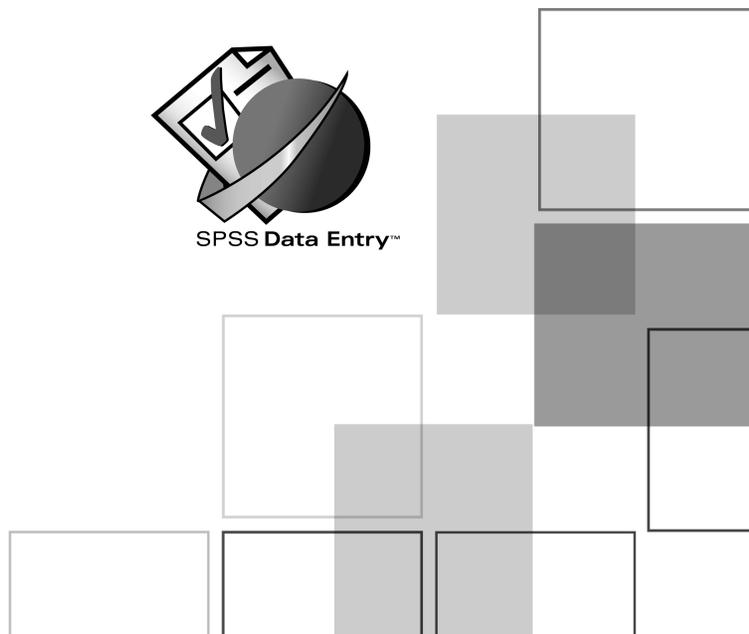




# SPSS Data Entry Builder™ 4.0 User's Guide



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1 2 3 4 5 6 7 8 9 0 06 05 04 03  
ISBN 1-56827-335-5

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# ***Preface***

SPSS Data Entry is a tool for fast and flexible survey design and data collection, offering a drag-and-drop interface for developing both printed and online data entry forms. Data Entry also helps prepare your data for analysis because when you specify the questions and responses that appear on your forms, you also define the variables you'll use to run analyses.

SPSS Data Entry is designed to be used with statistical software from SPSS Inc. You can read your Data Entry files into and out of SPSS programs at will. Throughout the documentation, tips and techniques are described to help you get the maximum benefit from both Data Entry and your data analysis software.

## ***Data Entry Builder and Data Entry Station***

You can purchase Data Entry Builder by itself or in combination with multiple copies of Data Entry Station, depending on your needs.

- Data Entry Builder includes everything that you need to build custom forms, enter data, and check data for accuracy using rules.
- Data Entry Station is a scaled-down version of SPSS Data Entry intended only for entering or checking data. If you have a large team, buying one or more copies of Data Entry Station in combination with Data Entry Builder can speed the data entry process by allowing more people to get involved.

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# ***Data Entry Overview***

SPSS Data Entry is a powerful tool for fast, accurate data entry—and much more. When you need data fast and clean, you need SPSS Data Entry.

**Design survey questionnaires.** Data Entry is a powerful tool for building forms and questionnaires. You can choose from a number of sample surveys to help you get started, copy preformatted questions from question libraries, or build your own forms from scratch. You can also generate forms from existing SPSS data files.

**Create paper and online forms.** You may find that you can use the same form in print that you use online, or you can develop alternate versions of a form—one optimized for online data entry, the other used for your printed questionnaire. You can map questions on both forms to a common set of variables so that if you later make changes to one of your variables (for example, to the wording of a question), questions on both forms are updated automatically.

**Successful surveys begin with well-defined questions.** Too often, researchers consider how to enter and analyze their data only after they've mailed their questionnaires. In Data Entry, as you create your questions and responses, you also define the variables you'll use to conduct your analyses. The result is data that are not only clean but also ready to analyze.

**Fast, efficient data entry.** Data Entry has a number of features to speed online data entry. You can create Skip & Fill rules to automatically fill in specific questions based on previous responses or use Table Entry view to quickly enter data into a tabular grid similar to a spreadsheet.

**Enter clean data.** Create Validation rules to ensure that data are entered correctly the first time, or use Checking rules to screen for logical inconsistencies (for example, if

a male respondent claims to be pregnant, you most likely have an error). You can also check for errors in your existing data files. Double-entry verification is available using the file compare facility.

**Analyze your data using statistical software from SPSS.** SPSS Data Entry is designed to be used with statistical software from SPSS Inc., maker of powerful tools for data analysis. You can read your Data Entry files into and out of SPSS programs at will. Throughout the documentation, tips and techniques are described to help you get the maximum benefit from both Data Entry and your data analysis software.

## ***Steps for Using SPSS Data Entry***

A typical user conducting a survey would work through the following steps:

- Build a form or questionnaire, complete with questions, variables, and rules.
- Distribute or administer the questionnaire.
- Collect, enter, and clean data.
- Analyze the data using statistical software from SPSS.

Alternatively, you can use the checking facility to check your existing data files or generate a form from an existing data file.

## ***Forms***

A file can have one form or many forms, each composed of questions. The form toolbox includes tools to create custom questions with different types of response controls, including multiple response questions, and tools to quickly arrange groups of questions in a tabular matrix. You can also add text annotations, pictures, and other elements.

Data Entry Builder allows you to use the same form for online data entry that you use for your printed questionnaire, which saves you time. (For online data entry, you can use either Data Entry Station 4.0 or the Data Entry Enterprise Server 4.0.) You can also develop alternate versions of a form—one optimized for online data entry, the other used for your printed questionnaire, and both linked to a common set of variables.

Figure 1-1  
Use the same form online and in print

**Customer Satisfaction Survey**

Product (select all that apply)

Fax Machine

Copier

How would you rate your overall satisfaction with this product?

Very satisfied

Somewhat satisfied

Satisfied

Very Satisfied

Dissatisfied

Very Dissatisfied

Would you recommend this product?

Yes

No

Did the product ever fail to operate?

Yes

No *If no, skip to the next section*

---

**Online Entry Form**

File Edit View Data Rules Help

3

**Customer Satisfaction Survey**

Product (select all that apply)

Fax Machine

Copier

How would you rate your overall satisfaction with this product?

Very satisfied

Somewhat satisfied

Somewhat dissatisfied

Very Dissatisfied

No Answer

Would you recommend this product?

Yes

No

Did the product ever fail to operate?

Yes

No *If no, please skip to the next section*

Did you contact us to fix the problem?

Yes

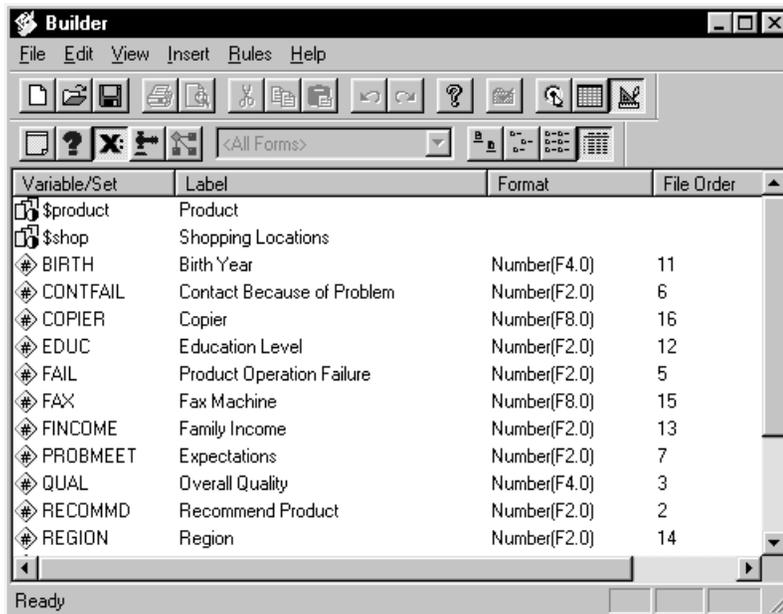
No

Ready 3/3 Skip & Fill: On Auto Check: On

## Questions and Variables

Questions are the foundation of any survey and the building blocks of data entry forms. Each question on a form has one or more controls that allow users to enter a response. A number of control types are available, including text boxes, check boxes, option buttons, and drop-down lists.

Figure 1-2  
Variables displayed in Builder window

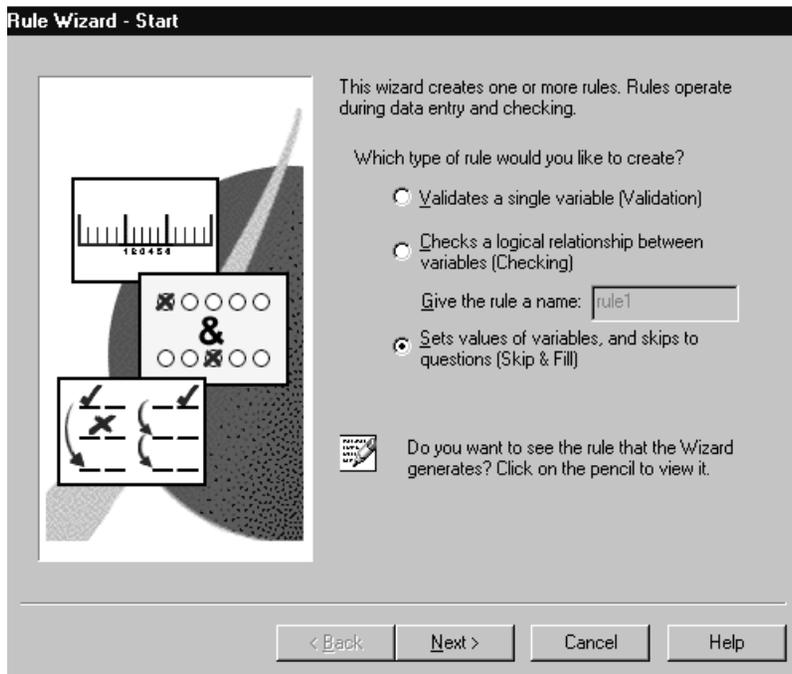


Answers to questions are stored in variables. The variables are created as you define your questions so that you'll be ready to enter data and run your analyses when the time comes. For example, the question *Date of purchase?* might be bound to a variable named *pdate*. In fact, you can think of a question as a representation of one or more variables on a form.

## Rules

Rules can validate data as they are entered, check logical relationships between variables, or automatically fill in or skip over specified questions. You can add rules to your forms to ensure that data are clean as they are entered or use the data checking facility to identify problems with existing data files. Beyond simple data validation, rules can check logical relationships between variables (for example, if gender equals *male*, then pregnant must be *no*) or speed data entry by automatically filling in data based on responses to specific questions.

Figure 1-3  
Rule Wizard



## Collecting, Entering, and Cleaning Data

You can gather data via traditional mail or by conducting interviews over the phone or in person. Use Data Entry Builder or Data Entry Station to enter responses from interviews or printed questionnaires. Purchase multiple copies of Data Entry Station to increase your team's productivity by distributing the task of entering data among team members, even across multiple sites.

For example, suppose you have several offices conducting phone interviews in different parts of the country. At the end of each day, each site sends you a file via e-mail containing the cases entered that day, and you merge the data from all of the sites into a single file (using the Add Files utility).

Once the data are entered, you can use the data checking facility to identify and report errors. You can clean the data in either Data Entry or your statistical software program. If you want to be doubly safe, double-entry verification is also available.

## Analyzing Data Using SPSS Software

SPSS Data Entry is designed to be used with statistical software from SPSS Inc., maker of powerful tools for data analysis. Whether you need simple reporting and summary statistics or in-depth analysis using advanced statistical procedures, such as Factor, Reliability, or Cluster Analysis, SPSS offers products to meet your needs.

Figure 1-4  
Cases displayed in SPSS Data Editor

	fax	copier	satisf	recommd	fincome
1	No	Yes	Somewhat satisfied	Yes	\$35,000 to \$44,9
2	No	Yes	Very satisfied	Yes	\$25,000 to \$34,9
3	Yes	Yes	Very satisfied	Yes	\$35,000 to \$44,9
4	Yes	No	Somewhat dissatisfied	No	\$65,000 to \$74,9
5					

SPSS Processor is ready

Data Entry saves data in a standard SPSS data file, a spreadsheet-like format with rows and columns. Each row is a case, and each column is a variable. For example, if you ask 100 people 10 questions, you'd have a data file with 100 cases (rows). The number of variables that you have depends upon the types of questions and your survey. For example, if your survey has 10 questions, and each question has 5 check-box answers, your survey will have at least 50 variables. Each case has information about one submitted survey, and variables store the answers to questions.

Throughout the documentation, tips and techniques are described to help you get the most from both Data Entry and your data analysis software.

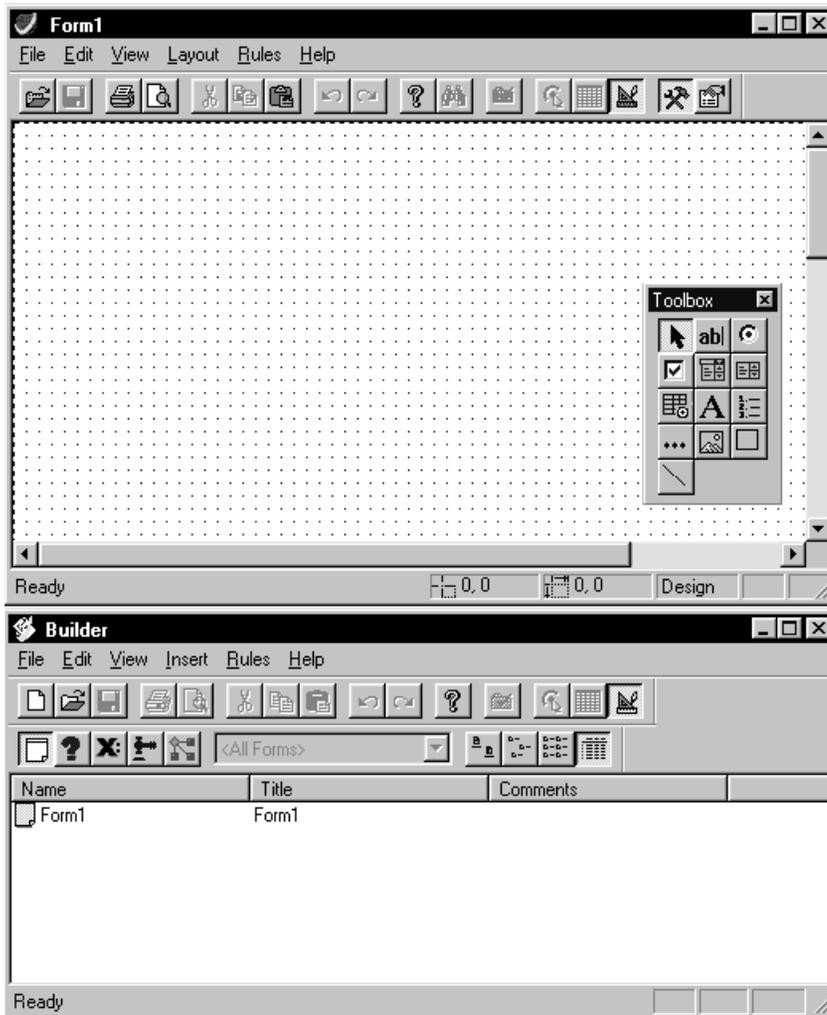
## ***Data Entry Product Components***

Depending on your needs, you can purchase Data Entry Builder by itself or in combination with multiple copies of Data Entry Station. You can also purchase the SPSS Data Entry Enterprise Server.

### ***Data Entry Builder***

Data Entry Builder includes everything that you need to build custom forms, enter data, and check data for accuracy using rules. Builder offers an easy-to-use graphical environment for defining variables and questions, developing custom forms, and creating Validation, Skip & Fill, and Checking rules to ensure that the data are clean. Sample surveys and question libraries are also included. If you're a lone researcher or a one-PC shop, a single copy of Data Entry Builder should have everything that you need.

Figure 1-5  
Form window, Builder window, and toolbox



## Data Entry Station

Data Entry Station is a scaled-down version of SPSS Data Entry intended only for entering or checking data. While you cannot use Data Entry Station to create new surveys or data files (these tasks must be done in Data Entry Builder), you can add data

to an existing file. Similarly, you can use rules to check your data in Data Entry Station, but to create new rules, you'll need Builder.

It is expected that Data Entry Station will be purchased in combination with at least one copy of Data Entry Builder (since you can't use Station to create surveys). If you have a large team, buying one or more copies of Data Entry Station in combination with Data Entry Builder can speed the data entry process by allowing more people to get involved.

## **SPSS Data Entry Enterprise Server**

You can purchase SPSS Data Entry Enterprise Server if you have a large team or if you wish to deploy surveys over the Web. The SPSS Data Entry Enterprise Server provides two powerful tools for data collection: the Network Server and the Web Server. The Network Server is designed for teamwork. A team member may play more than one role during the course of a survey, but every member is able to work more efficiently. For any survey that will be deployed at your site, team members may include:

**Survey designer.** The team member who develops the survey form, including the questions, valid responses, and rules. (This may be the same person as the survey administrator.)

**Survey administrator.** The team member who deploys and maintains the survey. The administrator may be responsible for exporting the survey files from Data Entry Builder, and registering the survey master files with the Data Entry Network Server, which is used by the entire team. Once the files are registered, users of both Builder and Station can submit cases.

**Survey analyst.** The team member who analyzes the survey data, usually with the SPSS for Windows application. This person uses the data collected in the survey's master *.sav* file, or other data sources. (This may be the same person as the survey designer.)

**System administrator.** The team member who is responsible for installing the Data Entry Network Server. The system administrator is also responsible for the computer system that hosts the Data Entry Network Server. This person may also administer the data sources at your site.

The Data Entry Web Server displays your survey as HTML. When an Internet or intranet user answers your survey and submits the information, the Data Entry Web Server collects the data and sends it to the Network Server, where it is saved in a master file in *.sav* format. When your survey is complete, you can open the *.sav* file in SPSS

for data analysis or in SPSS Data Entry Builder for cleaning. For more information on the SPSS Data Entry Enterprise Server, refer to the *SPSS Data Entry Enterprise Server User's Guide*.

## ***Question Libraries and Sample Files***

Data Entry Builder includes several question library files with fully formatted sample questions that you can copy and paste into your forms. The libraries include examples of categorical questions, as well as open-ended questions, demonstrating how these types of questions can be implemented in Data Entry using text boxes, check boxes, option buttons, and drop-down lists. Multiple response questions and tabular response item matrices are also included.

You can copy questions from the library into your form and use them as they are or customize each to your particular needs. The emphasis is on demographics, but by modifying the question text and response items, the questions in the libraries may serve as the starting point for almost any type of survey.

A number of fully formatted sample files are also included with Data Entry Builder. Each demonstrates a simplified solution for a given scenario.

You can access the question libraries via the Edit menu in Builder. The samples are installed in the same directory as your Data Entry software.

## ***Where to Go from Here***

- For an introduction to using Data Entry, see Chapter 2 or the online tutorial. (To run the tutorial, start Data Entry and select Tutorial from the Help menu.)
- To define questions and variables for a new survey, see Chapter 4 and Chapter 7.
- To use the question libraries, see Chapter 9.
- To create a form from an existing data file, see Chapter 4.
- To customize your forms, see Chapter 10.
- To create Validation, Checking, or Skip & Fill rules, see Chapter 11.
- To enter data, see Chapter 14.
- To use the data checking facility to check for errors in your existing data files, see Chapter 15.

## *Quick Tour*

In this chapter, you will learn how to:

- Create a short survey using three different question types.
- Create a simple Skip & Fill rule.
- Save the file.
- Enter data into the survey.

Figure 2-1  
*Quick Tour survey*

The screenshot shows a software window titled "quickt.sav - Form1" with a menu bar (File, Edit, View, Data, Rules, Help) and a toolbar. The main area contains a survey form with three questions:

1. How often do you travel overseas?  
 Never  
 Every Other Year  
 Every Year  
 Twice a Year or More

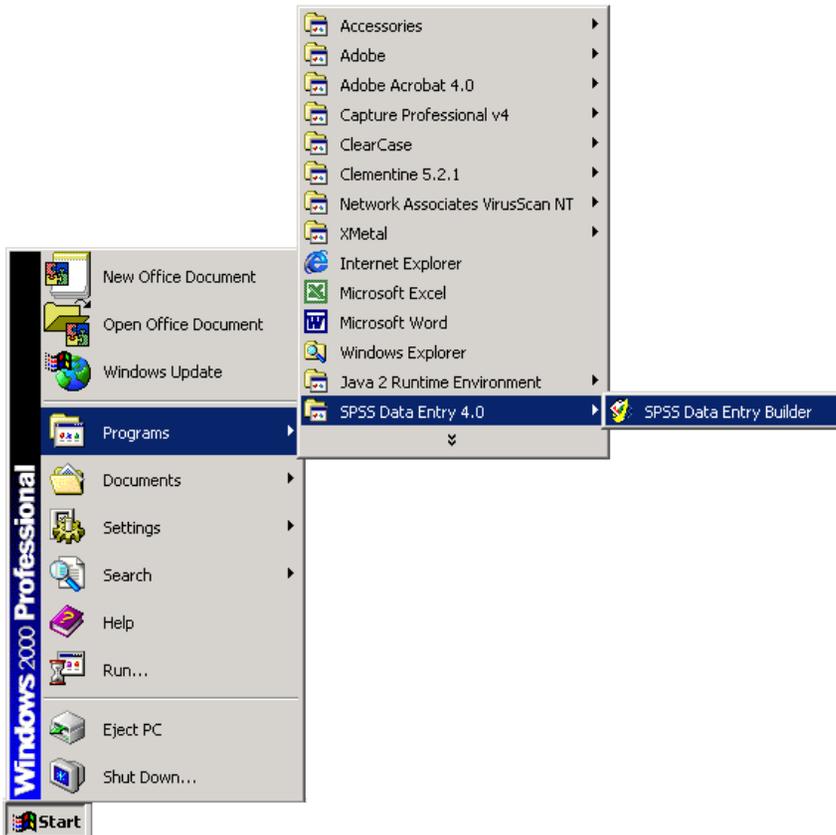
2. Last overseas destination:

3. Which of the following continents would you consider visiting?  
 Europe  
 Australia  
 Asia  
 South America  
 Africa

The status bar at the bottom shows "Ready", "4/4", "Skip & Fill: On", and "Auto".

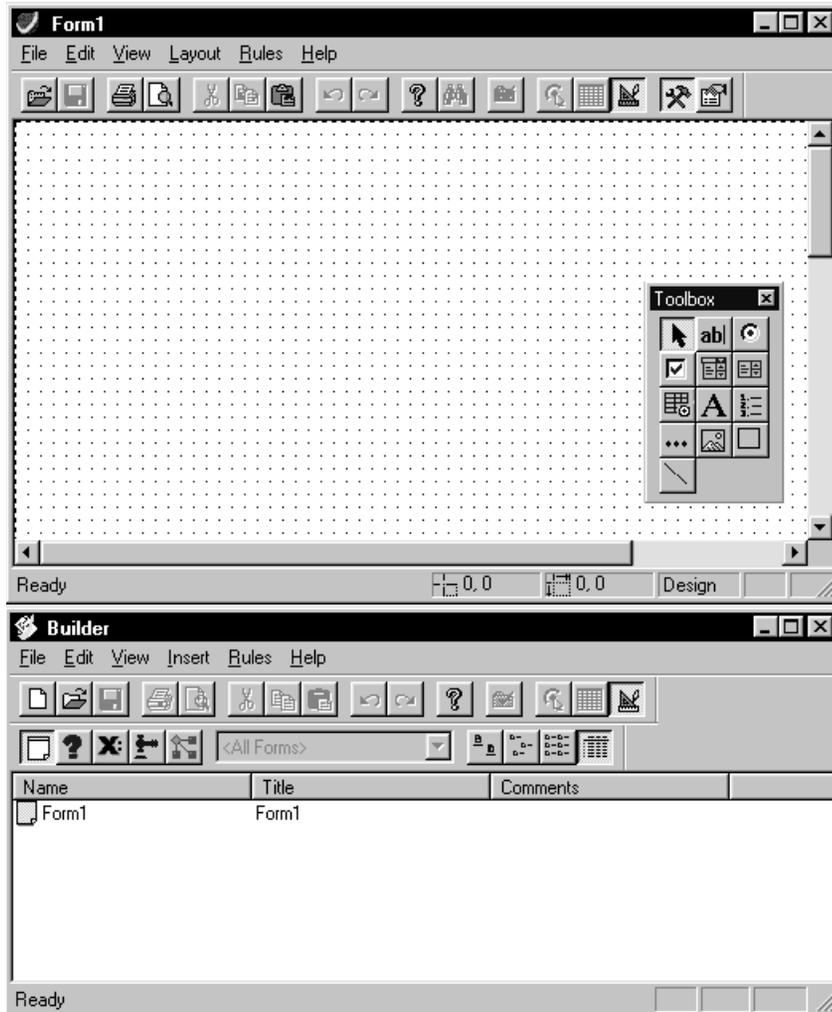
## Starting Builder

Figure 2-2  
Windows Start menu



- ▶ From the Windows Start menu choose:
  - Programs
  - SPSS Data Entry 4.0
  - SPSS Data Entry Builder

Figure 2-3  
Form window, Builder window, and toolbox



When you open Builder, a blank form is displayed. You can open an existing file or start working with the blank form to create a new file. The Builder window is where you will view and manage your forms, questions, variables, and rules. The Form window is where you will create your forms. You will use the toolbox to add questions, lines, rectangles, and pictures to your forms.

There are several different types of questions that you can create, depending on what sort of data that you want to collect. The questions are covered in more detail in Chapter 4. For this survey, you will learn how to create an option button question, a text box question, and a multiple response check box question.

## Turning on Automatic Question Numbering

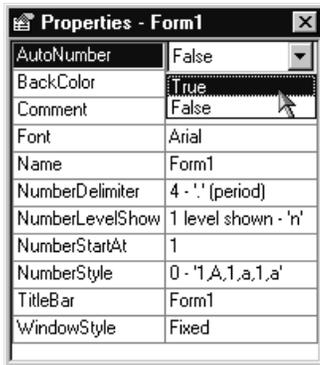
Before you create any questions, you can decide whether you want your questions automatically numbered. If you delete, cut, or paste questions, your question numbers automatically update to reflect the change.

To turn on automatic question numbering:

- ▶ Click on your form to select it.

Figure 2-4

*Changing the AutoNumber property in the Properties window*



- ▶ In the Properties window, change the AutoNumber property to True.

When the AutoNumber property is set to True, any question that you create will contain a question number. For now, set your form's AutoNumber property back to False. Later in the Quick Tour, you will learn how to manually add question numbers.

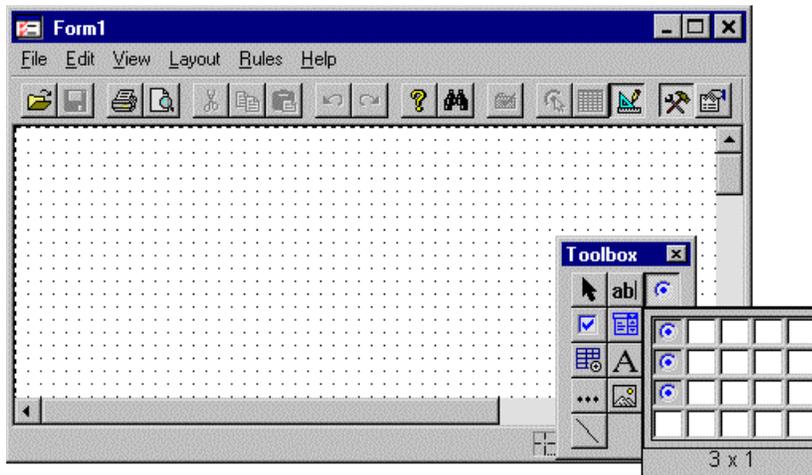
## Creating an Option Button Question

The option button question is used when you want to ask a question that will require one answer and will provide the respondent a limited number of responses. Each response is one option button. The first question in your survey is *How often do you travel overseas?* The possible responses are *Never, Every Other Year, Every Year, and Twice a Year or More.*

You will use the form toolbox to create the option button question. If the toolbox is not visible, from the menus choose:

View  
Toolbox

Figure 2-5  
Selecting option buttons from the well



- ▶ Move the mouse pointer over the option button question tool and hold down the left mouse button to display the option button well.
- ▶ Drag and release the mouse in the option button well to specify one column of four option buttons.

The cursor changes to indicate that the option button tool is selected.

- ▶ Click on the form to create the question.

**Note:** If you want to move your question, simply click on the question container, which is the box surrounding the question, and drag to another place on the form.

Figure 2-6

*Created option button question*

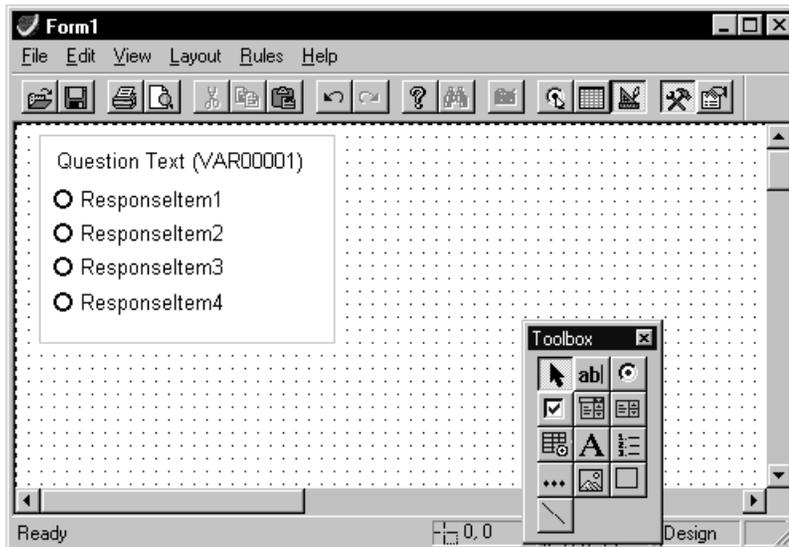
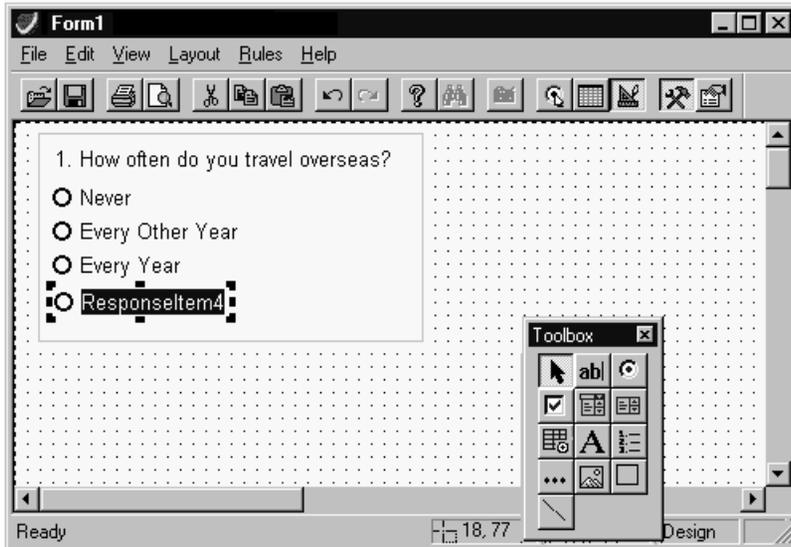
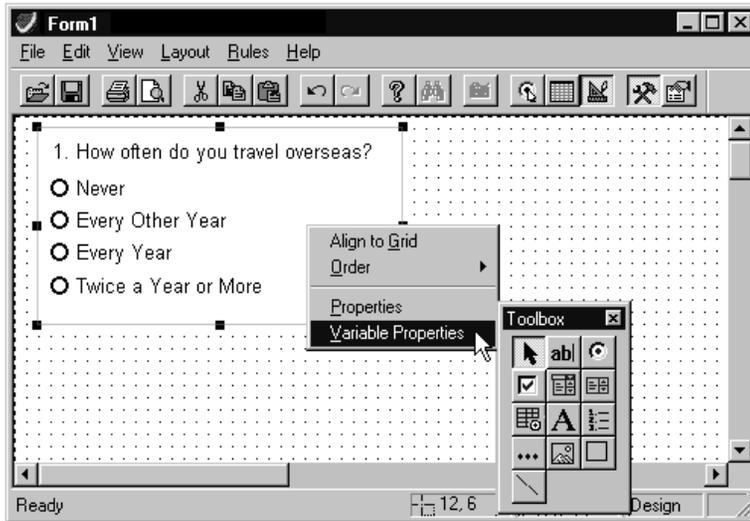


Figure 2-7  
Editing the question and response text



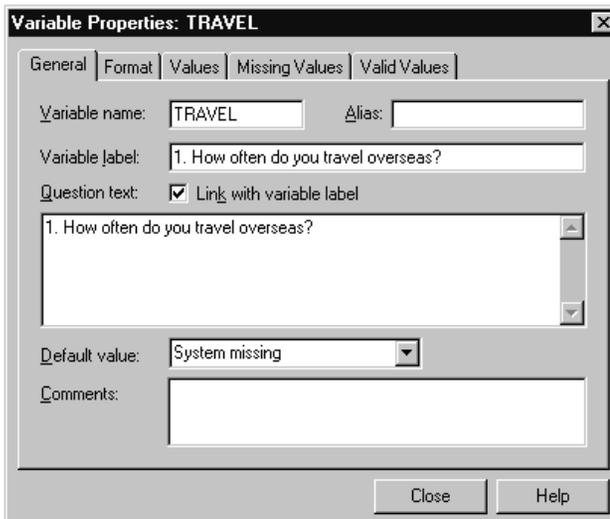
- ▶ To edit the question text and response text, double-click on them.
- ▶ For the question text, type How often do you travel overseas?
- ▶ For the first option button, type Never. For the second, type Every Other Year. For the third, type Every Year. For the fourth, type Twice a Year or More.  
When you create questions using the toolbox, variables are automatically created at the same time.
- ▶ To define the variable for the question, right-click on the question and choose Variable Properties.

Figure 2-8  
Selecting Variable Properties from the context menu



The Variable Properties window is displayed. Each tab in the Variable Properties window allows you to define a different aspect of the variable.

Figure 2-9  
Variable Properties window



The Variable Label area and Question Text area will already show How often do you travel overseas? If you edit the question text, the changes will appear on your form and vice versa.

- ▶ Type TRAVEL in the Variable name area. Variable names are restricted to eight characters.
- ▶ Click the Values tab.

Figure 2-10

*Variable Properties window: Values tab*

Value	Value Label	Link	Response Item
1	Never	<input checked="" type="checkbox"/>	Never
2	Every Other Year	<input checked="" type="checkbox"/>	Every Other Year
3	Every Year	<input checked="" type="checkbox"/>	Every Year
4	More than Twice a Year	<input checked="" type="checkbox"/>	More than Twice a Year
		<input type="checkbox"/>	

Check Box Value Mapping

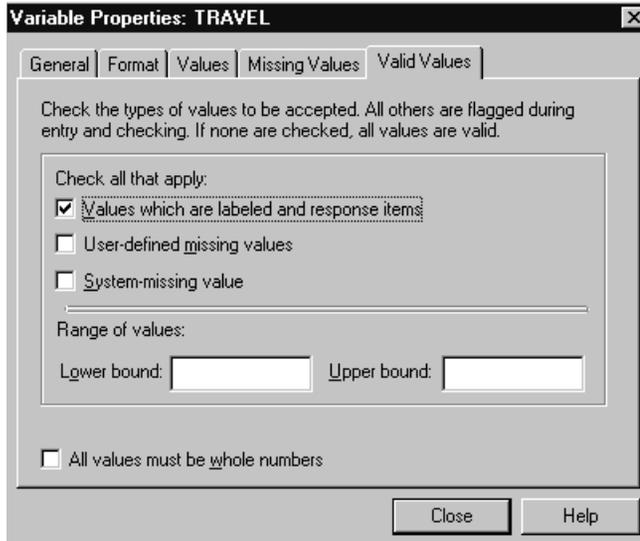
Checked:       Unchecked:

Close      Help

The changes that you made on the form to the option buttons are displayed in the *Response Item* column. Note that each option button control on the form represents a response item in the Variable Properties window. You don't have to make any further changes.

- ▶ Click the Valid Values tab.

Figure 2-11  
Variable Properties window: Valid Values tab



- ▶ Select Values which are labeled and response items.

This creates a simple Validation rule that limits entered data to the four response items that you defined: *Never*, *Every Other Year*, *Every Year*, and *Twice a Year or More*.

- ▶ Close the Variable Properties window.

## ***Connection between Questions and Variables***

Questions and variables are not the same thing in the program, but they are closely related. You can use the program without ever understanding this connection, but the many different methods for adding and removing responses from questions and variables will make more sense to you if you do.

A question is a representation of a variable on a form, and the question text and response items displayed in questions are actually stored in the variable bound to the question.

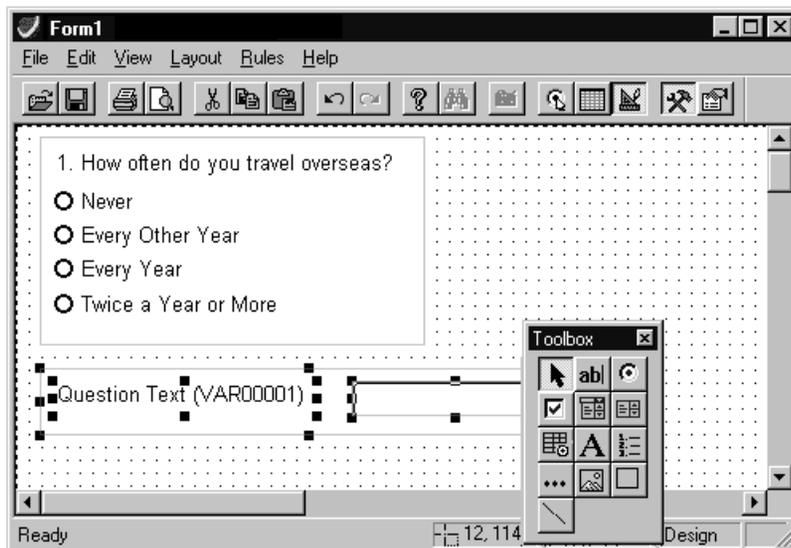
This makes it easy to keep your questions and forms up to date and provides multiple ways of doing things. You can edit question text and response choices directly on your form or in the Variable Properties window. Either way, the result is the same. Similarly, if you want to remove one of the buttons in an option button question, you can select and delete the button right on the form or delete the corresponding response item in the Variable Properties window. The result is the same, so use whichever method is convenient for you.

## Creating a Text Box Question

Use the text box question when you want to ask a question that will require a text answer. The second question of your survey is *Last overseas destination*.

- ▶ Click the text box question tool from the toolbox.
- ▶ Click on the form to create the question.

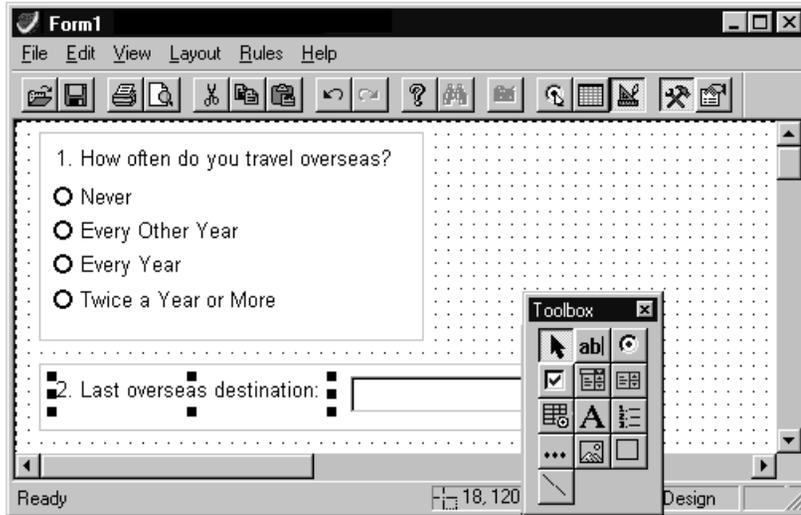
Figure 2-12  
*Created question*



- ▶ Double-click on the question and type Last overseas destination:.

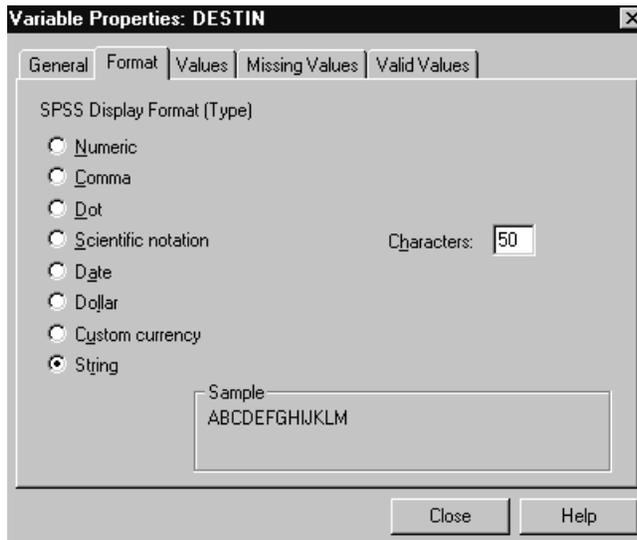
Figure 2-13

*Editing the question text*



- ▶ To define the variable, right-click and choose Variable Properties.
- ▶ In the Variable Properties window, type DESTIN for the variable name. (The question text that you entered on the form is already displayed.)

Figure 2-14  
Variable Properties window: Format tab



- ▶ Click the Format tab.
- ▶ Choose String as the variable type and specify the number of characters as 50.
- ▶ Close the Variable Properties window.

## ***Customizing Your Form***

You can change the properties of your form or question to alter the appearance and functionality of your form. You can:

- Change the font, size, and color of text.
- Apply custom styles to questions, such as raised, flat, or sunken.
- Change the border style, color, and width.
- Change the position and alignment of text within controls.
- Enable or disable questions and controls.
- Require respondents to answer a question or select a certain number of responses for a multiple response set.

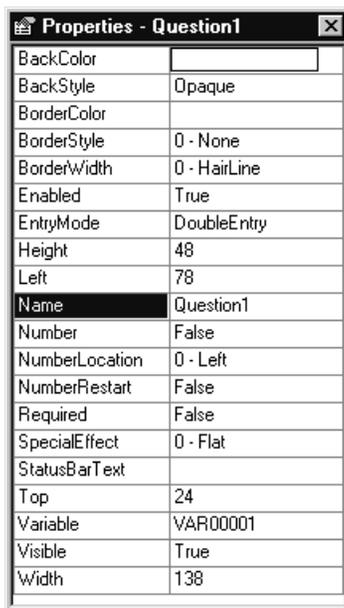
To view the properties for an item:

- ▶ Click on the item.
- ▶ From the Form menu choose:

View  
Properties

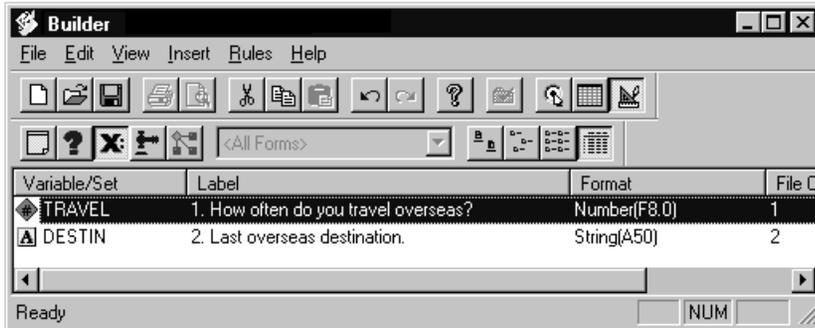
**Figure 2-15**

*Properties window*



## Builder Window

Figure 2-16  
Builder window



The Builder window allows you to access the objects that make up your file.

- ▶ From the Builder window menus choose:

View  
Variables

You can see a list of your variables.

- ▶ Double-click *DESTIN* to view the properties of the variable. Close the Variable Properties window.
- ▶ From the Builder window menus choose:

View  
Rules

You can see the Validation rule that you created for *TRAVEL*.

## Creating a Multiple Response Set

When you have a question that may require more than one response, you can create a multiple response set. When you create a multiple response set, you create a variable for each response.

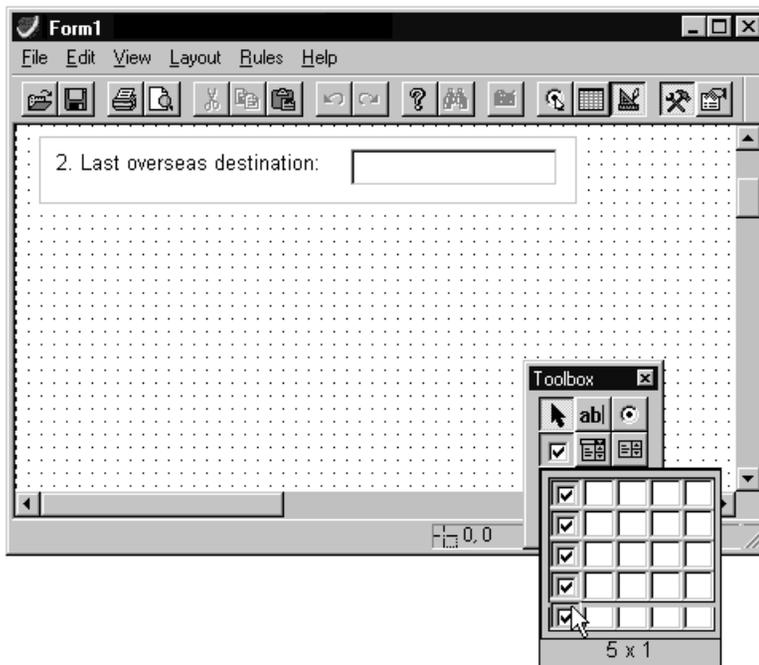
The third question in your survey is *Which of the following continents would you consider visiting?* The possible responses are *Europe, Australia, Asia, South America, and Africa.* Use the check box question tool to create the question.

The tool well allows you to specify the number and arrangement of the check boxes.

- ▶ Move the mouse pointer over the check box question tool and hold down the left mouse button to display the check box well.
- ▶ Drag and release the mouse in the well to specify one column of five check boxes.

Figure 2-17

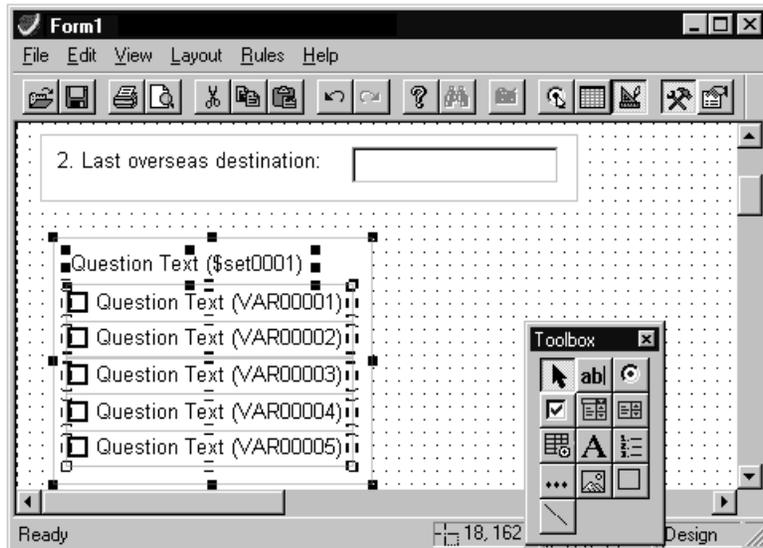
*Using the check box well*



- ▶ Click on the form to create the question.

Figure 2-18

*Created check box question*

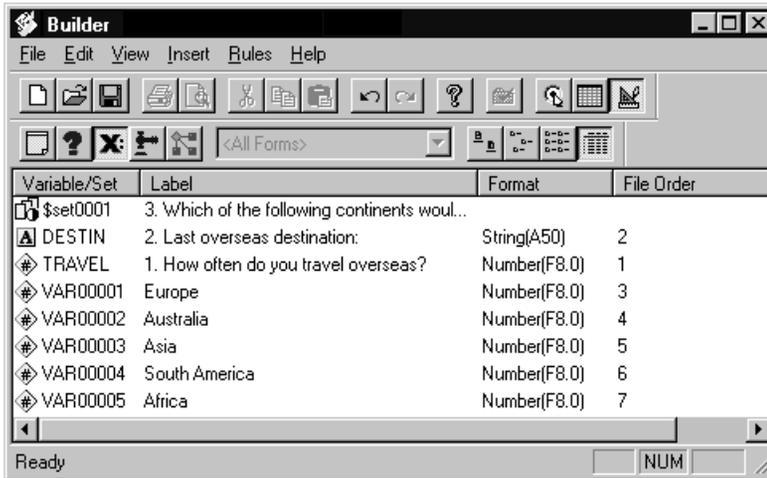


- ▶ Double-click on the question text and type Which of the following continents would you consider visiting?
- ▶ For the check boxes, type Europe, Australia, Asia, South America, and Africa.
- ▶ To define the multiple response set, from the Builder window menus choose:

View  
Variables

When you want to define several variables at once, the Builder window provides easy access to the variables.

Figure 2-19  
Builder window



When you created the check box question, you created a multiple response set, which appears in the Builder window as *\$set001*. The set consists of five variables. Each check box represents a subquestion with its own variable, since each check box is storing a response to the question. You will have to define your set and then define each of the variables.

- ▶ In the Builder window, double-click *\$set001* to view the properties of the set.

Figure 2-20  
Set Properties window: General tab

The screenshot shows a dialog box titled "Set Properties: \$TRIP". It has two tabs: "General" and "Members". The "General" tab is selected. The fields are as follows:

- Name: \$ TRIP
- Alias: trip
- Label: 3. Which of the following continents would you consider visiting?
- Question text:  Link with get label
- Text area: 3. Which of the following continents would you consider visiting?
- Counted value for dichotomies: 1
- Comments: (empty text area)

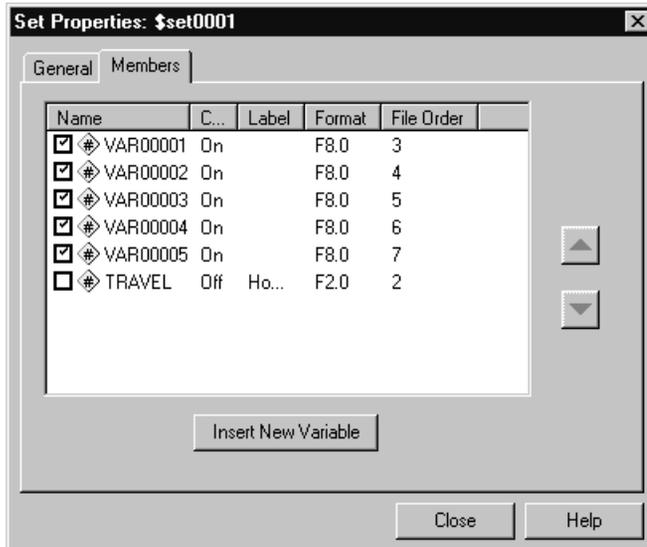
Buttons: Close, Help

- ▶ To change the set name, type TRIP in the Name text box. All sets must start with a \$, which is automatically provided for you.
- ▶ Type trip in the Alias text box. Because of the naming conventions of JScript, which is the language the program uses to make rules, sets must have an alias.

The counted value for dichotomies is the number stored in the check box representing the selected variable. When you are performing statistical analysis, your analysis software will know which responses were chosen because their variables will have the counted value stored inside of them.

- ▶ To specify the counted value, select 1 from the drop-down list.
- ▶ Click the Members tab.

Figure 2-21  
Set Properties window: Members tab



You can see the five variables, which are represented on your form by each of the check boxes. If you wanted to add another member, you could use the Insert New Variable button.

- ▶ Click the General tab in the Set Properties window.
- ▶ To define your variables, in the Builder window, click *var00001*.
- ▶ Change the name from *var0001* to *europa*. Since the variable name already conforms to JScript naming conventions, you need not specify an alias.
- ▶ Change the names of the other variables. Change *var00002* to *austral*, *var00003* to *asia*, *var00004* to *southam*, and *var00005* to *africa*.
- ▶ Close the Variable Properties window.

## Adding Question Numbers

You can manually add question numbers to questions.

- ▶ Hold down the Shift key and click on each question to select your three questions.

- ▶ From the Form menu choose:

Layout  
  Numbering  
    Add Question Number

Question numbers are added to your question. If you were to delete one of the questions, your questions would automatically renumber. If you add a question, your new question will not have a question number. Questions are not automatically numbered unless you set the form's AutoNumber property to True.

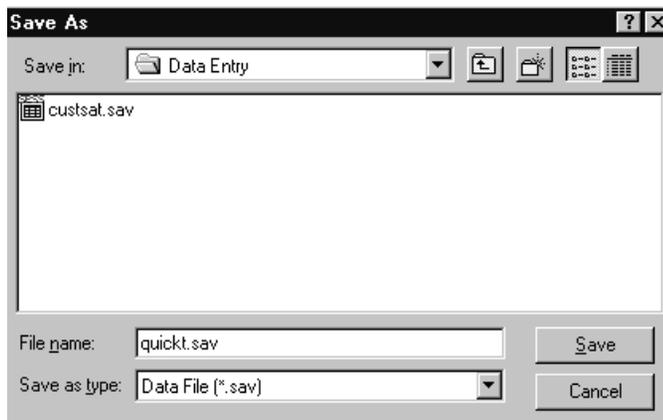
## Saving Your Data File

Now that you have created variables, you can save your data file.

- ▶ From the Builder window menus choose:

File  
  Save

Figure 2-22  
*Save As dialog box*



- ▶ Type quickt.sav and click Save.

## Creating a Skip & Fill Rule

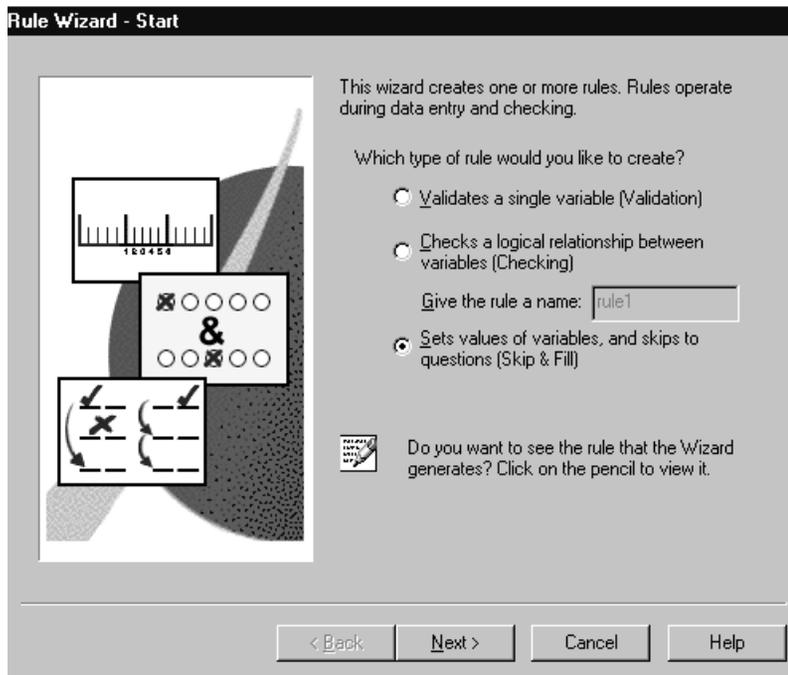
Skip & Fill rules allow you to skip questions that are not applicable for certain cases and fill in values for questions based on previously entered values. You will now create a rule so that when a person enters Never for question 1, the program will automatically enter Not applicable to question 2 and skip to question 3.

- ▶ From the Form window menus choose:

Rules  
Rule Wizard...

Figure 2-23

Rule Wizard dialog box



- ▶ Select Skip & Fill rule and click Next.

You can learn about Validation and Checking rules from the online rules tutorial or from Chapter 11 and Chapter 12.

Figure 2-24

*Rule Wizard - Skip & Fill Assignments dialog box*

Select the question which fires a Skip & Fill rule. The rule is fired when a value is entered into the selected question(s). Click on the box to select the question.

Question Name	Check	Form Name	Question Text
<input checked="" type="checkbox"/> Question1	On	Form1	1. How often do you travel overseas?
<input type="checkbox"/> Question2	Off	Form1	2. Last overseas destination:
<input checked="" type="checkbox"/> Question3	Off	Form1	3. Which of the following continents would you con

Questions which already have Skip & Fill rules are not included in this list.

< Back   Next >   Cancel   Help

- ▶ In the Skip & Fill Assignments dialog box, select the check box next to question 1 and click Next.

Figure 2-25  
Rule Wizard - Skip & Fill Rule

**Rule Wizard - Skip & Fill Rule: Expression 1 of 1**

If

Select the value label

Variables: TRAVEL Operators: IsLabeled Value(s):  Never  Variable:

Combinations

Click on a button to add a relation:

[Vars.TRAVEL.IsLabeled("Never")]

Use the right mouse button to delete, group, or ungroup selected relations.

Then

Else

- ▶ In the Variables drop-down list, select *TRAVEL*.
- ▶ In the Operators drop-down list, select *IsLabeled*.
- ▶ In the Values drop-down list, select *Never*.

As you make your selections, the rule script is written in the Expression window in the middle of the Rule Wizard. Your rule is tied to question 1. When you enter *Never* in question 1, the rule is activated. The next step is to tell the rule that when *Never* is entered in question 1, it should fill *Not Applicable* for question 2 and then skip to question 3.

- ▶ In the Then area of the Rule Wizard, click *Fill Values*.

Figure 2-26  
*Fill when Expression is True dialog box*

Variable	Value
TRAVEL	
DESTIN	Not Applicable
EUROPE	
AUSTRAL	
ASIA	
SOUTHAM	
AFRICA	

- ▶ In the text area next to *DESTIN*, type Not Applicable.
- ▶ Click Continue.
- ▶ In the Then area of the Rule Wizard, click Skip to a Question.

Figure 2-27  
*Skip when Expression is True dialog box*

When the expression is: True

Go to next question on current form

Skip to question: Question3

on form: Form1

Go to next case

- ▶ In the drop-down list of questions, select Question3.
- ▶ In the drop-down list of forms, select Form1.
- ▶ Click Continue.
- ▶ In the Rule Wizard, click Finish.

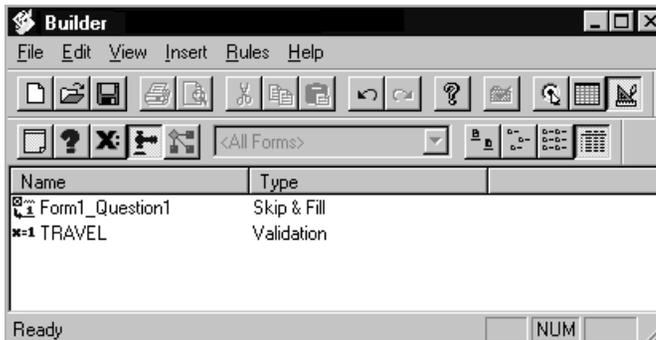
When you enter Never in question 1, the program will fill in Not Applicable in question 2 and automatically skip to question 3.

- ▶ From the Builder window menus choose:

View  
Rules

Figure 2-28

*Rules in the Builder window*



The rule named *Form1\_Question1* is the rule you just created. A Skip & Fill rule is named after the question it is attached to. The rule named *TRAVEL* is the Validation rule you created in the Variable Properties window as part of this Quick Tour. A Validation rule is named after the variable it is attached to.

## Entering Data

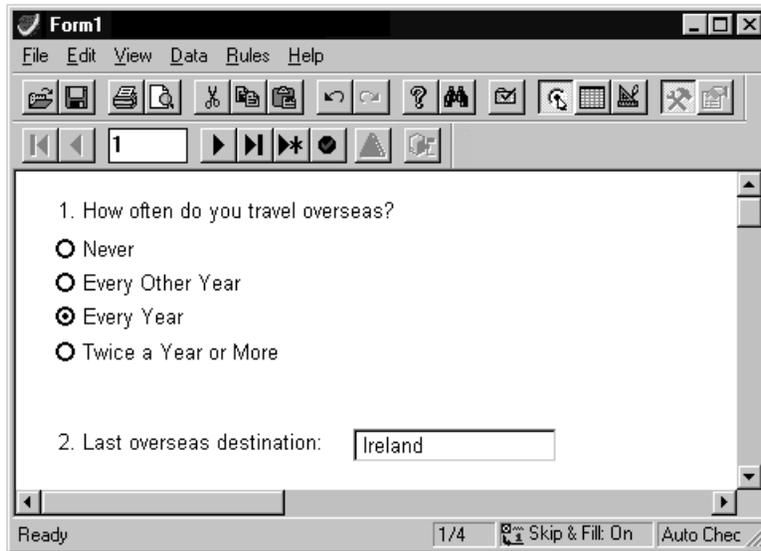
Now you are ready to enter data.

- ▶ From the Form window menus choose:

View  
Form Entry

Figure 2-29

*Form Entry view*



### ***Entering Data in Form Entry View***

- ▶ Use the mouse or the arrow keys to select an answer for the first question.
- ▶ Press the Tab key to move to the second question.
- ▶ In the text box, type the location of your last overseas destination and press the Tab key.
- ▶ Use the mouse to select an answer for the first question.
- ▶ Press the Tab key to move to the second question.
- ▶ In the text box, type a location.

- ▶ To save your file, from the File menu choose:

File  
Save

**Note:** If you try to save your file or switch to another view when no option is selected in the first question, you will receive a validation error. The Validation rule that you created in the Variable Properties window will not permit you to save a file or switch views without answering the first question. If you receive the alert, you can use the Navigation toolbar's back arrow to move to the previous case. Then, you can save your file or switch the view.

## Entering Data in Table Entry View

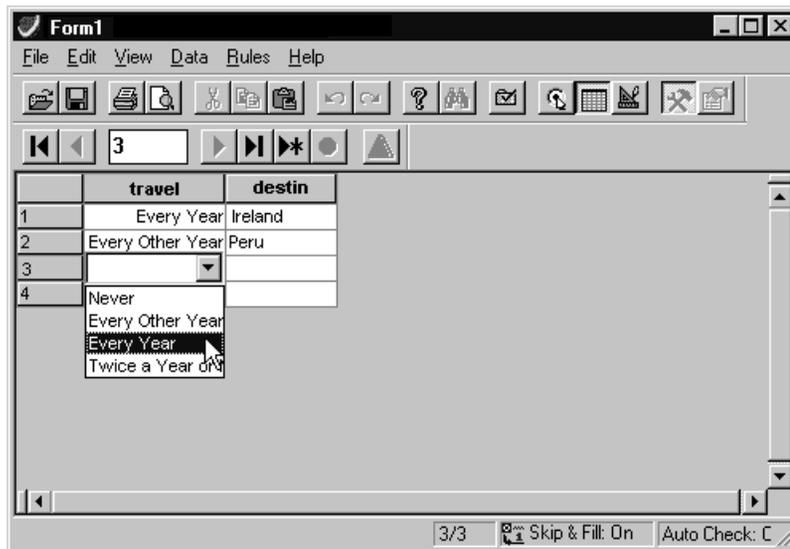
- ▶ From the Form window menus choose:

View  
Table Entry

Each column in Table Entry view represents a variable. Each row is a case.

Figure 2-30

Table Entry view



- ▶ Click on the first cell in the bottom row.

A new case is inserted.

- ▶ Click the arrow in the cell and select a response from the list.
- ▶ Press the Tab key to move to the next cell.
- ▶ Type a location.
- ▶ Press the Tab key to add this case and move to the next case.

### ***Closing Your File***

- ▶ From the Builder window menus choose:
  - File
  - Save
  - File
  - Close

### ***Opening Your File in SPSS***

Now that you have a few cases in your file, you can see what your file looks like in SPSS.

- ▶ From the Windows Start menu choose:
  - Programs
  - SPSS for Windows

**Note:** Builder is designed to be used with statistical analysis software programs from SPSS Inc.

- ▶ From the Data Editor menus choose:
  - File
  - Open
  - Data
- ▶ Select *quickt.sav* and click Save.

Figure 2-31  
Builder file in SPSS

	travel	destin	var	var
1	Every Year	Ireland		
2	Every Other	Peru		
3	Every Year	Kenya		

SPSS Processor is ready

In SPSS, you can analyze your data, delete variables, edit your file, or save the file to be exported into a number of spreadsheet and database programs. Any changes that you make to the file will be reflected when you open the file again in Builder. For example, if you delete a variable while in SPSS and save the file, you will find that when you open your file in Builder, both the question and the variable are no longer in the file. It is always a good idea to make a backup copy of your file before you change it in SPSS.

- ▶ To close SPSS, from the Data Editor menus choose:

File  
Exit

You have completed the first part of the Quick Tour. To learn how to create a question that can receive more than one answer or a Skip & Fill rule, keep reading.

### ***Where to Go from Here***

- To define questions and variables for a new survey, see Chapter 4 and Chapter 7.
- To create a form from an existing data file, see Chapter 4.
- To customize your forms, see Chapter 10.
- To create Validation, Checking, or Skip & Fill rules, see Chapter 11.
- To enter data, see Chapter 14. You can also open the sample survey for a reference on how to set up your file.

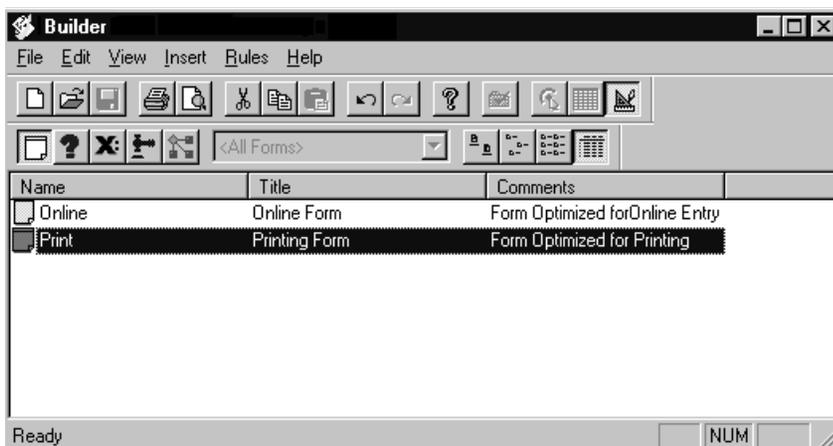
# Working in Builder

While you work in Builder, you will use:

- The Builder window
- Design and Entry views
- The Form window
- The toolbar
- The Properties windows

## Builder Window

Figure 3-1  
*Builder window*



The Builder window provides a base for working with your file. Within the Builder window, you can display and access the forms, questions, variables, and rules that make up your file.

- Use the View menu or toolbar to specify whether you want to display forms, questions, variables, or rules in the Builder window.
- Double-click on the name of a form, question, or variable to go to that element or access its properties.
- Use the File menu to create a new file, open an existing file, or print forms in your file.
- Use the Insert menu to insert new forms, variables, or multiple response sets.
- Use the View menu to switch among the Design, Form Entry, and Table Entry views.
- Click on a column within the Builder window to sort the items in the Builder window.

### ***Design View, Form Entry View, and Table Entry View***

**Design view.** In Design view, you design forms, questions, variables, and rules. You can add questions to the form or select and modify existing questions, variables, and rules, change the tab order, or make any changes to the design of the form, questions, variables, and rules. The design view also provides you with an HTML preview option, which allows you to preview how your survey will look online. However, you cannot add cases to the data file, modify existing data, or run rules.

**Form Entry view.** You can enter data and use the data-checking facility to check for rule violations in an existing data file. You can use the Tab key to move between questions, moving freely through the form and adding or modifying data as you wish. However, you cannot make any changes to the form properties without switching back to Design view.

**Table Entry view.** Table Entry view is an alternative to Form Entry view for entering data. Data are displayed in a spreadsheet-like format, where cases are rows and questions are columns, allowing you to view and print multiple cases.

## To Switch between Views

From the Form or Builder window menus choose:

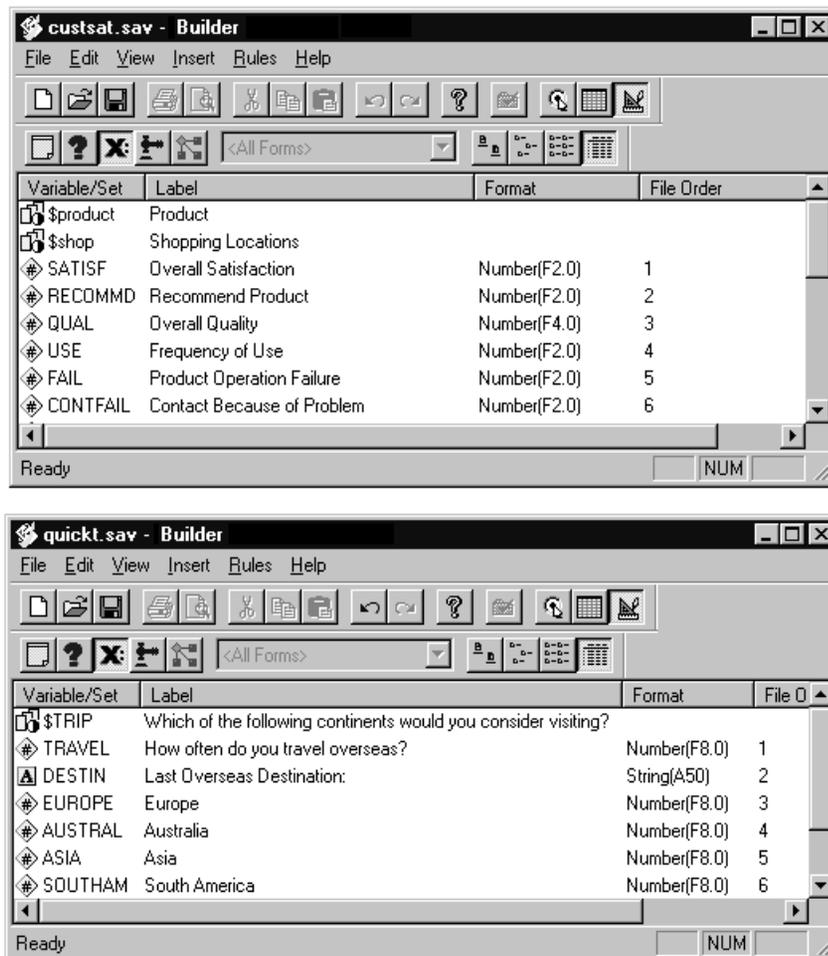
View

Form Entry (Table Entry, Design)

## Working with Multiple Builder Windows

Figure 3-2

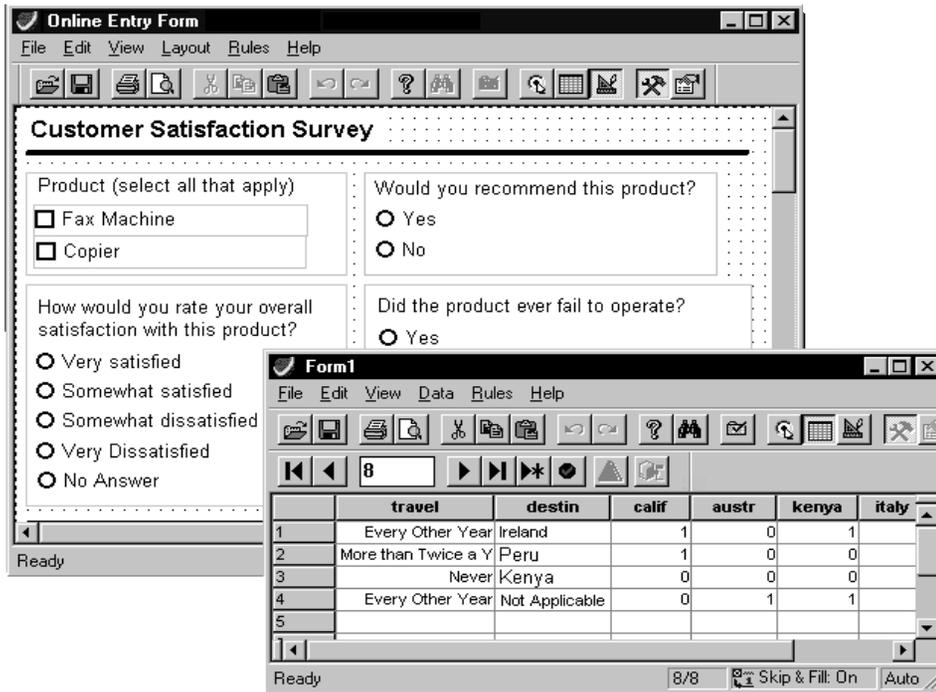
Two Builder windows



You can have more than one file open at a time, which can be useful for cutting, copying, and pasting between the files and comparing them. When you open more than one file, each file has its own Builder window, listing the elements in that file. When multiple Builder windows are displayed, be sure you are looking in the correct Builder window for the file that you want to access.

Figure 3-3

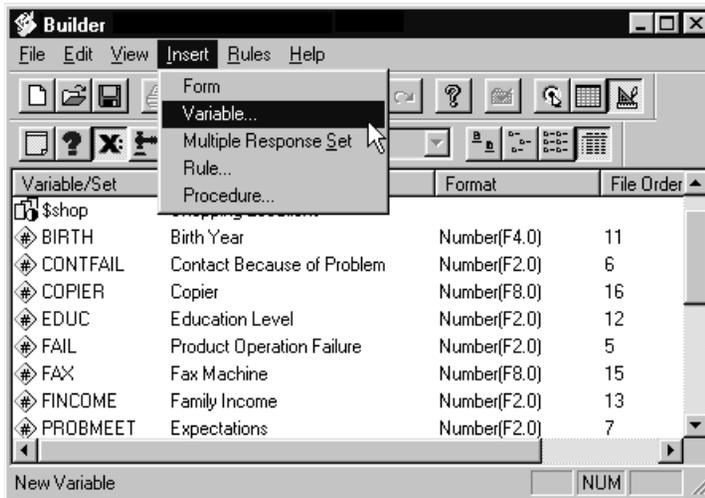
*Two files: One in Design view, one in Table Entry view*



When you have two files open, you can switch views freely within a file. For example, you can have one file open in the Design view, while the other file is open in the Form Entry or Table Entry view.

## Inserting Forms, Variables, Sets, and Rules

Figure 3-4  
Inserting a variable



You can use the Insert menu in the Builder window to insert objects into your file. You can insert forms, variables, multiple response sets, rules, and procedures. The Insert menu is helpful for creating objects quickly, particularly variables.

## Managing Objects

The Builder window is an easy place to work with your file objects. You can:

- Define variables and multiple response sets.
- Copy and paste forms, variables, rules, and sets. If you have multiple files open, each has its own Builder window, allowing you to copy and paste between Builder windows.
- Copy and paste variable or set properties. If you have multiple files open, each has its own Builder window, allowing you to copy and paste between Builder windows.
- Delete variables, questions, forms, and rules.

## Toolbars

Each window has a toolbar that provides quick and easy access to common tasks. Some windows have more than one toolbar. Hold the mouse pointer over a tool to display a ToolTip that briefly describes what the tool does.

Figure 3-5  
*Toolbar with ToolTip Help*

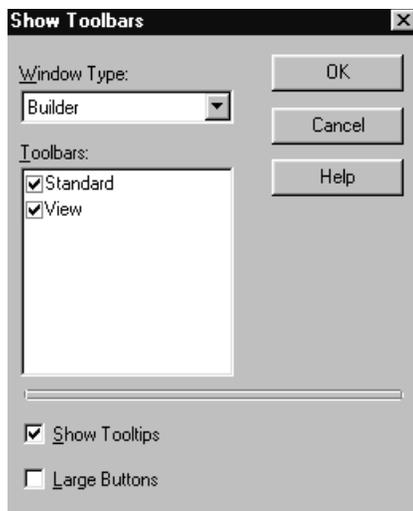


### To Show or Hide a Toolbar

- ▶ From the menus choose:  
View  
Toolbars...
- ▶ In the Show Toolbars dialog box, select the toolbars that you want to show (or hide).

You can also control the size of the toolbar buttons and the display of the ToolTips.

Figure 3-6  
*Show Toolbars dialog box*



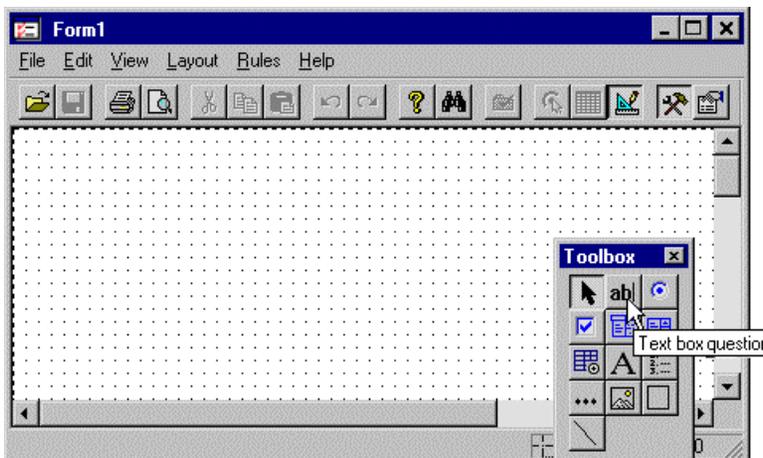
## To Move a Toolbar

- ▶ Click anywhere in the toolbar outside the toolbar buttons.
- ▶ Drag the toolbar where you want it.
  - Dragging the toolbar to the left or right side of the window attaches a toolbar vertically to that side.
  - Dragging the toolbar to the top or bottom of the window attaches the toolbar horizontally.
  - Dragging the toolbar anywhere other than the window borders creates a detached, floating toolbar.
  - Dragging the sides or corners of a floating toolbar changes the shape and arrangement of tools (vertical column, horizontal column, or rectangular).

## Form Toolbox

You use the form toolbox to add questions, text labels, and pictures to forms. Tools are available for creating questions with different types of response controls as well as annotations and pictures. Hold the mouse briefly over a tool for a description of the tool.

Figure 3-7  
*Form window toolbox*



For detailed information on creating questions with the toolbox, see Chapter 4.

## ***To Display the Form Toolbox***

- ▶ To show (or hide) the toolbox, from the Form window menus choose:

- View  
Toolbox

The toolbox includes tools for adding questions, pictures, and annotations to forms.

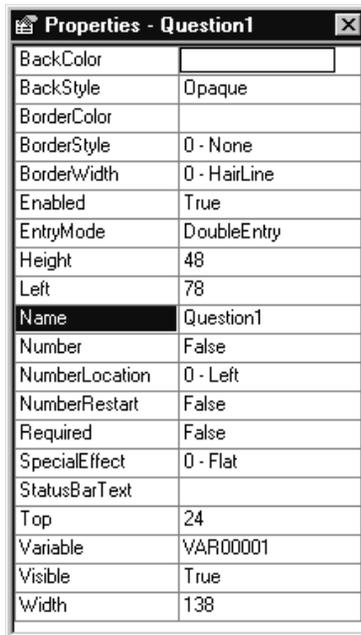
- ▶ Hold the mouse briefly over a tool for a description of the tool.
- ▶ Click a tool with the mouse to select the tool.
- ▶ After selecting a tool, click on the form to add the question, text label, or picture to your form.

You can drag the toolbox to the top, bottom, or side of the window to dock it like any other toolbar or leave it as a free-floating palette. For more information on creating questions with the toolbox, see Chapter 4.

## Properties Window

The Properties window allows you to specify properties of forms, questions, controls, and toolbox tools. Properties determine the appearance, position, and behavior of form objects and tools.

Figure 3-8  
*Properties window*

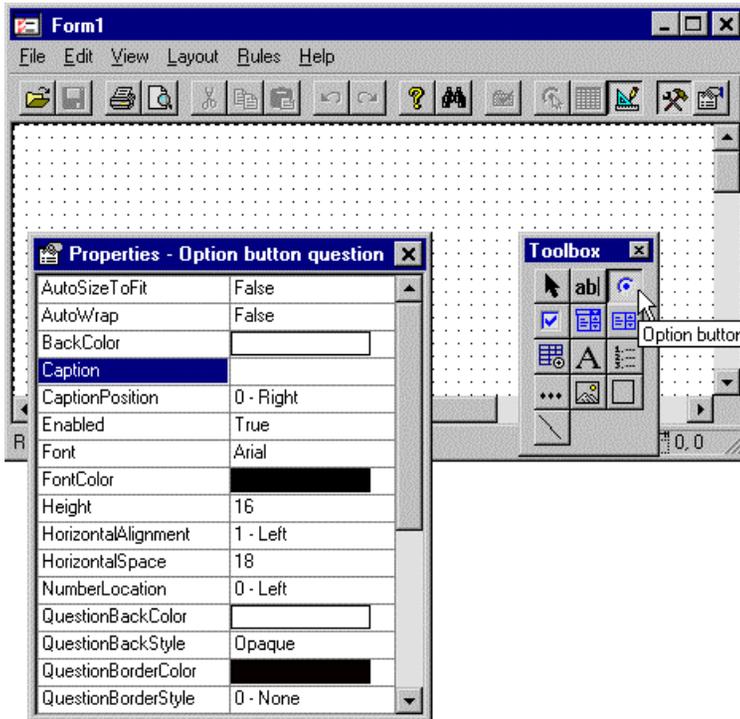


Properties - Question1	
BackColor	
BackStyle	Opaque
BorderColor	
BorderStyle	0 - None
BorderWidth	0 - HairLine
Enabled	True
EntryMode	DoubleEntry
Height	48
Left	78
Name	Question1
Number	False
NumberLocation	0 - Left
NumberRestart	False
Required	False
SpecialEffect	0 - Flat
StatusBarText	
Top	24
Variable	VAR00001
Visible	True
Width	138

- The Properties window always displays properties of the currently selected objects or toolbox tools. If multiple objects are selected, properties common to both objects are displayed.
- The left column displays the name of each property; the right column displays the current value.
- Click on any property and press F1 for help on that property.
- Changes to properties are updated immediately on the form.

## To Set Properties for a Form, Question, Control, or Tool

Figure 3-9  
Setting default properties for a question tool



- ▶ To display (or hide) the Properties window, from the Form window menus choose:  
View  
Properties
- ▶ Select one or more objects on a form, or select a tool in the form toolbox.  
Properties of the selected objects or tool are displayed.
- ▶ Change properties in the right column of the Properties window.

For some properties, you simply type a value; for others, you make selections from a drop-down list or double-click to open a dialog box.

- ▶ Press F1 for help on the selected property.

Changes to default tool properties are applied to objects subsequently created with the tool.

As a shortcut, you can access the Properties window by right-clicking on an object and selecting Properties or by pressing Alt-Enter when working in the Form window.

### ***Setting Properties for Multiple Objects***

To set properties for multiple objects, hold down the Shift key as you click on objects with the mouse. Properties common to all selected objects are displayed in the Properties window, allowing you to modify them with a single action.

### ***Variable Properties Window***

The Variable Properties window allows you to define your variables. You can access the Variable Properties window from the Builder window or from a question on a form.

Changes made in the Variable Properties window are applied immediately—you don't need to close the window after making changes. You can edit multiple variables by selecting them one after another in the Builder window, without closing the Variable Properties window between each selection.

Figure 3-10  
Variable Properties window

The screenshot shows the 'Variable Properties: SATISF' dialog box. It has five tabs: 'General', 'Format', 'Values', 'Missing Values', and 'Valid Values'. The 'General' tab is active. The 'Variable name' is 'SATISF' and the 'Alias' is empty. The 'Variable label' is 'How would you rate your overall satisfaction with this pro'. The 'Question text' is '4. How would you rate your overall satisfaction with this product?' and the 'Link with variable label' checkbox is unchecked. The 'Default value' is '0' and the 'Entry Type' is 'Double Enter'. There is a 'Comments' text area at the bottom. 'Close' and 'Help' buttons are at the bottom right.

### ***To Define Properties for a Variable or Set***

- ▶ To access Variable Properties from the Builder window, from the menus choose:  
View  
Variables
- ▶ In the variable list, right-click on a variable or multiple response set and select Variable/Set Properties.
- ▶ To access variable properties from a question on a form, right-click on the question and select Variable Properties.

See Chapter 7 for more information on defining variable properties.

# Questions

Questions are the foundation of any survey and the building blocks of data entry forms. Each question on a form has two visible components:

- **Question text.**
- One or more **response controls** that allow the user to enter a response.

A number of control types are available, including text boxes, check boxes, option buttons, and drop-down lists. Most response control types display enumerated **response items** (for example, *yes* or *no*) from which the user can choose.

Answers to questions are stored in variables. In fact, you can think of a question as a representation of one or more variables on a form. The question text and response items displayed in questions are also properties of the variable bound to the question.

Figure 4-1  
*Questions on a form*

The screenshot shows a window titled "Online Entry Form" with a menu bar (File, Edit, View, Data, Rules, Help) and a toolbar with navigation icons. The main content area displays a "Customer Satisfaction Survey" with the following questions and controls:

- Product (select all that apply)**
  - Fax Machine
  - Copier
- Would you recommend this product?**
  - Yes
  - No
- How would you rate your overall satisfaction with this product?**
  - Very satisfied
  - Somewhat satisfied
  - Somewhat dissatisfied
  - Very Dissatisfied
  - No Answer
- Did the product ever fail to operate?**
  - Yes
  - No *If no, please skip to the next section*
- Did you contact us to fix the problem?**
  - Yes
  - No

The status bar at the bottom shows "Ready", "3/3", and "Skip & Fill: On Auto Check: On".

## Question Numbering

Before you create any questions, you can decide whether you want your questions to be automatically numbered. When you set your form's AutoNumber property to True, all questions that you create are numbered. If you delete, cut, or paste questions, your question numbers automatically update to reflect the change.

The question numbers are controlled by the tab order of your form. The tab order specifies the sequence in which users can move through questions on the form by pressing Tab (or Shift-Tab) in Form Entry or Table Entry view. By default, the tab order corresponds to the order in which your questions are created. Tab order may become an issue if you change the order of questions on the form. When you opt to automatically number your questions, you will have to keep your tab order up to date. For more information on tab order, see Chapter 10.

If you have already created questions, the procedure for obtaining question numbers is slightly different. For more information on adding question numbers to existing forms, numbering static text, or customizing the appearance of question numbers, see Chapter 5.

### To Turn on Automatic Question Numbering

- ▶ Click your form to select it.
- ▶ In the Properties window, set AutoNumber to True.

## Adding Questions to Forms

You can add questions to a form using the form toolbox or by dragging existing variables from the Builder window onto a form.

Figure 4-2  
Form toolbox



- If you're starting a new project, using the form toolbox is probably the easiest method. As you add each question to the form, a variable or multiple response set is automatically created.
- If you prefer, you can first define your variables in the Builder window and then drag variables from the Builder window onto a form to generate questions based on those variables. You can also use this method to generate a form from an existing data file.

### ***To Create Questions and Variables Using the Form Toolbox***

- ▶ If the form toolbox is not visible, from the Form window menus choose:  
View  
Toolbox
- ▶ In the toolbox, click the desired question tool to select the tool.
- ▶ Click on the form to create the question.

Figure 4-3  
*Clicking on a question tool*

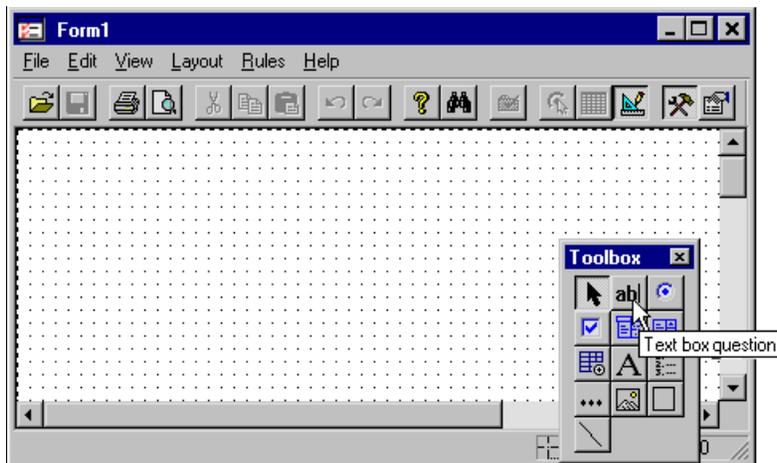
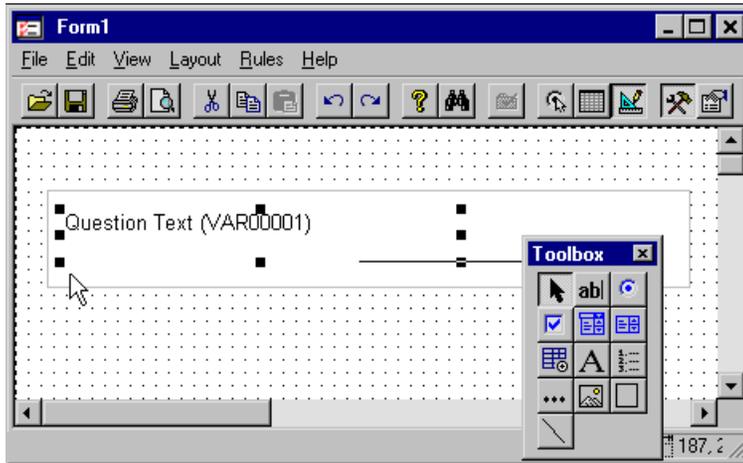


Figure 4-4  
*Clicking on the form to create the question*



As you add each question, a variable or multiple response set is automatically created.

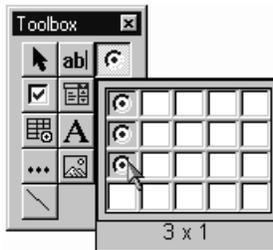
- ▶ To define variable properties, right-click on the question and select Variable Properties.
- ▶ To change question properties, right-click on the question container and select Properties.

**Note:** You can also change response control properties.

## Tool Wells

Tool wells allow you to create questions with more than one response control—for example, a group of option buttons or a multiple response question with several check boxes or drop-down lists.

Figure 4-5  
*Option button tool well*

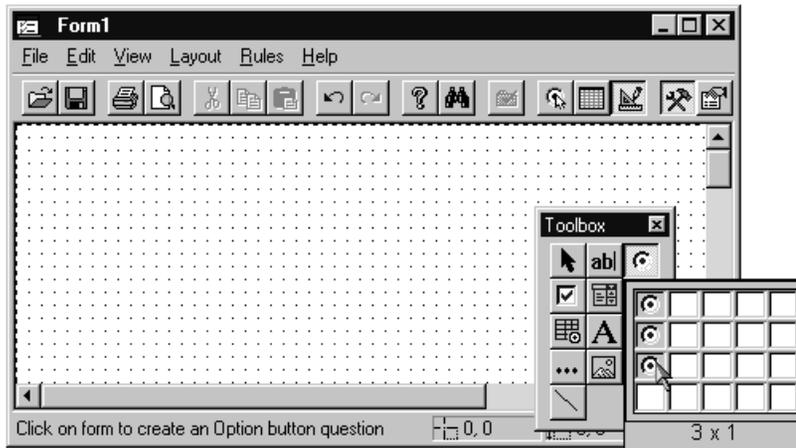


Hold the mouse pointer briefly over a tool and press the left mouse button until the well appears. Then, drag and release the mouse in the tool well to indicate the number and arrangement of controls. The well expands as you drag, allowing you to specify as many rows and columns as you want (to the limits of your screen).

### ***To Create a Question with Multiple Response Controls***

- ▶ If the form toolbox is not visible, from the Form window menus choose:  
View  
Toolbox
- ▶ Move the mouse over the desired question tool and hold down the left mouse button to display the tool well.
- ▶ Drag and release the mouse in the tool well to specify the number and arrangement of response controls.

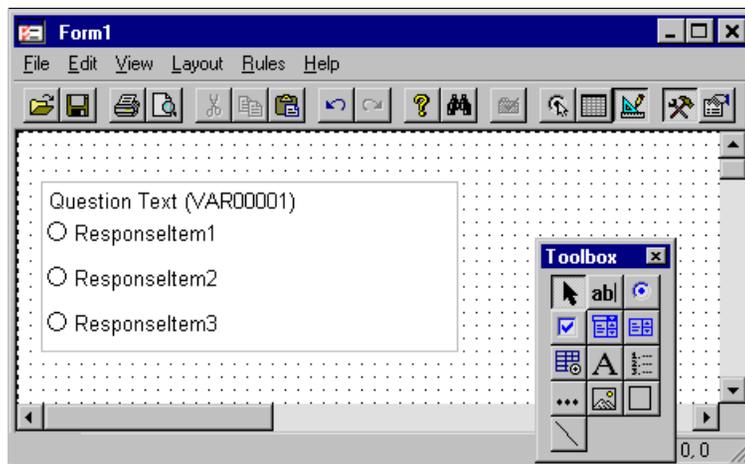
Figure 4-6  
Specifying the arrangement of controls



The well expands as you drag, allowing you to specify as many rows and columns as you want.

- Click the mouse on the form to create the question.

Figure 4-7  
Creating the question



---

As you add each question, a variable or multiple response set is automatically created.

- ▶ To define variable properties, right-click on the question and select Variable Properties.

### ***To Require a Response for a Question or Set***

An occasion might arise when you want to create a question that a respondent must answer. You can set a property for the question to ensure that the respondent or data entry clerk will not be able to skip that question. For sets, you can require that the respondent select a certain number of responses.

To create a question that requires a response:

- ▶ Create your question or set.
- ▶ Right-click on the question or set container and select Properties.
- ▶ For a question, in the Properties window, set the Required property to True.
- ▶ For a set, in the Properties window, specify a number for the RequiredAnswerCount property.

### ***Tips for Creating Questions with the Form Toolbox***

- The default properties of new questions depend on the properties of the tool used to create the question. To reduce the amount of time you spend customizing questions, specify tool properties *before* you create questions.
- To add several questions of the same type, select the tool by double-clicking rather than single-clicking or hold down the Shift key as you drag and release the mouse in the well. The tool remains selected after you add a question, allowing you to repeatedly click on the form to create several questions of the same type.
- To specify the type of variable created for the question, click on the form with the right (rather than left) mouse button when you create the question.
- To specify the exact size and shape of the question, drag the mouse on the form rather than clicking.

## ***Default Tool Properties***

You can customize the behavior of each tool by specifying the default properties applied to objects created with that tool.

For example, suppose you want all of the questions on your form to have a specific background color or border style. Rather than modify each question after you create it, set the appropriate property for your question tools *before* you create questions. This can save you a lot of time by reducing the need to modify questions after you create them.

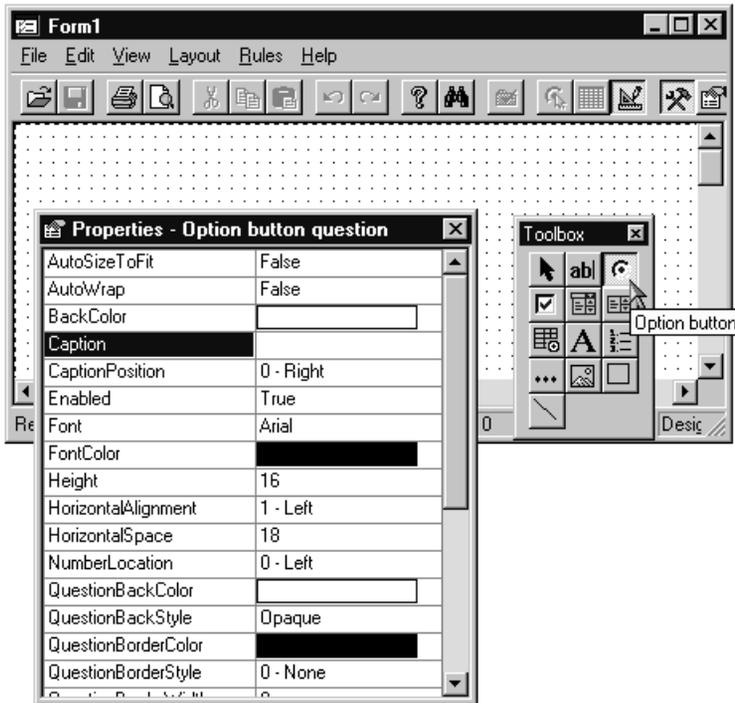
Changes to default tool properties are applied to all objects subsequently added to the form with the tool. Tool properties are saved with the form, so you can specify different defaults for different forms. Newly created forms inherit tool defaults from the last open form.

**Tip:** To set the default font for all questions added to a form, click on the form background and set the Font property for the form in the Properties window. The specified font is applied to all questions and text subsequently added to the form.

## ***To Set Default Tool Properties***

You can use the Properties window to specify default properties for new questions and objects created with toolbox tools.

Figure 4-8  
 Default properties for the option button questions



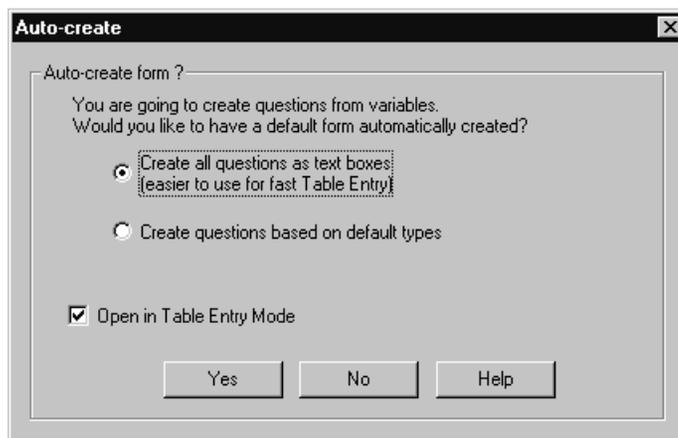
- ▶ In the toolbox, click on the desired tool.
- ▶ To display the Properties window, from the menus choose:
  - View
  - Properties
- ▶ Specify the desired properties in the right column of the Properties window.

The properties are subsequently applied to all objects created with the tool.

## Auto-Creating a Form

The Auto-create feature allows you to automatically create a form, maximized for entry in Table Entry view. To use Auto-create, you must have defined variables, either from an *.sav* file created in Builder or in another program from SPSS. You can use *.sav* files that already have forms.

Figure 4-9  
Auto-create dialog box



When you auto-create a form, the questions are created in the order in which the variables were created, which is listed in the Builder window as the file order. Auto-creating a form creates a form that is maximized for efficient data entry in Table Entry view. Autotab is set to True so that after you enter an answer, you move automatically to the next question. Value labels appear instead of response items as you enter data. For example, if you have a question where the response item is *yes*, instead of *yes* you see the value label, or 1.

**Tip:** If a numeric text box question is not defined properly, it will default to 8. So if you enter one digit, Autotab won't work because it is expecting eight digits. When defining numeric variables, make sure that the length is set properly so Autotab will work.

## To Auto-Create a Form

- ▶ From the Form menu choose:

Layout  
Auto Create Questions...

- ▶ Select either Create all questions as text boxes or Create questions based on default types.

**Tip:** Creating all questions as text boxes makes it easier to enter data in Table Entry view for those who prefer the keyboard to the mouse.

- ▶ If you want to edit the form, deselect Open in Table Entry Mode.

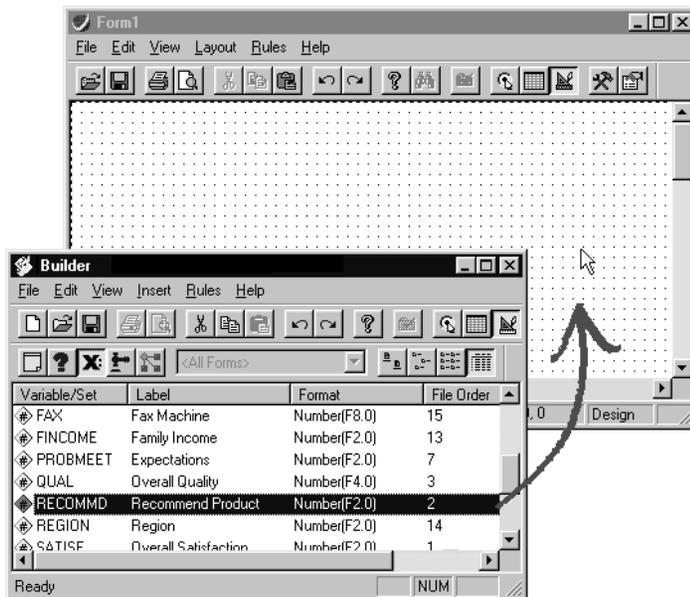
**Note:** If you open a file that contains only variables, the Auto-create dialog box opens automatically. If you do not want to auto-create a form, click No.

## To Create a Question from an Existing Variable or Set

You can drag or paste an existing variable or multiple response set from the Builder window onto a form to create a question. This is the only method that allows you to create a question bound to an existing variable.

Figure 4-10

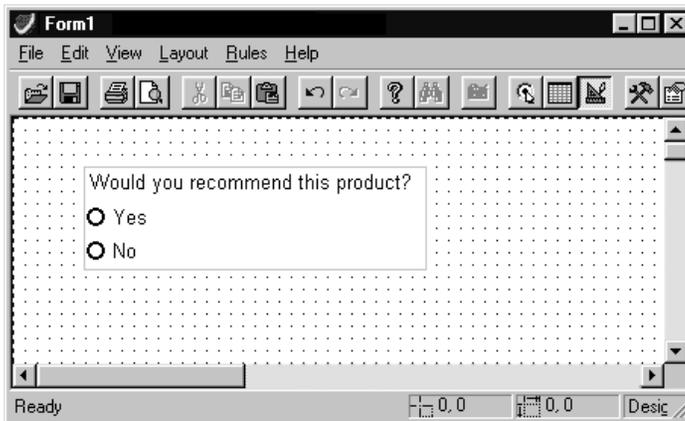
*Dragging a variable onto a form*



- ▶ In the Builder window, from the menus choose:  
View  
Variables
- ▶ Select one or more variables or multiple response sets.  
  
To select multiple variables, hold down the Shift key or Ctrl key as you click on the variables.
- ▶ Hold down the left mouse button while dragging the selected variables from the Builder window onto a form.
- ▶ Move the mouse to the desired position on the form and release the mouse button.
- ▶ To specify a response control type other than the default, drag and drop variables using the *right* mouse button rather than the left, and select the desired control type from the context menu.

Figure 4-11

*Question created from an existing variable*



---

## ***Tips for Creating Questions from Existing Variables***

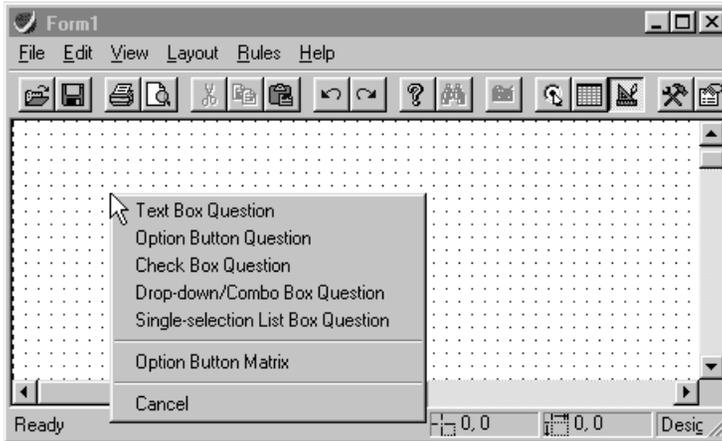
- By default, the response control type for the question depends on the type of variable and whether or not response items or value labels are defined.
- To specify a control type other than the default, drag the variables onto the form with the *right* mouse button rather than the left. You are then prompted to select a control type. If you use this method to drag multiple variables, the program attempts to apply your selection to all variables.
- The question text and response items specified for the variable are displayed in the question. (If question text and response items are not specified, the corresponding variable labels and value labels are substituted.)
- All other question properties depend on the tool properties (as when creating questions using the toolbox). For example, to adjust the vertical space between questions or controls, adjust the Vertical Space property for the option button question tool before dragging the question onto the form.
- Copying and pasting a variable using the Edit menu is the equivalent to dragging the variable onto the form.
- When creating a question from a multiple response set, select the set itself in the Builder window—you don't need to select the variables within the set unless you want each variable to also appear in a separate question.

## ***Specifying the Response Control Type***

By default, when you generate a question from an existing variable or multiple response set, the type of response control depends on the type of variable or set and whether or not response items or value labels are defined.

To specify a control type other than the default, drag and drop the variable or set onto the form using the *right* mouse button, and select the desired control type from the context menu. If you use this method to drag multiple variables, the program attempts to apply your selection to all variables. You cannot create long text boxes using this method.

Figure 4-12  
Selecting the response control type



### ***Creating Questions from Multiple Response Sets***

By default, when you generate a question from an existing multiple response set, the type of response control depends on the variables composing the set and whether it is a multiple category set or a multiple dichotomy set.

To specify a control type other than the default, drag and drop the multiple response set onto the form using the *right* mouse button, and select the desired control type from the context menu. If you use this method to drag multiple sets, the program attempts to apply your selection to all variables in all sets.

**Tip:** When creating a question from a multiple response set, select the set itself in the Builder window—you don't need to select the variables within the set unless you want each variable to also appear in a separate question.

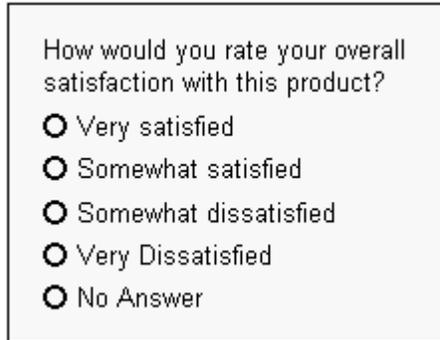
## ***Questions and Variables***

When you create questions using the toolbox, you also create variables (and multiple response sets, if needed) because you can't have a question without a variable or set. In fact, you can think of a question as a representation of a variable or multiple

response set on a form. For example, a question asking the respondent to rate overall satisfaction might be bound to a variable named *SATISF*.

Figure 4-13

*Question representing a single variable*



How would you rate your overall satisfaction with this product?

- Very satisfied
- Somewhat satisfied
- Somewhat dissatisfied
- Very Dissatisfied
- No Answer

Questions that allow the user to choose more than one response represent a set of variables, referred to as a **multiple response set**. For example, a question such as *Which stores do you shop in?* might be bound to a set of variables named *\$shop*, with a separate variable in the set for each type of shop.

Figure 4-14

*Question representing a multiple response set*



Which stores do you shop in?

- Department
- Office Product Store
- Consumer Electronic Store

## ***Understanding the Connection between Questions and Variables***

Questions and variables are not the same thing in the program, but they are closely related. You can use the program without ever understanding this connection, but the program will make more sense if you do.

A question is a representation of a variable on a form. When you create questions using the form toolbox, you also create variables; the question text and response items displayed in questions are actually stored in the variable bound to the question.

This makes it easy to keep your questions and forms up to date and also provides for multiple ways of doing things. You can edit question text and response choices directly on your form or in the Variable Properties window. Either way, the result is the same.

You can also have different questions on different forms that are tied to the same variable. The questions can look different (for example, one might be formatted as a group of option buttons and the other as a drop-down list), but they share the same question text and the same set of response choices because these attributes are stored in the variable.

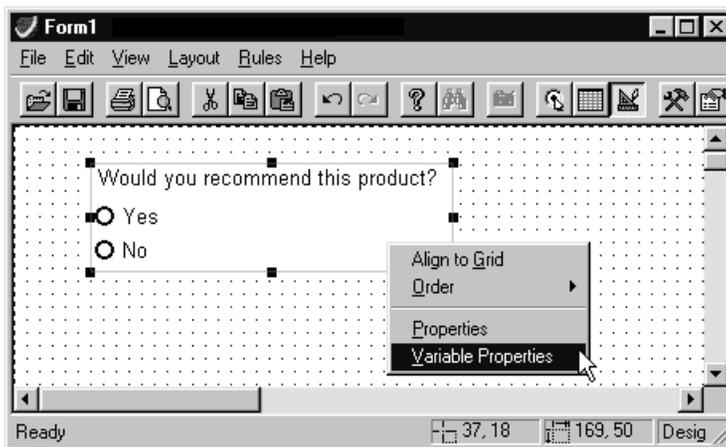
## To Define Variable or Set Properties

**Note:** You cannot view or edit the variables for long text boxes.

- ▶ To access the Variable Properties window from a question on a form, right-click on the question and select Variable Properties.

Figure 4-15

*Accessing variable properties from a question*



- ▶ To access variable properties from the Properties window when a question is selected, double-click the Variable property.

- ▶ To access variable properties from the Builder window, from the menus choose:  
View  
Variables
- ▶ Then, right-click on a variable or multiple response set and select Variable/Set Properties.

For more information on defining variable properties, see Chapter 7.

## ***Variable Properties That Affect Questions***

Questions share important properties with the variables (or multiple response sets) that they represent, including question text, response items, data type, and values. You can modify these properties in the Variable Properties window. Any changes to variable properties are reflected in all questions bound to that variable.

Figure 4-16

*Question text displayed in the Variable Properties window*

The image shows a dialog box titled "Variable Properties: SATISF". It has five tabs: "General", "Format", "Values", "Missing Values", and "Valid Values". The "General" tab is selected. The dialog contains the following fields and controls:

- Variable name:** A text box containing "SATISF".
- Alias:** An empty text box.
- Variable label:** A text box containing "How would you rate your overall satisfaction with this pro".
- Question text:** A checkbox labeled "Link with variable label" is unchecked. Below it is a text area containing the question text: "4. How would you rate your overall satisfaction with this product?".
- Default value:** A dropdown menu showing "0".
- Entry Type:** A dropdown menu showing "Double Enter".
- Comments:** An empty text area.

At the bottom right of the dialog are two buttons: "Close" and "Help".

**Question text.** Text to be displayed in questions is bound to the variable (for example, in Figure 4-16, *How would you rate your overall satisfaction with this product?* is bound to the variable *SATISF*). You can edit the question text on the form or in the Variable Properties window (General tab).

Figure 4-17  
Response items specified for a variable

The screenshot shows the 'Variable Properties: SATISF' dialog box with the 'Values' tab selected. The dialog has a table with four columns: 'Value', 'Value Label', 'Link', and 'Response Item'. Below the table is a 'Check Box Value Mapping' section with two input fields: 'Checked:' with the value '1' and 'Unchecked:' with the value '0'. At the bottom are 'Close' and 'Help' buttons.

Value	Value Label	Link	Response Item
0	No Answer	<input checked="" type="checkbox"/>	No Answer
1	Very satisfied	<input checked="" type="checkbox"/>	Very satisfied
2	Somewhat satisfied	<input checked="" type="checkbox"/>	Somewhat satisfied
3	Somewhat dissatisfied	<input checked="" type="checkbox"/>	Somewhat dissatisfied
4	Very dissatisfied	<input checked="" type="checkbox"/>	Very dissatisfied
5	Don't know	<input checked="" type="checkbox"/>	Don't know
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	

Check Box Value Mapping

Checked:  Unchecked:

**Response items.** Enumerated responses that users can choose from are displayed as option button captions or items in a drop-down list or list box. You can edit response items directly on the question or in the Variable Properties window (Values tab).

**Data format, variable values, and valid values.** The type of data—and in some cases, the specific values—that a question can accept depends on the variable bound to the question. For example, if a question is bound to a numeric variable, you can't enter *yes* (unless *yes* has been specified as a response item for the variable). Similarly, a Validation rule defined for a variable affects all questions bound to the variable.

See Chapter 8 for more information on how multiple response sets are represented in questions.

## ***Automatic Update of Question and Variable Properties***

Changes to a variable are automatically reflected in all questions bound to that variable. This makes it easy to keep your forms up to date, even when you create several versions of a form.

For example, suppose you want to create several versions of a questionnaire, each with the same questions but with the sequence of questions changed to make sure the order in which questions are presented doesn't bias the responses. To do this, you create one form and then make a copy. The result is two separate forms, each with a complete set of questions. You can rearrange questions on one form, and even change the appearance of one or more questions, without affecting the other.

However, both forms are still bound to the same underlying variables, so any changes made to a variable's properties are automatically updated in all questions bound to that variable. (The same variable can be represented in several questions on several forms.)

For example, if you decide to change the wording of one of your questions, you need to make the change only once. This is because question text is a property of the variable. When you edit the question text for a variable, all questions bound to that variable are automatically updated. Similarly, if you change the type of variable or create a Validation rule for the variable, the change affects the behavior of every question bound to the variable.

**Tip:** If you have several questions on several forms bound to the same variable, you can't change the question text or response items from one question without changing all other questions bound to that variable. However, you can use the clipboard to "clone" a question by copying the question and pasting it back to the same form you copied it from. The result is a separate question bound to a separate variable.

### ***Why Share Properties?***

Question text and response items are shared between questions and variables because they define the *substance* of a question, which you typically want to preserve across all forms that share that question. Properties that define the *appearance*, rather than the substance, of a question (for example, the font size or whether the question is formatted as a drop-down or list box) are not shared, so you can customize the appearance of each question on each form as needed.

## ***Copying and Pasting Questions***

You can copy and paste questions between forms in the same file, between forms in different files, or from the Builder window to a form. Simply select the questions that you want to copy and then drag or use the Edit menu to paste them into the desired form.

When you copy a question, the variable or multiple response set bound to the question may or may not be pasted. The result depends on whether you paste to the same form, a different form in the same file, or a different file, and whether a variable or set of the same name already exists in the file.

### ***To Copy Questions between Forms***

You can copy questions from one form to another or make a copy of a question on the same form. The forms can be in the same file or in a different file.

- ▶ If you want to copy questions between forms in different files, open both files.
- ▶ On one form, select the questions that you want to copy. (To select multiple questions on a form, hold down the Shift key as you click with the mouse or drag the mouse to draw a rectangle around multiple objects.)
- ▶ From the Form window menus choose:
  - Edit
  - Copy
- ▶ On the form where you want to paste the questions, from the menus choose:
  - Edit
  - Paste

Alternatively, you can drag selected questions from one form to another. This method allows you to specify the exact position of questions on the target form.

**Tip:** You can “clone” a question by copying and pasting it back to the same form. The result is a separate question bound to a separate variable.

## ***To Paste Questions from the Builder Window to a Form***

You can select questions in the Builder window and copy or drag them onto a form. The form can be in the same file as the original questions or a different file. If you want to copy a large number of questions, using the Builder window may be easier than copying questions directly between forms.

- ▶ If you want to copy questions from one file to another, open both files.
- ▶ From the Builder window menus choose:
  - View
  - Questions
- ▶ Select the questions that you want to copy. (You can select multiple questions using the Shift key; however, all of the questions you select must be on the same form.)
- ▶ From the Builder window menus choose:
  - Edit
  - Copy
- ▶ On the form where you want to paste the questions, from the menus choose:
  - Edit
  - Paste

Alternatively, you can use the mouse to drag the selected questions from the Builder window onto the form.

## ***To Move a Question from One Form to Another***

You can move a question from one form to another by cutting and pasting using the Edit menu.

- ▶ If you want to move a question to a form in a different file, open both files.
- ▶ On the original form, select the questions that you want to move. (To select multiple questions on a form, hold down the Shift key as you click on questions with the mouse or drag the mouse to draw a rectangle around multiple objects.)

- ▶ From the Form window menus choose:
  - Edit
  - Cut
  
- ▶ On the form where you want to paste the questions, from the menus choose:
  - Edit
  - Paste

When you use this method to move a question to a different file, the variable bound to the question is not removed from the original file.

### ***How Questions and Variables Are Copied***

When you copy a question, the variable or multiple response set bound to the question may or may not be pasted along with the question. The result depends on whether you paste to the same file or to a different file and whether a variable or set of the same name already exists in the file.

**Pasting a question to the same form.** If you paste a question into the same form you copied it from, a new variable is created for the question. The result is a new question with properties similar to the original question but bound to a separate, newly created variable. This is a quick way to create several questions (and variables) with similar properties.

**Pasting a question to a different form in the same file.** If you paste a question to a different form in the same file, only the question is pasted, since the variable already exists in the file. The result is a new question bound to the same variable as the original question (since the same variable can be represented on several forms).

**Pasting a question to a different file.** If you paste a question to a form in a different file, both the question and variable are pasted. If a variable with the same name already exists in the file, the pasted variable is renamed to avoid a conflict.

**Rules associated with questions and variables.** Skip & Fill rules are copied along with questions, and Validation rules are copied along with variables.

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## ***Copying Questions from Question Libraries***

The question libraries are a collection of files containing ready-to-use questions on topics such as general demographics, customer satisfaction, and customer preferences. The variables attached to the questions are defined, including value labels and response items. You can access the question libraries from the Edit menu.

You can copy questions from the library into your form and use them as they are or customize each to your particular needs. By modifying the question text and response items, the questions in the libraries may serve as the starting point for almost any type of survey.

For more information on how to use the question libraries, see Chapter 9.

## ***Cutting and Deleting Questions***

When you cut or delete a question from a form, the variable or multiple response set bound to the question is not cut from the data file. You can delete the variable or multiple response set in the Builder window.

**Avoiding orphaned variables.** Whenever you delete questions from a form, be aware that you may be leaving orphaned variables behind. For example, suppose you create a question with the toolbox, immediately realize you made a mistake, and then select and delete the question. Although the question has been deleted, the variable created with the question remains. Over time, your data file may become cluttered with unneeded variables.

To avoid this situation, use Undo (on the Edit menu), rather than Delete, to remove questions immediately after creating them. If you use Undo, the variable or multiple response set created along with the question is also removed.

## ***To Remove a Question Using Undo***

You can use Undo Create New Object(s) on the Edit menu, rather than Delete, to remove questions after creating them (for example, if you create a question and immediately realize you don't want the question). When you use Undo, the variable created for the question is also removed. This method will avoid cluttering your file with orphaned variables.

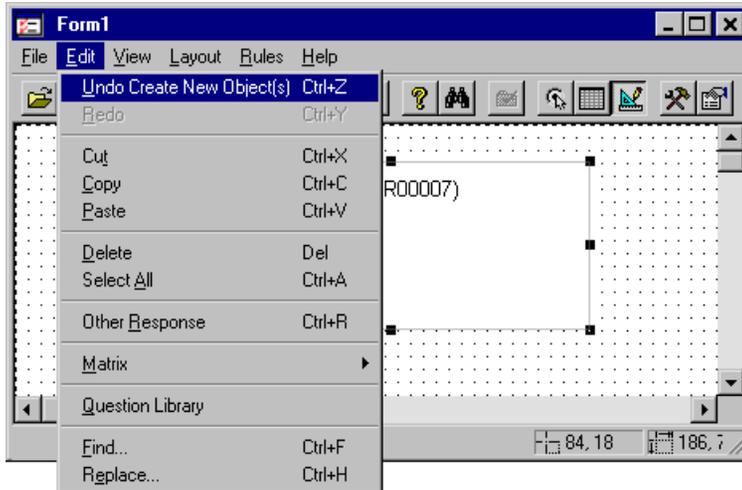
- ▶ After creating the question, from the Form window menus choose:

Edit

Undo Create New Object(s)

Figure 4-18

*Using Undo Create New Object(s) to remove a newly created question*



**Multiple Undo.** You can undo multiple actions by repeatedly selecting Undo Create New Object(s) on the Edit menu, essentially backing through your actions one step at a time. For example, if you create three questions one after another, you could select Undo three times to remove all three questions.

### ***To Delete Questions and Variables in the Builder Window***

- ▶ From the Builder window menus choose:

View

Questions

- ▶ Select one or more questions and press the Delete key. (To select multiple questions, hold down the Shift key or Ctrl key as you click with the mouse.)

To delete the variable or multiple response set bound to the question:

- ▶ From the Builder window menus choose:
  - View
  - Variables
- ▶ Select the variables or multiple response sets and press the Delete key.

When you delete a variable or multiple response set, any questions still bound to the variable or set are also deleted. This is because a question cannot exist without the underlying variable or set.

## ***Question Examples***

This section provides examples of the different types of questions that you can create during a session, along with specific instructions for creating each type of question. The sample questions can also be found in the file *Manual examples.sav*, which is installed in the same directory as your software. You can copy and paste the sample questions onto your own forms and customize them as needed.

## ***Response Control Types***

Every question has one or more controls that allow the user to enter a response. A number of response control types are available, including:

- Text boxes
- Long text boxes
- Option buttons
- Check boxes
- List boxes
- Drop-down lists
- Other response

A question can have one response control or many. In most cases, if a question has more than one response control, it represents a multiple response set rather than a single variable.

Response controls may appear different in print than online; not all control types are appropriate for a printed form. See the descriptions of individual control types for details.

## **Text Boxes**

Text box controls allow users to type a custom response. The length and format of the response depends on the variable bound to the question.

A text box control is not the same as a text annotation, which is text on a form that is not bound to any variable. You add text annotations to forms using the text tool.

Figure 4-19

*Text box question*



The image shows a rectangular box containing the text "Date of purchase" on the left and a smaller, empty rectangular input field on the right.

The value entered must either match the format of the variable bound to the question (specified in the Variable Properties window) or match a response item defined for the variable. For example, if the variable type is numeric, the user can enter any numeric value but cannot enter *yes* unless *yes* is specified as a response item for a specific value (for example, 1 = *yes*).

The display format for the typed value depends on the variable. Available formats include numeric, string, date, currency (dollar or custom), and scientific notation. If the variable type is string, any string is accepted (letters or numbers) unless it exceeds the maximum length (up to 255 characters). If you need to accommodate more characters, create a long text box control instead.

**Tip:** To format text boxes so they print as underlines on a printed form, change the Border Style property for the text box to Underline in the Properties window.

### **To Create a Text Box Question**

- ▶ If the toolbox is not visible, from the Form window menus choose:

View  
Toolbox

- ▶ Click the text box question tool to select the tool. (Hold the mouse pointer over each tool for a description.)
- ▶ Click on the form to create the question.

Optionally, you can specify the size and position of the question by dragging the mouse on the form rather than using a simple click.

- To edit the question text directly on the form, double-click on the text.
- To modify variable properties, right-click on the question and select Variable Properties.

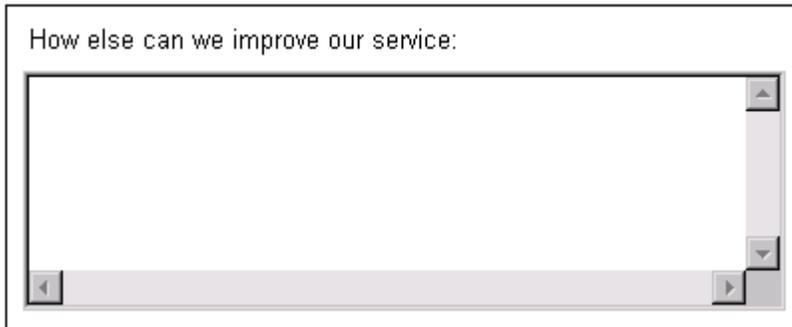
**Tip:** A text box is not the same as a text label, which is text that is not bound to any variable. You add text labels to forms using the text tool.

## Long Text Boxes

Long text box controls allow users to enter open-ended responses. These differ from regular text box controls because the user can enter more than 255 string characters.

Figure 4-20

*Long text box question*



The value entered must be a string. Any string is accepted (letters or numbers) unless it exceeds the maximum length (up to 4,000 characters).

Long text boxes do not have a one-to-one correspondence with a variable, as other controls do. Data Entry Builder actually creates multiple variables to accommodate the responses for long text boxes. One variable acts as an index for the rest of the variables, which contain the response text. Each of these content variables holds 255 characters.

The name of the index variable has the format  $@nn$ , where  $nn$  is a sequential number (for example,  $@01$ ). Each name of a content variable has the format  $@nniii$ , where  $iii$  is a number indicating the variable's index (for example,  $@010001$ ,  $@010002$ , and so on). Do *not* modify any of these variables.

### **To Create a Long Text Box Question**

- ▶ If the toolbox is not visible, from the Form window menus choose:  
View  
Toolbox
- ▶ Click the long text box question tool to select the tool. (Hold the mouse pointer over each tool for a description.)
- ▶ Click on the form to create the question.

Optionally, you can specify the size and position of the question by dragging the mouse on the form rather than using a simple click.

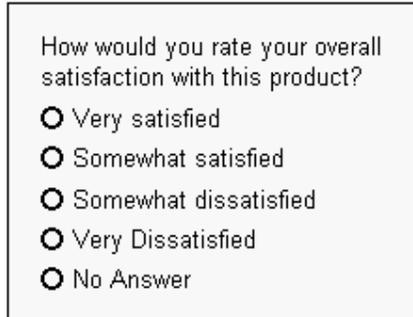
- To edit the question text directly on the form, double-click on the text.

**Note:** You cannot edit the variables for long text boxes. Do not try to modify the name or the properties for the variables, which always begin with the at sign (@).

### **Option Buttons**

Option buttons offer users a choice between mutually exclusive options. In a group of option buttons, only *one* button can be selected. Because users can select only one response, option button groups always represent a single variable rather than a multiple response set.

Figure 4-21  
*Option button question*

The image shows a rectangular window with a light gray background. At the top, it contains the text "How would you rate your overall satisfaction with this product?". Below this text are five radio button options, each with a small circle to its left. The options are: "Very satisfied", "Somewhat satisfied", "Somewhat dissatisfied", "Very Dissatisfied", and "No Answer".

How would you rate your overall satisfaction with this product?

Very satisfied

Somewhat satisfied

Somewhat dissatisfied

Very Dissatisfied

No Answer

Each option button represents one of the response items for the variable bound to the question (Variable Properties window, Values tab). You cannot remove an option button from a question without removing the corresponding response item from the variable. However, you can set the Visible property to False for an option button to suppress display of the button. For example, if the variable has the response item *did not answer*, you'll probably want to suppress that item from a printed questionnaire.

**Default selection versus no selection.** When entering data, none of the buttons in an option button group is selected by default. However, once the user selects a button, the selection can be changed but not removed using standard keyboard controls. To restore the question to its initial state, select Delete Value from the Edit menu.

If you want one of the buttons in the group to be selected by default, set the default value for the variable bound to the question to match the value for the corresponding response item. (The default value and response items are specified in the General tab and Values tab, respectively, of the Variable Properties window.)

**Tip:** To create an asymmetric arrangement with five buttons in two columns, create a question with six buttons and delete one of the buttons.

### ***To Create an Option Button Question***

- ▶ If the toolbox is not visible, from the Form window menus choose:

View  
Toolbox

- ▶ Move the mouse pointer over the option button question tool and hold down the left mouse button to display the tool well.
- ▶ Drag and release the mouse in the tool well to indicate the number and arrangement of option buttons. The well expands as you drag, allowing you to specify as many rows and columns as needed.
- ▶ Click on the form to create the question.
  - To edit the question text or button captions directly on the form, double-click on the text.
  - To modify variable properties, right-click on the question and select Variable Properties.
  - To suppress the display of one of the buttons in the group, set the Visible property to False for the control in the Properties window.

### ***Check Boxes (All That Apply)***

Check boxes are controls that can be turned on or off and are useful for representing dichotomous (*yes or no*) questions. For example, a common use of check boxes is to represent the variables in a multiple dichotomy set—each check box represents a variable within the set and can be individually selected or deselected.

Figure 4-22

*Check box question*



Which stores do you shop in?

Department

Office Product Store

Consumer Electronic Store

**Changing the default value.** When entering data, check boxes are neither selected nor deselected by default (this indeterminate state is visually indicated in Entry view by a gray mark inside the check box). To change this, set the default value for the variable bound to the check box to the “unchecked” or “checked” value. (The default, checked,

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and unchecked values are specified in the General tab and Values tab, respectively, of the Variable Properties window.)

### ***To Create a Check Box Question***

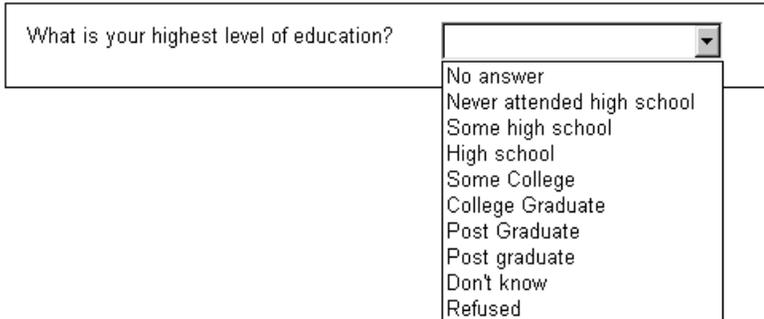
- ▶ If the toolbox is not visible, from the Form window menus choose:
  - View
  - Toolbox
- ▶ Move the mouse pointer over the check box question tool and hold down the left mouse button to display the tool well.
- ▶ Drag and release the mouse in the tool well to indicate the number and arrangement of check boxes.
- ▶ Click on the form to create the question.
  - To edit the question text or caption directly on the form, double-click on the text.
  - To modify variable properties, right-click on the question and select Variable Properties.
  - To change the values stored in the variable when the check box is selected or deselected, modify the checked and unchecked values (Variable Properties, Values tab). You can also edit the default value for the variable to change the default state for the check box.

### ***Drop-Down Lists***

Drop-down lists allow the user to choose from a list of responses. The list is displayed only when the user clicks on the control, saving space on the form. The user must choose one of the options from the list—a custom value cannot be entered.

Because the drop-down list is displayed only when the control is selected, this type of control is not appropriate for a printed form. Use option buttons instead.

Figure 4-23  
Drop-down list



What is your highest level of education?

- No answer
- Never attended high school
- Some high school
- High school
- Some College
- College Graduate
- Post Graduate
- Post graduate
- Don't know
- Refused

Items on the list correspond to response items for the variable bound to the question (Variable Properties, Values tab). You can specify the sequence of response items and suppress the display of individual response items in the List Items dialog box.

### ***To Create a Drop-Down List***

- ▶ If the toolbox is not visible, from the Form window menus choose:
  - View
  - Toolbox
- ▶ Click the drop-down list question tool to select the tool. (Hold the mouse pointer over each tool for a description.)
- ▶ Click on the form to create the question.

Optionally, you can specify the size and position of the question by dragging the mouse on the form rather than using a simple click.

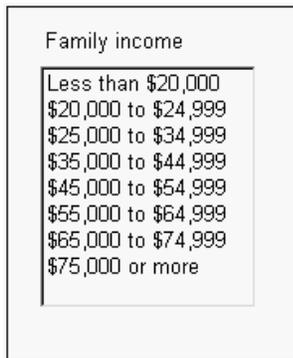
- To edit the question text directly on the form, double-click on the text.
- To specify the items that appear in the drop-down list, select the drop-down control and double-click the List Items field in the Properties window.
- To modify variable properties, right-click on the question and select Variable Properties.

## Single-Selection List Boxes

Single-selection list boxes display a list of responses from which the user can choose only one. List boxes occupy more space on forms than drop-down lists but may allow for faster entry of data because the user doesn't need to select the control in order to view or select items from the list. If the list of items is too long to be completely visible, scroll bars are displayed.

Figure 4-24

List box



Family income

- Less than \$20,000
- \$20,000 to \$24,999
- \$25,000 to \$34,999
- \$35,000 to \$44,999
- \$45,000 to \$54,999
- \$55,000 to \$64,999
- \$65,000 to \$74,999
- \$75,000 or more

Items on the list correspond to response items for the variable bound to the question (Variable Properties, Values tab). You can specify the sequence of response items and suppress the display of individual response items in the List Items dialog box.

### To Create a Single-Selection List Box Question

- ▶ If the toolbox is not visible, from the Form window menus choose:  
View  
Toolbox
- ▶ Click the single-selection list-box question tool to select the tool. (Hold the mouse pointer over each tool for a description.)
- ▶ Click on the form to create the question.

Optionally, you can specify the size and position of the question by dragging the mouse on the form rather than using a simple click.

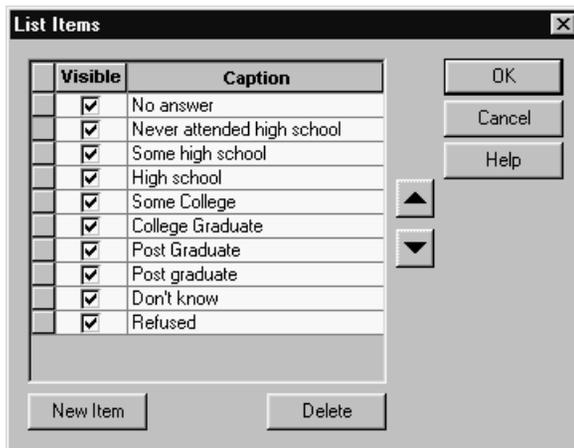
- To edit the question text directly on the form, double-click on the text.
- To modify properties for a question or control, right-click on the control and select Properties.
- To specify the list items, select the list box control and double-click the List Items field in the Properties window.
- To modify variable properties, right-click on the question and select Variable Properties.

### ***To Specify the Responses in a List Box or Drop-Down List***

List Items allows you to specify the items displayed in a drop-down list or list box.

Figure 4-25

*List Items dialog box*



- ▶ Create a drop-down or list box question.
- ▶ On the form, right-click on the drop-down or list box control and select Properties.
- ▶ In the Properties window, double-click in the List Items field.
- ▶ In the List Items dialog box, use the buttons and arrows to add, delete, and move individual items.

- ▶ To hide a list item without removing it, deselect the Visible check box.

## ***Ordinal Scale with Endpoint Labels***

You can use the option button question tool to create a button scale with endpoint labels.

**Figure 4-26**

*Button scale with endpoint labels*



- The question represents a single variable. Each point on the scale represents a specified value for the variable.
- The endpoint labels *Highly unsatisfied* and *Highly satisfied* are separate labels (added with the text tool).
- Hide the caption for each button by resizing each button control so the caption is not visible.

Alternatively, you can use a scale button matrix for this type of question.

## ***To Create an Ordinal Scale Question with Endpoint Labels***

- ▶ Create an option button question with a single row of buttons.
- ▶ Double-click on the question text to edit the text. You can also edit the response items if desired.
- ▶ Select all button controls and use the Properties window to set the `AutoSizeToFit` property to `False`.
- ▶ Select each button control and resize the control so the caption is no longer visible.

- Use the text tool to add the endpoint labels.

Figure 4-27

*Resizing an option button control*

How satisfied are you with your job?

Highly unsatisfied      Response Response Highly satisfied

Alternatively, you can use a scale button matrix for this type of question.

## Scale Button Matrix

A scale button matrix is a set of questions that shares a common set of response items. The matrix provides a mechanism for aligning questions on the form and displaying shared response text in column labels. In addition, you can modify a scale button matrix to display a numeric scale rather than buttons in each row.

Figure 4-28

*Scale button matrix*

Please rate your sales representative on the following characteristics:

	Excellent	Very Good	Good	Fair	Poor
Helpfulness	<input type="checkbox"/>				
Promptness	<input type="checkbox"/>				
Knowledge of product	<input type="checkbox"/>				

Figure 4-29

*Matrix with numeric scale displayed*

Please rate the importance of the following product characteristics:

	Important					Not Important
	1	2	3	4	5	5
Reliability	1	2	3	4	5	5
Price	1	2	3	4	5	5
Range of features	1	2	3	4	5	5

See Chapter 6 for instructions on creating a scale button matrix.

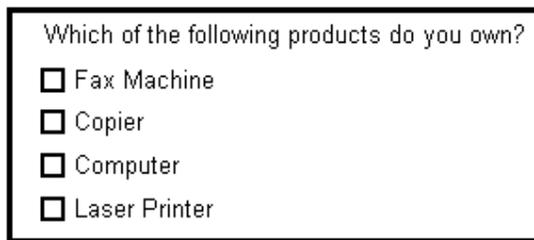
## ***Multiple Responses Coded As Dichotomies***

When you want to receive a *yes* or *no* answer to a specific set of subquestions, you can use a multiple response set coded as dichotomies. A set coded as dichotomies is composed of the set and as many variables as needed to ask the subquestions.

Multiple dichotomy sets can be represented as check boxes, list boxes, text boxes, or drop-down lists.

**Figure 4-30**

*Question with multiple responses coded as dichotomies*



Which of the following products do you own?

- Fax Machine
- Copier
- Computer
- Laser Printer

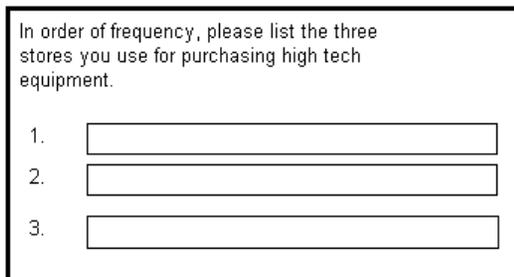
See Chapter 8 for instructions on creating multiple response questions.

## ***Multiple Responses Coded As Categories***

When you want to receive open-ended responses or responses selected from predefined categories, you can use a multiple response set coded as categories. A set coded as categories asks a question and provides a number of text boxes to collect the responses. Each text box represents a variable that is part of the set. You can also use single-selection list boxes or drop-down list boxes to display predefined categories.

**Figure 4-31**

*Question with multiple responses coded as categories*



In order of frequency, please list the three stores you use for purchasing high tech equipment.

1.
2.
3.

See Chapter 8 for instructions on creating multiple response questions.

## Questions with an “Other” Response

Sometimes you will want to ask a question for which you cannot list all of the possible responses. You can use the *other* response to give respondents the option of using a response not listed in the question.

When you create a question with an *other* response, an additional variable bound to the question is created. The additional variable does not appear in the Variable list in Builder, although it does appear in Table Entry view and will appear when you open the file for analysis in software from SPSS Inc. The additional variable has an alias that you can use in rules. The alias is the name of the original question’s variable plus the letter *o*. For example, if you have a question tied to the variable *shop* and you add an *other* response to that question, the alias for the *other* response’s variable is *shopo*.

Figure 4-32  
File in Table Entry view

	HEARABT	OTHER002	LIT	MYST	ROMANCE	SCIFI
1	Other Direct Mail		0	0	0	0
2				0	0	0
3			0		0	0
4						

Using the *other* response for option button and list box questions simplifies data analysis. You will have to run a frequency only on the additional variable, since the responses to the questions are stored in that variable.

You can create an *other* response in three ways:

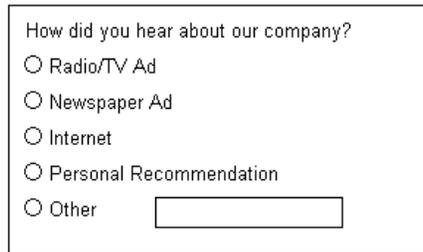
- Use the Other tool in the toolbox.
- Right-click on an eligible question container and select Other Response.
- Select an eligible question container and from the Edit menu, choose Other Response.

You can add an *other* response to option button questions, check box sets, single-selection list box questions, and drop-down list box questions. You cannot add an *other* response to a matrix, a text box question, or a text box set.

A question can have only one *other* response. You cannot copy and paste an *other* response from one question to another question.

**Figure 4-33**

*Option button question with an "other" response*

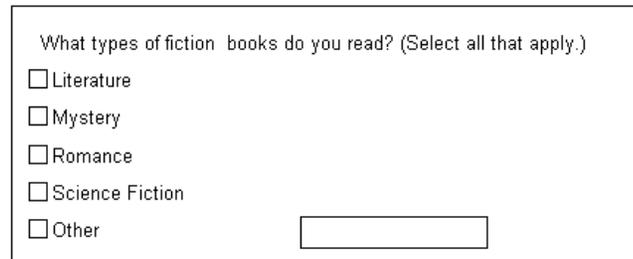


How did you hear about our company?

- Radio/TV Ad
- Newspaper Ad
- Internet
- Personal Recommendation
- Other

**Figure 4-34**

*Check box multiple response set with an "other" response*

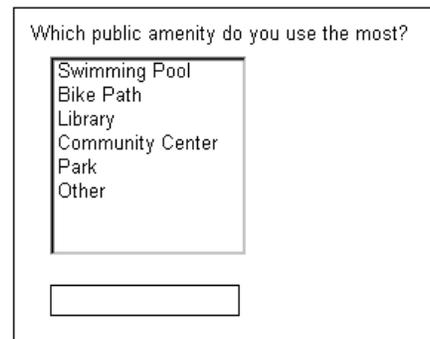


What types of fiction books do you read? (Select all that apply.)

- Literature
- Mystery
- Romance
- Science Fiction
- Other

**Figure 4-35**

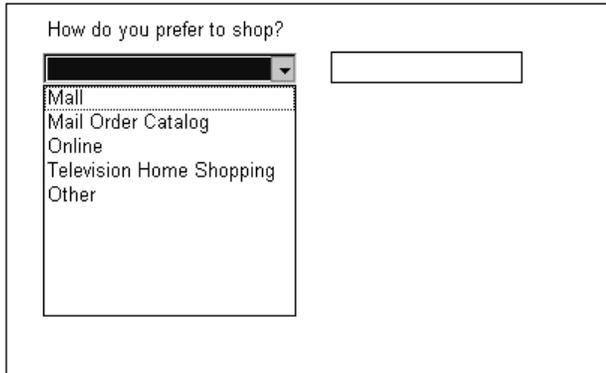
*Single-selection list box with an "other" response*



Which public amenity do you use the most?

- Swimming Pool
- Bike Path
- Library
- Community Center
- Park
- Other

**Figure 4-36**  
*Drop-down list box with an “other” response*



How do you prefer to shop?

Mail  
Mail Order Catalog  
Online  
Television Home Shopping  
Other

### ***To Create a Question with an “Other” Response***

- ▶ Select an eligible question container (either an option button question, a check box set, a single-selection list box question, or a drop-down list box question).
- ▶ From the Form menu choose:
  - Edit
  - Other Response

Alternatively, you can use the Other tool from the toolbox or right-click on the question container and select Other Response from the context menu.

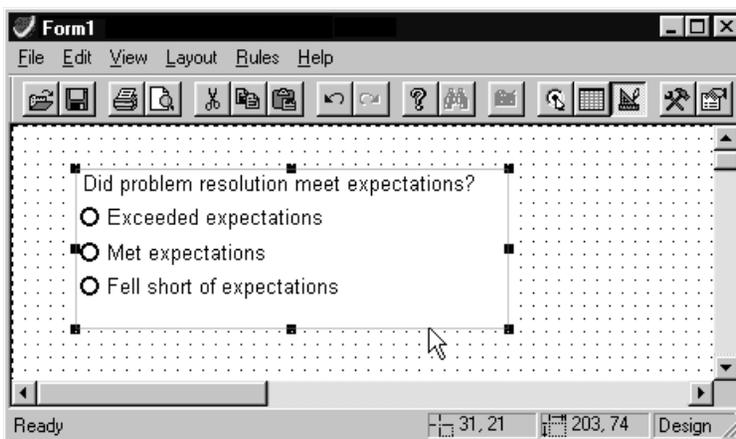
# ***Customizing Questions and Controls***

You can modify the size, position, appearance, and behavior of questions and other form objects using several methods:

- Use the mouse to select, position, and resize questions and controls.
- Use the Properties window to modify properties of questions and controls.
- Use the Layout menu and to arrange, align, and group questions and controls.
- Use the toolbox to add question numbers to created questions.
- Use the Properties window to change the properties of question numbers.

## ***To Select Questions and Controls on Forms***

Figure 5-1  
*Selecting a question with the mouse*



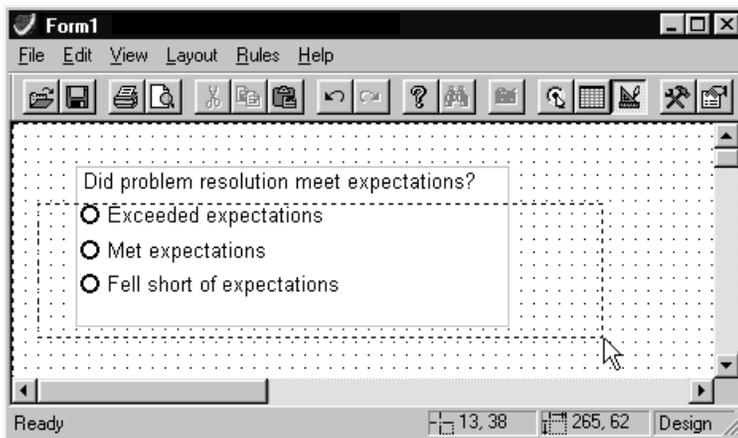
- To select a question, click on the question border.
- To select a control within a question, click directly on the control.
- To select multiple objects, hold down the Shift key as you click on the objects.
- To select all of the objects in a rectangular area, hold down the left mouse button and drag the mouse to draw a rectangle around the objects.
- To edit text directly on the form, double-click on the text.
- To select a form, click on the form background.

**Primary selection.** If you select multiple objects, the object that you select first is the **primary selection**. If you use the Layout menu or formatting toolbar to align objects, the objects are aligned relative to the primary selection.

If you select multiple objects by dragging a rectangle, the top-left object is the primary selection.

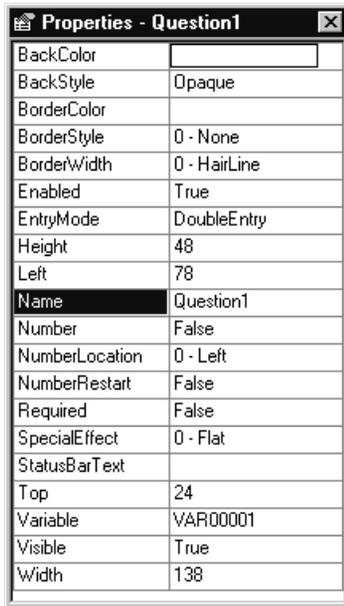
Figure 5-2

*Drag the mouse to select all of the objects in a rectangular area*



## To Modify Properties for a Form, Question, or Control

Figure 5-3  
Properties window



- ▶ To display the Properties window, press Alt-Enter, or from the Form window menus choose:

View  
Properties

- ▶ Select the form objects for which you want to specify properties.
- ▶ Specify the desired value for each property in the right column.

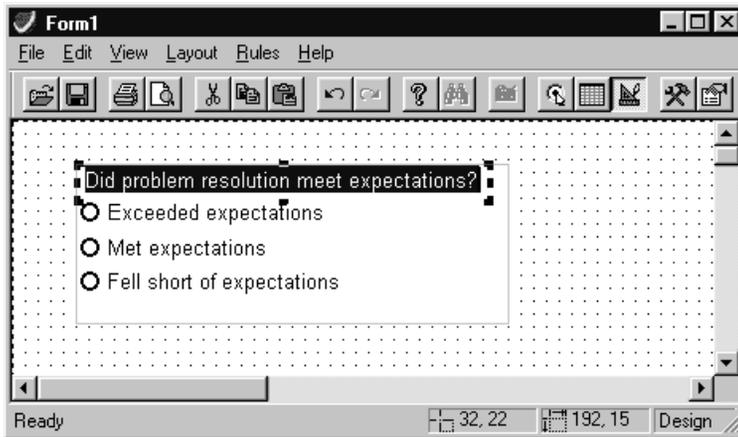
For some properties, you can choose from a list of choices. For others, you can double-click to open a dialog box.

- As a shortcut, you can also access properties by right-clicking on a form object and selecting Properties.
- To set properties for multiple objects, hold down the Shift key as you select the objects on the form. Properties common to all selected objects are displayed, allowing you to modify them with a single gesture.

- Changes to properties are updated immediately on the form. You don't need to close and reopen the Properties window for changes to be applied.

## To Edit Text on a Form

Figure 5-4  
Editing form text



- ▶ To edit text directly on the form, double-click on the text.
  - Press Enter to commit changes.
  - Press Esc to cancel changes and restore the original text.
  - Press Ctrl-Enter to insert a carriage return (so that text will wrap to the next line).
  - Before editing text, you may want to enlarge the text control by dragging the selection handles so that more text will be visible as you type.

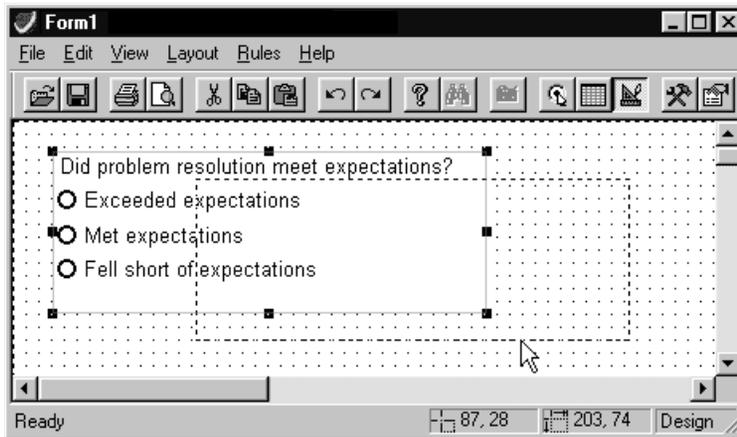
To edit text in the Properties window, click on the Text or Caption property (as appropriate) and type the desired text.

## Positioning and Aligning Questions and Controls

You can align and resize questions and controls using the mouse, the Properties window, the Layout menu, or the formatting toolbar.

## To Move a Question or Control

Figure 5-5  
Moving a question

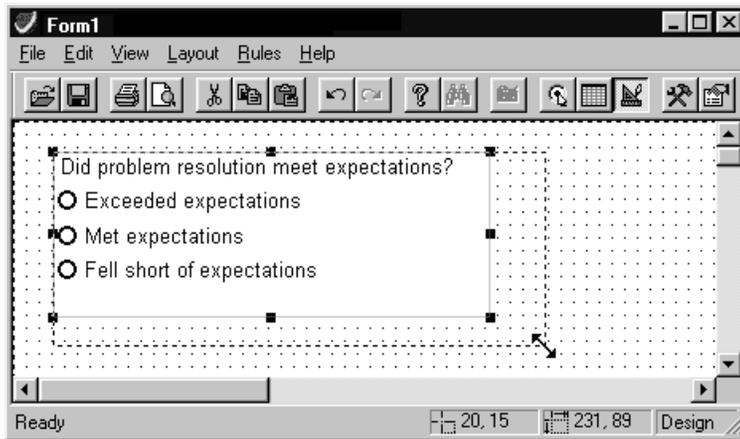


- ▶ Select the questions or controls that you want to move.
  - To select multiple objects, hold down the Shift key as you click on the objects.
- ▶ Hold down the left mouse button to drag the selected objects.
  - When you move or resize controls within a question, the question frame expands as needed.
  - When you move a question, controls within the question also move.

To specify the exact position of a question or control, modify the Top and Left properties in the Properties window.

## To Resize a Question or Control

Figure 5-6  
Resizing a question



- ▶ Click on the question or control that you want to resize. Selection handles appear around the selected object.
- ▶ Drag the selection handles on the sides and corners to resize the object.
- ▶ To resize all of the controls in a question with a single action, select the question along with all of its controls, and then drag the outer question border.

To specify the exact dimensions of an object, modify the Height and Width properties in the Properties window.

**Tip:** Text controls will automatically resize to fit their contents if the `AutoSizeToFit` property is set to `True` for the object. To quickly size a newly created object, double-click on it, edit the text if necessary, and then click away from the object to deselect it. By default, `AutoSizeToFit` is always on unless you turn it off.

## ***To Align Questions and Controls Using the Properties Window***

You can position form objects according to precise coordinates by modifying their Top, Left, Height, and Width properties. This can be particularly useful when you want to align multiple objects.

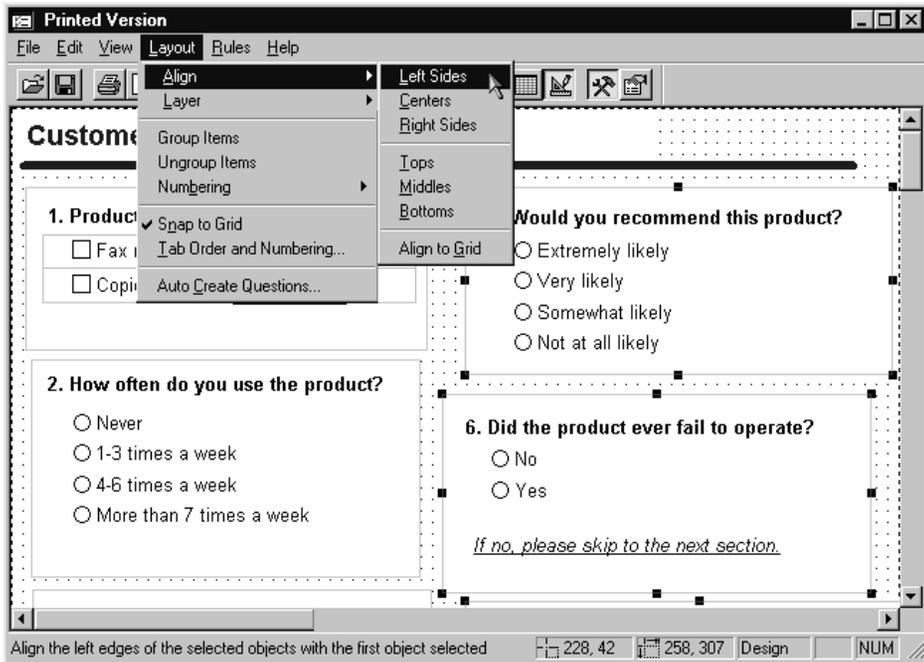
- ▶ To display the Properties window, from the Form window menus choose:
  - View
  - Properties
- ▶ Select the objects that you want to align.

If you select multiple objects, properties common to the selected objects are displayed.
- ▶ Edit the Top, Left, Height, and Width properties as needed.
  - To align selected objects vertically, specify a common value for the Left property.
  - To align objects horizontally, specify a common value for the Top property.
  - To make objects the same size, specify common values for Height and Width.

## ***To Align Questions and Controls Using the Layout Menu***

The Layout menu and formatting toolbar offer a number of features to quickly align or arrange objects on a form. The primary selection object acts as an anchor, and all other selected objects are aligned to it based on the chosen position.

Figure 5-7  
Aligning objects with the Layout menu



- ▶ In the Form window, select the objects that you want to align.
- ▶ From the Form window menus choose:

Layout  
Align

You can align objects relative to their sides, middles, tops, bottoms, or centers.

**Tip:** If the results are not as you expected, choose Undo Align from the Edit menu to reverse the action. For example, depending on the position of the primary selection, objects may be partially or entirely stacked on top of one another.

## To Align Questions and Controls to the Grid

- ▶ To turn on Snap to Grid, from the Form window menus choose:

Layout  
Snap to Grid

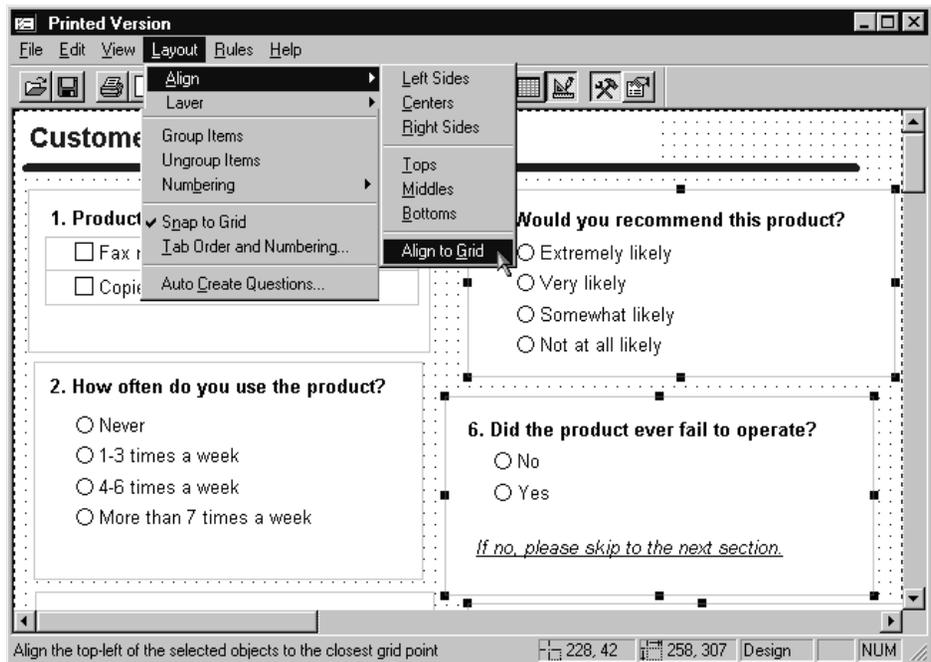
All objects subsequently added to the form are aligned to the nearest grid point. However, Snap to Grid does not affect existing form objects.

- ▶ To align existing form objects to the nearest grid point, select the objects and from the menus choose:

Layout  
Align  
Align to Grid

Figure 5-8

*Aligning questions and controls to the grid*



**Tip:** Even when Snap to Grid is on, entering values for an object's Top and Left properties allows you to place an object exactly where you want it.

## To Layer Questions and Controls on a Form

When questions and controls overlap on a form, you can use the Layout menu to control which object is on top of which.

- ▶ Select the objects you want to layer.
- ▶ From the Form window menus choose:

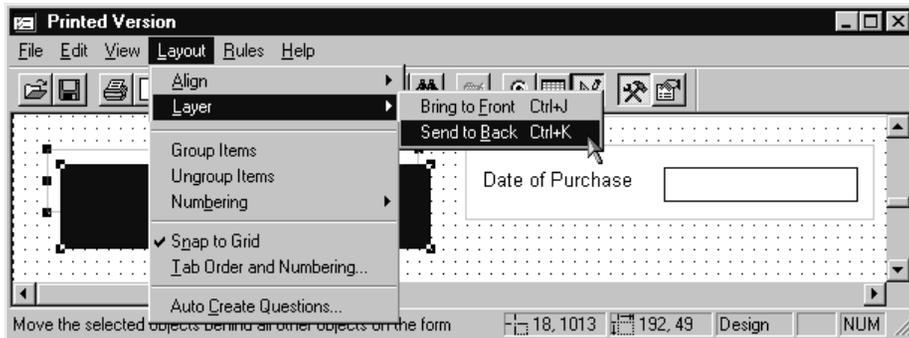
Layout

Layer

Bring to Front (or Send to Back)

Figure 5-9

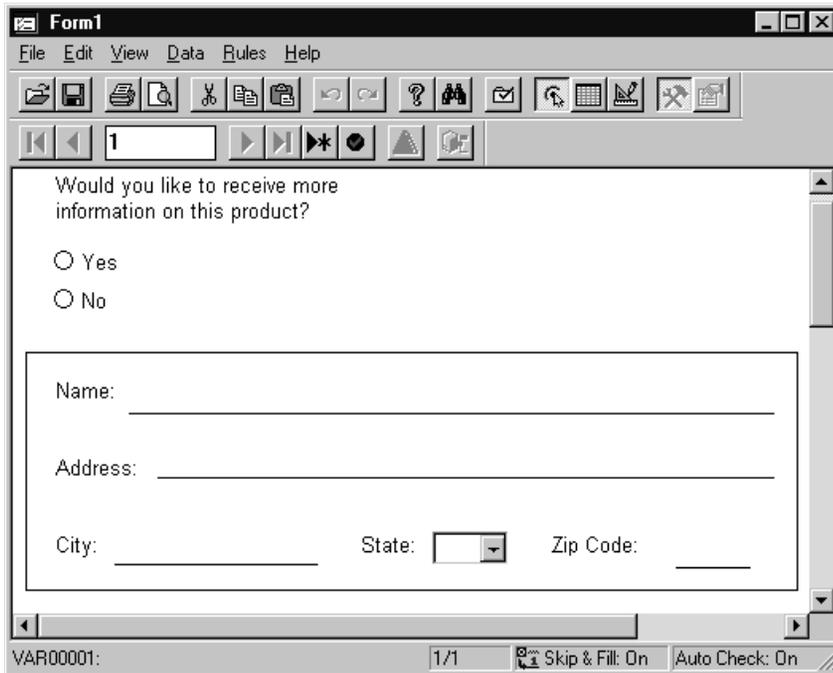
*Sending an object to the back*



**Tip:** Text and pictures can be either “inside” of questions or on top of them, depending on how they are created. If you click the text or picture tool within an existing question, the text or picture becomes part of the question. If you want text to be on top of the question, create the text outside of the question and then drag the text to overlap the question. (If the text disappears behind the question, immediately use Bring to Front to bring it to the top.)

## Grouping Questions

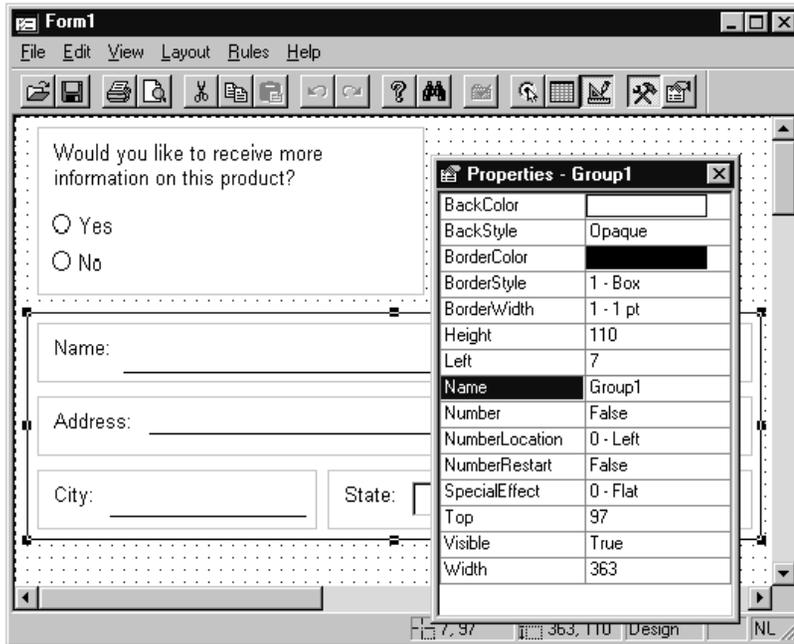
Figure 5-10  
Grouped questions



The screenshot shows a software window titled "Form1" with a menu bar (File, Edit, View, Data, Rules, Help) and a toolbar. Below the toolbar is a navigation bar with a text box containing the number "1" and several navigation icons. The main content area contains a question: "Would you like to receive more information on this product?" with two radio button options: "Yes" and "No". Below the question is a form with four input fields: "Name:", "Address:", "City:", and "Zip Code:". The "State:" field is a dropdown menu. The status bar at the bottom shows "VAR00001:", "1/1", and "Skip & Fill: On Auto Check: On".

Grouping questions allows you to move, number, and display questions as a block. For example, you may place all of your demographic questions into a group. Grouping questions allows you to easily move the group to another section of the form.

Figure 5-11  
Properties of a group



The group container has the same properties as a question container, such as background and border color. You can set the group container properties and you can also select and set the properties of individual questions within the group.

When you group questions, they show up in the tab order of your form as a group. You can number them individually or as part of the group.

For more information about tab order, see Chapter 10.

### ***To Create a Group***

- ▶ Select the question containers of the questions that you want in the group.
- ▶ From the Form window menus choose:
  - Layout
  - Group

**Note:** You can group multiple response sets only by selecting the multiple response sets and using the Group menu item.

Alternatively, you can group questions by dragging and dropping a question into another question's container.

Or you can use the toolbox to create a question inside of another question's container.

If you use the toolbox with questions of the same type, you *must* right-click inside of the question container and from the context menu choose Create New Question. If you simply click your mouse, you will not automatically get a new question. Instead, you will get additional response items added to your existing question.

You can create a group of questions within a group. For example, you might have a group of questions containing personal information, and then within that group, you might have a group of several questions that represent an address.

### ***To Ungroup Questions***

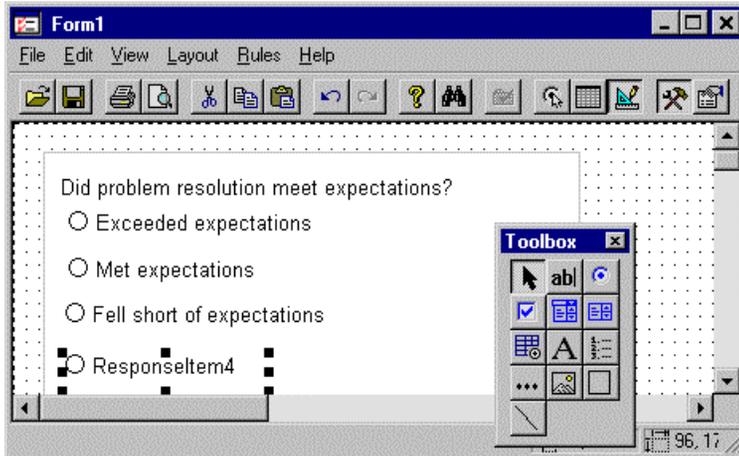
- ▶ Select the group container.
- ▶ From the Form window menus choose:
  - Layout
  - Ungroup

If you want to remove only certain questions from a group, you must ungroup the entire group and then regroup the questions that you want in the group.

### ***Adding Responses to Existing Questions***

You can add response choices to an option button or multiple response question by using the form toolbox to add response controls or by copying and pasting response controls between questions using the clipboard. You can add response choices to a list box or drop-down list question by adding items in the List Items dialog box.

Figure 5-12  
*Response control added to a question*



- When you add an additional option button to a question, a corresponding response item is added to the variable bound to the question.
- When you add an additional subquestion (with response control) to a multiple response question, a corresponding variable is added to the multiple response set bound to the question.

You can also add subquestions to a multiple response question by dragging one or more variables from the Builder window onto the question.

### ***To Add Response Controls to Questions Using the Toolbox***

You can add additional response controls to option button and multiple response questions using the toolbox. New controls must match the type of existing controls. For example, you can't add check boxes to an option button question.

- ▶ If the toolbox is not visible, from the Form menu choose:
  - View
  - Toolbox
- ▶ Click the question tool for the desired type of response control (option button, check box, and so forth).

Optionally, you can drag and release the mouse in the tool well to specify the number of controls that you want to add.

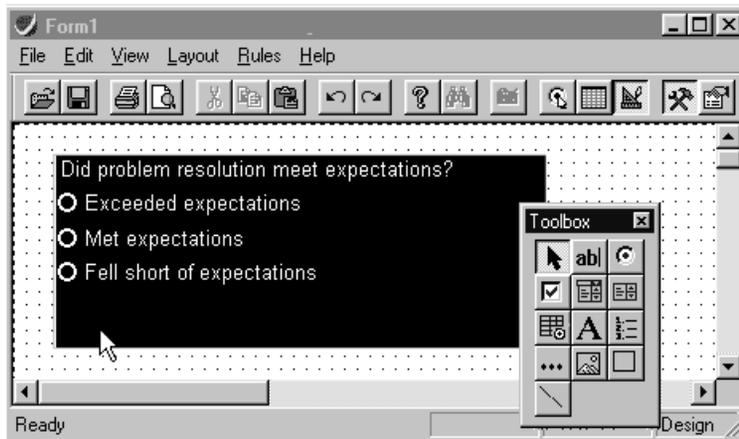
- ▶ Move the mouse pointer over an existing option button or multiple response question of the same type as the selected tool.

The question is highlighted to indicate that it is receptive to the tool.

- ▶ Click inside of the question to add the control.

**Figure 5-13**

*Adding a response control to an existing question*



**Tip:** To avoid adding new controls on top of existing controls, click near the bottom or side of the question (on or near the border). The question border expands to make room for the new controls.

## ***To Copy and Paste Response Controls***

You can copy and paste response controls between option button and multiple response questions. The question type must match the control being pasted. For example, you can't paste a check box control into an option button question.

- ▶ Select the controls that you want to copy.

- ▶ From the Form window menus choose:
  - Edit
  - Copy
- ▶ Select the question to which you want to paste controls, and from the menu choose:
  - Edit
  - Paste

The question that you paste to can be on the same form or a different form. You can even copy and paste to the same question to quickly add an additional response control.

**Pasting text.** You can copy static text (created with the text tool) and paste it into any question. The text becomes part of the question.

**Pasting entire questions.** You can also copy and paste entire questions as a shortcut for creating new questions. For more information, see Chapter 4.

### ***To Add Variables to Multiple Response Questions***

- ▶ From the Builder window menus choose:
  - View
  - Variables
- ▶ Select one or more variables. (To select multiple variables, hold down the Shift key or the Ctrl key as you click on the variables.)
- ▶ Hold down the left mouse button to drag selected variables from the Builder window over the question.

The question is highlighted to indicate that it is receptive to the variables.

- ▶ Release the mouse button to add the variables.

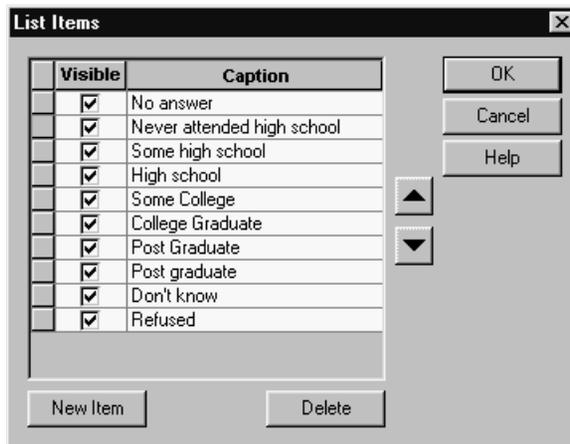
For each variable, a new subquestion (with a response control) is added to the question.

**Tip:** To avoid creating new controls on top of existing controls, drop the variable near the bottom or side of the question (on or near the border). The question border expands to make room for the new controls.

## To Add or Remove Responses in a List Box or Drop-Down List

- ▶ On the form, right-click on the list box or drop-down list that you want to modify and select Properties.
- ▶ In the Properties window, double-click in the List Items field.

Figure 5-14  
List Items dialog box



- ▶ In the List Items dialog box, use the buttons and arrows to add, delete, and move individual items.
- ▶ To hide a list item without removing it, deselect the Visible check box.

## Adding Responses by Modifying Variable or Set Properties

You can add response choices to single response questions by adding response items to the variable bound to the question. Similarly, you can add response choices (subquestions) to multiple response questions by adding variables to the multiple response set bound to the question. In either case, all questions bound to the variable or set are automatically updated.

For example, if you have a multiple dichotomy set represented as check boxes, adding a variable to the set creates a new check box in the question.

### ***Understanding the Connection between Questions and Variables***

Remember that questions and variables are not the same thing in the program, but they are closely related. You can use the program without ever understanding this connection, but the many different methods for adding and removing responses from questions and variables will make more sense to you if you do.

A question is a representation of a variable on a form, and the question text and response items displayed in questions are actually stored in the variable bound to the question.

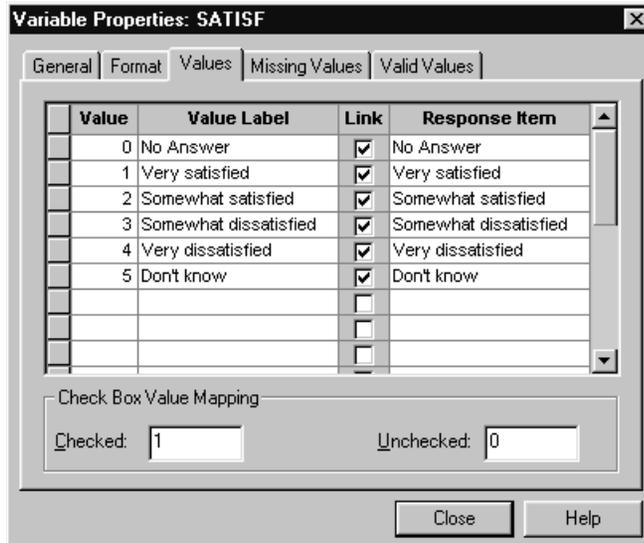
This makes it easy to keep your questions and forms up to date and provides multiple ways of doing things. You can edit question text and response choices directly on your form or in the Variable Properties window. Either way, the result is the same. Similarly, if you want to remove one of the buttons in an option button question, you can select and delete the button right on the form, or you can delete the corresponding response item in the Variable Properties window. The result is the same, so use whichever method is convenient for you.

### ***To Add Response Choices by Modifying Variable Properties***

You can add option buttons to an option button question or add new items to a list box or drop-down list question by adding response items to the variable bound to the question.

- ▶ On the form, right-click on the question and select Variable Properties.
- ▶ In the Variable Properties window, click the Values tab.
- ▶ Enter new items in the *Response Item* column.

Figure 5-15  
Response items displayed in the Variable Properties window



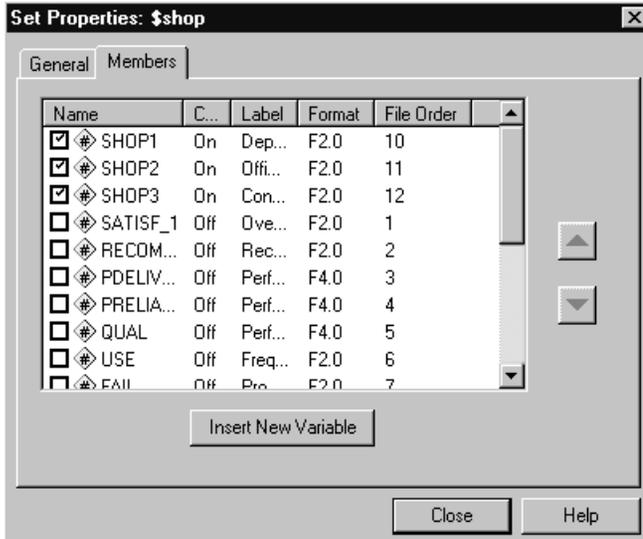
For each new response item, a corresponding option button or list item is added to the question. All questions bound to the variable are automatically updated. For more information about modifying variable properties, see Chapter 7.

### ***To Add Subquestions by Modifying Set Properties***

You can add response controls to an existing multiple response question by adding variables to the set bound to the question.

- ▶ Right-click on the multiple response question and select Variable Properties.
- ▶ In Set Properties window, click the Members tab.
- ▶ Click Insert New Variable to add a new variable, or click the check box of an existing variable that you want to add to the set.

Figure 5-16  
Set members displayed in the Set Properties window



For each variable added to the set, a corresponding response control is added to the question. All questions bound to the set are automatically updated.

For more information about modifying set properties, see Chapter 8.

### ***To Remove Response Controls from a Question***

- ▶ Click on the response control that you want to remove.
- ▶ Press Delete (or choose Cut from the Edit menu).
  - If you delete an option button, the corresponding response item is deleted from the variable bound to the question.
  - If you delete a subquestion (along with response control) from a multiple response question, the corresponding variable is removed from the set. However, the variable is not deleted from the file (the variable still exists but is no longer included in the set).

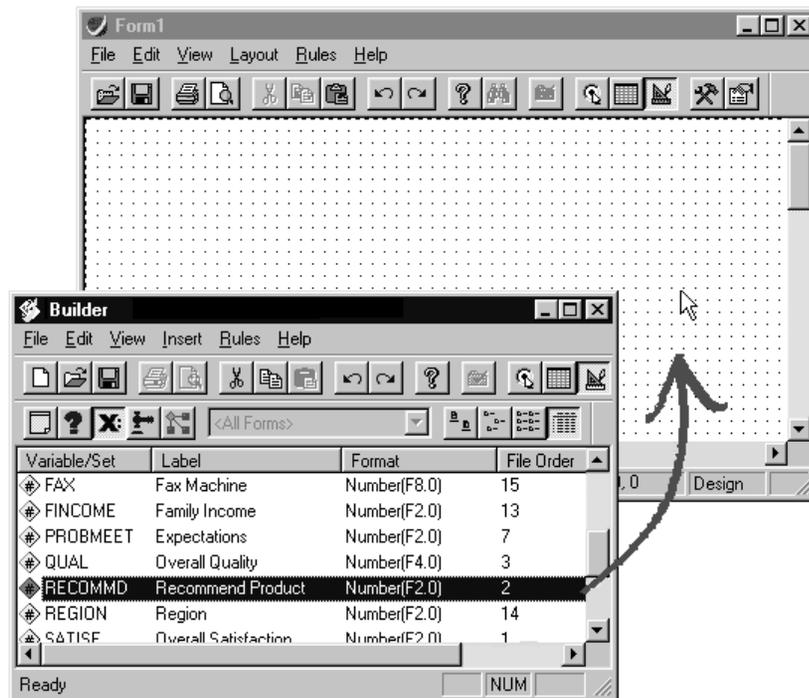
- Alternatively, if you delete response items from a variable or delete variables from a set, the corresponding response controls or subquestions are deleted from questions bound to the variable or set.

**Tip:** To hide a response control without removing it from the variable or multiple response set, use the Properties window to set the Visible property to False for the control.

## To Change the Response Control Type for a Question

You cannot change the response control type for an existing question—for example, you cannot change a drop-down list into a group of option buttons. However, you can create a new question based on the same variable or multiple response set as the original question but with a different control type.

Figure 5-17  
Dragging a variable onto a form



- ▶ From the Builder window menus choose:
  - View
  - Variables
- ▶ Select the variable or multiple response set bound to the original question.
- ▶ Hold down the right mouse button to drag the selected variable or set from the Builder window onto a form.
- ▶ Move the mouse to the desired position on the form and release the mouse button.
- ▶ Select the desired response control type from the context menu.

The new question shares the same variable or set as the original question.
- ▶ Delete the original question if desired.

## ***Customizing the Appearance of Questions and Controls***

You use the Properties window to modify the appearance of questions and controls. You can:

- Change the font, size, and color of the text.
- Apply custom styles, such as flat, raised, or sunken.
- Change the border style, color, and width.
- Change the position and alignment of text within controls.

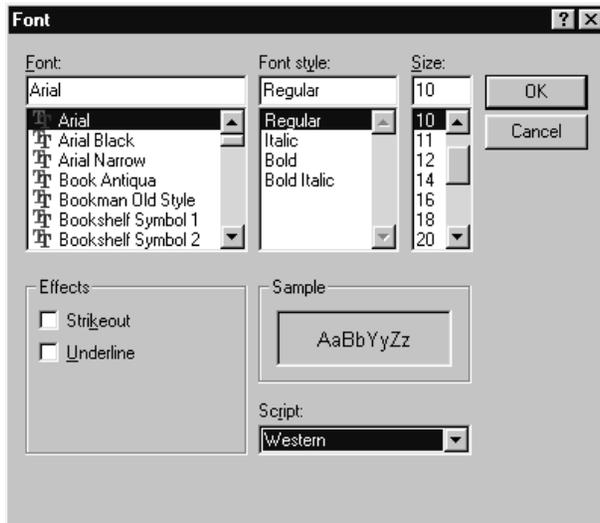
### ***To Change the Font for Form Text***

You can specify the font, size, and style for form text in the Fonts dialog box.

- ▶ In the Form window, click on the text you want to modify.
- ▶ From the menus choose:
  - View
  - Properties

- ▶ In the Properties window, double-click the Font field.

Figure 5-18  
Fonts dialog box



- ▶ In the Fonts dialog box, select the desired font, size, and style.
- ▶ To change the text color, use the Font Color property.

Notice that the Fonts property is available only when you select objects that contain text.

### ***To Set the Default Font for a Form***

You can specify the default font for text on a form using the Properties window. The font applies to text subsequently added to the form; it does not apply to existing objects. Setting the font *before* you begin can save a lot of time.

- ▶ In the Form window, click on the form background to select the form.
- ▶ From the menus choose:

View  
Properties

- ▶ In the Properties window, double-click the Font field.
- ▶ In the Fonts dialog box, select the desired font, size, and style.

### ***To Apply a Custom Style to a Question***

You can apply a flat, raised, or sunken style to a question using the Special Effect property.

- ▶ Select the questions or controls that you want to modify.
- ▶ From the menus choose:
  - View
  - Properties
- ▶ In the Properties window, edit the Special Effect property.

**Note:** For option buttons, the Special Effect property choices are flat, sunken, and square.

### ***To Change the Color or Border Style for Questions or Controls***

You can specify the color and appearance of questions and controls using the Back Color and Back Style properties.

- ▶ Select the objects you want to modify.
- ▶ From the menus choose:
  - View
  - Properties
- ▶ In the Properties window, modify the Back Color and Back Style properties.
  - The background color setting is ignored when Back Style is transparent.
  - The Border Color and Border Style properties specify the appearance of the question border.
  - The Font Color property specifies the color of text.

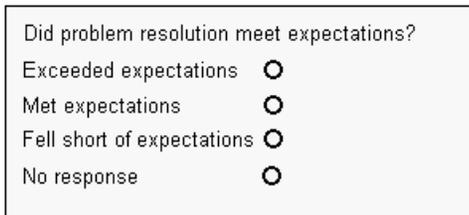
- To make text boxes print as underlines on a printed form, set the Border Style to Underline for the text box.

### ***To Specify the Caption Position for a Check Box or an Option Button***

You can specify whether the caption for a check box or an option button control is positioned to the left or right of the button using the Caption Position property.

Figure 5-19

*Left-aligned captions*



Did problem resolution meet expectations?

Exceeded expectations

Met expectations

Fell short of expectations

No response

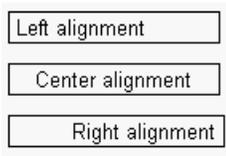
- ▶ Select the check boxes or option buttons that you want to modify.
- ▶ From the menus choose:  
View  
Properties
- ▶ In the Properties window, edit the Caption Position property.

**Tip:** Changing the caption position may not produce expected results when the AutoSizetoFit property is on for a control. For best results, turn this property off in the Properties window.

### ***To Specify the Alignment of Text within a Control***

You can specify the horizontal alignment (justification) of text within a control by using the Horizontal Alignment property. For option button and check box controls, you can also specify the vertical alignment of the caption relative to the control.

**Figure 5-20**  
*Left-, center-, and right-aligned text*



- ▶ Select the object that you want to modify.
- ▶ From the menus choose:  
View  
Properties
- ▶ In the Properties window, edit the Horizontal Alignment or Vertical Alignment property.

**Tip:** Changing the alignment of text may not produce expected results when the AutoSizeToFit property is on for a control. For best results, turn this property off in the Properties window.

### ***To Disable a Question or Control***

You can disable questions and controls by setting the Enabled property to False. When a control is disabled, it cannot receive the focus in Entry mode. This is useful if you want a question to be visible on the form but don't want the data in the question to be modified.

- ▶ Select the controls that you want to disable (or enable).
- ▶ From the menus choose:  
View  
Properties
- ▶ In the Properties window, set the Enabled property to False (or True).

## ***To Hide a Question or Control***

You can hide a question or control by setting its Visible property to False. The control is no longer visible in Form Entry view. This is especially useful if you want to suppress the display of a response control in a question without removing the corresponding response item or variable.

- ▶ Select the controls that you want to hide (or unhide).
- ▶ From the menus choose:
  - View
  - Properties
- ▶ In the Properties window, set the Visible property to False (or True).

Setting Visible to False hides the object only in Form Entry view; the object is still visible in Design view.

## ***To Specify Status Bar Text for a Question***

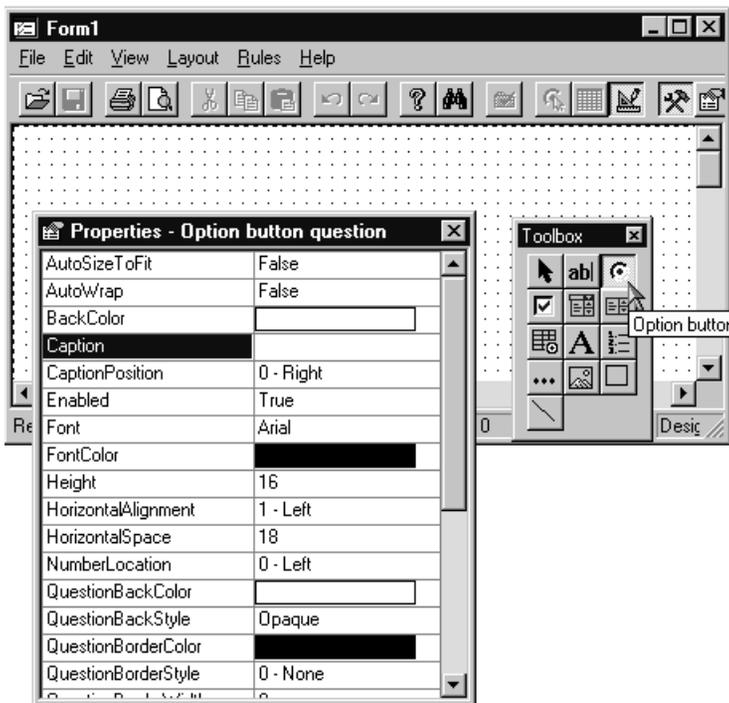
When a question has the focus, you can specify the text to be displayed in the status bar using the Status Bar Text property. The specified text is displayed whenever the user clicks on the question in Entry mode. For multiple response questions, you can specify different status bar text for each subquestion.

- ▶ Select the question.
- ▶ From the menus choose:
  - View
  - Properties
- ▶ In the Properties window, specify the desired text for the Status Bar Text property.

## Setting Default Tool Properties before You Create Questions

Tool properties allow you to specify the default properties of questions before you create them. For example, suppose you want to use a specific font in all of your questions. Rather than modify each question after you create it, set the Font property for your question tools *before* you create questions. This saves time because you avoid modifying questions after creating them.

Figure 5-21  
*Properties for the option button question tool*



- ▶ In the toolbox, click on the desired tool.
- ▶ To display the Properties window, from the menus choose:  
View  
Properties
- ▶ Specify the properties for the tool in the right column of the Properties window.

The properties are applied to all objects subsequently added to the form with the tool. Tool properties are saved with the form, so you can specify different defaults for different forms. Newly created forms inherit tool defaults from the last open form.

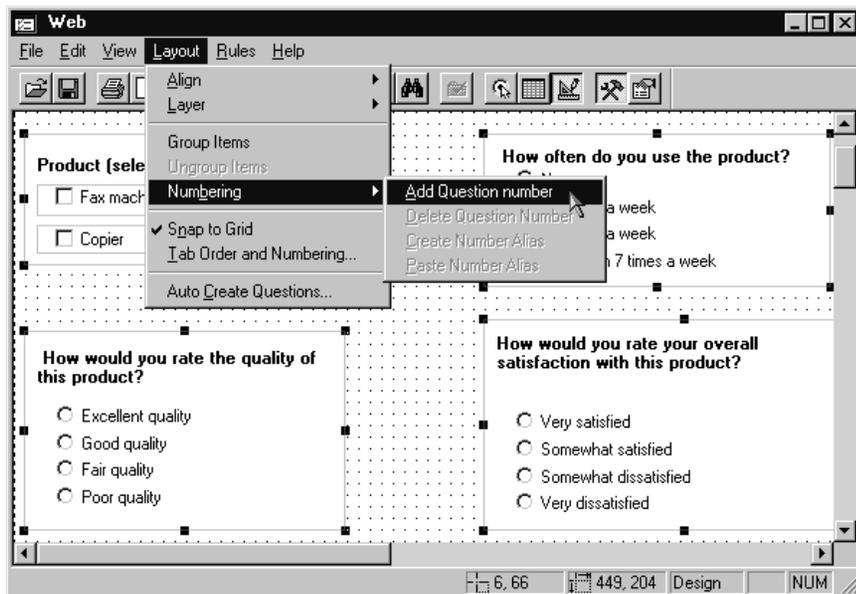
## Question Numbering

Builder includes a feature that allows you to number your questions, subquestions, matrices, and text annotations. Question numbers appear in a separate control. You can set properties for that control, but you cannot edit the text of the control.

If you are creating a new form, it is easy to use automatic question numbering. You simply set the form's AutoNumber property to True. Every question you create is numbered and the numbers change to reflect actions, such as deleting a question.

Figure 5-22

*Applying question numbers to multiple questions*



When you have an existing form of unnumbered questions, you can select individual questions and use the Question Number tool from the toolbox to add question numbers. Or you can select many questions at once and use the Layout menu's Numbering submenu to add question numbers. You can select questions in any order since the order of question numbers is controlled by the tab order of the form.

Question numbering in Builder is dynamic, which means that the numbers automatically renumber when any of the following happens:

- There is a change in the tab order of a numbered question, subquestion, or static text.
- You add a new question number using the toolbox or the menu.
- You delete a question number.
- You create a new question on a form whose AutoNumber property is set to True.
- You delete, cut, or paste a question, subquestion, or static text containing a number.

**Note:** If you change the order of questions on your form, you must change the tab order of the questions in order to have the questions automatically renumber to reflect your changes.

For more information about tab order, see Chapter 10.

### ***To Number Existing Questions***

To add numbers to several questions at once:

- ▶ Select the questions that you want to number.
- ▶ From the Form menu choose:

Layout  
  Numbering  
    Add Question Number

Alternatively, you can use the Question Number tool in the toolbox or you can set the questions' Number property to True.

### ***Modifying the Appearance of Numbers***

There are several ways to modify the appearance of question numbers.

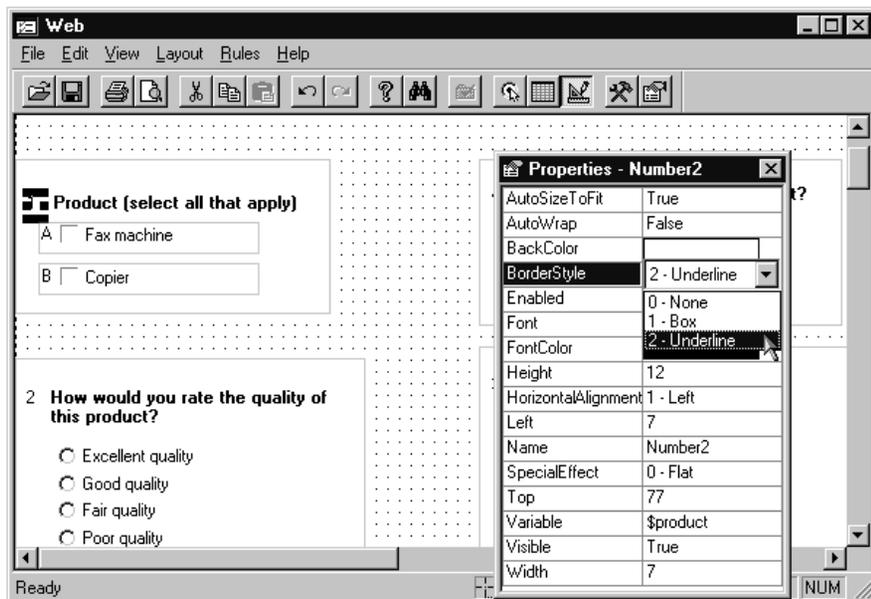
By changing the form's properties, you can:

- Change the delimiter, which is the symbol that appears after the number. Delimiters include the period, comma, semicolon, colon, dash, or slash.
- Change the number of levels shown.
- Change the style of numbering.
- Change the starting number for the form. This is helpful in multi-form surveys. For example, if the first question on Form3 is the hundredth question in the survey, you would set Form3's NumberStartAt property to 100.

By changing a question's properties, you can:

- Add or delete the question number by changing the Number property.
- Change the location of the question number.
- Mark a question as a new start for numbering. For example, you have a form with three sections. In each section, you want to restart the question numbering at 1. You would select the first question in each section and set the NumberRestart property for each to True.

Figure 5-23  
Question control properties



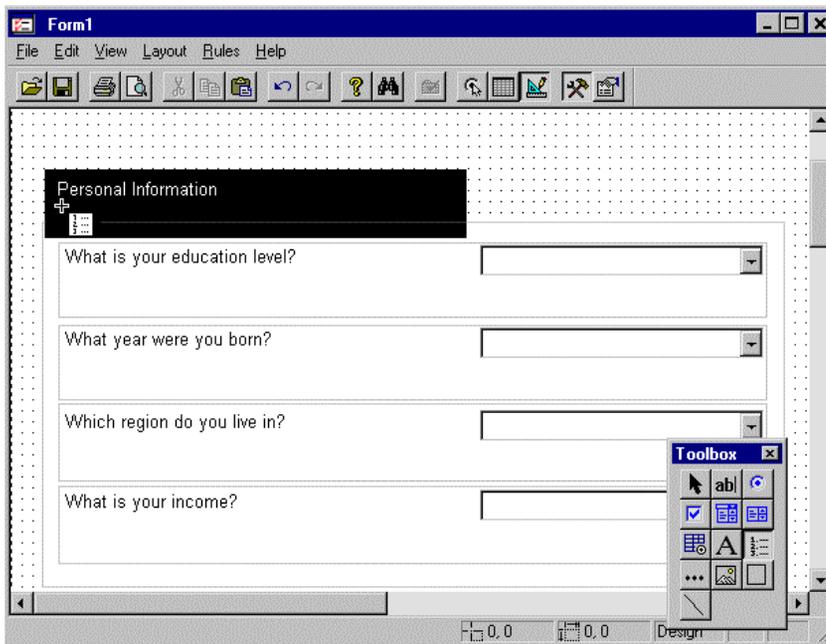
Numbers have many of the same properties as other controls—background colors, border styles, font, height, special effect, and alignment. You can change the properties of an individual number or multiple numbers at once or change the defaults for the number tool.

## ***Text Annotations and Question Numbering***

You can add question numbers to text annotations. For example, you may have a form divided into sections, which are titled with text annotations. You can number the text annotations using the Question Number tool in the toolbox.

Figure 5-24

*Adding question numbers to text annotations*



When you add a question number to a text annotation, you create a group consisting of a question number control and the text annotation. You may delete the question number by ungrouping the group or by deleting the question number.

Your numbered text annotation appears in the tab order as a group. If you want to move your numbered text annotation, you must change its position in the tab order to update the question number.

For more information about tab order, see Chapter 10.

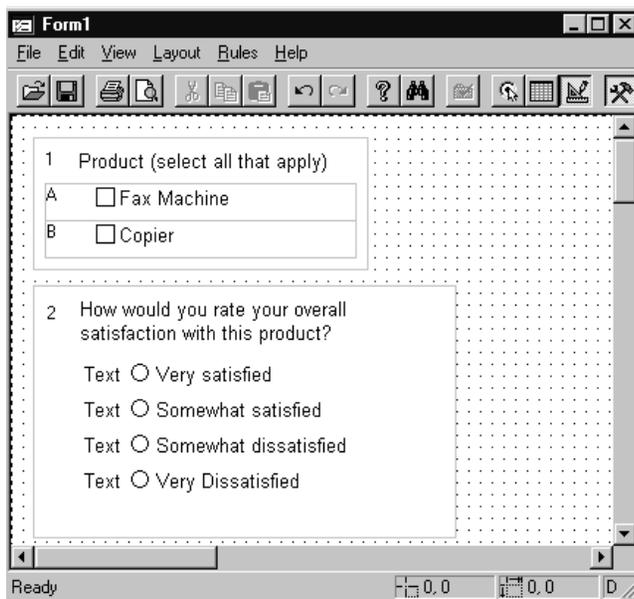
### **Example: Numbering Option Buttons**

You can give question numbers to questions, subquestions, matrices, and text annotations. However, you cannot automatically number option button responses because they are not subquestions. There is a way to number option button responses using text annotations.

- ▶ Set your form's AutoNumber property to True.
- ▶ Create a text annotation in front of each option button response.
- ▶ When you create the text annotation, it is much bigger than the option button response and overlaps it. Use your mouse to size the text annotation to a reasonable size.

Figure 5-25

*Option button responses with text annotations*

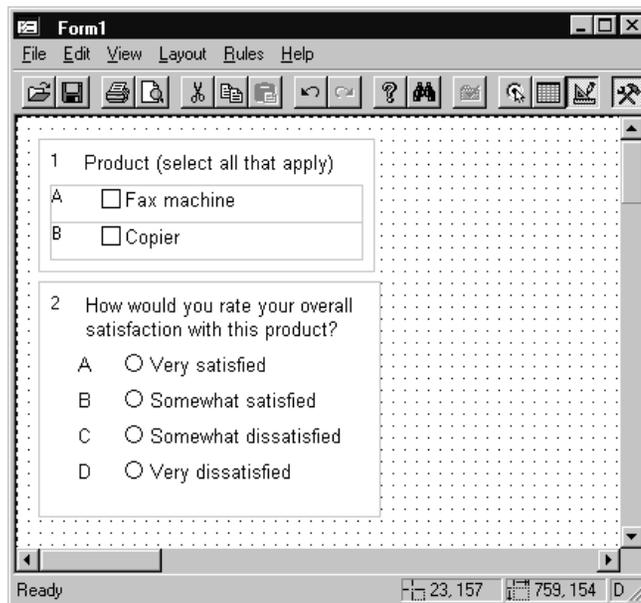


The screenshot shows a window titled "Form1" with a menu bar (File, Edit, View, Layout, Rules, Help) and a toolbar. The form content is displayed on a grid background. Question 1 is "Product (select all that apply)" and has two options: "A Fax Machine" and "B Copier". Question 2 is "How would you rate your overall satisfaction with this product?" and has four radio button options: "Text Very satisfied", "Text Somewhat satisfied", "Text Somewhat dissatisfied", and "Text Very Dissatisfied". The text annotations "A" and "B" for the first question are significantly larger than the option buttons they precede.

- ▶ Using the Question Number tool, add a question number to each of the text annotations.
- ▶ Select each text annotation and in the Property window, delete the word Text in the Text property field.

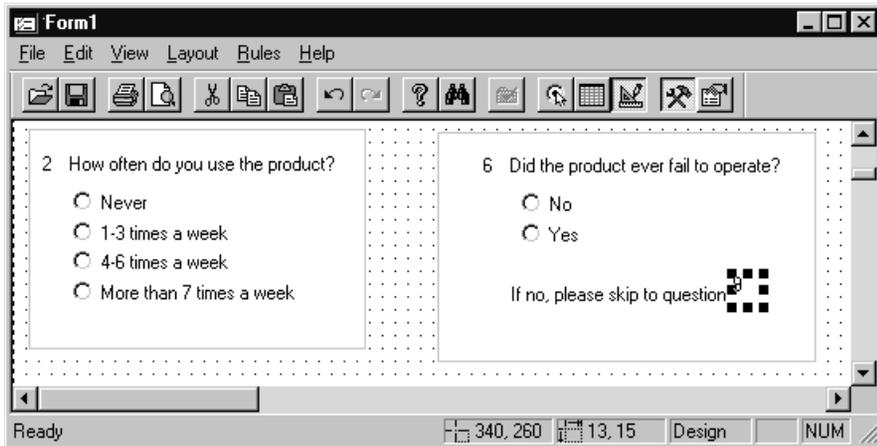
Figure 5-26

*Numbered option button responses*



## Number Aliases

Figure 5-27  
Question with a number alias



You may have instructions on a form that ask a user to skip to a certain question. If your form is using automatic question numbering, you can create a number alias for a question number and paste that alias into the instructions. Then, if the question number changes, the alias will automatically change to reflect the new question number.

The following rules apply to aliases:

- You can create and paste aliases only from the Layout menu's Numbering submenu.
- If you delete the question number used in the alias, the alias is also deleted. However, you can delete an alias without affecting the question number that the alias referred to.
- You cannot paste aliases between forms unless you also paste the question the alias refers to.

## ***To Use Number Aliases***

- ▶ Select the number control you would like to use in the alias.
  
- ▶ From the Form menu choose:
  - Layout
  - Numbering
  - Create Number Alias
  
- ▶ Select the item that you would like to have as the alias (this will usually be a text annotation).
  
- ▶ From the Form menu choose:
  - Layout
  - Numbering
  - Paste Number Alias

# Creating Scale Button Matrices

A scale button matrix is a set of questions that share a common set of response items. The matrix provides a mechanism for aligning questions on the form and displaying shared response text in column labels. Each row is a separate question representing a separate variable, and each column holds one possible response. For example, a  $3 \times 5$  scale button matrix would represent three questions, each with five response items.

Figure 6-1  
*Scale button matrix*

Please rate your sales representative on the following characteristics:					
	Excellent	Very Good	Good	Fair	Poor
Helpfulness	<input type="checkbox"/>				
Promptness	<input type="checkbox"/>				
Knowledge of product	<input type="checkbox"/>				

Figure 6-2  
*Matrix with numeric scale displayed*

Please rate the importance of the following product characteristics:					
	Important				Not Important
Reliability	1	2	3	4	5
Price	1	2	3	4	5
Range of features	1	2	3	4	5

**Tip:** Matrix questions are not multiple response questions. Multiple response questions are questions that can have more than one response (for example, *Which of the following magazines do you read?*). By contrast, each row in a matrix is a separate question that can have one and only one response.

## Creating a Matrix

You can create a matrix with the form toolbox or by dragging existing variables from the Builder window onto a form.

### To Create a Matrix with the Form Toolbox

- ▶ If the form toolbox is not visible, from the Form window menus choose:
  - View
  - Toolbox
- ▶ Move the mouse pointer over the scale button matrix tool and hold down the left mouse button to display the tool well.
- ▶ Drag and release the mouse in the tool well to specify the number of rows and columns in the matrix.
- ▶ Click on the form to create the matrix.

A variable is automatically created for each question (row). By default, all variables share a common set of response items.

Figure 6-3

*Newly created matrix in Design view*

	A	B	C	D	E	F
2	Corner Header	ResponseItem1	ResponseItem2	ResponseItem3	ResponseItem4	ResponseItem5
3	Question Text (VAR00001)	<input type="checkbox"/>				
4	Question Text (VAR00002)	<input type="checkbox"/>				
5	Question Text (VAR00003)	<input type="checkbox"/>				

- Drag the separator bars between row and column marker buttons to make rows and columns wider (or narrower). *Marker buttons are visible in Design view only; they are never visible when entering data.*
- The **row labels** display the question text for each variable. You can edit text in the matrix by double-clicking on the text.

- The **column labels** display response items. By default, when you edit the response items in the column header, the response items are updated for all variables represented in the matrix.
- Use the text tool to add text or instructions above the matrix (for example, *Please rate the importance of the following characteristics*). If you want the text to appear within the matrix, edit the corner header.

Figure 6-4  
Modified matrix in Design view

	A	B	C	D	E	F
2		Excellent	Very Good	Good	Fair	Poor
3	Helpfulness	<input type="checkbox"/>				
4	Promptfulness	<input type="checkbox"/>				
5	Knowledge of product	<input type="checkbox"/>				

## To Create a Matrix from Existing Variables

You can drag two or more variables from the Builder window onto a form to create a question matrix.

- ▶ From the Builder window menus choose:
  - View
  - Variables
- ▶ Select two or more variables.
- ▶ Hold down the *right* mouse button while dragging the selected variables from the Builder window onto a form.

- ▶ Move the mouse pointer to the desired position on the form and release the mouse button.

When you drag and drop variables using the right mouse button, you are prompted to specify the type of question you want to create.

- ▶ Select Scale button matrix from the context menu.

The number of columns depends on the number of response items or value labels defined for the variables. The column heads are derived from the response items or value labels defined for the first variable. If the first variable has no response items or value labels, two columns are created by default. For more information on creating questions from existing variables, see Chapter 4.

## To Display a Numeric Scale in a Matrix

Figure 6-5  
Matrix with numeric scale displayed

Please rate the imporantance of the following product characteristics:					
	Important				Not Important
Reliability	1	2	3	4	5
Price	1	2	3	4	5
Range of features	1	2	3	4	5

You can modify a scale button matrix to display a numeric scale rather than buttons in each row.

- ▶ Create a scale button matrix with the desired number of rows and columns using the form toolbox (or by dragging variables from the Builder window).
- ▶ To display caption text rather than buttons in each cell, select the button cells and use the Properties window to set the ButtonStyle property to Caption text for each cell.

To select multiple cells, hold down the Shift key as you click, or drag a rectangle with the mouse.

- Edit the default caption text for each cell by double-clicking on the column labels. By default, when you edit the column labels, all rows are automatically updated (change *ResponseItem1* to 1, *ResponseItem2* to 2, and so forth).

Figure 6-6  
Selecting cells by dragging the mouse

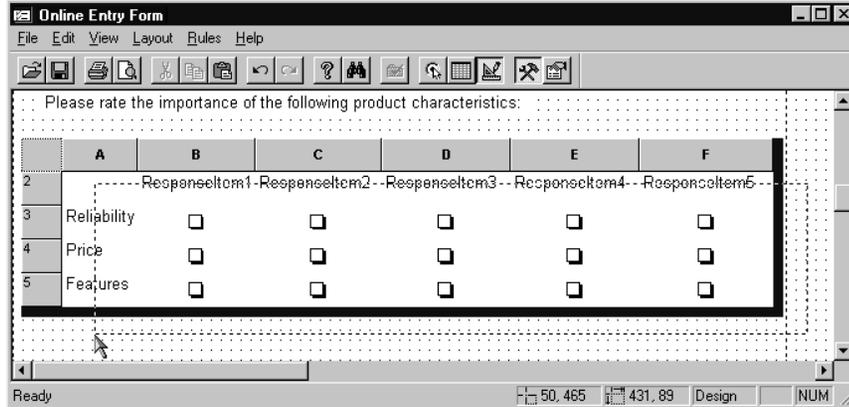
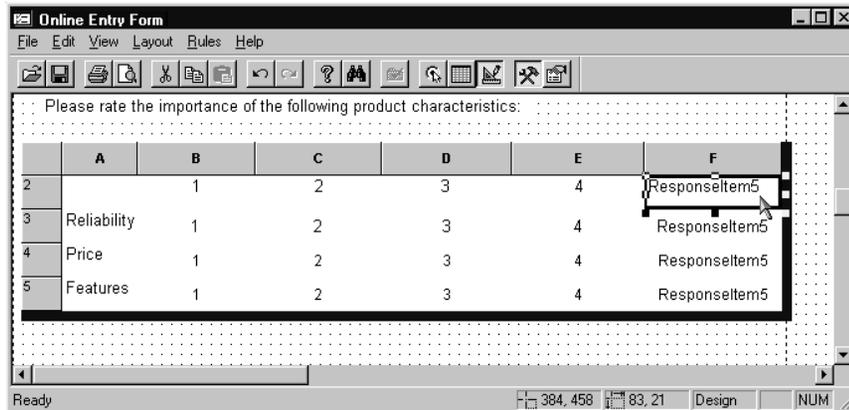


Figure 6-7  
Editing the column labels



To enter the endpoint labels in the first and last columns (for example, *Important* and *Not Important*), you must first break the link between the column labels and the captions in each cell.

- ▶ Select the entire matrix by clicking on the lower border, and use the Properties window to set the `ResponseTextUpdate` property to `False` for the matrix.

With `ResponseTextUpdate` set to `False`, you can edit the column labels without updating all rows.

- ▶ Edit the labels in the first and last columns, and delete the text in the labels for the middle columns.

## ***Modifying Matrices***

You can use the Matrix submenu (available on the Edit menu) and the Properties window to modify matrices in a number of ways. You can:

- Hide (or display) row and column marker buttons.
- Insert or remove rows and columns.
- Display buttons or response item text in cells.
- Customize cell borders.
- Update responses in all rows using the Fill Responses option.

You can also modify a matrix indirectly by modifying the variables bound to the matrix. For general information on modifying question and variable properties, see Chapter 5 and Chapter 7.

## ***To Select Cells in a Matrix***

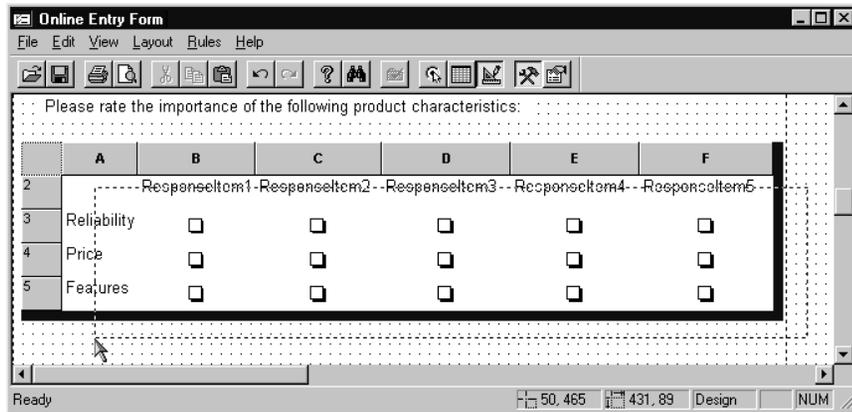
You can select cells in a matrix using any of the following methods:

- ▶ To select the entire matrix, click on the lower border.
- ▶ To select individual cells within the matrix, click on them with the mouse. To select multiple cells, hold down the Shift key as you click.
- ▶ To select rows or columns of cells, click on the row and column marker buttons.
- ▶ To select all of the cells in the matrix, click on the selector button in the upper left corner.

- ▶ To select all of the cells in a rectangular area, drag a rectangle with the mouse. (You must start dragging the rectangle outside of the matrix to use this method.)

Figure 6-8

Selecting cells by dragging the mouse



- ▶ To select a question, row, column, the entire matrix, or all cells using the menus choose:

Edit  
Matrix  
Select

### ***To Insert a Row or Column in a Matrix***

- ▶ In the matrix, select a row, column, or cell to indicate where you want to insert a row or column.
- ▶ From the Form window menus choose:

Edit  
Matrix  
Insert  
Row (Column)

New rows are inserted above the selected row. New columns are inserted to the left of the selected column.

- When you insert rows, a new variable is created for each row.

- When you insert columns, a corresponding response item is added to all variables bound to the matrix.
- Alternatively, you can add rows by dragging variables from the Builder window and dropping them onto the matrix or add columns by adding response items to one or more of the variables represented in the matrix.

For more information on modifying variable properties, see Chapter 7.

### ***To Delete a Row or Column from a Matrix***

- ▶ In the matrix, select the row or column that you want to delete.
- ▶ From the Form window menus choose:

- Edit
  - Matrix
    - Delete
    - Row (Column)

Alternatively, you can delete rows by deleting the corresponding variable in the Builder window or delete columns by removing the corresponding response item from all variables represented in the matrix.

### ***To Reorder Rows or Columns***

- ▶ In the matrix, select the rows or columns that you want to move.
- ▶ From the Form window menus choose:

- Edit
  - Matrix
    - Move
    - Up (Down, Left, or Right)

Alternatively, you can move a row or column using the mouse. Select the row or column and then click on the selected row or column button and drag.

The top row of cells and the first column of cells (row and column labels) cannot be moved.

## To Display Caption Text in Matrix Cells

Figure 6-9  
Matrix with caption text displayed

Please rate the importance of the following product characteristics:					
	Important				Not Important
Reliability	1	2	3	4	5
Price	1	2	3	4	5
Range of features	1	2	3	4	5

You can use display caption text rather than buttons in matrix cells by setting the `ButtonStyle` property to `Caption` text. This is especially useful if you want to display a numeric scale rather than buttons in each row.

- ▶ Select the cells that you want to modify.
- ▶ From the menus choose:  
View  
Properties
- ▶ In the Properties window, edit the `ButtonStyle` property.

**Tip:** The `ButtonStyle` property is available only when cells containing buttons are selected (not row and column label cells).

## To Edit Response Items in a Matrix

The variables created for a scale button matrix share a common set of response items, displayed in the column labels at the top of the matrix.

- ▶ To edit column labels in the matrix, double-click on the text.

By default, when you edit the column labels, all variables bound to the matrix are also updated. If you prefer that changes made in the column labels not be propagated throughout to the matrix, modify the `ResponseTextUpdate` property as follows:

- ▶ Right-click on the lower matrix border to select the matrix, and select Properties from the context menu.
- ▶ In the Properties window, set the `ResponseTextUpdate` property to `False`.

**Tip:** To display response item text (rather than buttons) in all rows, select the cells and change the `ButtonStyle` property to `Caption text`.

### ***To Update Response Items for All Rows***

- ▶ To force all response items for all variables in the matrix to match the column labels, including empty cells, select the matrix.
- ▶ From the menus choose:
  - Edit
  - Matrix
  - Fill Responses

### ***To Hide Row and Column Marker Buttons***

- ▶ To hide (or display) row and column marker buttons when in Design view, from the menus choose:
  - Edit
  - Matrix
  - Row and Column Markers
- ▶ Select this item again to restore the original setting.

**Note:** Whether or not row and column markers are displayed in Design view, they are never visible when entering data.

### ***To Display Borders in a Matrix***

You can specify border style and color using the `BorderStyle` and `BorderColor` properties.

- ▶ Select the cells that you want to modify.
- ▶ From the menus choose:

View  
Properties

In the Properties window, edit the properties for the left, right, top and bottom borders (`LeftBorderStyle`, `LeftBorderColor`, `RightBorderStyle`, `RightBorderColor`, and so forth).

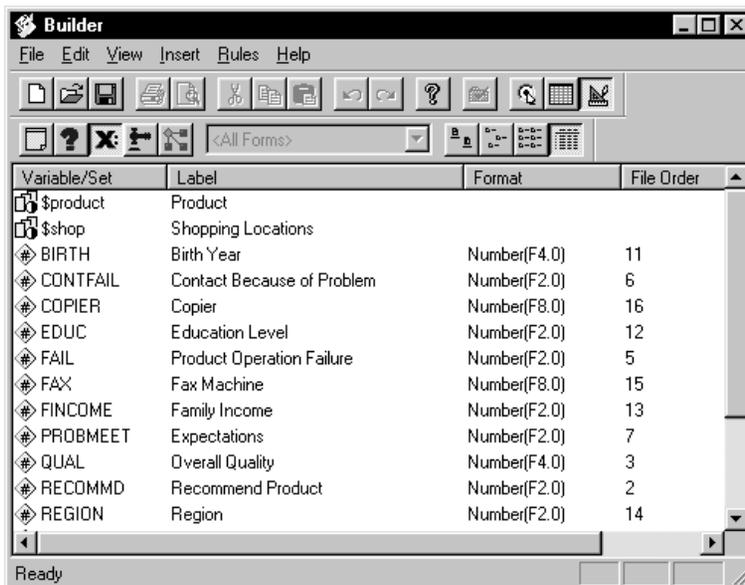


# Creating and Defining Variables

Your data—the responses to your questions—are stored in variables. Every question on a form is bound to at least one variable. In fact, you can think of a question as a representation of a variable on a form. For example, the question “How old are you?” might be bound to a variable named *age*. Questions that allow multiple responses are bound to a named set of variables called a **multiple response set**, with each subquestion bound to one of the variables in the set.

While every question on a form must be bound to a variable or a multiple response set, the reverse is not true—not every variable must be represented by a question. You can have variables in your files that do not appear on any form. Such variables can be filled in automatically using Skip & Fill rules or can be set to a default value (specified in the Variable Properties window, General tab).

Figure 7-1  
*Variables displayed in the Builder window*



In the Builder window, use the View menu or the toolbar to display the variables in your file. Each variable has a name, label, and data format. In addition, variables have properties, such as question text and response items, that apply to questions bound to the variable. (This is important because variables and questions are closely related—you can think of a question as a representation of a variable on a form.)

If you view your data in Table Entry view, each variable is a column of data that measures a particular characteristic, and each row is a case.

Figure 7-2

*Data displayed in Table Entry view*

	fax	copier	satisf	fail	contfail	recommd	birth
1	No	Yes	Very satisfied	No		Yes	
2	No	Yes	Somewhat satisfied	Yes	No	Yes	1961
3	No	Yes	Very satisfied	No		Yes	1965
4	Yes	Yes	Somewhat satisfied	Yes	No	No	1951
5	Yes	No	Somewhat dissatisfied	No		No	1954
6	No	Yes	Very satisfied	No		Yes	1949
7							

## ***Understanding the Connection between Questions and Variables***

Questions and variables are not the same thing in the program, but they are closely related. You can use the program without ever understanding this connection, but it will make more sense if you do.

A question is a representation of a variable on a form. When you create questions using the form toolbox, you also create variables; the question text and response items displayed in questions are actually stored in the variable bound to the question.

This makes it easy to keep your questions and forms up to date and also provides for multiple ways of doing things in the program. You can edit question text and response choices directly on your form or in the Variable Properties window. Either way, the result is the same. Similarly, if you want to remove one of the buttons in an option button question, you can select and delete the button right on the form, or you

can delete the corresponding response item in the Variable Properties window. The result is the same, so use whichever method is convenient for you.

## ***Creating Variables***

You can create questions and variables using the form toolbox, or you can create variables using the Insert menu in the Builder window.

- If you add questions to a new form using the toolbox, variables and multiple response sets are created for each question automatically.
- If you prefer to define your variables before you create questions, use the Insert menu in the Builder window to add variables to your file. You can later drag them onto a form to generate questions bound to those variables.

Regardless of how your variables are initially created, the methods for defining their properties are the same.

**Tip:** Copying and pasting variables in the Builder window is an easy way to create several variables with similar properties. However, it may be easier to create a complete question and copy the question rather than copying just the variable.

### ***To Create Questions and Variables Using the Form Toolbox***

- ▶ In the Form window, from the menus choose:  
View  
Toolbox
- ▶ In the toolbox, click on the desired question tool to select the tool.  
  
Optionally, you can drag the mouse in the tool well as you select the tool to specify the number and arrangement of controls (for example, a row or column of buttons).
- ▶ Click on the form to create the question.  
  
As you add each question, a variable or multiple response set is automatically created.
- ▶ To define variable properties, right-click on the question and select Variable Properties.  
  
See Chapter 4 for more information on creating questions.

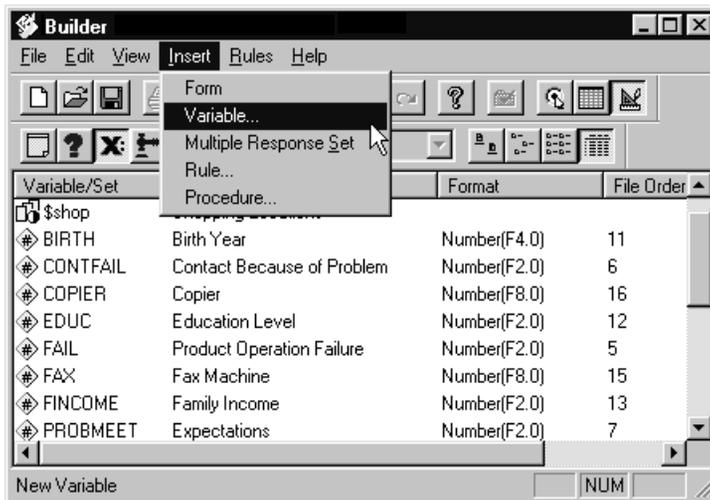
## To Insert a New Variable in the Builder Window

- ▶ In the Builder window, from the menus choose:

Insert  
Variable...

Figure 7-3

*Inserting a variable in the Builder window*



- ▶ In the Variable Properties window, enter a variable name.
- ▶ Specify other variable properties as needed.

## To Define Properties for a Variable or Multiple Response Set

**Note:** You cannot view or edit the variables for long text boxes.

- ▶ In the Builder window, from the menus choose:

View  
Variables

- ▶ Right-click on a variable or set and select Variable/Set Properties.

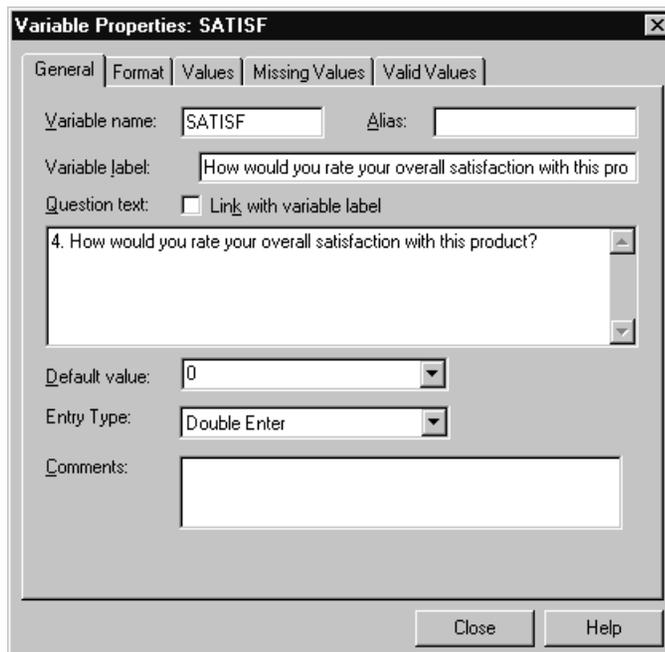
In the Variable Properties window, specify the variable name and label, question text, data type, response items, and valid and missing values as appropriate.

- ▶ To access variable properties from a question on a form, right-click on the question and select Variable Properties.

**Tip:** Changes made in the Variable Properties window are applied immediately—you don't need to close the window after making changes. You can edit multiple variables by selecting them one after another in the Builder window without closing the Variable Properties window in between each selection.

## General Variable Properties

Figure 7-4  
Variable Properties window



The screenshot shows the 'Variable Properties: SATISF' dialog box. It has five tabs: 'General', 'Format', 'Values', 'Missing Values', and 'Valid Values'. The 'General' tab is selected. The 'Variable name' field contains 'SATISF' and the 'Alias' field is empty. The 'Variable label' field contains 'How would you rate your overall satisfaction with this pro'. The 'Question text' field has a checkbox for 'Link with variable label' which is unchecked, and a text area containing '4. How would you rate your overall satisfaction with this product?'. The 'Default value' is set to '0' and the 'Entry Type' is 'Double Enter'. There is a 'Comments' text area at the bottom. 'Close' and 'Help' buttons are at the bottom right.

**Variable name and label.** Variable names can be 64 bytes long. You can also enter a descriptive variable label that can be up to 255 characters. The descriptive labels are displayed in statistical output when you run analyses.

**Question text.** Text is displayed in questions bound to the variables. For example, if you have a variable named *age*, you might specify “What is your age?” By default, the question text is identical to the variable label, but you can deselect the link if desired. You can edit question text in the Variable Properties window or by editing the question text directly on a form.

**Alias.** This is a JScript-compliant name used to reference the variable in rules or scripts. By default, the alias is the same as the variable name, but if the variable name fails to comply with scripting-language conventions, you are prompted to specify an alternative. The alias must start with a letter, must contain only numbers, letters, and underscores (no special characters), and must be unique within the file.

**Default value.** Value provided to the variable by default. If the variable is bound to a check box or option button question, this value determines the default state of the check box or option button. For example, if you want the check box to be unchecked by default, set the default to the unchecked value for the variable (Variable Properties, Values tab).

**Entry Type.** Determines how a variable will appear and behave in Double Entry mode. By default, it is set to Double Enter, which means that the variable will be double entered. Edit allows a user to edit the variable in Double Entry mode. A user cannot access a *Protected* variable in any entry mode. Only a rule can fill a *Protected* variable.

**Comments.** Comments offer additional information about the variable. Comments are generally used for “internal” documentation (as distinct from variable labels, which are typically displayed in statistical output).

## ***Variable Names***

The following rules apply to variable names:

- The name must begin with a letter. The remaining characters can be any letter, any digit, a period, or the symbols @, #, \_, or \$.
- Variable names can't end with a period.
- To avoid conflict with variables automatically created by some procedures, do not give variables names that end with an underscore.
- The length of the name can't exceed 64 bytes.
- Blanks and special characters (for example, !, ?, ', and \*) can't be used.

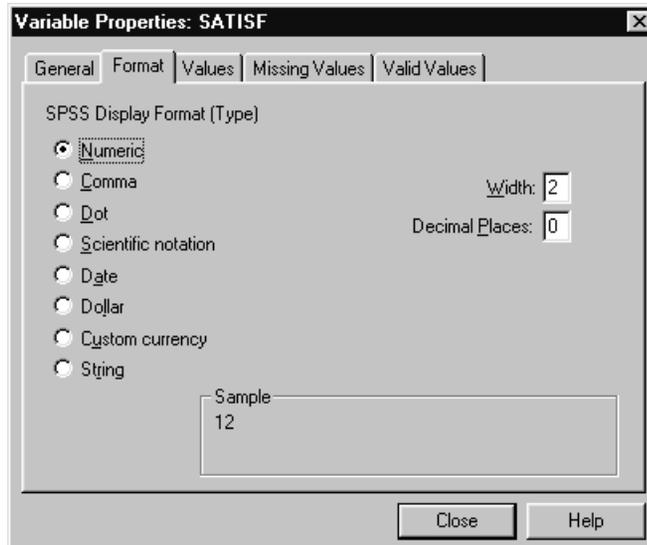
The following reserved keywords can't be used as variable names:

ALL	NE	EQ	TO	LE
LT	BY	OR	GT	AND
NOT	GE	WITH		

## Variable Format

The Format tab specifies the display format or data type for the variable. Available formats include numeric, comma, dot, scientific notation, date/time, dollar, custom currency, and string (letters, numbers, and punctuation). The specific options available in the dialog box depend on the format that you select. For example, some formats allow you to specify the width and number of decimals; for others, you simply select a format from a scrolling list of examples.

Figure 7-5  
Variable Properties: Format tab



**Non-numeric data.** The default format for newly created variables is numeric (unless the variable is created for a text box question, in which case the default format is string). Numeric variables accept only numbers; if you want to enter non-numeric data, you'll need to use a different format.

However, it is a good idea to use numeric codes even for non-numeric categorical data because numbers are easier to analyze. Specify value labels and response items to describe what the codes mean (for example, codes of 1 and 2 for *yes* and *no*).

**String and long string variables.** If you specify the format as string, you can enter letters, numbers, and punctuation. Numbers are treated as characters rather than values. Standard string variables are no more than 8 characters in length. If you specify a longer length—up to 255 characters—the variable is considered a long string variable. Value labels, response items, missing values, and Validation rules are not available for long string variables.

**Custom currency.** Applies the custom currency format defined in File Properties (Builder window, File menu). See Chapter 13 for more information on specifying a custom currency format.

### ***Input versus Display Formats***

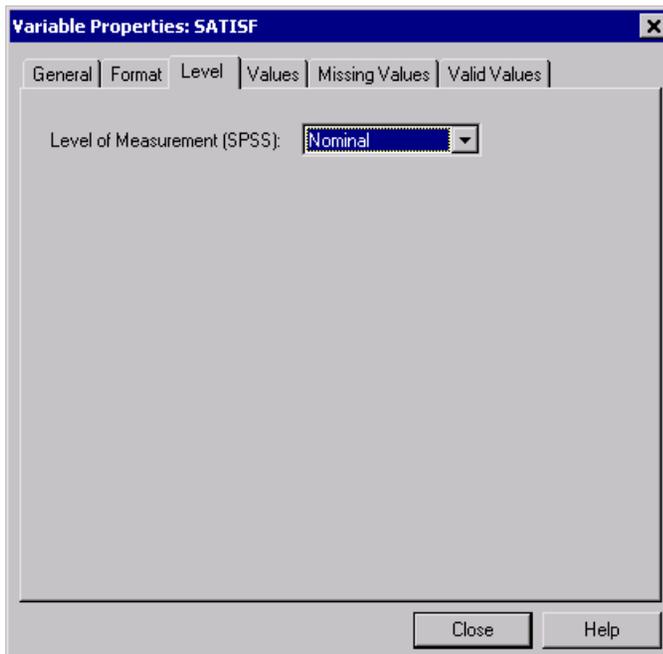
Depending on the format, the value that you see displayed on a form may differ from the actual value as entered and stored internally. Here are some general guidelines:

- For numeric, comma, and dot formats, you can enter values with any number of decimal positions (up to 16). Values are rounded to the number of decimals specified in variable properties for display purposes, but the complete value is stored internally.
- For string variables, all values are right-padded to the maximum width. For a string variable with a width of 6, a value of 'No' is stored internally as 'No ' and is not equivalent to ' No '.
- For date formats, you can enter data using slashes, dashes, spaces, commas, or periods as delimiters between day, month, and year values, and you can enter numbers, three-letter abbreviations, or complete names for month values. Dates of the formats *dd/mm/yy* and *mm/dd/yy* are displayed with slashes for delimiters and numbers for the month. Dates of the format *dd-mmm-yy* are displayed with periods as delimiters. Internally, dates are stored as the number of seconds from October 14, 1582.
- For time formats (actually a type of date format), you can enter data using colons, periods, or spaces as delimiters between hours, minutes, and seconds. Times are displayed with colons as delimiters. Internally, times are stored as the number of seconds.

## Variable Level

The Level tab specifies whether the non-text variable's level of measurement is scale (numeric data on an interval or ratio scale), ordinal, or nominal. Measurement specification is relevant if you use SPSS to analyze your data.

Figure 7-6  
*Variable Properties: Level tab*



**Level of Measurement (SPSS).** If the variable is a non-text variable, there are three options for the level of measurement:

- **Scale.** Data values are numeric values on an interval or ratio scale (for example, age or income).
- **Ordinal.** Data values represent categories with some intrinsic order (for example, low, medium, high; strongly agree, agree, disagree, strongly disagree). Ordinal variables are numeric values that represent distinct categories (for example, 1 = low, 2 = medium, 3 = high).

- **Nominal.** Data values represent categories with no intrinsic order (for example, job category or company division). Nominal variables are numeric values that represent distinct categories (for example, 1 = Male, 2 = Female).

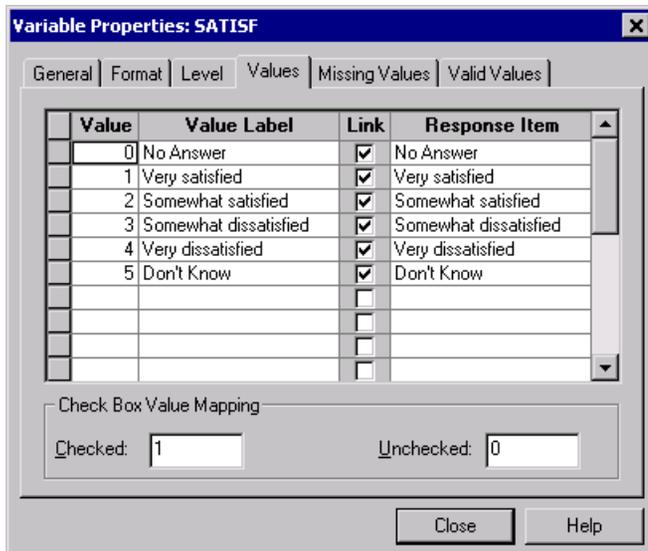
## Variable Values

The Values tab specifies descriptive value labels and response items. You can specify value labels for most variable types, including string variables, but not long string variables (string variables with a length greater than 8 characters). Value labels are particularly useful if your data file uses numeric codes to represent non-numeric categories (for example, codes of 1 and 2 for *yes* and *no*). Value labels can be up to 60 characters long.

Value labels are not available for long string variables (those with a length greater than 8 characters).

Figure 7-7

Variable Properties: Values tab



**Response items.** Response items are displayed in questions bound to the variable. For example, if you create an option button question from the variable, each option button represents one of the response items. You can edit response items in the Variable Properties window or by modifying questions directly on a form.

**Checked and unchecked values.** Mapping values are used when a variable is represented as a check box question. For example, when the check box is selected, the value of the variable is set to the checked value.

**Tip:** When you add or remove response items, the corresponding changes are made in all questions bound to the variable. For example, in the case of an option button question, buttons are added or removed from the question as needed. This ensures that your questions are up to date (but may cause questions to overlap on the form as they expand to accommodate additional response items).

### ***Coding Responses***

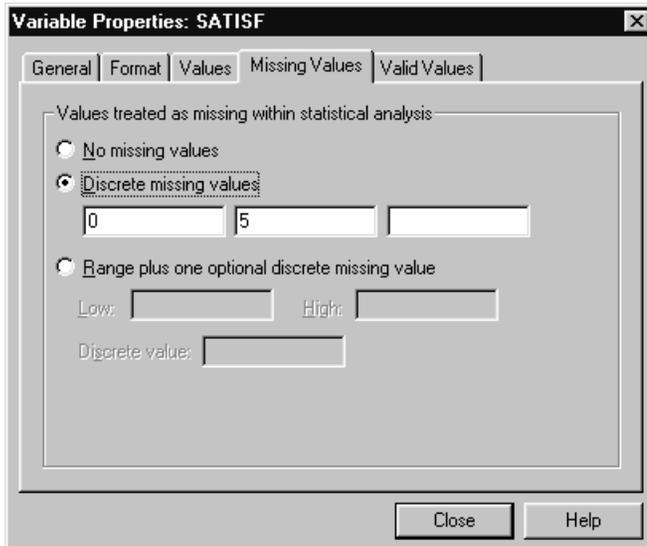
Responses can be coded as numbers or strings in the data file. For example, *yes/no* responses can be entered as *yes* and *no*, *y* and *n*, or using numeric codes (for example, 1 and 2 for *yes* and *no*). It is a good idea to use numeric codes whenever possible because numbers are easier to analyze in most statistical software programs. Specify value labels and response items to describe what the codes mean.

If you create questions using the toolbox, numeric codes are often mapped for you. For example, if you create a question with an option button group, each option button is automatically mapped to a specific value, and a default value label and response item are created. All you have to do is customize the text for each value label/response item.

### ***Missing Values***

The Missing Values tab allows you to define data values as user-missing. It is often useful to know why information is missing. For example, you might want to distinguish between data missing because a respondent refused to answer and data missing because the question didn't apply to that respondent.

Figure 7-8  
Variable Properties: Missing Values tab



- You can enter up to three discrete (individual) missing values, a range of missing values, or a range plus one discrete value. For example, you can specify three values to indicate *not applicable*, *don't know*, and *no response*. (Click the Values tab in the Variable Properties window to specify descriptive value labels for discrete missing values.)
- Ranges can be specified for numeric variables only.

**Missing values for string variables.** For short string variables, you can specify a space as a discrete missing value so that “empty” string variables are treated as missing. Simply click in the edit field and press the space bar. A single space is sufficient; the value is automatically padded to the defined width of the string variable (up to 8 characters). You cannot define missing values for long string variables with a width greater than 8 characters.

Data values specified as user-missing are flagged for special treatment and are excluded from most calculations in statistical software programs.

### ***User-Missing Values versus System-Missing Values***

User-missing values are not the same as the system-missing (or default) value. The system-missing value simply indicates that no value has been specified for a variable for a particular case. User-missing values are values explicitly entered to indicate the reason that data are missing.

All variables normally default to the system-missing value for new cases (since a variable cannot be empty for a case). However, you can change this behavior by specifying a different value as the default (Variable Properties window, General tab).

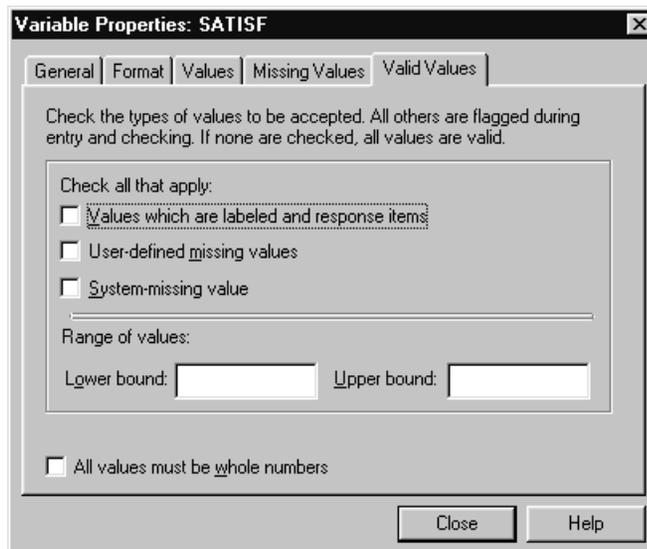
### ***Valid Values***

The Valid Values tab specifies conditions that restrict the values of the variable to labeled values, missing values, values within a specified range, or whole numbers. If the user enters a value that fails to meet these conditions, the value is not accepted and the user is prompted to enter a different value.

Valid values options are not mutually exclusive. For example, you can specify that labeled values, response items, *and* missing values are all valid responses.

Figure 7-9

*Variable Properties: Valid Values tab*



**Tip:** Specifications made in Valid Values create a simple Validation rule for the variable. You can also create Validation rules in the Rule Wizard, which offers additional options not available in Valid Values. For example, the Rule Wizard allows you to create a rule that displays a custom message when an invalid value is entered.

## ***To Copy Variables and Multiple Response Sets***

You can use the Builder window to copy and paste variables and sets. If you open multiple files, each file has its own Builder window, allowing you to copy and paste objects between them.

- ▶ In the Builder window with the variables that you want to copy, from the menus choose:  
View  
Variables
- ▶ Either select one or more variables or sets and hold down the left mouse button to drag selected variables from one Builder window to the other, or from the menus choose:  
Edit  
Copy
- ▶ In the Builder window in which you want to paste the variables, from the menus choose:  
View  
Variables
- ▶ And then choose:  
Edit  
Paste

**Tip:** You can “clone” a variable or set by copying it and pasting it back into the same file.

## ***Tips for Copying Variables and Multiple Response Sets***

You can use the Builder window to copy and paste variables. If you open multiple files, each file has its own Builder window, allowing you to copy and paste objects between them.

- When you copy a variable, all of its properties are copied, including any Validation rules bound to the variable. If you paste a variable into a file where a variable of the same name already exists, the pasted variable is renamed to avoid a conflict (since two variables cannot have the same name).
- You can “clone” a variable or set by copying it and pasting it back into the same file. The new variable or set has similar properties to the original but is renamed to avoid a naming conflict.
- If you copy a multiple response set, all of the member variables are copied along with the set.
- If the variable or set you want to copy is already bound to a question, you may save time by copying the complete question rather than just the variable. When you copy a question, the variable or set bound to the question is also copied.
- You can paste a variable or multiple response set onto a form to create a question based on the variable.

## ***To Copy Properties of a Variable or Set***

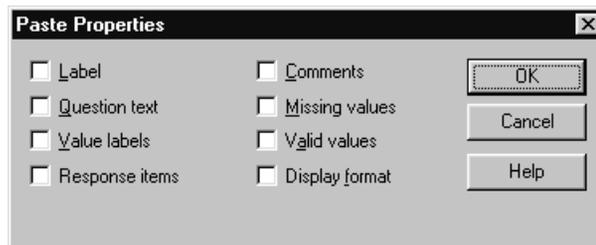
You can copy and paste properties from one variable or multiple response set to another. This is an easy way to assign the properties of one variable or set to several others, essentially using the variable as a template.

- ▶ If necessary, from the Builder window menus choose:
  - View
  - Variables
- ▶ Select the variable whose properties you want to copy and from the menu choose:
  - Edit
  - Copy Properties

- ▶ Select one or more target variables to which you want to paste properties, and from the menus choose:  
Edit  
Paste Properties...
- ▶ Select the properties that you want to apply to the target variable.

Figure 7-10

*Paste Properties dialog box*



**Tip:** If you open multiple files, each file has its own Builder window, allowing you to copy and paste properties between them.

## ***Copying Multiple Response Sets***

You can copy and paste multiple response sets as well as variables. When you copy a set, all of the variables within the set are also copied and renamed if necessary to avoid conflicts with existing variables. See Chapter 8 for more information on multiple response sets.

## ***Reordering Variables***

Variables are added to your file in the order in which you create them. While the order of variables has no effect on the order of questions on your form—you can rearrange your forms as much as you want regardless of the variable order—you may find it convenient to reorder variables to match the order of a form or questionnaire or to facilitate your later analysis of the data.

You can reorder variables by opening the file in SPSS (release 7.5 or later), or a similar program from SPSS Inc.

## ***To Reorder Variables in Another Program***

It is recommended that you make a backup copy before making significant modifications to any file.

- ▶ Open the file that you want to modify in SPSS (release 7.5 or later).
  - ▶ In the Data Editor, select the column for the variable that you want to move and from the menus choose:
    - Edit
    - Cut
  - ▶ Click on the column to the right of where you want to insert the variable and from the menus choose:
    - Data
    - Insert Variable
  - ▶ Select the newly inserted (still empty) column.
  - ▶ From the menus choose:
    - Edit
    - Paste
  - ▶ Save the file.
- To confirm the results, open the file in Builder.



# ***Multiple Response Questions and Sets***

Sometimes you want to ask a question that may require more than one response. You might want to know which magazines people read, which products they buy on a regular basis, or which employee benefit services they have used in the past month. You can use multiple response questions to obtain more than one answer.

Multiple response questions represent multiple response sets. A multiple response set is a named set of variables that can be analyzed as a group and represented on the form as a multiple response question.

Multiple response sets can be coded as dichotomies or as categories. In a set coded as dichotomies, each possible choice represents a single variable, and each variable has one distinct value that means yes, count this response. Typically, that value is the checked value for a check box. In a set coded as categories, each possible response represents a variable whose value can be any of the legal responses to the question. Those legal responses might be represented in a set of identical list boxes, and the respondent chooses once from each. There does not have to be a list box for each possible choice—just enough to accommodate the maximum number of choices the respondent is expected to make.

Dichotomies are most useful when you have a manageable list of alternative responses. They are generally preferred for data analysis because you can analyze the underlying variables apart from the set and recombine them into different sets. Sets coded as categories are preferable when you have a large number of choices from which you expect respondents to select just a few—such as their favorite three television shows from a list of a hundred. They also allow you to later select top choices apart from lower choices.

For information on creating questions and defining variables, see Chapter 4 and Chapter 7.

## ***Multiple Response Questions Representing Sets Coded As Dichotomies***

Multiple response questions allow you to ask a question and receive more than one answer. The answers are stored in separate variables. In effect, each option in a multiple response question is a subquestion.

For example, consider the question *Which of the following products do you own?* with check boxes for four different products. The respondent can select all of the check boxes that apply.

Figure 8-1

*Multiple response question represented with check boxes*

Which of the following products do you own?

Fax Machine

Copier

Computer

Laser Printer

The multiple response question, which represents a multiple response set, is composed of four subquestions and four separate variables.

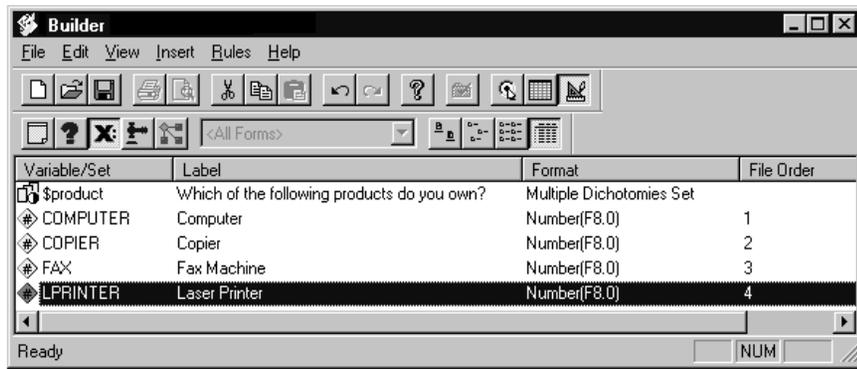
<b>Variable</b>	<b>Subquestions</b>
Fax	Do you own a fax machine?
Copier	Do you own a copier?
Computer	Do you own a computer?
Lprinter	Do you own a laser printer?

The respondent is in effect answering *yes* or *no* to each of the subquestions. Each product listed in the example question functions as a subquestion of the main question, which represents a multiple response set coded as dichotomies. The *yes* or *no* answer for each product is stored in the underlying variable that is part of the set.

## Multiple Response Sets Coded As Dichotomies

When you want to receive a *yes* or *no* answer to a specific set of subquestions, you can use a multiple response set coded as dichotomies. A set coded as dichotomies is composed of the set and as many variables are needed to ask the subquestions.

Figure 8-2  
Multiple response set coded as dichotomies



The following controls are appropriate for representing multiple response sets coded as dichotomies:

- Check boxes
- Single-selection list boxes
- Text boxes
- Drop-down lists

### To Create a Multiple Response Question Representing a Set Coded As Dichotomies

- ▶ If the toolbox is not visible, from the Form window menus choose:
  - View
  - Toolbox
- ▶ Move the mouse pointer over the check box question tool and hold down the left mouse button to display the check box well. (You can also use single-selection list boxes, text boxes, or drop-down lists.)

- ▶ Drag and release the mouse in the check box well to select as many check boxes as you need.
- ▶ Click on the form to create the question. (If you have chosen list boxes, text boxes, or drop-down lists, use the right mouse button to create the question and select Dichotomies - numeric or Dichotomies - string.)

When you create the multiple response question, the multiple response set is also created.

- ▶ To define the multiple response set, right-click on the question and select Variable Properties.
- ▶ To define the component variables, right-click on the question and select Variable Properties. You can use Copy Properties and Paste Properties on the Edit menu of the Builder window to apply the same properties to multiple response variables.

## ***Multiple Response Questions Representing Sets Coded As Categories***

A multiple response question that represents a set coded as categories collects responses in text boxes, drop-down lists, or single-selection list boxes. For example, you could use three text boxes to receive the responses and ask the question *In order of frequency, please list the three stores you use for purchasing high-tech equipment.*

Figure 8-3

*Multiple response question represented with text boxes*

In order of frequency, please list the three stores you use for purchasing high tech equipment.

1.

2.

3.

Variable	Subquestions
Shop1	Which store do you most often use for purchasing high-tech equipment?
Shop2	Which store do you second most often use for purchasing high-tech equipment?
Shop3	Which store do you third most often use for purchasing high-tech equipment?

The respondent is able to type in the required responses, and each response is stored in its own variable. In this example, each of the responses represents a different store, which, when analyzed together, represent a multiple response set coded as categories. Note that string variables in a multiple response set are limited to eight characters and that string variables are case sensitive, so that Techshop and TechShop are different values. For that reason, you may prefer to use numeric variables or short alphabetic codes and have users select responses from a set of list boxes or enter codes from a list that you provide.

### Multiple Response Sets Coded As Categories

When you want to receive open-ended responses or a limited number of responses selected from predefined categories, you can use a multiple response set coded as categories. A set coded as categories asks a question and provides a number of text boxes to collect the responses. Each text box represents a variable that is part of the set. You can also use single-selection list boxes or drop-down list boxes to display predefined categories.

Figure 8-4

*Multiple response set coded as categories*



## ***To Create a Multiple Response Question Representing a Set Coded As Categories***

- ▶ Move the mouse pointer over the text box question tool and hold down the left mouse button to display the text box well. (You can also use single-selection list boxes or drop-down lists.)
- ▶ Drag and release the mouse in the tool well to specify the number and arrangement of objects.
- ▶ Right-click on the form and select either Categories - string or Categories - numeric to create the question.

When you create the multiple response question, the multiple response set is also created.

- ▶ To define the multiple response set, right-click on the question and select Variable Properties.
- ▶ To define the component variables, right-click on the question and select Variable Properties. You can use Copy Properties and Paste Properties on the Edit menu of the Builder window to apply the same properties to multiple variables.

## ***Creating Multiple Response Sets***

When you create multiple response questions using the form toolbox, sets are created automatically. However, you can define sets that do not have questions representing them. Create and define your set in the Builder window and then create the question representing it by dragging the set onto the form.

### ***To Insert a Multiple Response Set***

- ▶ From the Builder window menus choose:
  - Insert
  - Multiple Response Set
  - Dichotomies... (Categories...)
- ▶ In the Set Properties window, under the General tab, give the set a name and optionally a label and question text. Under the Members tab, check the variables that you want to include in the set.
- ▶ Alternatively, click Insert New Variable once for each new variable that you want to include in the set and return to the Builder window to select and define properties for the individual variables you created. You can use Copy Properties and Paste Properties on the Edit menu of the Builder window to apply the same properties to multiple variables.

There is a limit of 200 sets within a file.

### ***To Create a Multiple Response Question from an Existing Set***

- ▶ From the Builder window menus choose:
  - View
  - Variables
- ▶ Select a set.
- ▶ Click the right mouse button and drag the set onto a form.
- ▶ From the context menu, select the type of question that you want to represent your multiple response set.

## ***Deleting Multiple Response Sets***

Deleting a multiple response set deletes the variable and any questions that represent the set. The member variables still exist. For example, if you have a multiple response set question with the set variable *\$service* and the member variables *atm*, *teller*, *online*, *phone*, and *loan*, when you delete *\$service*, the other variables are not deleted. If you don't want to use the member variables in your file, you must delete them separately.

Whenever you delete a variable or set, you also delete any questions or rules that are tied to the variable or set.

### ***To Delete a Multiple Response Set***

- ▶ From the Builder window menus choose:

- View  
Variables

- ▶ Select the set that you want to delete.

- ▶ From the Builder window menus choose:

- Edit  
Delete

## ***Changing Multiple Response Set Types***

If you want to change the type of multiple response set, you must delete it and define a new one using the same set of variables. If you want to analyze the same variables in different types of sets, you can define a new set without deleting the original one.

## ***Multiple Response Set Properties***

Properties control several characteristics of sets, including:

- Set name
- Set alias
- Set label
- Set question text

- Comment field
- Counted value (dichotomies only)
- Set membership

Figure 8-5

*Multiple response set properties*

**Set Properties: \$shop**

General | Members

Name: \$ shop      Alias: shop

Label: Shopping Locations

Question text:  Link with set label

Which stores do you shop in?

Counted value for dichotomies: [ ]

Comments:

Close      Help

### ***To Change Multiple Response Set Properties***

- ▶ From the Builder window menus choose:  
View  
Variables
- ▶ Right-click on the multiple response set and choose Variable/Set Properties.
- ▶ Change the properties.  
Changes are applied as they are made.

## Multiple Response Set General Properties

Figure 8-6  
Multiple response set general properties

The screenshot shows a dialog box titled "Set Properties: \$shop". It has two tabs: "General" and "Members". The "General" tab is selected. The dialog contains the following fields and controls:

- Name:** A text field containing "\$ shop".
- Alias:** A text field containing "shop".
- Label:** A text field containing "Shopping Locations".
- Question text:** A text area containing "Which stores do you shop in?". To its left is a checkbox labeled "Link with set label", which is currently unchecked.
- Counted value for dichotomies:** A dropdown menu.
- Comments:** A large text area.
- Buttons:** "Close" and "Help" buttons are located at the bottom right of the dialog.

**Name.** All set names must start with a \$, which is provided preceding the name entry field. You do not have to type the \$. Set names may not exceed 8 characters, including the \$.

**Alias.** An alias is the alternative name for the set. Because JScript, which is used in the creation of rules, does not allow names to start with a \$, you must create an alias for use in scripting and rules. The alias must start with a letter, must contain only numbers, letters, and underscores, and must be a name not used elsewhere in the file.

**Label.** The set label allows you to create a description of the set that will appear in statistical and graphical output when you run analyses on your data.

**Question text.** Question text is displayed on the form. By default, the question text and set label are linked.

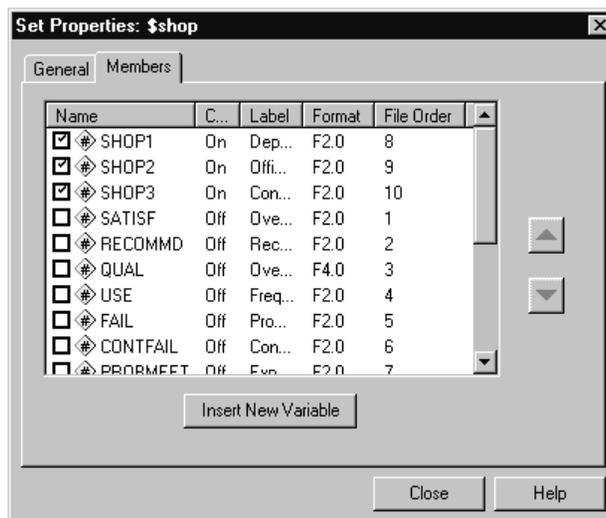
**Link with set label.** When checked, the question text and set label are identical, and changes to one are automatically made to the other. You may want to unlink the question text and set label for the purpose of having succinct, readable output in your data analysis. For example, if the question text is *Which forms of transportation have you used in the last month?*, you may want to unlink your set label and question text and use “transportation” for your set label.

**Counted value for dichotomies.** This specifies the value of interest for analysis. The counted value normally equals the checked value or the value that represents an answer of *yes*. The counted value is essential for the analysis of dichotomous sets.

**Comments.** This allows you to store comments regarding the set.

## Multiple Response Set Members Properties

Figure 8-7  
Multiple response set members properties



The Members tab allows you to add and remove variables from your set. A set must include at least two variables. There is a limit of 100 variables within a set and 4000 variables across all sets. Your set must contain variables of the same type. For example, you are not able to add a string variable to a set containing numeric variables. If a member's type changes later in the design process, the variable is automatically removed from the set.

When you add a variable to a set, it is checked for type consistency with the other variables. In the interest of good design, in a multiple categories set, the value labels should be consistent across variables. In a multiple dichotomies set, the variables' checked/unchecked property should be consistent, and the variable labels should be consistent. You can have inconsistent labels and checked/unchecked properties within your sets, but they can cause problems during analysis.

You can use the up and down buttons to reorder set members. You can also click on a variable and drag it to a position within the list of members.

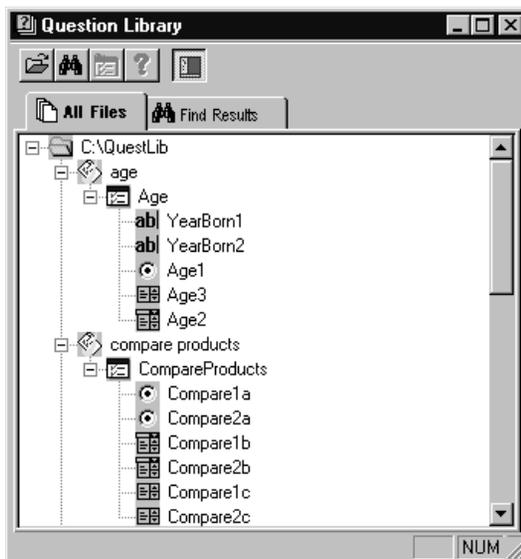


# ***Question Libraries***

The question libraries are a collection of files containing ready-to-use questions on topics, such as general demographics, customer satisfaction, and customer preferences. The variables attached to the questions are defined, including value labels and response items. You can use the questions in your files. You can also add files of your own to the question libraries.

## ***Using the Question Libraries***

Figure 9-1  
*Question Library window*



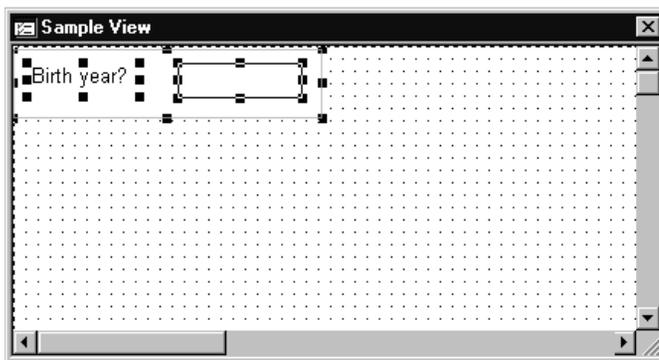
You can access the question libraries from the Edit menu. The Question Library window displays the contents of the question libraries in levels. At the top level is the folder. The *QuestLib* folder contains all of the question libraries files (.*qlb*) that accompany the software. Clicking on a plus sign displays the next level. You can browse through files, forms, and questions.

The Question Library window contains a toolbar, which will allow you to perform several tasks. Hold the mouse pointer over a tool to display the ToolTip that briefly describes what the tool does. The toolbar allows you to:

- Add a folder to the question libraries.
- Search through text in the question libraries.
- Add questions or forms to your file.
- Display Help.
- Open and close the Sample View window.

If you want to view a question or form, you can do so in the Sample View window. To open the Sample View window, double-click a form or question or click the Show Sample button on the toolbar. Once the Sample View window is open, you can click on a form or a question to display it in the window.

Figure 9-2  
*Question in the Sample View window*



## **To Add a Question to Your Form**

To open the question libraries:

- ▶ From the menus choose:  
Edit  
Question Library

To add a question to the current form in the current file:

- ▶ In the Question Library window, click the question that you want to add.
- ▶ Click the Add To button on the toolbar.

When you add the question to your form, Builder creates a variable for your question. You can edit the text of the question, the variable label, and any other variable properties. For example, you might want to specify missing values for the variable.

You can also add an entire form to your file by using the Add To button. When a form is added to your file, variables are created for all of the questions on the form. You can edit the questions or variables on your newly added form.

If you have more than one file open or have a multiform file, you can use context menus to add the question to a form other than the current form.

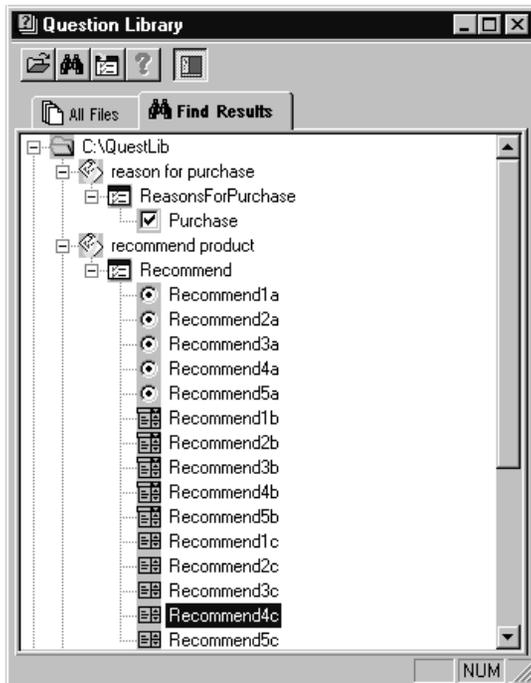
- ▶ In the Question Library window, right-click the question that you want to add to your form.
- ▶ From the context menu, select Add To.
- ▶ Select the appropriate file.

## **Searching for a Question in the Question Libraries**

You can search through the text of the question libraries to locate an appropriate question. For example, if you are looking for a question on product recommendations, you could search for the word *recommend*. You will see all of the questions containing the word *recommend* in the Find Results tab in the Question Library window. You can

add questions to your file from that tab, just as you can from the All Files tab. Click the All Files tab to return to the question libraries folders.

Figure 9-3  
*Results displayed in the Find Results tab*



### ***To Search in the Question Libraries***

- ▶ Click the Find button on the toolbar.
- ▶ Specify the words that you want to search for.
- ▶ Click OK.

## ***Adding Files to the Question Libraries***

You can add your own files to the question libraries. This allows you to preserve questions for use in later files. Following are some general tips for creating files that lend themselves well to the question libraries.

- Make sure that all variable labels, values, and response items are fully and clearly defined.
- Rename your questions so that they have clearly understandable names. For example, if the default name for a question is *Question1*, renaming your question to *Satisfaction* will give you an idea of the question's content.
- Group questions together on forms according to their purpose and then name the form accordingly. This will make it easier to find the type of question you need.
- By default, question library files are installed in the *QuestLib* subfolder, located under the same directory as your program software. Save all of your question library files in the *QuestLib* folder so that they will automatically appear when you open the Question Library window. If you decide to add the file to a different folder, you will have to add the folder to the Question Library window.
- Once you have added your file to the question libraries, you will have to refresh the view in the Question Library window.

## ***To Add a File to the Question Libraries***

- ▶ Open the file that you want to add to the question libraries.
- ▶ From the Builder window menus choose:
  - File
  - Add to Question Library...
- ▶ In the Save In drop-down list, browse to the folder in which you want to save the file.
- ▶ In the File Name text box, enter a filename. Select Question Library Files (.qlb) from the Save as Type drop-down list.
- ▶ In the Question Library window, right-click on the *QuestLib* folder and select Refresh from the context menu.

By default, question library files are installed in the *QuestLib* subfolder, located under the same directory as your program software. Files in the *QuestLib* subfolder automatically appear in the Question Library window. If you saved your new question library file to a folder other than *QuestLib*, you will have to add the folder so that it will appear automatically when you open the Question Library window.

To add a folder to the Question Library window:

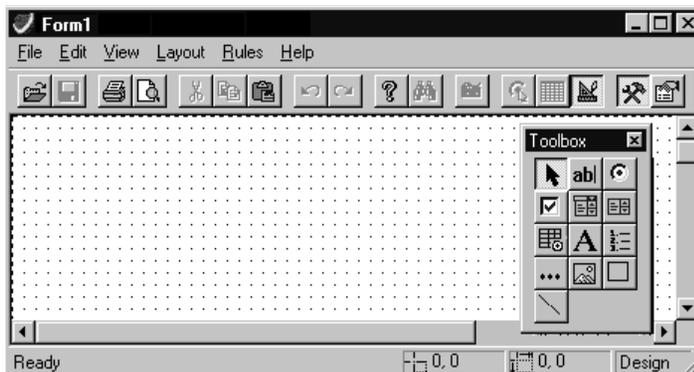
- ▶ Right-click inside the Question Library window.
- ▶ From the context menu, select Add Folder.

**Note:** When you view your new folder in the Question Library window, you will see only the question library files (*.qlb*). If there are additional files in the new folder that you would like to use in the Question Library window, you will have to open them and add them as above. You will also have to refresh the view in the Question Library window by right-clicking in the window and selecting Refresh from the context menu.

# Forms

A form is the device you use to collect and view your data. The form holds the questions and response controls used to gather the data. The form is saved as part of your file when you save your file. There is no need to save only the form.

Figure 10-1  
*Form window and toolbox*



Before you begin to design your form, you should consider who will use the form, what they will use it for, and how they will use it. Answering the following questions will allow you to develop the form(s) that will best suit the needs of your users:

- Who will use the form? What is their level of expertise?
- Will they use it on paper or within the data entry program?
- If you want to use a paper form, will someone then enter the data online?

## When Do You Need Separate Versions of a Form?

The program allows you to create forms for both printed questionnaires and online data entry via an entry form or a spreadsheet. You can often use the same form for both printing and online data entry. However, the program allows you to create alternate versions of forms, linked to the same set of variables. You may want to use two different forms for a number of reasons.

Figure 10-2  
Online form and printed form

The figure shows two versions of a 'Customer Satisfaction Survey' form. The top version is a printed form, and the bottom version is an online entry form displayed in a software window.

**Printed Form (Top):**

**Customer Satisfaction Survey**

Product (select all that apply)

Fax Machine

Copier

Would you recommend this product?

Yes

No

How would you rate your overall satisfaction with this product?

Very satisfied

Somewhat satisfied

Did the product ever fail to operate?

Yes

No *If no, skip to the next section*

**Online Entry Form (Bottom):**

**Online Entry Form**

File Edit View Data Rules Help

3

**Customer Satisfaction Survey**

Product (select all that apply)

Fax Machine

Copier

Would you recommend this product?

Yes

No

How would you rate your overall satisfaction with this product?

Very satisfied

Somewhat satisfied

Somewhat dissatisfied

Very Dissatisfied

No Answer

Did the product ever fail to operate?

Yes

No *If no, please skip to the next section*

Did you contact us to fix the problem?

Yes

No

Ready | 3/3 | Skip & Fill: On | Auto Check: On

- Your online form might display instructions for the interview that you don't want to appear on a printed form. Or, a printed form might require more instructions that are unnecessary online. For example, rules can automate Skip & Fill patterns in an online form, but you would need to include written skip instructions on a printed form.
- You want to hide questions or responses on a printed form. For example, you don't want to have a *Didn't respond* option on a printed form.
- Some control types, such as drop-down lists, do not work well in print.
- You may want your printed form to differ in appearance from your online form.
- You want to create several forms with the same questions but in different order. For example, you want to control the possibility that question order biases responses.
- You want to split all of your questions across several forms to make entry easier.
- You want to send different groups of respondents different copies of a survey.

### ***To Make a Copy of a Form***

- ▶ From the Builder window menus choose:

View  
Forms

- ▶ Select the form you want to copy.

- ▶ From the Builder window menus choose:

Edit  
Copy

- ▶ From the Builder window menus choose:

Edit  
Paste

If you copy and paste a form to the same file, the result is two separate forms bound to a common set of variables. You can customize the arrangement and appearance of questions on each form as needed. However, if you edit question text or response items or make other changes to your variables, both forms are updated.

If you copy and paste a form from one file into another file, the variables on the form are also copied into the other file. Changes made to a form in one file are not made to the form in the other file.

## To Create a Form for Table Entry

Figure 10-3  
Form in Table Entry view

	fax	copier	satisf	fail	contfail	recommd	birth	fincome
1	0	0						
2								
3	0	Yes	Very satisfied	No		Yes	1965	\$35,000 to \$44,99
4	Yes	Yes	Somewhat sa	Yes	No	No	1951	\$65,000 to \$74,99
5								
6								

If you don't want to spend time formatting the appearance or arrangements of questions on your form, use the Auto-create feature, which allows you to automatically create a form, maximized for entry in Table Entry view. To use Auto-create, you must have defined variables, either from an *.sav* file created in Builder or in another program from SPSS. You can use *.sav* files that already have forms.

- ▶ From the Form menu choose:
    - Layout
    - Auto Create Questions...
  - ▶ Select either Create all questions as text boxes or Create questions based on default types.
- Tip:** Creating all questions as text boxes makes it easier to enter data in Table Entry view, since your hands do not have to leave the keyboard to use the mouse.
- ▶ If you want to edit the form, deselect Open in Table Entry Mode.

## Designing a Form for an Interview

The following are suggestions for adapting a form for use in an interview:

- Use text annotations to incorporate the script into the form. You can also use text annotation objects to provide additional instructions to the interviewer.

- Make sure that AutoTab is selected to speed the entry process.
- Create Validation and Skip & Fill rules to speed entry.
- You can use multiple forms to display only one question at a time.
- Size the form to fit your screen. Consider the type of computer and the monitor size used in the interview. Forms for use on laptop computers should be sized to accommodate the screen resolution.
- Include responses such as *Refused to answer* and *Didn't know* (which would be suppressed in a printed form).

## ***Designing a Form for Printing***

The following are guidelines for designing a form for printing:

- Choose a font that is large enough to read.
- For questions that require a written response, size the entry area to allow enough space for handwriting and make sure that the space is long enough to accommodate responses of reasonable length.
- Design the form to include plenty of white space so that the form does not appear to be cluttered.
- Use lines to break the form into sections.
- Set the margins and page size large enough to accommodate your form when you print the form.
- Add instructions and graphics to aid the respondent.
- Hide response items such as *Refused to answer* that you may have included on your online form. You can hide a response without removing it by setting the Visible property to False for the response control.
- Use the Layout menu or toolbar to ensure the neatness of the arrangement.
- Use Print Preview and View Page Breaks to ensure that questions are not split across pages.
- Consider which controls you use because some controls (such as a drop-down list) will not work on a printed form.
- Provide directions for skip patterns, and filling out and returning the form.
- Remember, people are likely to fill out a form only if it is clear and easy to use.
- Print the form in Form Entry view, either before you enter cases or before you enter data into a new case.

## ***Customizing Forms***

This section describes how to specify form properties, set the page size, add headers and footers to a printed form, and add text labels, lines, rectangles, and pictures.

- For information on creating questions, see Chapter 4.
- For information on selecting, modifying, and aligning questions and other objects on forms, see Chapter 5.
- For information on question numbering, see Chapter 5.

### ***To Insert a New Form***

When you start a session, a blank form is automatically displayed; you don't need to insert a new form unless you want multiple forms in your file.

- ▶ To list the forms already in your file, from the Builder window menus choose:

View  
Forms

- ▶ To insert a new form in the Builder window, from the menus choose:

Insert  
Form

- ▶ To insert a form in the Form window, from the menus choose:

File  
New Form

- ▶ To specify the form name, default font, and other form properties, right-click on the form's background and select Properties.

- ▶ Use the form toolbox to add questions and other objects to the form.

See Chapter 4 and Chapter 5 for more information on creating and customizing questions.

## ***To Specify Form Properties***

You can use the Properties window to specify the form name, window style, and the text displayed in the Form window title bar.

- ▶ In the Form window, right-click on the form's background and select Properties.
- ▶ Enter a form name.
- ▶ Enter the title bar text and press Enter.
- ▶ To restrict the size of the Form window so that it cannot be resized in Entry view, change the window style to Fixed.
- ▶ If you want your questions numbered automatically, change the AutoNumber property to True.

For more information on question numbering, see Chapter 5.

## ***To Copy a Form***

### **To copy a form within the same file:**

- ▶ From the Builder window menus choose:
  - View
  - Forms
- ▶ Select the form you want to copy.
- ▶ From the Builder window menus choose:
  - Edit
  - Copy
- ▶ From the Builder window menus choose:
  - Edit
  - Paste

**To copy a form between files:**

- ▶ Select the form you want to copy.
- ▶ Drag and drop it into the other file's Builder window.

If you copy and paste a form to the same file, the result is two separate forms bound to a common set of variables. You can customize the arrangement and appearance of questions on each form as needed. However, if you edit question text or response items or make other changes to your variables, both forms are updated.

If you copy and paste a form from one file into another file, the variables on the form are also copied into the other file. Changes made to a form in one file are not made to the form in the other file.

***Using Find and Replace in the Form Window***

In the Form window, you can search through your form's questions, variables, and properties to locate text phrases. You can also replace text in your form's questions, variables, and properties. You can search through only one form at a time. If you want to search through another form, you must open that form. If you want to search through your entire file, use the Builder window. If you want to search through your data, search in Form Entry or Table Entry view.

***To Find and Replace in a Form***

- ▶ From the Form window menus choose:
  - Edit
  - Replace...
- ▶ Specify the text to search for.
- ▶ Specify the replacement text.
- ▶ Click OK.
- ▶ To search through another form, open that form.

---

## ***Spell Checking Text in the Form Window***

In the Form window, you can check the spelling of your form's questions and text labels. If a word is misspelled, the spell checking tool suggests alternatives, which you can select to replace the spelling error. You can check the spelling in only one form at a time.

### ***To Spell Check Text in a Form***

- ▶ From the Form window menus choose:

- Edit
- Spell Check

The Check Spelling dialog box appears if there are any spelling errors. For details about using it, click Help in the dialog box.

## ***Page Size and Window Size***

Page size refers to the size of the page when the form is printed. The form size is not restricted by the page or window size; forms can be as many pages long (or wide) as you want. To ensure that questions don't split across pages, you can display page breaks when designing the form by choosing the Page Breaks option in the View menu.

Window size refers to the size of the Form window. By default, users can resize the Form window at will by dragging the sides and corners; you can change this by setting the window style to Fixed in the Properties window.

**Tip:** When designing a form for online use, always consider the user's display size. This is especially important if laptop computers will be used for entering data, since laptops typically have smaller displays than desktop computers.

### ***To Set the Page Size for a Form***

- ▶ From the Form window menus choose:
  - File
  - Page Setup...
- ▶ Specify the desired page size and margin width.
- ▶ Select either the narrow or the wide orientation (portrait or landscape).

### ***To View Page Breaks***

To ensure that questions don't split across pages, you can display page breaks when designing the form.

- ▶ From the Form window menus choose:
    - View
    - Page Breaks
- Page breaks are displayed as dashed lines whenever the form is open in Design view.

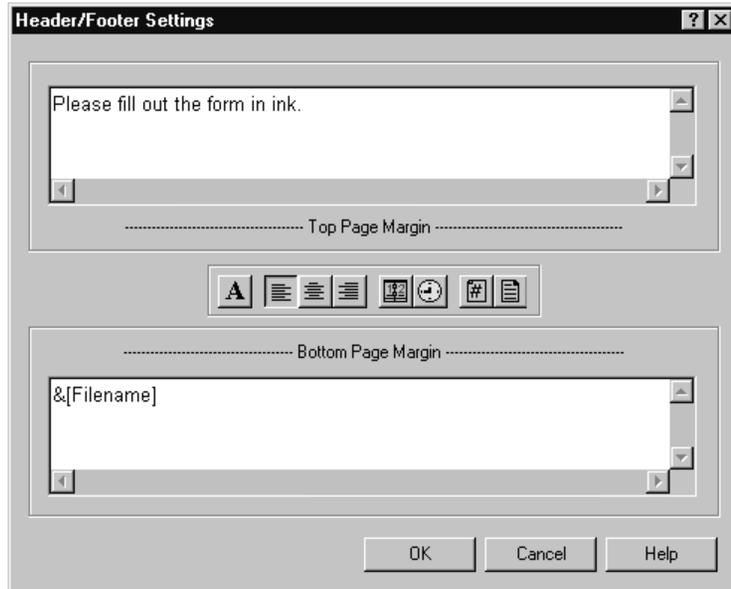
## ***Headers and Footers***

You can add custom headers and footers to a printed form. For example, you can use headers to add contact information or to insert instructions that are necessary only on a printed form, such as where to send the form after it is completed. Headers and footers also allow you to include pertinent reference information, such as the date, filename, or identification codes.

### ***To Add Headers and Footers to a Form***

- ▶ From the Form window menus choose:
  - View
  - Headers/Footers...

Figure 10-4  
Header/Footer Settings dialog box



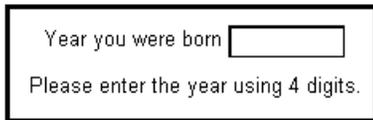
- ▶ In the Header/Footer Settings dialog box, enter the text that you want to appear in the header or footer.
- ▶ Use the buttons in the dialog box to add the date, time, page numbers, or filenames.
- ▶ Use the buttons to change the font or justification of your headers and footers.
- ▶ Choose Print Preview on the File menu to see how your headers and footers will look on the printed page.

## **To Add Text Labels to a Form**

Use the text tool to add text that is not bound to any variable. This can be useful for comments, directions, or codes.

Figure 10-5

*Text added to a question*

A screenshot of a form question. The question text is "Year you were born" followed by a text input field. Below the input field, there is a separate line of text: "Please enter the year using 4 digits." The entire content is enclosed in a black rectangular border.

- ▶ If the form toolbox is not visible, from the menus choose:
  - View
  - Toolbox
- ▶ In the form toolbox, click on the text tool.
- ▶ Click on the form to add the text.
- ▶ Double-click on the text to edit the text.
  - Before editing the text, you may want to make the text label larger by dragging the selection handles so you can see more text as you type.
  - If you insert text within an existing question, the text becomes part of the question. If you move or delete the question, the text goes with it.
  - If you want text to overlap a question but not be part of the question, create the text on the form (away from the question), and then drag the text over the question.

If necessary, you can move the text on top of the question. From the menus choose:

- Layout
- Layer
- Bring to Front

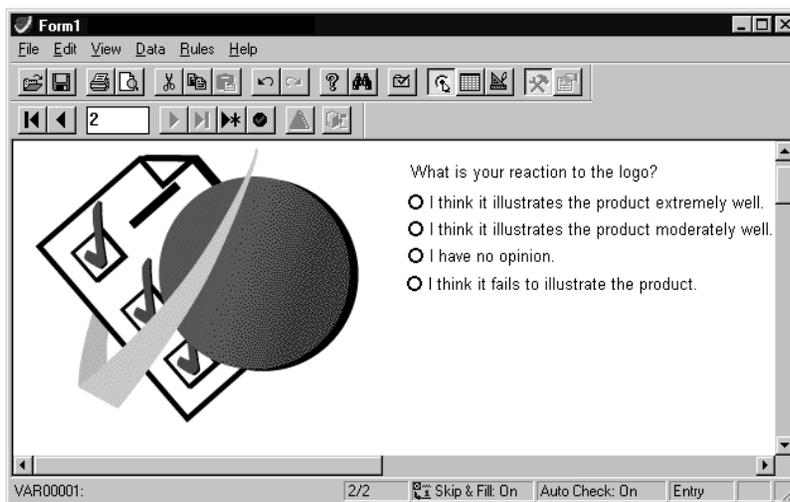
## To Draw Lines and Rectangles on a Form

You can improve the appearance and usability of forms by drawing lines and rectangles.

- ▶ Select the line or rectangle tool from the toolbox.
- ▶ Draw the line or rectangle on the form.
- ▶ To specify the color, thickness, and other properties, right-click on the line or rectangle and select Properties.
  - In the Properties window, use *ArrowStyle* to create lines with arrows on the ends to illustrate skip patterns on printed questionnaires.
  - You can use rectangles to group questions together or to create a background shadow.
  - Use the *Bring to Front* and *Send to Back* commands to adjust the appearance of rectangles used for background shadows.

## To Add a Picture to a Form

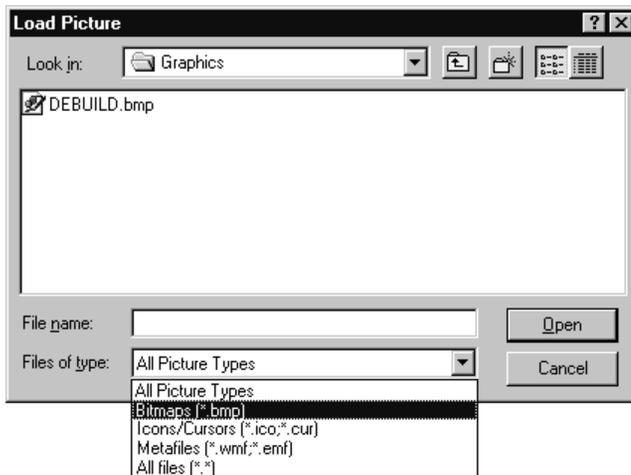
Figure 10-6  
Form with picture



- ▶ If the form toolbox is not visible, from the menus choose:  
View  
Toolbox
- ▶ In the form toolbox, click on the picture tool.
- ▶ Click on the form where you want the picture to appear.
- ▶ Right-click on the empty picture object and select Properties.
- ▶ In the Properties window, double-click Picture.

Figure 10-7

Load Picture dialog box



- ▶ In the Load Picture dialog box, browse for or enter the name of the picture file you want to open. You can open bitmaps (*.bmp*), Windows metafiles (*.wmf*), icons (*.ico*), *.gif* files, and *.jpg* files.

## ***Adding Questions to Forms***

You can add questions to your form using the form toolbox or by dragging variables from the Builder window onto the form.

- For information on creating questions, see Chapter 4.
- For information on selecting, modifying, and aligning questions and other objects on forms, see Chapter 5.

## ***Creating a Form from an Existing Data File***

You can generate a form from an existing data file by opening the file in the Builder window and dragging the variables from the Builder window onto the form. See Chapter 4 for more information.

## ***Tab Order***

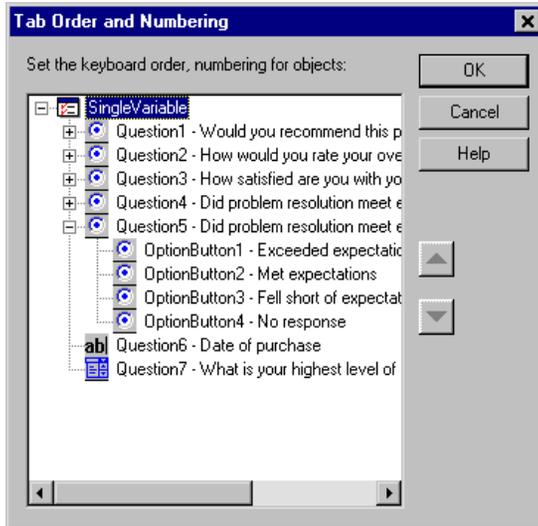
Tab order specifies the sequence in which users can move through questions on the form by pressing Tab (or Shift-Tab) in Form Entry or Table Entry view. You can also specify the tab order for subquestions with a multiple response question, or specify the sequence in which arrow keys cycle through buttons in an option button question. By default, the tab order corresponds to the order in which your questions are created.

Tab order is extremely important in question numbering. The tab order is the sequence used to determine question numbering. If you change the order of the questions on your form, you will have to change the tab order to ensure that navigation is preserved and also that the question numbers reflect the correct order of the questions. For more information on question numbering, see Chapter 4.

## To Specify the Tab Order for a Form

Tab order specifies the sequence in which users can move through questions on the form by pressing Tab (or Shift-Tab) in Form Entry or Table Entry view.

Figure 10-8  
Tab Order dialog box



- ▶ From the menus choose:
  - Layout
  - Tab Order and Numbering...
- ▶ Select questions with the mouse and use the arrow buttons to move them up or down in the tab order, or drag them up or down with the mouse.
  - To specify the tab order for subquestions within a multiple response question, double-click the question (or click the plus sign [+] icon).
  - To specify the sequence in which arrow buttons cycle through buttons within an option button question, double-click the question.

The question number appears in front of the question name. When you change the tab order of your questions, the question numbers change automatically.

# Rules

Rules increase the integrity of your data and help make the data entry process more efficient. Rules enable you to:

- Catch invalid values as they are entered.
- Check for illogical relationships between variables.
- Fill in values for questions based on previously entered values.
- Skip questions that are not applicable for particular cases.
- Generate reports of invalid or inappropriate values.
- Check and clean existing data files.

A rule remains inactive until it is triggered by an event that affects the variable or question involved with the rule or until you select a menu option that uses the rules to check the data. A rule attached to the variable *PRODUCT*, for example, might activate when an incorrect value is entered for that variable.

You can use rules to verify values and cases as they are entered or to check an entire file at once. You can also use rules to clean and verify existing data files created with data analysis software from SPSS Inc. Checking values as they are entered enables you to catch and fix incorrect values immediately, minimizing the chances of invalid data getting into your file. Using rules to check an entire file at once allows you to clean data files previously created with such data analysis software. Rules allow you to easily change and correct any invalid responses.

Three types of rules are available: Validation, Checking, and Skip & Fill. Each type of rule is responsible for different aspects of improving the data entry process, is triggered by different events, and results in different actions when violated.

## ***Rules and JScript***

Rules are scripts—sets of JScript commands that help you automate your data entry tasks—written in the JScript programming language and saved in your file. JScript is Microsoft’s version of the JavaScript scripting language and is an interpreted, object-based scripting language.

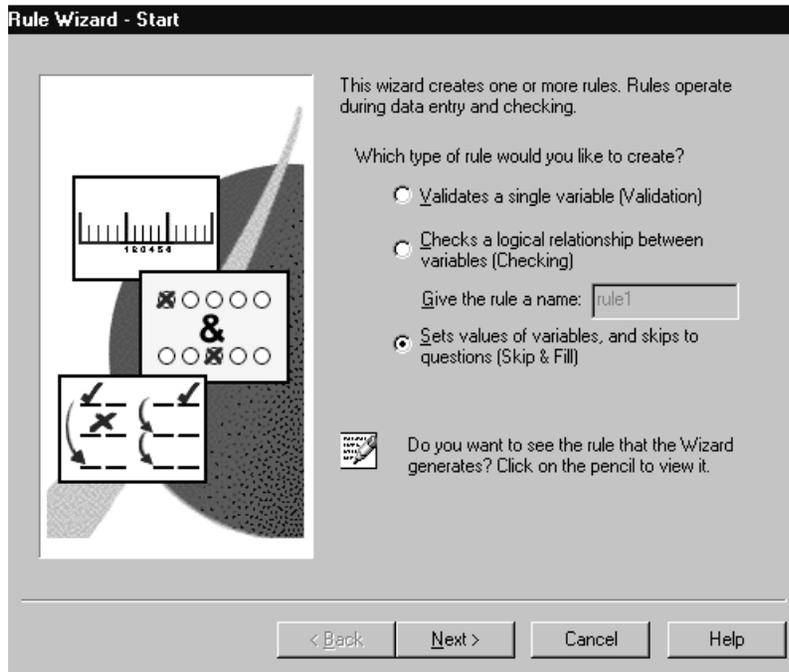
You can create rules effortlessly using the Rule Wizard—you do not have to know JScript or any other programming language in order to create powerful rules with the Rule Wizard. If you are familiar with the JScript programming language, you can create rules by entering the necessary JScript commands directly into the Rule Scripts window. You can also use JScript and the Rule Scripts window to edit and extend the functionality of rules created with the Rule Wizard. See the online JScript help for more information on using JScript.

### ***Creating Rules***

Rules can be created by using the Rule Wizard or by selecting the New Rule option from the Scripts menu in the Rule Scripts window and directly entering the JScript commands. Unless you’re an experienced JScript user, however, you will probably want to begin by creating your rules with the Rule Wizard. Once you are familiar with the JScript code that is created for you by the Wizard, you should be able to edit existing rules to fit your needs. See Chapter 12 for information on creating rules without the Rule Wizard.

## Rule Wizard

Figure 11-1  
Rule Wizard



The Rule Wizard makes it easy to create Validation, Checking, and Skip & Fill rules by guiding you through each step of the process. After you complete the steps necessary to create a rule and click the Finish button, your new rule is added to the survey file. Be aware that when you use the Rule Wizard to create a rule, you are actually creating a JScript script—the Wizard creates the script for you.

- You cannot use the Rule Wizard to edit scripts. Once a rule is created, you must use the Rule Scripts window to revise it. If you are not familiar with the JScript language and are uncomfortable with editing a script, it is best to simply delete the rule and recreate it using the Wizard.

## **To View a Rule Script in the Rule Wizard**

Figure 11-2  
*Rule Wizard pencil icon*



When you use the Rule Wizard to create a rule, you are actually creating a script—the Wizard writes the JScript code for you. You can view the rule script that is being created by clicking the pencil icon. However, you cannot edit the script here. To edit a script, you must complete the rule and open the script in the Rule Scripts window.

## **Validation Rules**

Validation rules:

- Help ensure data integrity by requiring data to conform to criteria that you select during rule creation.
- Are attached to variables and are given the same name (by the software) as the variable.
- Are triggered whenever they encounter an invalid value for a given variable. For example, if you define the valid values for *AGE* as 18 through 90, a Validation rule will display an alert when you try to enter 150.

You can set Validation rules to verify values during data entry or to check an existing data file. If you set the rules to activate during data entry, an alert is given as soon as an invalid value is entered. When you want to check an existing data file, use *Check File* on the Rules menu in the Builder or Form windows. This produces a report of all the rules violated, sorted either by case or by rule.

**Tip:** In some cases, you do not even need a Validation rule. The variable type can also determine values that are invalid. For example, the software will not let you enter non-numeric characters into a numeric field.

## ***Validation Rule Specifications***

There are three main elements in a Validation rule:

**Variables.** The variable(s) to which the rule will be assigned. If you are using the Rule Wizard and you select more than one variable, the Wizard will create a separate rule for each variable. The scripts of these rules are identical, with the exception of the variable name.

- A variable can have only one Validation rule attached it. Variables that already have Validation rules assigned to them are not shown in the Rule Wizard variable list.

**Alert.** The type of alert that is given for invalid entries.

**Valid value criteria.** The criteria that determine which values are accepted as valid. Values outside of these criteria will be flagged as they are entered or during case and file checking. You can choose to restrict valid values to any or all of the following: values that are labeled or have response items, user-missing values, system-missing values, a range of values (enter the lower and upper bounds), or whole numbers.

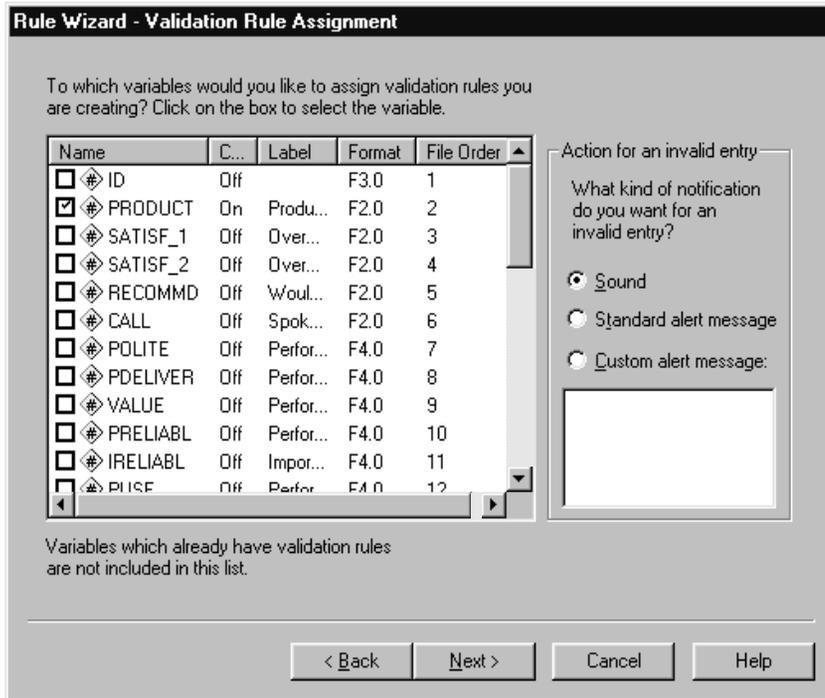
Your new Validation rule will be identified by the variable to which it is attached. For example, if you create a new rule for the variable *SALES*, the new rule is listed in the Builder rules list as *SALES*.

**Tip:** In some cases, you do not even need a Validation rule. The variable type can also determine values that are invalid. For example, the system will not let you enter a string variable into a numeric field.

### ***To Create a Validation Rule with the Rule Wizard***

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Wizard...
- ▶ Select Validates a single variable (Validation).

Figure 11-3  
 Rule Wizard--Assigning a Validation rule to a variable



- ▶ Select the variable(s) to which the new rule will be applied by clicking the check box to the left of the variable. You can create many rules with the same criteria at once by selecting more than one variable.
- ▶ Select the type of notification that will warn you of invalid entries. If you select Custom alert message, you must enter the message text.

Figure 11-4  
Rule Wizard--Determining valid values in a Validation rule

**Rule Wizard -- Variable Validation**

Which values are valid?  
Check the types of values to be accepted. All others are flagged during entry and checking. If none are checked, all values are valid.

Check all that apply:

- Values which are labeled and response items
- User-defined missing values
- System-missing value

Range of values:

Lower bound:  Upper bound:

All values must be whole numbers



< Back Finish Cancel Help

- ▶ Select the criteria that determine which values are valid.
- ▶ Click Finish to create the rule.

### Tips

- Click the pencil icon to view the rule script.
- Use Rule Options to determine how and when Validation rules activate.

## Creating Validation Rules with the Variable Properties Settings

A Validation rule is automatically created when you set the acceptable values for a variable using the Valid Values tab of the Variable Properties window. The result is the same as when you create a Validation rule with the Rule Wizard, except that you are not able to select the type of notification for invalid entries. A sound (the default notification) is used.

Figure 11-5  
Variable Properties–Valid Values tab



- Variables that already have Validation rules assigned to them are not shown in the Rule Wizard variable list. If you try to create a Validation rule with the Wizard and can't see the variable you're looking for, you may have already created one by setting the Valid Values. If you want to revise the rule and are familiar with JScript, use the Rule Scripts window. Otherwise, delete the rule and create a new one using the Wizard.

## **Validation Rule Example**

The following example shows you how to create a Validation rule that checks to see if a respondent's age is within an acceptable range. You can find the variable used, *BIRTH*, in the Customer Satisfaction Survey, which was installed with the program.

To create the rule:

- ▶ From the menus choose:
  - Rules
  - Rule Wizard...
- ▶ In the Rule Wizard - Start dialog box, click Validates a single variable (Validation).
- ▶ Click Next.
- ▶ In the Rule Wizard - Validation Rule Assignment dialog box, click *BIRTH*, which selects the variable for the rule.
- ▶ Click Standard Alert Message.
- ▶ Click Next.

Now that you have selected the rule type and the variable to which the rule applies, the final step is to specify the criteria for the rule. Given that this is a business-oriented survey, you can assume that your respondents should fall within the ages of 18 to 75. You will create the rule so that it will trigger if someone claims to be younger than 18 or older than 75.

- ▶ In the Rule Wizard - Variable Validation dialog box, type 1925 for the Lower bound and type 1982 for the Upper bound.
- ▶ Click Finish.

### **Example: Validation Rule Script**

You can view the Validation rule you created by clicking the Rules icon in the Builder window and then double-clicking on the rule named *BIRTH*.

For more complex rules, see Chapter 12.

```
function BIRTH_Validate(thisVar) // Generated by wizard
{
    if (thisVar.IsNotValid())
    {
        RuleViolation(1)
    }
}
```

### **Checking Rules**

Checking rules:

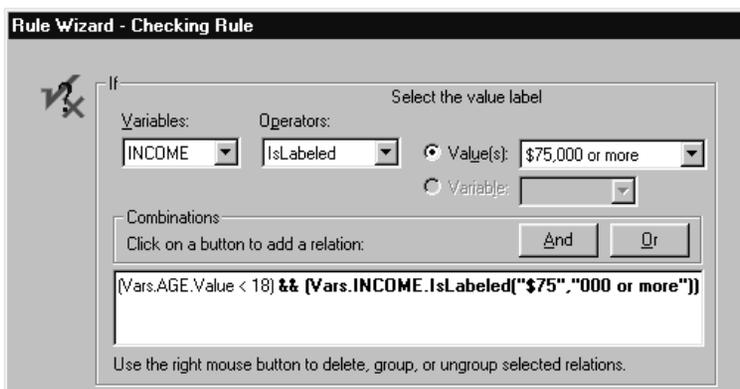
- Ensure data integrity by examining the relationships between variables.
- Are attached to neither variables nor questions. You name Checking rules when you create them.
- Identify logical inconsistencies in combinations of variables by comparing data with conditional (*if-then*) statements (such as, *if sales are greater than \$5,000*). For example, a government tax agency might use a Checking rule that compares *INCOME* against *AGE* to flag tax returns for auditing purposes. It is unlikely that a 16-year-old would have a personal income of \$100,000; a Checking rule would trigger an alert for such a case.

You can use Checking rules to check values as data are entered or to check an existing data file. If you set the rules to activate during data entry, an error message displays whenever a case with an invalid combination of values is committed. When you want to check an existing data file, use Check File on the Rules menu in the Builder or Form windows. This produces a report of all the rules violated, sorted either by case or by rule.

## Checking Rule Specifications

Checking rules are built on conditional *if-then* expressions, which consist of one or more relations. Relations are short mathematical or logical statements that can be evaluated as true or false ( $X < 10$  is a relation, for example). Checking rules work such that *if* the value entered for a given variable meets the conditions in the conditional expression, *then* a specified action will take place. Defining the relations in the *if* expression and the resulting action in the *then* section are the two main steps in creating a Checking rule.

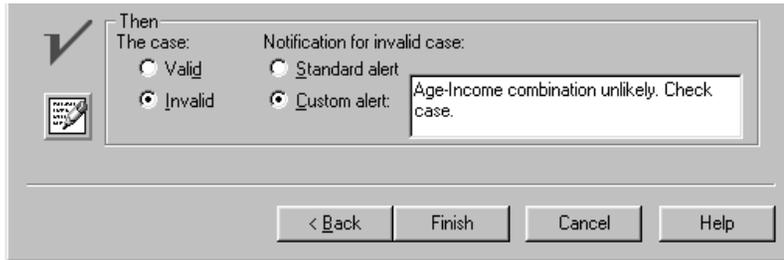
Figure 11-6  
Checking rules—Specifying relations in the Rule Wizard



**Specifying relations (if).** A relation includes a variable from your file, a comparison operator, and a value or variable to which the first variable is compared. The comparison operator can be a logical operator, such as *less than*, or a method such as *IsValid*. In the Rule Wizard, you can add relations by clicking the And and Or buttons; you can also right-click in the window to delete, group, or ungroup relations.

For more information on building relations, see “Tips on Using Operators in the Rule Wizard (Checking and Skip & Fill Rules)” on p. 216.

**Figure 11-7**  
*Checking rules—Specifying actions in the Rule Wizard*



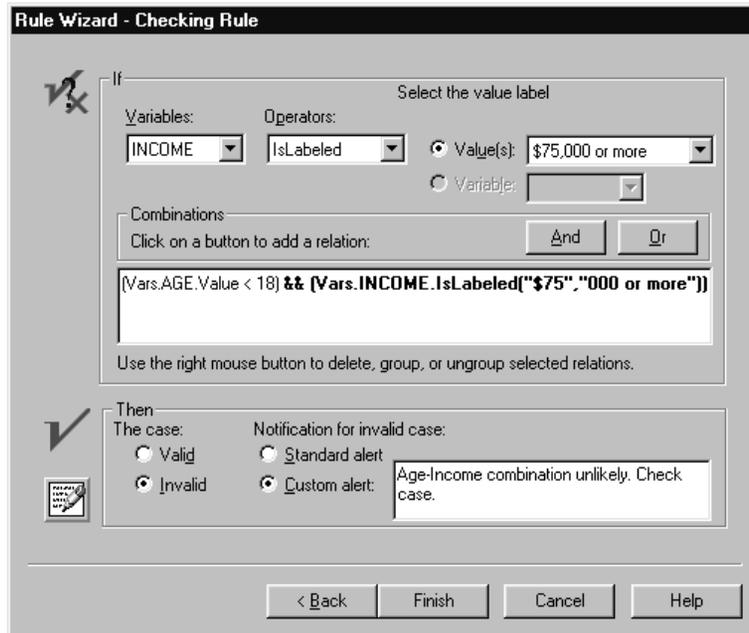
**Specifying actions (then).** You can choose to make cases that meet the conditions invalid or valid; you can also choose a standard or custom alert.

- The Rule Wizard window displays the JScript code as it is being built. You cannot edit the script here. To revise a script, you must complete it and open it in the Rule Scripts window.

### ***To Create a Checking Rule with the Rule Wizard***

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Wizard...
- ▶ Select Checks a logical relationship between variables (Checking) and enter the name of the rule.

Figure 11-8  
Rule Wizard—Creating a Checking rule



- ▶ Create an expression that determines when the rule will activate: select a variable, a comparison operator, and a value or variable to which the first variable will be compared.
- ▶ Select Valid or Invalid to determine the status of cases that meet the conditions you just specified.
- ▶ Select the type of notification that will occur when an invalid case is found.
- ▶ Click Finish to create the rule.
  - Click And or Or to expand the *if* expression with additional relations.
  - Right-click in the expression box to delete, group, ungroup, or negate expressions.
  - Click the pencil icon to view the rule script.
  - Use Rule Options to determine how and when Checking rules are activated.

## Checking Rule Example

The following example shows you how to create a Checking rule that checks for a logical relationship between age and education level. You can reasonably infer that it is unlikely that someone under age 22 has completed post-graduate work. You can find the variables used, *BIRTH* and *EDUC*, in the Customer Satisfaction Survey, which was installed with the program.

- ▶ From the Builder or Form window menus choose:

- Rules
  - Rule Wizard...

- ▶ In the Rule Wizard - Start dialog box, select Checks a logical relationship between variables (Checking) and type MyRule for the name of the rule.
- ▶ Click Next.
- ▶ In the Rule Wizard - Checking Rule dialog box, select *BIRTH* from the Variables list.
- ▶ In the Operator List, select <=.
- ▶ In the Value box, type 1978.
- ▶ Click the And button.

As you create the expression, you will see it appear in the Expression box in the middle of the dialog box. When you clicked the And button, you added two ampersands (the logical connector) and empty parentheses to accomodate the second expression. Now you will create the second condition of the statement.

- ▶ Select *EDUC* from the Variables list.
- ▶ In the Operator list, select IsLabeled.
- ▶ In the Value box, select Post Graduate.

---

You have created a condition that checks to see if the value in the *BIRTH* variable is less than or equal to 1978 and if the value in the variable *EDUC* is labeled *Post Graduate*. This is the *if* condition of your rule. The next step is to create the *then* condition.

- ▶ Click Valid.
- ▶ Click Custom alert.
- ▶ In the Custom alert box, type This is unlikely. Double-check, please.
- ▶ Click Finish.

If your condition is met, your case is valid, but an alert is issued. If you wanted to make a stricter rule, you would make the case invalid. In this case, you do not have to be so strict since it is not impossible for someone under age 22 to have a post-graduate degree; it is simply unlikely.

### ***Example: Checking Rule Script***

You can view the Checking rule you created by clicking the Rules icon in the Builder window and then double-clicking on the rule named MyRule.

For more complex rules, see Chapter 12.

```
function MyRule_Check() // Generated by wizard
{
    if (!(Vars.BIRTH.Value <= 1978) && (Vars.EDUC.IsLabeled("Post Graduate")))
    {
        RuleViolation("This is unlikely. Double-check, please.")
    }
}
```

## ***Skip & Fill Rules***

Skip & Fill rules:

- Speed data entry by skipping questions and filling in data based on previous responses.
- Are attached to questions and are given the same name (by the software) as the question.
- Enable you to skip and fill in values for variables that are not applicable or necessary for a particular case. For example, if you are entering data for a male respondent, a Skip & Fill rule enables you to skip a section of questions intended only for females. The rule activates as soon as the value *male* is entered for the question *Gender*. This same rule could set all of the female-only questions to *not applicable* for this particular case.

Using Skip & Fill rules, you can:

- Jump to a question on a form. You can navigate through a data entry form by skipping questions that are not applicable for a given case. You can also jump to a question on a different form.
- Fill in or change a value. Values are automatically filled in so that you don't have to enter them manually. You can even fill in variables that are on your survey.
- Change properties of questions and controls. For example, you can hide or show individual questions and change the properties of controls, such as font size and style and foreground and background colors.
- Commit the current case.
- Move to the next case.
- Create a new case.

## ***Skip & Fill Rule Specifications***

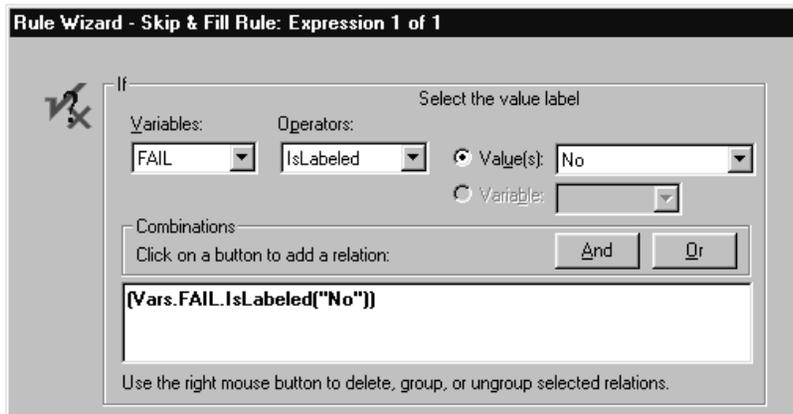
Like Checking rules, Skip & Fill rules are built on conditional (*if-then-else*) expressions, which consist of one or more relations. Relations are short mathematical or logical statements that can be evaluated as true or false ( $X < 10$  is a relation, for example). Skip & Fill rules work such that *if* the value entered for a given question meets the conditions in the expression, *then* a specified action takes place, *else* (if the expression is false) a different action occurs. When building a Skip & Fill rule, you

must select the question to which the new rule will be attached and then define the expression (*if*) and the resulting actions (*then-else*) for the rule.

- A question can have only one Skip & Fill rule attached it. Questions that already have Skip & Fill rules assigned to them are not shown in the Rule Wizard question list.

Figure 11-9

*Skip & Fill rules—Specifying relations in the Rule Wizard*



**Specifying relations (if).** This includes a variable from your file, a comparison operator, and a value or variable to which the first variable is compared. The comparison operator can be a logical operator, such as *less than*, or a method such as *IsValid*. In the Rule Wizard, you can add relations by clicking the And and Or buttons. You can also right-click in the window to delete, group, or ungroup relations.

See “Tips on Using Operators in the Rule Wizard (Checking and Skip & Fill Rules)” on p. 216 for more information on building relations.

**Specifying actions (then-else).** You can set skip and fill actions for values that meet the conditions in the expression (*then*) and for those that do not (*else*). Skip options include skipping to another question or form; fill options enable you to fill in values for other variables.

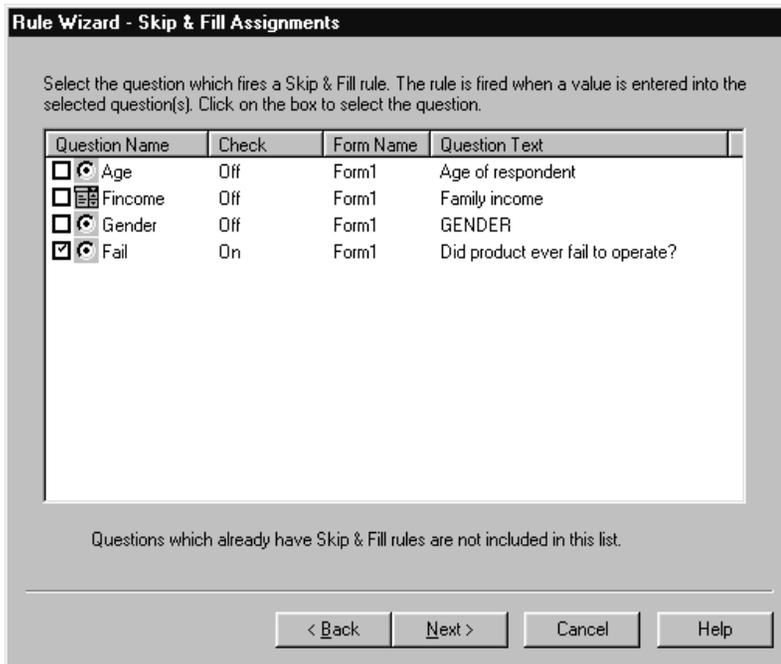
- Your new Skip & Fill rule will be identified by the question to which it is attached. For example, if you create a new rule for the question *Incom\_97* on *Form1*, the new rule is listed in the Builder rules list as *Form1\_Question1*.
- The Rule Wizard window displays the JScript code as it is being built. You cannot edit the script here. To revise a script, you must complete it and open it in the Rule Scripts window.

## To Create a Skip & Fill Rule with the Rule Wizard

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Wizard...
- ▶ Select Sets values of variables, and skips to questions (Skip & Fill).

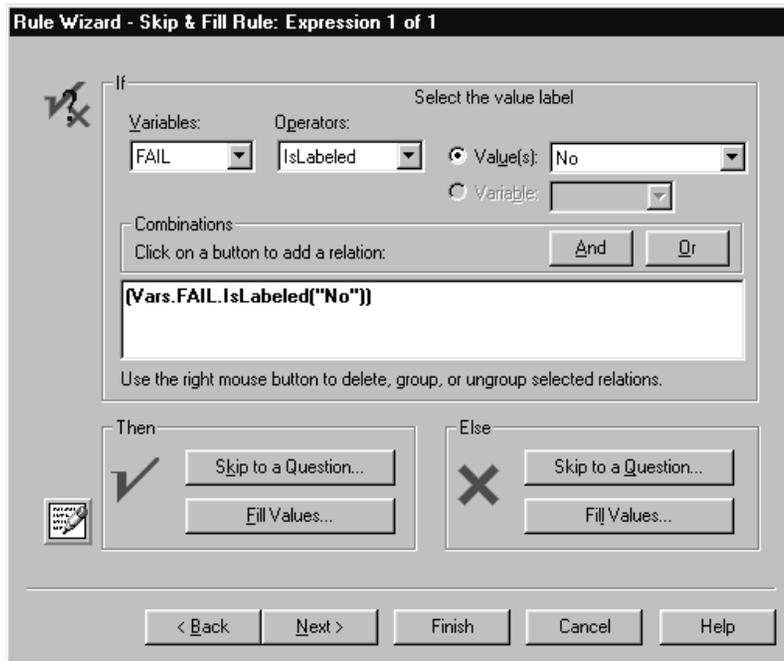
Figure 11-10

*Rule Wizard--Assigning a Skip & Fill rule to a question*



- ▶ Select each question to which the new rule will be applied by clicking the check box to the left of the question. You can create many rules with the same criteria at once by selecting more than one question.

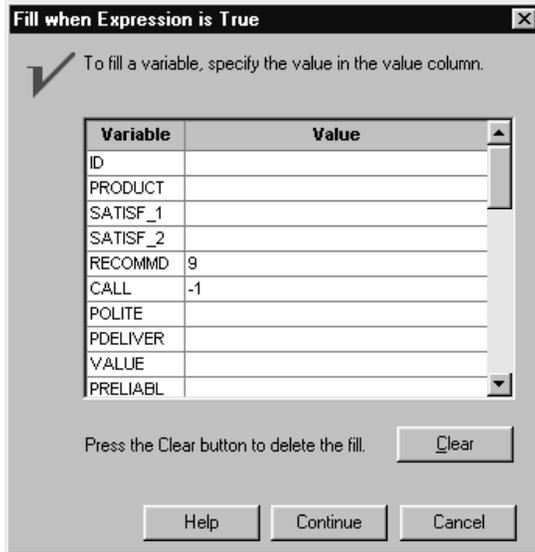
Figure 11-11  
Rule Wizard—Building a Skip & Fill rule



- ▶ Create an expression that determines when the rule will activate: select a variable, a comparison operator, and a value or variable to which the first variable is compared.
- ▶ In the *then* section, click Skip to a Question to determine the question and form the system will skip to if the expression is true.

See “To Specify Skip Options in the Rule Wizard” on p. 213 for more information.

Figure 11-12  
Rule Wizard--Specifying fill options



- ▶ In the *then* section, click Fill Values to select the variables and the values that will be filled in if the expression is true.
- ▶ Set Skip & Fill options for instances when the expression is false by clicking Skip to a Question and/or Fill Values in the *else* section.
- ▶ Click Finish to create the rule.

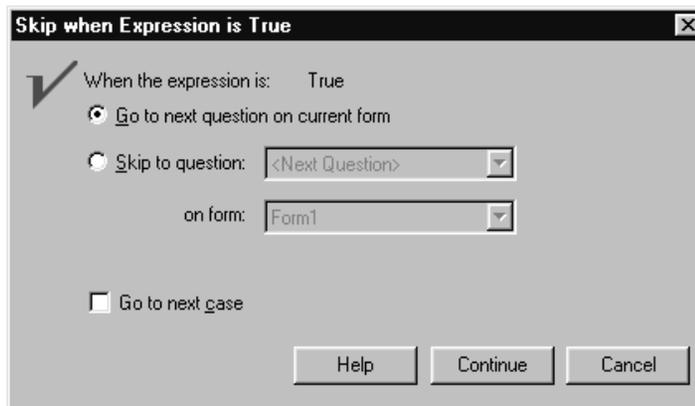
### Tips

- Click And or Or to expand the If section with additional relations.
- Right-click in the expression box to delete, group, ungroup, or negate expressions.
- Click the pencil icon to view the rule script.
- Use Rule Options to determine when Skip & Fill rules activate.

## To Specify Skip Options in the Rule Wizard

When you click Skip to a Question in the Then or Else sections of the Rule Wizard, the default action is to go to the next question on the current form.

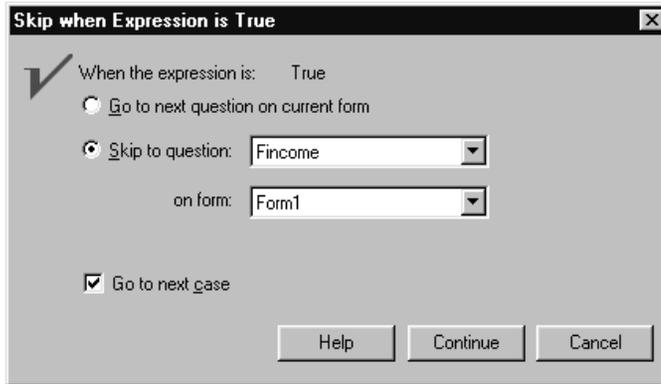
Figure 11-13  
*Skip & Fill—Specifying Skip To options*



To go to a different question or form:

- ▶ Select Skip to question.
- ▶ If you want to skip to a question on the current form, select the question from the question drop-down list. The question list contains all of the questions from the selected form, as well as <First Question> and <Next Question> options.

Figure 11-14  
Skip & Fill—Specifying a particular question



- ▶ If you want to skip to a question on a different form, select the form from the form drop-down list, and then select the question from the question list.
- ▶ If Go to next case is selected, the skip and fill actions are performed, and the software automatically moves to the next case.

**Tip:** To move automatically to the beginning of the current form for a new case, select <First Question> from the question list and check the Go to next case check box.

### ***Skip & Fill Rule Example***

The following example shows you how to create a Skip & Fill rule that will take a respondent who answers *no* to question six (*Did this product fail to operate?*) to question nine and fill in the questions in between with *Not Applicable*.

**Note:** If you wish to work through this example yourself in the Customer Satisfaction Survey that was shipped with the product, you must go to the Builder window and delete Online\_Question6 and Web\_Question6.

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Wizard...
- ▶ Select Sets values of variables, and skips to questions (Skip & Fill).

- 
- ▶ In the Rule Wizard - Skip & Fill Assignments dialog box, click the check box in front of Question6.
  - ▶ Click Next.
  - ▶ In the Rule Wizard - Skip & Fill Rule dialog box, select *FAIL* from the Variables list.
  - ▶ Select *IsLabeled* from the Operators list.
  - ▶ Select *No* from the Values list.

As you create the expression, you will see it appear in the Expression box. You have created an *if* statement that checks to see if the answer to Question6 is *no*. Now, you will create the *then* statement.

- ▶ Click Fill Values.
- ▶ In the Fill when Expression is True dialog box, type 99 for the variables *CONTFAIL* and *PROBMEET*.
- ▶ Click Continue.

You have created half of the *then* statement. If the answer to Question6 is *no*, the software will fill in 99, which is code for *not applicable* as defined in the Variable Values tab of the Variable Properties window, for the variables *CONTFAIL* and *PROBMEET*. You will now create the second half of the *then* statement, which will skip to Question9.

- ▶ In the Rule Wizard - Skip & Fill Rule dialog box, click Skip to a Question.
- ▶ In the Skip when Expression is True dialog box, click Skip to question and select Question9 from the list.
- ▶ Click Continue.
- ▶ Click Finish.

### **Example: Skip & Fill Rule Script**

You can view the Skip & Fill rule you created by clicking the Rules icon in the Builder window and then double-clicking on the rule named Online\_Question6.

For more complex rules, see the Chapter 12.

```
function Online_Question6_SkipFill(thisRespObj, thisVar) // Generated by wizard
{
    if ((Vars.FAIL.IsLabeled("No")))
    {
        Vars.CONTFAIL.Value=99
        Vars.PROBMEET.Value=99
        Forms.Online.Question9.SetFocus()
    }
    else
    {
        // by default focus will go to the next question
    }
}
```

### **Tips on Using Operators in the Rule Wizard (Checking and Skip & Fill Rules)**

Correctly specifying relations in a conditional expression (such as *if AGE is less than 21*) is integral to creating Checking and Skip & Fill rules. Relations contain comparison operators, which consist of logical operators and object methods. If you are unfamiliar with JScript, the logical operators may appear differently from what you expect. For example, the JScript operator for *equal to* is `==` rather than the single equals sign used in mathematical expressions (`=`). Different comparison options are available depending on which operator you choose.

**Logical operators.** Six logical operators are available: != (not equal), < (less than), <= (less than or equal to), == (equal to), > (greater than), and >= (greater than or equal to). Once you choose an operator, you must select a value or variable to complete the relation. You can select a variable or a value from their respective drop-down lists or enter a value or arithmetic expression.

**IsLabeled.** Tests a value by checking it against one of its value labels. When using this operator, you must select a value label from the drop-down list. For example, the relation *if (Vars.EDUC.IsLabeled("High school"))* tests to see whether the value of *EDUC* is labeled “high school.”

**Any, NotAny.** *Any* tests whether a value is among a list of values that you enter; *NotAny* does the opposite, testing whether a value is *not* among the list of values that you enter. You must separate each value on the list with a comma. For example, the relation *if (Any(Vars.REGION.Value,1,3,4))* is testing to see whether the value of *REGION* is equal to 1, 3, or 4.

**IsMissing, IsValid, IsNotValid.** These operators test whether a variable’s value is, respectively, missing, valid, or not valid. (Valid values are set in the Valid Values tab of the Variable Properties window.)

**Range.** Tests whether a value is in a range of numbers that you enter. For example, the relation *if (Range(Vars.EDUC.Value,3,6))* is testing to see whether the value of *EDUC* is between 3 and 6.

### ***To Add Relations in the Rule Wizard (Checking and Skip & Fill Rules)***

When you are creating Checking or Skip & Fill rules with the Rule Wizard, you can click And or Or to add a relation to your *if* statement. The Wizard inserts the necessary JScript operator to your expression in the expression window—&& for *And*, || for *Or*.

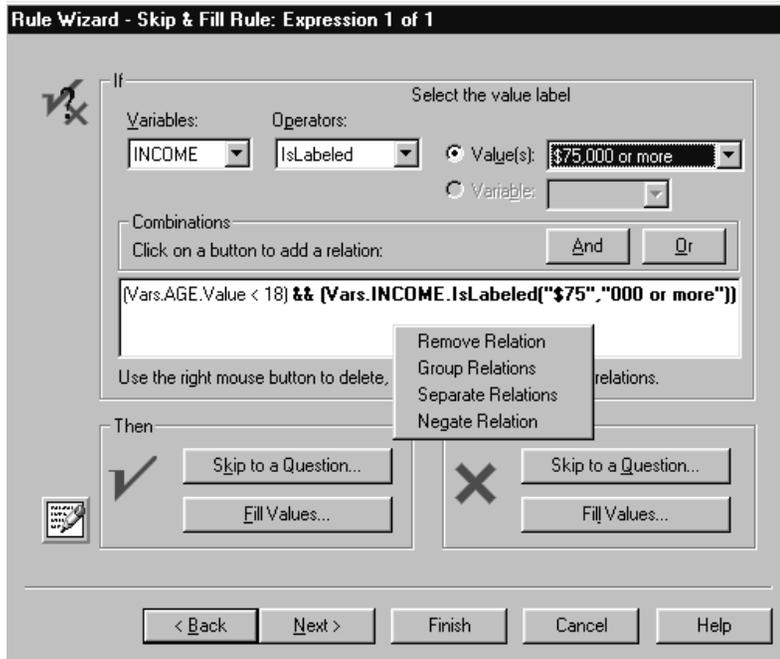
### ***To Modify Relations in the Rule Wizard Expression Window (Checking and Skip & Fill Rules)***

You can use the Rule Wizard expression window to modify relations in Checking and Skip & Fill rules. You can right-click to group, separate, negate, and remove relations. Grouping relations can change the meaning of an expression. For example, the expression *X==1 AND Y==1 OR Z==1* is different from *X==1 AND (Y==1 OR*

$Z=1$ ). In the former, the rule will be activated if  $X$  and  $Y$  equal 1, or if  $Z$  equals 1; in the latter, the rule will be activate only if  $X$  equals 1 and either  $Y$  or  $Z$  equals 1.

Figure 11-15

Checking and Skip & Fill rules--Using the Rule Wizard expression window



- Remove Relation deletes the selected relation(s).
- Group Relations adds parentheses around selected relations.
- Separate Relations removes the outermost parentheses from selected relations.
- Negate Relation inserts a ! (*Not*) operator in front of the selected relation(s). If the relation is already negated, this removes the ! operator.

To use any of the relations commands:

- ▶ In the Rule Wizard expression window, use the mouse to select one or more relations.
- ▶ Right-click and choose the necessary relations command from the menu.

## To Edit a Rule Created with the Rule Wizard

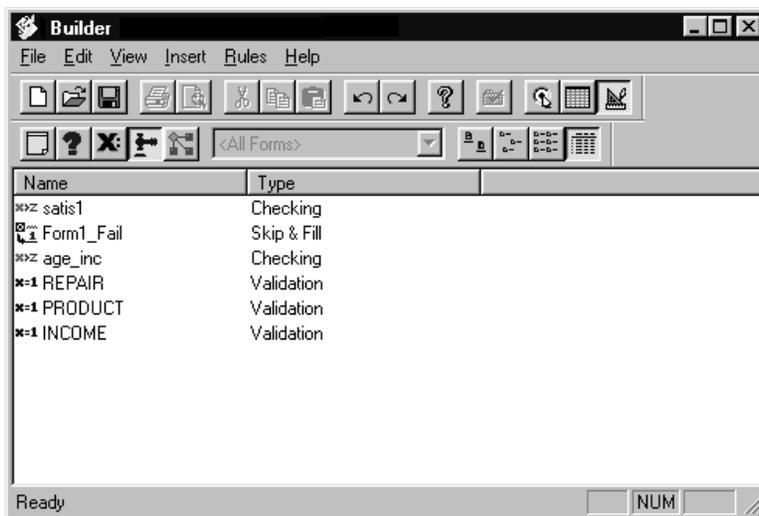
You cannot use the Rule Wizard to edit rules. Once a rule is created, you must use the Rule Scripts window to revise it. If you are not familiar with the JScript language and are uncomfortable with editing a rule script, it is best to simply delete the rule and create a new one using the Wizard. For information on editing rule scripts, see Chapter 12.

## To Delete a Rule

To ensure that you delete the correct rule, remember that:

- Validation rules are named for the variables to which they are attached.
- Skip & Fill rules are named for the questions to which they are attached.
- You name Checking rules when you create them.

Figure 11-16  
Rules in the Builder window



- To display rules in the Builder window, from the menus choose:

View  
Rules

- ▶ Select a rule and press the Delete key.

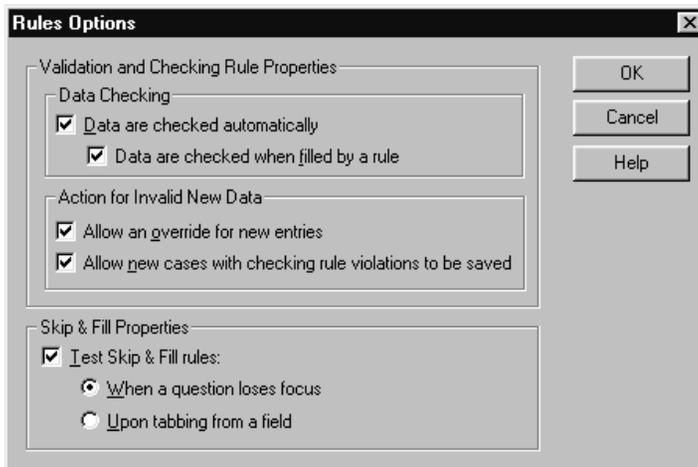
Alternatively, you can delete a rule by selecting Delete on the Edit menu in the Builder window or Delete Script on the Scripts menu in the Rule Scripts window.

- When a variable is deleted, any Validation rules associated with it are deleted as well. Similarly, when a question is deleted, any Skip & Fill rules associated with it are also deleted.
- If you delete any object that is referenced within a rule, the rule is no longer valid. You must edit or remove the reference.

## Rule Options

Rule Options control when rules activate and how they operate.

Figure 11-17  
*Rules Options dialog box*



**Validation and Checking Rule Properties.** Determine when Validation and Checking rules take action.

- **Data are checked automatically.** If selected, Validation rules check values as they are entered, and Checking rules check data when a case is committed (Auto Check: On displays in the entry form status bar). If this option is not selected, Validation

and Checking rules are not applied until Check Case or Check File is selected from the Rules menu.

- **Data are checked when filled by a rule.** If selected, values filled in by a Skip & Fill rule are automatically checked by a Validation rule.
- **Allow an override for new entries.** Determines whether you can override an invalid value warning from a Validation rule. If this option is selected, the Override Error tool and command on the Form window's Rules menu are enabled. Choosing Override Error allows you to move off of a field after a Validation error. If this option is unchecked, Override Error is disabled, and you cannot move to another question until a valid value is entered.
- **Allow new cases with Checking rule violations to be saved.** Determines whether you can move to the next case after attempting to commit a new case that has violated a Checking rule. If this option is selected and you attempt to commit a new case with a checking error, an alert displays, and you are given the option to go to the checking report to view the errors or to ignore the errors and continue to the next case. If you go to the checking report but do not correct the checking error, the alert will display again.

**Skip & Fill Rule Properties.** Determine when Skip & Fill rules are activated.

- **Test Skip & Fill rules.** You will generally turn these off when making changes to an existing data file (since, presumably, all of the values have been entered into the file). If When a question loses focus is selected, the rules will activate anytime you move away from a question, whether it is with the keyboard or mouse. If Upon tabbing from a field is selected, the rules will activate only when you move away from a question by using the Tab or Enter keys.

## ***To Set Rule Options***

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Options...
- ▶ Select the settings you want.
- ▶ Click OK.

## ***To Check Data Automatically (Validation and Checking Rules)***

You can use Validation and Checking rules to check data as they are entered.

- ▶ From the Builder or Form window menus choose:

- Rules
  - Rule Options...

- ▶ Select Data are checked automatically.

With automatic checking enabled:

- Validation rules will activate immediately after an invalid value is entered.
- Checking rules will activate immediately after a case with an invalid combination of values is committed.

An error message will display the incorrect value(s) and the Validation or Checking rule that was violated.

## ***Copying and Pasting Rules***

You can:

- Directly copy Checking rules from one file to another.
- Copy Validation and Skip & Fill rules from one file to another by copying the variables (for Validation) or questions (for Skip & Fill) associated with those rules.
- Create many Validation or Skip & Fill rules at once by selecting more than one variable or question in the Rule Wizard.
- Reuse the same rule script code for multiple rules by creating a procedure and calling it from many different rules.

---

## ***To Copy and Paste a Checking Rule***

To copy and paste a Checking rule:

- ▶ If the Checking rule you want to copy is in a different file, open both files.

Each file has its own Builder window, allowing you to copy and paste elements between them.

- ▶ Use the View menu or the toolbar to display the rules in each Builder window.
- ▶ Select one or more Checking rules and hold down the left mouse button to drag selected rules from one Builder window to the other. Or, from the Builder window menus choose:

- Edit
  - Copy

- ▶ In the Builder window where you want to paste the rule, from the menus choose:

- Edit
  - Paste

Alternatively, you can use Ctrl+C to copy the rule and then Ctrl+V to paste it. You can also drag a Checking rule from one Builder window to another.



## ***Rule Scripts***

Rule scripts are short sets of JScript statements. When you create a rule with the Rule Wizard, you are actually creating a rule script—the Wizard writes the JScript syntax for you. Rule scripts are powerful; you can use them to:

- Manipulate questions and controls. For example, you can write scripts to hide or show questions and response controls (for example, text boxes, option buttons, etc.). You can also change the visual properties (font family, size, and style or foreground and background colors) of controls.
- Compute numbers and dates on the fly. You might compute an overall customer satisfaction measure by averaging the responses to five different survey questions.
- Move the focus to different cases, questions, and forms. You can write a Skip & Fill script that will move you to another case, question, or form based on the response to a previous question.
- Evaluate and modify variables. You can check whether values are valid, coded as system- or user-missing, or equal to a particular value label.

The following is an example of a Validation rule script that checks the variable *PRODUCT* for valid values:

Figure 12-1  
*Example rule script*



Refer to the online JScript Help for more information on using JScript. If you do not have the JScript Help installed, run the install program and select Custom Install; then select JScript Help Reference.

## ***Creating Rule Scripts***

You can create rule scripts using the Rule Scripts editor. You can also edit existing scripts, such as the scripts included with this software and any scripts you have created with the Rule Wizard. You must be familiar with JScript in order to customize or create complex rule scripts.

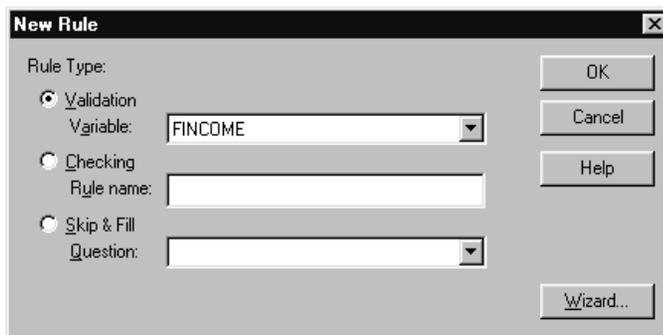
If you are unfamiliar with JScript or with programming in general, you may want to create rules in the Rule Wizard and then open them in the Script window. When you think you understand how a particular rule works, try replacing part of it and see what happens. Editing existing rules is a good way to learn how JScript works.

## To Create a Rule Script

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Scripts
- ▶ From the Rule Scripts window menus choose:
  - Scripts
  - New Rule...
- ▶ Or, from the Builder window menus choose:
  - Insert
  - Rule...

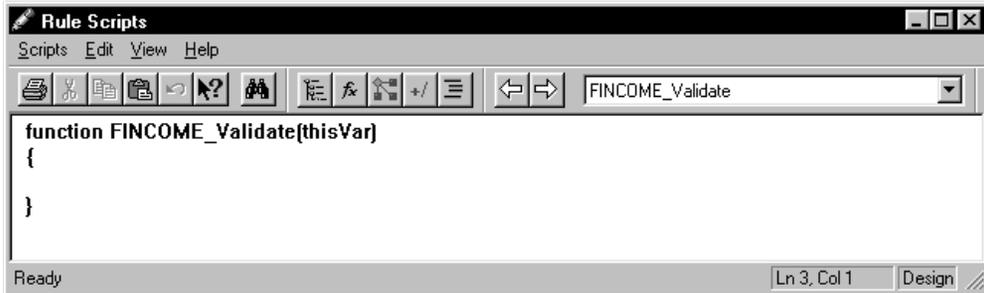
Figure 12-2

Creating a new rule script—Selecting the type of rule



- ▶ Select Validation, Checking, or Skip & Fill.
- ▶ Select the appropriate variable (for a Validation rule) or question (for a Skip & Fill rule), or enter the rule name (for a Checking rule).
- ▶ Click OK.
  - The Rule Scripts editor will display a template script. The editor will not allow you to edit or delete the first line (beginning with the JScript keyword *function*) or the outermost set of brackets, as these parts of the script are required by JScript.

Figure 12-3  
Rule script template



- ▶ Complete the script by entering the necessary JScript commands.
- ▶ To automatically save the script and check it for syntax errors, close the Rule Scripts editor or use the drop-down list to move to another script.

## ***To Edit an Existing Rule Script***

You can modify existing rule scripts using the Rule Scripts editor. The editor works as a basic word processor in that you can add, cut, copy, and paste text with relative ease. You can also paste rule script code using the Objects, Functions/Methods/Constants, Procedures, Operators, and Statements windows.

- It is important to note that once a rule is created, the only way to revise it is by using the script editor—you cannot use the Rule Wizard to edit scripts. If you are not familiar with the JScript language and are uncomfortable with editing a script, it is best to simply delete the rule and recreate it using the Wizard.

To edit a rule script:

- ▶ In the Builder window, double-click on a rule.
- ▶ Edit the script.

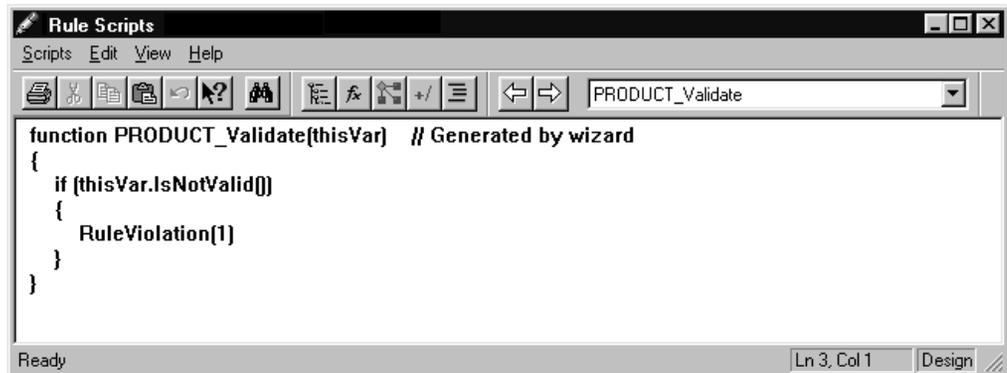
The Rule Scripts editor will not allow you to edit or delete the first line or the outermost set of brackets, as these parts of the script are required by JScript.

Alternatively,

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Scripts
- ▶ By default, the script for the first rule is displayed. Choose the script you want to edit from the drop-down list on the toolbar.

## Rule Scripts Window

Figure 12-4  
Rule Scripts window



**Scripts.** Use the Scripts menu to create a new rule or procedure, check rule script syntax, and print and delete scripts.

**Edit.** Use the Edit menu to cut, copy, and paste text, find and replace text strings, and change the default display font.

**View.** Use the View menu to move to another rule, view the Objects, Functions/Methods/Constants, Procedures, Operators, and Statements windows, and change the toolbar and status bar display options.

**Help.** Use the Help menu to access online Help for the many features available in this product.

## ***How Scripts Work***

Rule scripts are written in JScript. JScript is Microsoft's version of the JavaScript scripting language and is an interpreted, object-based scripting language. Rule scripts work through OLE automation to manipulate objects using properties and methods. Each object class has specific properties and methods associated with it. For example, questions are a class of objects in this product. You can use the SetFocus method to navigate from one question to another (as in a Skip & Fill rule) or manipulate the Visible property to hide a question that is being skipped.

### ***Objects, Properties, and Methods***

Objects, properties, and methods are central to creating and editing rule scripts.

**Objects.** Objects are the elements that make up your file, including the file itself. Classes of objects that can be used in rule scripts include files (referred to as DataEntryDoc in scripts), forms, questions, controls, form objects, and variables. Objects are manipulated using properties and methods.

**Properties.** Like real-world objects, objects have features and uses. In JScript programming terminology, the features are referred to as properties. Properties set or return attributes of objects, such as the color or cell width.

**Methods.** Methods are the uses of objects. They perform actions on objects, such as moving the question focus. For example, you can use the IsValid method to check if a particular variable value is valid and then use the Value property to change the value.

<b>Object</b>	<b>Property (feature)</b>	<b>Method (use)</b>
Computer (real-world)	speed, amount of memory	word processing, spreadsheets
Question (this software)	BackColor, Visible	Move, SetFocus

Press Ctrl-O any time you are working in the script editor to display the Objects window, which displays object classes and the properties and methods associated with each.

See the online Help for more information on individual objects, properties, and methods.

## Objects Window

To build usable scripts, you need two things: proper syntax and logical, correct relations. You can use the Objects window to create proper syntax.

The Objects window displays all object classes and the methods and properties associated with each. You can also access help on individual properties and methods and paste selected properties and methods into your script.

To view the Objects window:

- ▶ From the Builder or Form window menus choose:

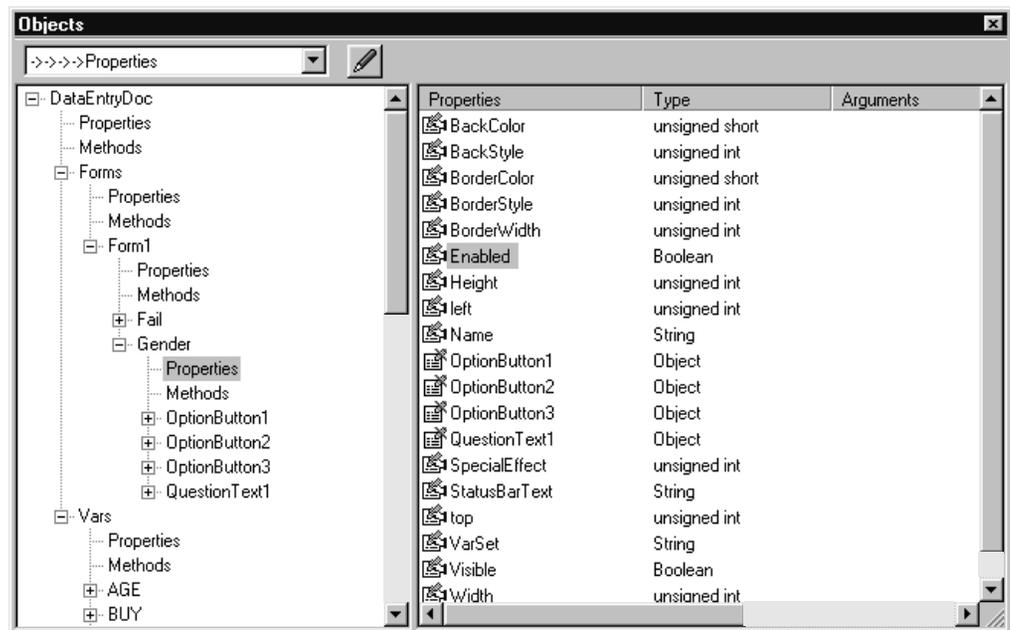
Rules  
Rule Scripts

- ▶ From the Rule Scripts window menus choose:

View  
Objects

Figure 12-5

*Objects window demonstrates the object hierarchy*



Objects are hierarchical in nature. Clicking on a plus sign in the Objects window displays the next level of the hierarchy. In writing a rule script, the full name of an object, property, or method includes all of the objects that come above it in the object hierarchy.

The general convention is *ObjectClass.ObjectName(s).PropertyOrMethod*. For example, if you wanted to access the Enabled Property of the question named *Gender*, the proper name to use is *Forms.Form1.Gender.Enabled*.

Any object must have a unique name within its immediate container (that is, the object directly above it in the hierarchy). For example, the question *Gender* cannot have two option buttons named *OptionButton1*, but the questions *Gender* and *Age* can both have option buttons with that name. *Form2* cannot have two questions named *Income*, but *Form1* and *Form2* can both have questions named *Income*.

You can use the Objects window to help determine the full name of an object, property, or method. You can also use the Objects window to paste the full name directly into your rule script.

To use the Objects window to create proper syntax:

- ▶ Open the Objects window.
- ▶ Navigate through the objects on the left side of the screen by clicking on the plus signs or by using the drop-down list of objects in the upper left corner.
- ▶ Double-click on a property or method on the right of the window to paste it into the Rule Scripts editor.
- ▶ You can also paste a property or method by selecting it and clicking the pen icon or pressing the space bar.

**Tip:** With the Objects window active, hold the mouse pointer over a property or method on the right side of the screen to see a brief description of it.

## ***RuleViolation Method in Validation and Checking Rules***

If you are writing a Validation and Checking rule, you *must* include the RuleViolation method. This method is used to display alerts and write results to checking reports. RuleViolation takes a single argument, the results of which differ depending upon whether you are checking data as they are entered or checking an entire file at once (batch checking).

The following is an example of a Validation rule that uses the RuleViolation method:

```
function EDUC_Validate(thisVar)
{
  if (thisVar.IsNotValid())
  {
    RuleViolation("Invalid value. Please reenter.")
  }
}
```

Argument	Checking during data entry	Batch checking
0	The system beep sounds.	A standard alert is written to the checking file and displayed in the Checking Report window.
1	A standard alert is given: “<ruletype> <rulename> violated.” Example: “Checking rule INC_AGE violated.”	A standard alert is written to the checking file and displayed in the Checking Report window.
“string” (custom alert)	The custom alert is displayed. Example: “Invalid value. Please reenter.”	The custom alert message is written to the checking file and displayed in the Checking Report window.

See Chapter 15 for more information.

### ***ClearViolation Method in Validation and Checking Rules***

You can use the ClearViolation method turns off a violation set by RuleViolation within a rule. It turns off any alerts that would otherwise be issued at data entry time and can also be used to write a message to the checking log. Only one message is written to the checking log per rule per case. ClearViolation has the following arguments:

Argument	Batch checking
0	A standard alert is written to the checking file and displayed in the Check Case window.
“string” (custom alert)	The custom alert message is written to the checking file and displayed in the Check Case window.

**Note:** While you must include the RuleViolation method in Validation and Checking rules, using the ClearViolation method is optional. You can use the ClearViolation method to ensure that the warnings are written only to the checking log, which makes for uninterrupted data entry.

## **Rule Script Components**

In addition to objects, properties, and methods, rule scripts involve the following components:

**Event.** Events activate rules and are triggered by actions in the software. The three events available for use in rules scripting are Check, SkipFill, and Validate, which correspond to the three types of rules. Check and Validate events, for example, are triggered when you select the Check Case command; a SkipFill event is generated when the value of a variable is changed. The event is referenced in the first line of each rule. For example, a Validation rule attached to the variable *AGE* would begin with *function AGE\_Validate* (all rules and procedures begin with the JScript keyword *function*).

**Argument.** Arguments are pieces of information that are passed to a function. They generally appear within parentheses, as in the date function *TimeDays(9)*.

**Predicate** (optional). An *if-then* statement that evaluates to true or false. A predicate will generally contain an arithmetic or logical expression—for example, *if (Vars.AGE.Value < 21)*.

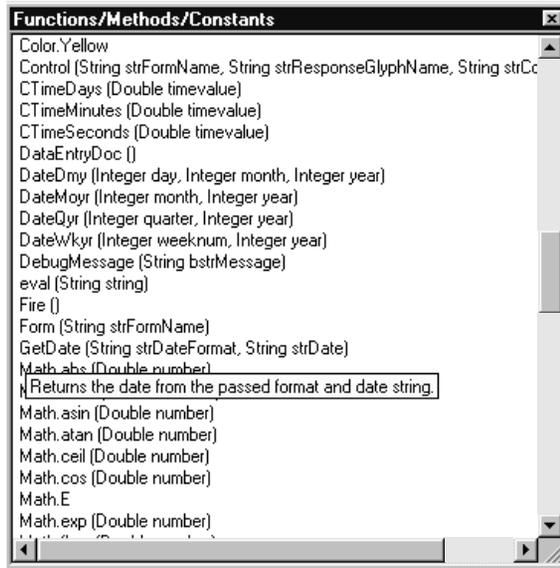
**Action.** Actions change properties of controls, assign values to variables, and apply methods to controls. For example, the following action sets the font of a form text object to Courier: *Forms.Form1.Text1.Font.Name = "Courier"*.

## **Functions/Methods/Constants Window**

The Functions/Methods/Constants window displays all of the functions, methods, and constants available within JScript, as well as functions that are specific to data analysis software from SPSS Inc. The entries are listed in alphabetical order. You can use this window to paste selected functions, properties, and methods right into your script.

Figure 12-6

Rule Scripts—Functions/Methods/Constants window (with description displayed)



To view the Functions/Methods/Constants window:

- ▶ From the Builder or Form window menus choose:

Rules  
Rule Scripts

- ▶ From the Rule Scripts window menus choose:

View  
Functions/Methods/Constants

With the Rule Scripts window active, you can also press Ctrl-M to bring up the Functions/Methods/Constants window.

- ▶ Double-click on a function, method, or constant to paste it into the Rule Scripts editor. You can also paste an item by selecting it and pressing the space bar.
- ▶ A question mark (?) is pasted wherever an argument must be filled in for a given function or method. For example, the date function *DateMoyr* is pasted into the script editor as *DateMoyr* (? , ?) because it requires two arguments.

**Tip:** With the Functions/Methods/Constants window active, hold the mouse pointer over a function, method, or constant to see its description.

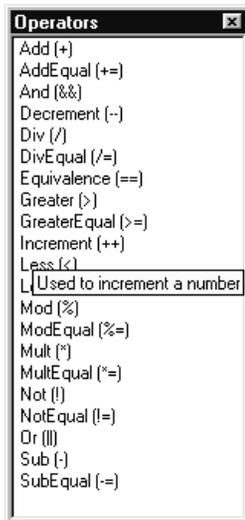
See the online JScript Help for more information on using JScript statements.

## Operators Window

The Operators window displays the JScript mathematical and logical operators available for use in rule scripts.

Figure 12-7

*Rule Scripts—Operators window (with operator description displayed)*



To view the Operators window:

- ▶ From the Builder or Form window menus choose:

- Rules
- Rule Scripts

- ▶ From the Rule Scripts window menus choose:

- View
- Operators

With the Rule Scripts window active, you can also press Ctrl-R to bring up the Operators window.

- ▶ Double-click on an operator to paste it into the Rule Scripts editor. You can also paste an operator by selecting it and pressing the space bar.

**Tip:** With the Operators window active, hold the mouse pointer over an operator to see its description.

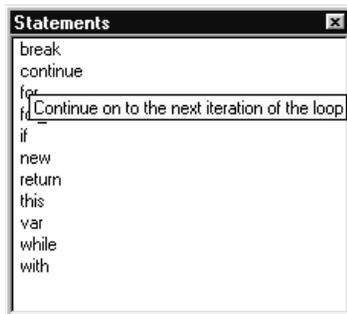
See the online JScript Help for more information on using JScript statements.

## Statements Window

The Statements window displays JScript operational statements (also called reserved keywords) that can be used in rule scripts, such as *break*, *for*, and *continue*.

Figure 12-8

Rule Scripts—Statements window (with description displayed)



To view the Statements window:

- ▶ From the Builder or Form menus choose:
  - Rules
  - Rule Scripts
- ▶ From the Rule Scripts window menus choose:
  - View
  - Statements

With the Rule Scripts window active, you can also press Ctrl-S to bring up the Statements window.

- ▶ Double-click on a statement to paste it into the Rule Scripts editor. You can also paste a statement by selecting it and pressing the space bar.

**Tip:** With the Statements window active, hold the mouse pointer over a statement to see its description.

See the online JScript Help for more information on using JScript statements.

### **Example: Creating a Skip & Fill Rule Using the Rule Script Editor**

In this example, a Skip & Fill rule is created and attached to the first question, named *Product1*, on *Form1*. The rule skips to the first question on *Form2* if the response to *Product1* is “Fax Machine.” This type of rule would be applicable in instances where the rest of the questions on *Form1* pertain only to respondents who have purchased fax machines.

- ▶ At the New Rule dialog box, select Skip & Fill and choose the question *Form1\_Product1* from the drop-down list.
- ▶ Click OK.

The Rule Scripts editor will display a template script that includes the JScript keyword function, the full name of the question to which the rule is attached (*Form1\_Product1*), the event that triggers the rule (*SkipFill*), the arguments required for a SkipFill event (*thisRespObj*, *thisVar*), and the opening and closing brackets required by JScript. The editor will not allow you to edit the JScript code before the first bracket or after the last bracket.

```
function Form1_Product1_SkipFill(thisRespObj, thisVar)
{
}
```

- ▶ Add a predicate statement (an *if* statement) that checks whether the response (the value of the variable *PRODUCT*) is labeled “Fax Machine.” You can use the Objects window to paste the method (*Vars.PRODUCT.IsLabeled(?)*). Replace the question mark with the required argument (“*Fax Machine*”).

```
if (Vars.PRODUCT.IsLabeled("Fax Machine"))
```

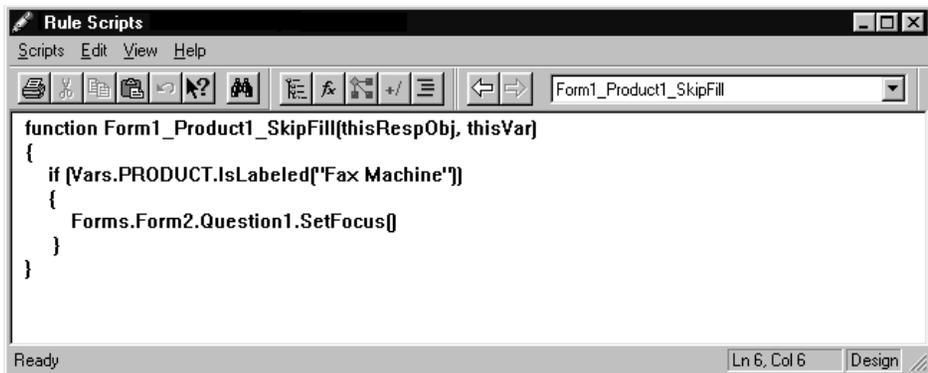
- ▶ Add the *then* part of the statement in brackets. If the *if* statement is true, this statement will be executed. In this case, the focus will be set to the first question on *Form2*.

```
{  
    Forms.Form2.Question1.SetFocus()  
}
```

- ▶ Closing the Rule Scripts editor or using the drop-down list to move to another script will automatically save the script and check it for syntax errors.

The resulting script looks like this:

Figure 12-9  
Creating a rule script



## Procedures

Procedures are similar to rule scripts in that they are sets of JScript commands. Procedures are meant to be called from rule scripts and are useful for reusing the same batch of JScript code for many rules. For example, you might want to change the background color and text of any question that is skipped due to a Skip & Fill rule. Rather than insert the necessary JScript commands into every Skip & Fill rule, you can save the commands as a procedure and call that procedure from each rule.

## ***To Create a Procedure***

- ▶ From the Builder window menus choose:
  - Insert
  - Procedure...
- ▶ Enter the name of the new procedure and click OK.
- ▶ The script editor will display a template procedure. Finish the procedure by entering the necessary JScript commands.
- ▶ Or, from the Rule Scripts window menu choose:
  - Scripts
  - New Procedure...

## ***Procedures Window***

The Procedures window displays all of the procedures you have created for the current file.

Figure 12-10  
*Rule Scripts—Procedures window*



To view the Procedures window:

- ▶ From the Builder or Form window menus choose:
  - Rules
  - Rule Scripts
- ▶ From the Rule Scripts window menu choose:
  - View
  - Procedures

With the Rule Scripts window active, you can also press Ctrl-U to bring up the Procedures window.

- ▶ Double-click on a procedure to paste it into the Rule Scripts editor. You can also paste a procedure by selecting it and pressing the space bar.

### ***Example: Procedure***

The following procedure returns the current date.

```
function todaydat()
{
  x = new Date()
  str = new String()
  y = x.getMonth()
  y = y + 1
  str = y+"-"+x.getDate()+"-"+x.getYear()
  return str
}
```

This script calls the procedure from a Checking rule.

```
function orderdat_Check()
{
  // rule compares order date to current date
  // if less than today's date, display alert
  // call procedure to get today's date
  Vars.TODAY.Value=todaydat()
  if (Vars.ORDERDAT.Value < Vars.TODAY.Value)
  {
    RuleViolation("Invalid. Order date must be greater than or equal to current date.")
  }
}
```

### ***To Debug a Rule Script or Procedure***

A script or procedure is automatically checked for syntax when it loses focus (you open another script or close the script window).

You can also debug rule scripts and procedures by checking the JScript syntax in the Rule Scripts editor.

- ▶ In the Rule Scripts editor, select the script or procedure that you want to debug.
- ▶ From the Rule Scripts window menus choose:

- Scripts
- Check Syntax

You can debug all of your scripts and procedures at once. From the Rule Scripts window menus choose:

- Scripts
- Check Syntax for All Scripts

The script editor will display an alert for each syntax error that is found.

### ***To Delete a Rule Script or Procedure***

- ▶ In the Rule Scripts editor, open the script or procedure that you want to delete.
- ▶ From the Rule Scripts window menus choose:

- Scripts
- Delete Script

You can also delete rule scripts and procedures from the Builder window by selecting one and pressing the Delete key.

### ***To Print a Rule Script or Procedure***

- ▶ In the Rule Scripts editor, open the script or procedure you want to print.
- ▶ From the Rule Scripts window menus choose:

- Scripts
- Print...

## ***Rule Script Examples***

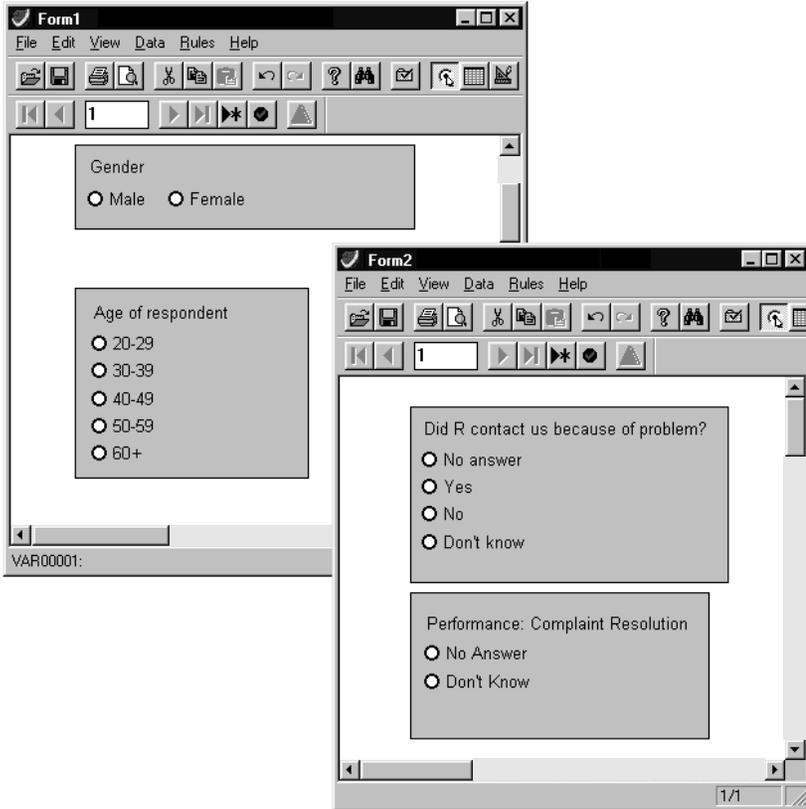
The following examples illustrate many of the tasks you can accomplish with rule scripts. You can copy these examples from the online Help windows and customize them for your own files. See the online Help for more script examples.

### ***Example: Moving to Another Form on a Survey with Multiple Forms***

**Check a value and move to another form.** If you have a survey with more than one form, you must use a Skip & Fill rule to move from one form to another. This rule script checks the validity of *AGE* and, if the value is valid, moves you from the last question on *Form1* to the first question on *Form2*. *GetFirstResponseGlyph()* is a method that returns the name of the first question, in terms of entry order, on a form.

```
function Form1_Question5_SkipFill(thisRespObj, thisVar)
{
    if (Vars.AGE.IsValid())
    {
        Forms.Form2.GetFirstResponseGlyph().SetFocus()
    }
}
```

Figure 12-11  
Moving from one form to another



**Move without checking.** You can also skip to the next form without first checking the validity of the response.

```
function Form1_Question5_SkipFill(thisRespObj, thisVar)
{
    Forms.Form2.GetFirstResponseGlyph().SetFocus()
}
```

**Move directly to a particular question.** You can go directly to any question on the next form.

```
Forms.Form2.Question4.SetFocus()
```

## ***Example: Moving to a New Case on a Different Form***

**Move to the first question, next case.** This rule script moves you from the last question on *Form3* to the first question on *Form1* for the next case.

```
function Form3_Question7_SkipFill(thisRespObj, thisVar)
{
  Forms.Form1.Question1.SetFocus()
  NextCase()
}
```

## ***Example: Modifying the Visible Property of a Question***

**Modify the Visible property.** Questions have a Visible property that can be set to true or false. This property is useful for making invisible any questions that are not applicable for a respondent based on his or her previous responses. The following script checks the value of the question *Gender*—if the response is *male*, the script skips two questions pertaining to pregnancy and turns them invisible.

```
function Form1_Gender_SkipFill(thisRespObj, thisVar)
{
  if ((Vars.GENDER.IsLabeled("Male")))
  {
    Forms.Form1.Pregnan1.Visible = false
    Forms.Form1.Pregnan2.Visible = false
    Forms.Form1.Workstat.SetFocus()
  }
}
```

**Disable a question.** You can also hide an inapplicable question by disabling it.

```
Forms.Form1.Pregnan1.Enabled=false.
```

## ***Example: Computing the Value of a Variable with a Rule Script***

**Compute the value of a variable.** You can use rule scripts to compute new variable values as data are being entered or checked. The following example checks the validity of responses on a customer satisfaction survey. This Checking rule computes an overall customer satisfaction rating by taking the average of three different responses and then comparing the average to another question that asks, “Were you satisfied with our service?” If the satisfaction rating is high—in this case, an average of 8 or more on a scale of 1 to 10—but the answer to the final satisfaction question is negative, a checking error is generated.

```
function checkavg_Check()
{
  Vars.SAT_AVG.Value=Sum(Vars.SATRATE1.Value,Vars.SATRATE2.Value)/2
  if ((Vars.SAT_AVG.Value >= 8) && (Vars.SATFINAL.IsLabeled("No")))
  {
    RuleViolation("Customer satisfaction average does not match response. Please check case. ")
  }
}
```

## ***Example: Setting Other Properties with a Rule Script***

The following are examples of how you can use rule scripts to modify the properties of questions, response controls, and text objects.

**Change the back color of a question.**

```
Forms.Form1.Question1.BackColor=Color.Blue
```

**Change the text of a question.**

```
Forms.Form1.Question2.QuestionText1.Text = "Enter your last name."
```

**Change the font of the question text.**

```
Forms.Form1.Question2.QuestionText1.Font = "Courier"
```

**Change the caption of an option button.**

```
Forms.Form1.Question2.OptionButton1.Caption="College degree"
```

# ***Managing Data Files***

This program is designed to be used in conjunction with statistical software programs from SPSS Inc.

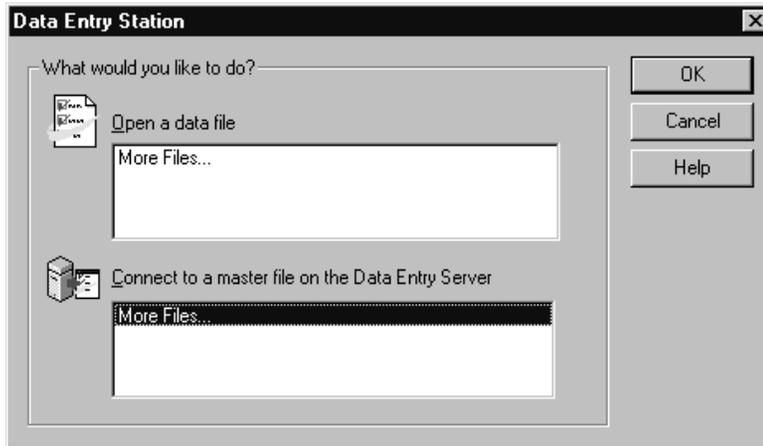
- You can read your data files in and out of recent versions of SPSS programs at will, including SPSS-format data files (version 7.5 or later). All of your forms, questions, variables, and rules are preserved when you read files in and out of these newer programs.
- In Builder, you can open SPSS data files (\*.sav) saved in earlier versions of SPSS for Windows, as well as files from SPSS for Macintosh or UNIX. However, you cannot read a data file back into one of these earlier programs without removing your forms, questions, and rules. (Use Export Data on the File menu to export your data in a format that can be read by SPSS for Windows version 6.1.3 through 7.1.)
- If you want to open a spreadsheet, ASCII, tab-delimited text, database, or SPSS/PC+ file, open the file in SPSS, save the data in SPSS format, and then open it in Builder.
- Files saved in Builder release 2.0 are not readable in earlier releases.

## ***Files in Builder and Station***

**Builder.** When you start Builder, the software opens a new file with a blank form. You begin creating a survey or you can open an existing file using the File menu.

**Station.** When you start Station, the initial dialog box allows you to choose between opening a local file or a master file. The master files are stored on the network server. To open a local file, double-click More Files under Open a Data File.

Figure 13-1  
*Data Entry Station dialog box*



## ***Exporting Data***

Forms, questions, and rules are not preserved in the exported data file.

### ***To Export Data for Analysis in an Older Version of SPSS***

You can read data files into and out of recent versions of SPSS programs at will, including SPSS-format data files (version 7.5 or later). If you want to analyze your data in an earlier version of SPSS, you can export only your data (cases and variables) into a data file that can be read by SPSS version 6.1.3 through 7.1.

- ▶ From the menus choose:
  - File
  - Export Data...
- ▶ In the Save Copy As dialog box, click the Save as Type drop-down list.

- ▶ Select the *.sav* file format to save the data in a format that can be read by SPSS 6.1.3 through 7.1.

Forms, questions, and rules are not saved in the exported data file, since these elements are not recognized by earlier versions of SPSS.

## ***Opening a File Modified in Another Program***

You can read data files in and out of recent versions of SPSS programs at will, including SPSS-format data files (version 7.5 or later). You can use Builder to open a file that has been modified in one of these programs. You will be warned that the file has been modified outside of Builder, and you will be asked if you would like to see the modification log. A modification log lists the changes that were made to the file. If a variable was deleted from the file, any object bound to the variable is also deleted.

If you open a survey and receive this warning, call your survey administrator if you are in doubt about how to proceed. You can also refer to the modification log for information about what was deleted.

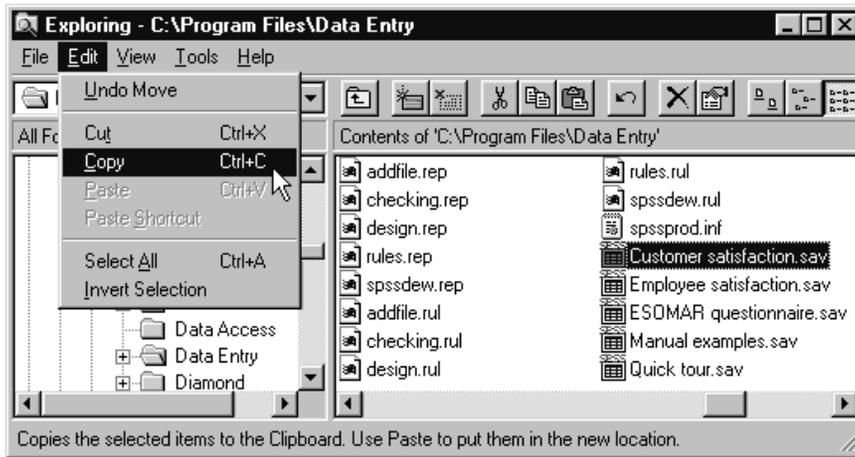
It is always a good idea to make a backup copy of a file before opening it in another program. If some essential variable is accidentally deleted, you will be able to retain all of your data.

## ***Tips for Managing Data Files***

A file is composed of two main parts: your form(s) and your data. If you find that you have created a form that meets your data collection needs but you want the data stored in different files, you can create copies of the file. For example, if you have a file that you want to use to collect your data but you want the data kept in separate files according to month, you can make as many copies of the file as you need and then collect each month's data with a different file.

## To Make a Copy of a File

Figure 13-2  
Copying a file in the Windows Explorer



- ▶ Open the Windows Explorer.
- ▶ Search through the directories until you find the file that you want to copy.
- ▶ From the menus choose:
  - Edit
  - Copy
  - Edit
  - Paste
- ▶ Change the name of your copied file.

## ***To Save a File without Cases***

If you forget to make a copy of your file before entering data, you can save a copy of your file and then delete the data from the file that you want to reuse. It is a good idea to make a backup copy of your file before you delete your data.

- ▶ Open the file.
- ▶ From the Builder window menus choose:
  - File
  - Save As...
- ▶ Save the file under a different name.
- ▶ Switch to Table Entry view.
- ▶ From the Form window menus choose:
  - Edit
  - Select All
- ▶ From the Form window menus choose:
  - Edit
  - Delete

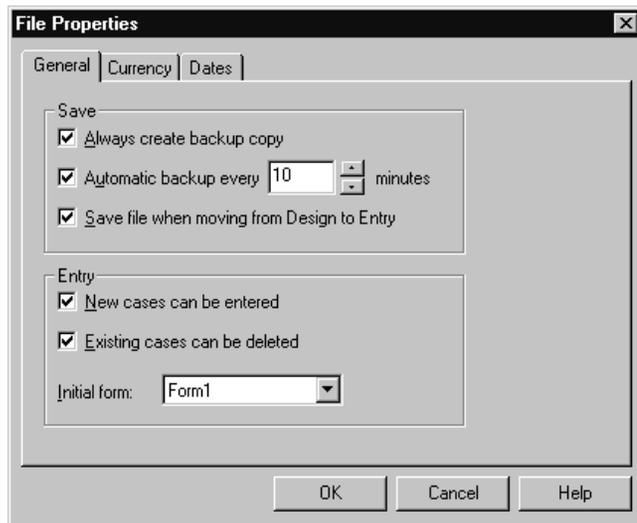
If you want to merge the files at a later time, you can use the ADDFILES utility.

## ***File Properties***

File properties allow you to access information about your survey and to change certain settings, including:

- Automatic saving
- Automatic backing up
- Entry options
- Currency formats
- Date formats

Figure 13-3  
*File Properties dialog box*

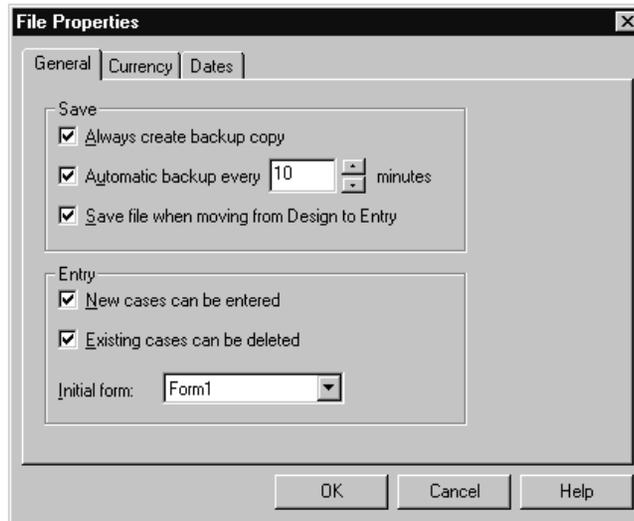


### ***To Change File Properties***

- ▶ From the Builder window menus choose:
  - File
  - File Properties
- ▶ Click the tab(s) for the properties that you want to change.
- ▶ Change the properties to the desired values.

## General Properties

Figure 13-4  
General tab



**Always create a backup copy.** Creates a backup copy whenever you open a file. The backup copy is not updated as you add data to your file. The copy is given the same name as your file, with a *.bak* extension. If for some reason you want the original data back, you can open the *.bak* file. Backups are stored in the current directory and remain there until removed or overwritten.

**Automatic backup.** Automatically saves a copy of your file at a specified interval. For example, if you enter three new cases and change the name of your file, a copy of your file containing the new cases and with the new name will be saved at the specified time interval. When you close the program, the autosave file will be removed. The autosave file appears in your directory only if the program terminated abnormally.

**Save file when moving from Design to Entry.** Saves the file automatically when you switch from Design to Entry view.

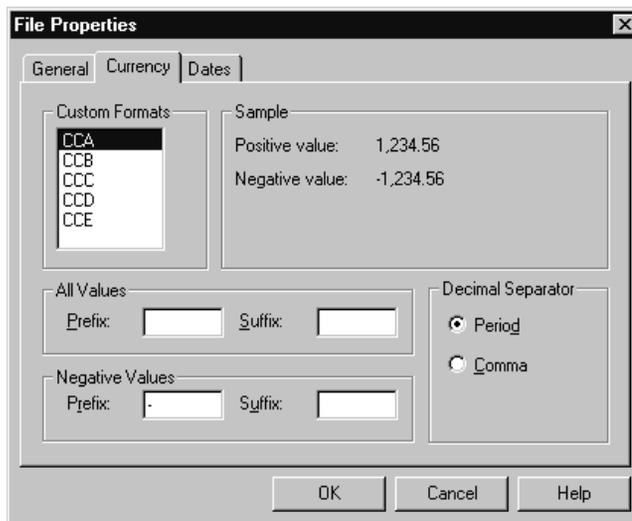
**New cases can be entered.** Controls whether you can insert or append new cases to your file. Deselect this option to suppress the addition of new cases (for example, if you want to preserve your file and ensure that no data will be added).

**Existing cases can be deleted.** Controls whether a case can be deleted during entry mode. Deselect this option to prevent the deletion of cases.

**Initial form.** The initial form is the form first opened when the file is opened for an entry session. You can specify which form you want to act as the initial form.

## Currency Formats

Figure 13-5  
Currency tab



You can define up to five custom currency display formats that can include special prefix and suffix characters and special treatment for negative values.

The five custom currency format names are *CCA*, *CCB*, *CCC*, *CCD*, and *CCE*. You cannot change the name of a currency format.

To define a custom currency format:

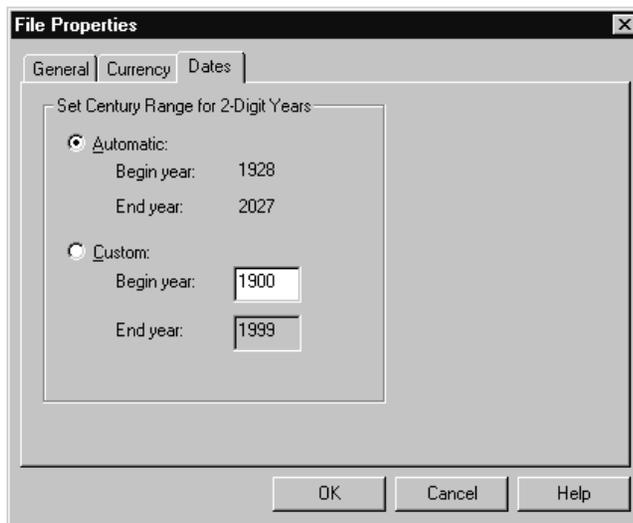
- ▶ From the Builder window menus choose:

File  
File Properties

- ▶ Click the Currency tab.
- ▶ Select one of the currency formats from the list (*CCA*, *CCB*, *CCC*, *CCD*, or *CCE*).
- ▶ Enter the prefix, suffix, and decimal indicator values.

## Date Formats

Figure 13-6  
Dates tab



**Set Century Range for 2-Digit Years.** Defines the range of years for date-format variables entered and/or displayed with a two-digit year (for example, 10/28/86, 29-OCT-87). The automatic range setting is based on the current year, beginning 69 years prior to and ending 30 years after the current year (adding the current year makes a total range of 100 years). For a custom range, the ending year is automatically determined based on the value you enter for the beginning year.



## ***Entering Data***

You can enter data in Form Entry view or Table Entry view.

**Form Entry view.** You enter the data by selecting or typing in the controls provided on the form. The form collects the data and stores it in your file. You can use the keyboard, mouse, or Navigation toolbar to move through the controls on your form. You can print your data while in Form Entry view, but the controls of your form are printed for each case.

**Table Entry view.** You enter the data into a table that resembles a spreadsheet, with each column representing a question and each row representing a case. In Table Entry view, you enter and move through data in essentially the same way as in Form Entry view, only the appearance and speed of entry differ. Printing from Table Entry view gives you a spreadsheet-like view of your data. Table Entry view allows you to view and print multiple cases.

## To Enter Data in Form Entry View

Figure 14-1  
Form in Form Entry view

The screenshot shows a window titled "Online Entry Form" with a menu bar (File, Edit, View, Data, Rules, Help) and a toolbar with navigation icons. The main content area displays a "Customer Satisfaction Survey" form. The form is divided into two columns of questions. The first column asks for product selection and overall satisfaction. The second column asks for recommendations and problem resolution. The "Fax Machine" checkbox is selected, and the "Very satisfied" radio button is selected for the overall satisfaction question. The status bar at the bottom shows "Ready", "3/3", "Skip & Fill: On", and "Auto Check: On".

**Online Entry Form**

File Edit View Data Rules Help

Customer Satisfaction Survey

Product (select all that apply)

Fax Machine

Copier

How would you rate your overall satisfaction with this product?

Very satisfied

Somewhat satisfied

Somewhat dissatisfied

Very Dissatisfied

No Answer

Would you recommend this product?

Yes

No

Did the product ever fail to operate?

Yes

No *If no, please skip to the next section*

Did you contact us to fix the problem?

Yes

No

Ready 3/3 Skip & Fill: On Auto Check: On

- ▶ From the Form window menus choose:
  - View
  - Form Entry
- ▶ Enter data into the response controls by typing or clicking on option buttons or list box selections.
- ▶ Press the Tab key to move between questions or to move from the last question to a new case.
- ▶ Press the arrow keys to move between option buttons or to move within a drop-down list.
- ▶ Use the space bar to select check boxes.
- ▶ Use the space bar or the mouse to deselect a selected check box.

- ▶ Use Shift-Tab to move back to the previous question.
- ▶ Use the checking facility to examine your data for errors.

## To Enter Data in Table Entry View

Figure 14-2  
Form in Table Entry view

	fax	copier	satisf	fail	contfail	recommd	birth
1	No	Yes	Very satisfied	No		Yes	
2	No	Yes	Somewhat satisfied	Yes	No	Yes	1961
3	No	Yes	Very satisfied	No		Yes	1965
4	Yes	Yes	Somewhat satisfied	Yes	No	No	1951
5	Yes	No	Somewhat dissatisfied	No		No	1954
6	No	Yes	Very satisfied	No		Yes	1949
7							

- ▶ From the Form window menus choose:
  - View
  - Table Entry
- ▶ Enter the data into the cells and press the space bar; then, use the arrow keys to look through the options, and use the Enter key to enter information.
- ▶ Click on a cell to select the cell. Click on the row number to select the entire case.
- ▶ Drag the separator bar to make columns wider.
- ▶ Press Tab or the arrow keys to move between cells.
- ▶ Use the checking facility to examine your data for errors.

**Tip:** If you accidentally hide a column in Table Entry view by resizing it so that it disappears, you can double-click on the column separation bar to make the column reappear.

### ***To Enter Values in Table Entry View***

You can enter the value of a response item in Table Entry view, instead of selecting the response item in the cell.

- ▶ From the Form window menus choose:
  - View
  - Table Entry
- ▶ From the Form window menus choose:
  - Data
  - Display Response Items
- ▶ Make sure that Display Response Items does not have a check mark by it.
- ▶ Enter data by using the values for response items.

### ***To Turn on AutoTab***

In Table Entry view, AutoTab automatically moves you to the next question after a specified number of characters have been entered. AutoTab works on text box cells.

- ▶ From the Form window menus choose:
  - View
  - Table Entry
- ▶ From the Form window menus choose:
  - Data
  - AutoTab

## To Use the Navigation Toolbar

Figure 14-3  
Navigation toolbar



- ▶ Use the Arrow tools to move through your cases or to add a new case.
- ▶ Use the First Case and Last Case buttons to go to the first or last case.
- ▶ Enter a number into the box to go to a specific case number.
- ▶ Use the Next Case with Error button to go to the next case with an error.
- ▶ Use the Override Error tool to override an error if the rules of your file allow it.
- ▶ If you are entering data into a master file, you can use the Send Case button to send a case to the network server.
- ▶ Use Toolbars on the View menu to hide and display the Navigation toolbar.

## Overriding Errors

There may be instances where you receive a rule violation error and need to override the error. For example, you may have entered the respondent's answer to a question, or you may have to commit the case before it is complete. Depending on the design of your file, you may be able to override the error and move on to the next question or case. For more information on checking and rules, see Chapter 15.

## ***Keyboard Shortcuts for Entering Data***

Tab	Move to the next question.
Enter	Move to the next question.
Shift-Tab	Move to the previous question.
Arrow keys	Move through the option buttons.
Ctrl-T	Switch to Table Entry view.
Ctrl-E	Switch to Form Entry view.
F8	Copy the value from the previous case.
Shift-F8	Copy all values from the previous case.
Space bar	Select check boxes.
Page Up	Move to first question on prior page.
Page Down	Move to first question on next page.
Alt-Home	Move to the first question on this page. If you have text selected for editing, move to the first character in the selected text.
Alt-End	Move to the last question on this page. If you have text selected for editing, move to the last character in the selected text.
Ctrl-Page Up	Move to the current question on the previous case.
Ctrl-Page Down	Move to the current question on the next case. If there is no next case, the current case is committed and a new case is created.
Ctrl-Alt-Page Up	Move to the first question on the first case.
Ctrl-Alt-Page Down	Move to the last question on the last case.

## ***Using Cut, Copy, and Paste***

You can use Cut, Copy, and Paste on the Edit menu to enter data into your file. You can cut, copy, or paste from Form Entry view or from Table Entry view. Cut removes the selected value from your file and copies the value to the clipboard. Copy copies the selected value to the clipboard. Paste copies the contents of the clipboard, in whole or part depending on the situation, to the variable bound to the selected question. You can cut, copy, and paste data both inside and outside of your file. You can copy:

- A single value.
- A case.
- The previous case or one of its values.
- A value from an outside source, including text or binary interchange format (BIF), which is the format used in spreadsheets. If you have selected more than one spreadsheet cell, only the first value is copied into your question's variable.

## ***To Copy and Paste Values***

- ▶ Select the text that you want to copy.
- ▶ From the Form window menus choose:
  - Edit
  - Copy
- ▶ Click in the area where you want the text to appear.
- ▶ From the Form window menus choose:
  - Edit
  - Paste

## ***To Cut a Value***

- ▶ Select the value that you want to cut.
- ▶ From the Form window menus choose:
  - Edit
  - Cut

## ***To Copy and Paste a Case***

You can copy and paste cases in either Form Entry view or Table Entry view. The method of selecting a case differs in the two views. Copying and pasting cases is faster in Table Entry view.

### ***Table Entry View***

- ▶ Select the case that you want to copy.
- ▶ From the Form window menus choose:
  - Edit
  - Copy

- ▶ Select the case you want to paste into. You can paste into a blank case or a case with values.
- ▶ From the Form window menus choose:
  - Edit
  - Paste

### ***Form Entry View***

- ▶ Display the case that you want to copy.
- ▶ From the Form window menus choose:
  - Edit
  - Select Case
- ▶ From the Form window menus choose:
  - Edit
  - Copy
- ▶ Display the case you want to paste into. You can paste into a blank case or a case with values.
- ▶ From the Form window menus choose:
  - Edit
  - Paste

### ***To Paste Data from the Previous Case***

- ▶ Select the question in the current case you want to copy the value into.
  - ▶ From the Form window menus choose:
    - Edit
    - Copy Value from Previous Case
- If you want to copy all values into the current case, you can press Shift-F8.

## ***To Insert a Case between Existing Cases***

- ▶ Select any question in the case before which you want the new case to appear.
- ▶ From the Form window menus choose:
  - Data
  - Insert Case
  - Before Current (After Current, At End)

## ***To Delete a Case***

- ▶ From the Form window menus choose:
  - Edit
  - Delete Case

Deleting a case leaves you on the case immediately preceding the case that was just deleted.

**Tip:** You can also delete cases in Table Entry view. This is especially useful for deleting a range of cases or deleting all cases.

## ***Committing versus Saving Cases***

Committing a case validates the case and enters it into memory. You can actively commit a case by using the Commit Case command on the Data menu, by using the Navigation toolbar, or by pressing the Tab key on the last question in a case. Cases are also committed when you move from one case to another, save your data, open a different file, add a new case, or trigger a Skip & Fill rule.

Even when you have committed a case, you must still save your data file. Saving records more information than just your data, including information such as window size and location. You must save your file before you exit the session. There is no undo for committing a case. For more information, see Chapter 15.

## ***To Commit a Case Manually***

- ▶ From the Form window menus choose:
  - Data
  - Commit Case
- ▶ The case is now validated and entered into memory.
- ▶ You will need to save the file upon exiting. It is also a good idea to save your file regularly to protect against data loss.

## ***Continuing Where You Left Off***

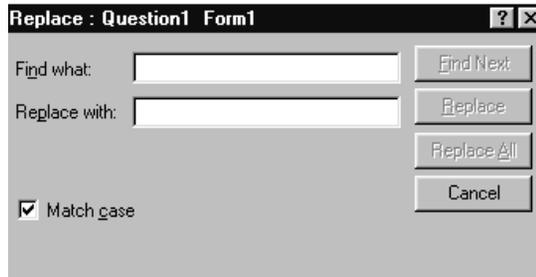
If, for some reason, you need to stop entering data and continue at a later time, your best option is to finish entering the data for your current case, save your file, and exit the program. However, if it is necessary for you to stop in the middle of a case, you may be able to commit the case, save what you have already entered, exit the program, and, at a later time, continue where you left off.

Whether you are able to do this depends on the rules specified for your file. If there are rules in your file that prohibit you from continuing to the next case until you have entered data in the current case, you will have to finish entering the data for the current case. For example, a Checking rule may be defined that prevents an incomplete case from being committed.

For a file without rules requiring answers to all questions, you can commit your incomplete case and save your file. When you open your file next time, your incomplete case is the current case. You can tab to where you left off and resume entering data.

## Using Find and Replace

Figure 14-4  
Find and Replace dialog box



Find and Replace finds all instances of a response stored within your file's variables and changes them. You can use Find and Replace to locate a string, a number value, or a date. The search continues through your file and wraps around to the beginning.

When searching for a number, the search is not case-sensitive, and a match is made only for the entire value. For example, if you enter 30,000 while searching a question that represents a variable for wages, a match happens only for that exact number. Numbers such as 130,000 would not match.

A string search could consist of letters, numbers, and punctuation or only letters. For example, a search for John in a name box and JL-1002-88-2321 in a driver's license number box are both string searches. You have the option of case-sensitive string searches.

When searching for dates, you have multiple options for the format of the date. For example, the program will accept 5/30/97 or 5-30-97 or May 30, 97. Date searches are not case-sensitive.

You can also search for blanks and system-missing data.

Find and Replace can be a useful tool for fixing typing or low-level entry errors. For instance, if you entered abbreviations for "Drive" and "Street" in addresses and then had to put in the full words, you could use Find and Replace to complete the task quickly.

## ***To Find and Replace a Value***

- ▶ Select the field in which you want to locate the item.
- ▶ From the Form window menus choose:
  - Edit
  - Replace...
- ▶ Enter the value that you want to find and the value that will replace it.

## ***Printing in Form Entry View***

Printing your data in Form Entry view prints the form controls as well as data. Only the current case is printed in Form Entry view. If you want to print all of your cases, you can print the file from Table Entry view.

Page Setup allows you to specify several properties of the printed form, such as the paper size and source, the orientation of the page, and the margins.

## ***To Print a Form***

- ▶ Switch to Form Entry view.
- ▶ To preview your form, from the Form window menus choose:
  - File
  - Print Preview
- ▶ To print your form, from the Form window menus choose:
  - File
  - Print...

### ***Tips***

- If you want to use the form as a printed questionnaire, you can either print from the Form Entry view before you enter cases or add a new case and then print the empty case.
- In cases where a default value has been changed or Skip & Fill rules have been activated, a case may not print out blank.

## ***To Print All Cases in Table Entry View***

- ▶ From the Form window menus choose:
  - View
  - Table Entry
  
- ▶ From the Form window menus choose:
  - File
  - Print...

## ***To Specify Page Size and Orientation***

- ▶ From the Form window menus choose:
  - File
  - Print...
  
- ▶ In the Print dialog box, specify page size and orientation.



## ***Checking Data***

Use the Rules menu to check your data for rule violations. The rules are created and saved by the survey designer. You can check a single case or an entire file. Checking by case allows you to examine a case quickly and correct it easily at any time during the entry process. Checking an entire file gives you a detailed report of all of the rule violations in the file. If you need to find and correct a rule violation, check by case. If you need a detailed report of the state of all of your data, check by file.

### ***To Check a File***

- ▶ From the Form window menu choose:
  - Rules
  - Check File
- ▶ Select either By Cases or By Rules.
- ▶ To correct errors, display the case with the error.
- ▶ Tab to the question with the error and correct it.

#### ***Tips***

- If you want to easily view and correct rule violations, select the report by cases. If you are interested in evaluating the effectiveness of your rules, select the report by rules.
- You can open an existing data file and check it for errors.

## Checking Report by Case

Figure 15-1  
*Checking report by case*

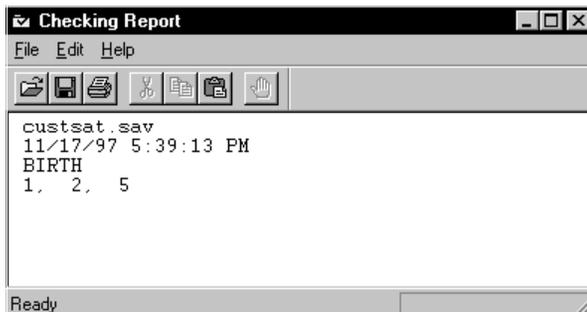


The first two lines of the report list the name of the file and the date and time the report was run. The report then lists the case number for each case with rule violations. The name of the violated rule is listed on a separate line below the case number.

If you want to view a case listed in the report or make changes to it, you can open the case in your form and make your changes. The changes are reflected in the report when you run a new Checking report.

## Checking Report by Rule

Figure 15-2  
*Checking report by rule*



The first two lines of the report list the name of the file and the date and time the report was run. The report then lists the name of each rule that was violated. Below the rule name is a list of all of the cases that violate the rule.

## To Save the Checking Report

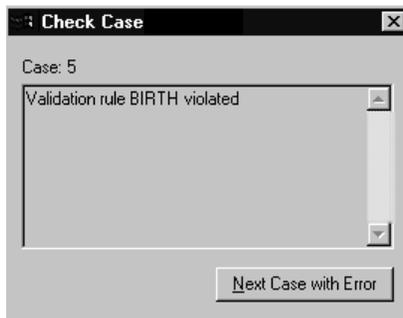
You can save a Checking report for later use or for administrative purposes. Reports are saved in rich text format (.rtf).

- ▶ From the Checking Report window menus choose:

- File
- Save

## To Check a Case

Figure 15-3  
*Checking Report window for a single case*



- ▶ From the Form window menus choose:
  - Rules
  - Check Case
- ▶ If you want to keep a record of the errors you find, the most efficient way is to run a Checking report by case. However, you can copy the rule violations in the Checking Report window by selecting the text and pressing Ctrl-C and then pasting it into a text file.
- ▶ Click Next Case with Error to see the report for the next case containing rule violations.



# ***Minimizing Errors with Double Entry and Compare Versions***

If you have data that require accurate entry, you can use Checking and Validation rules to uncover many errors. However, rules cannot uncover all errors. Typos, incorrect data, and skipped cases can still escape detection. The Double Entry and Compare Versions facilities can give you another way to verify the accuracy of your data.

With Double Entry, you specify which variables you want to have verified. After a user enters data into the file, a second user opens the file in Double Entry mode and enters just the variables specified as double entry variables. When differences are found, the user is immediately notified and is able to correct the discrepancy on the spot.

With Compare Versions, you can compare two versions (entered by different people) of the same file to minimize the possibility of errors. One file acts as the verification file and the other file is compared against the verification file. The files are checked for case, variable, and value consistency. Discrepancies are recorded in the comparison log file, which you can use to correct the data.

## ***Designing a File for Double Entry***

When you create your form and define your variables, you can specify which variables you want to have double entered by setting the Entry property of the variable.

Figure 16-1  
Variable Properties dialog box

The screenshot shows the 'Variable Properties' dialog box for the variable 'SATISF'. The dialog has five tabs: 'General', 'Format', 'Values', 'Missing Values', and 'Valid Values'. The 'General' tab is selected. The 'Variable name' is 'SATISF' and the 'Alias' is empty. The 'Variable label' is 'How would you rate your overall satisfaction with this pro'. The 'Question text' is '4. How would you rate your overall satisfaction with this product?' and the 'Link with variable label' checkbox is unchecked. The 'Default value' is '0' and the 'Entry Type' is 'Double Enter'. There is a 'Comments' text area at the bottom. 'Close' and 'Help' buttons are at the bottom right.

There are three possible designations for the Double Entry property:

**Double Enter.** Allows the entry of a second value when in Double Entry mode. This is the default.

**Edit.** Allows anyone to change the values of variables during normal entry or double entry.

**Protected.** Prevents any entry for variables in all entry modes. Protected variables can only be filled by rules (for example, an ID field that is incremented with each new case).

You cannot set the Entry property via a rule.

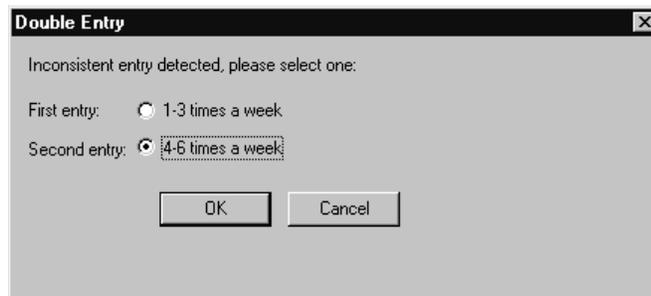
You can open your existing *.sav* files and all the variables are ready for double entry. You can change the Double Entry state for variables you don't want to have double entered. If the file already has data in it, you can double enter that data.

**Tip:** Double Entry is not appropriate for long, open-ended text questions.

## Double Entering Data

After the initial data entry is complete, you can double enter the file in either Form or Table Entry view. You access the Double Entry mode via the Data menu. In Double Entry mode, you are moved automatically between the variables whose Entry properties are set to Double Entry.

Figure 16-2  
Double Entry dialog box



When a difference in the data is found, you must select the correct response from the Double Entry dialog box. Any rules attached to the variable will fire after the correction.

## To Double Enter a File

To double enter the data in a file:

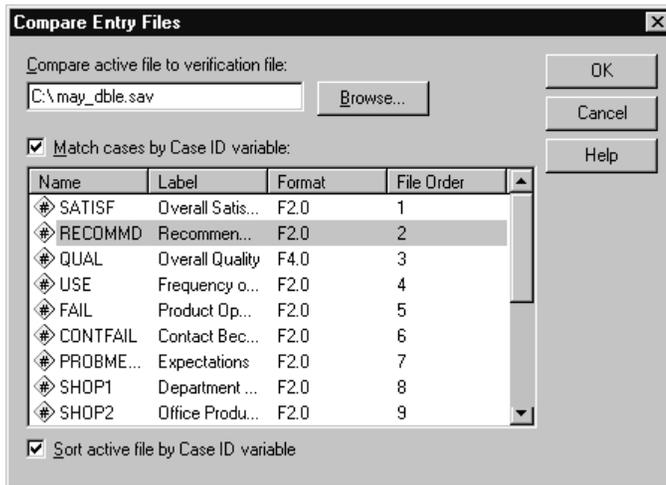
- ▶ Create a file with variables designated for double entry.
- ▶ Have someone enter data into the file.
- ▶ When the initial entry is completed, ask another user to open the file in either Form or Table Entry view.
- ▶ From the Form menu choose:
  - Data
  - Double Entry
- ▶ Enter data into the file.

- ▶ When differences occur, select the correct response from the Double Entry dialog box.
- ▶ Or, click Cancel to enter a different response.

## Using Compare Versions

At the beginning of the entry process, you should create two copies of the file and have two different people enter the data into the files. When the data entry is complete, open the file whose data you want to save permanently. This is the active file, which you can edit to correct any discrepancies found by the comparison. You can use Compare Versions only in Form Entry or Table Entry view.

Figure 16-3  
Compare Entry Files dialog box



**Verification file.** Specify the name of the file you want to compare to the active file.

**Match cases by Case ID variable.** This ensures that cases are matched when comparing files. If you don't have a case ID, your file is compared sequentially. If files do not have an equal number of cases, the comparison stops when the shorter file has run out of cases. You can use the case ID variable to compare a subset of the cases. For example, if you specify a case ID variable, you can have someone randomly enter 20 selected cases to compare with a file of 1000 cases.

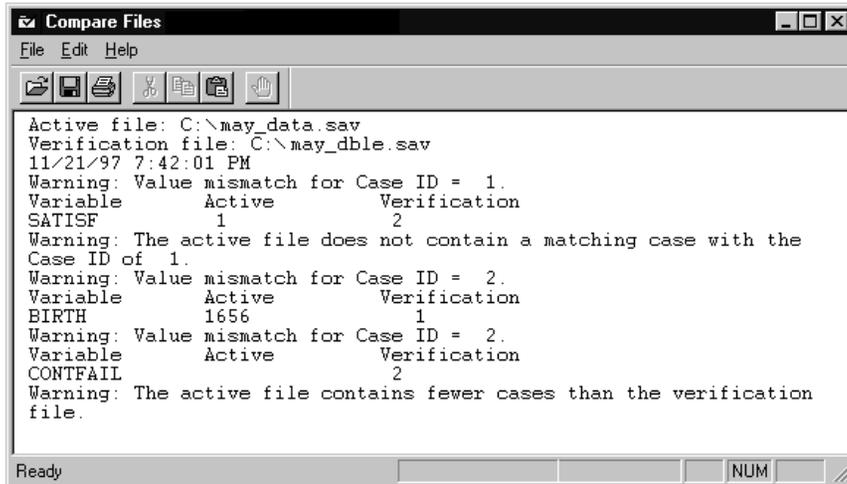
**Sort active file by Case ID variable.** Sorting is required for a comparison keyed by the case ID variable. This option indicates whether a copy of the active file is sorted on the case ID for comparison. If you select this option, the active file is permanently sorted. If you do not, a temporary copy of the file is sorted for the comparison. If current case order is not important to you, select this option—it is faster and uses less disk space. The file is not sorted if a case ID variable is not specified.

### ***To Compare Versions***

- ▶ Create two copies of the file without cases.
- ▶ Have someone enter the data into one of the files.
- ▶ Have someone else enter the data into the other file.
- ▶ Open the file that you want to use as the active file.
- ▶ Switch to Table Entry or Form Entry view.
- ▶ From the Builder window menus choose:
  - File
  - Compare Versions...
- ▶ Enter the name of the file that you want to use as the verification file.
- ▶ If you have a case ID and you want to use it in the comparison, select Match cases by Case ID variable.
- ▶ If you are using a case ID variable and you don't mind the file being permanently sorted by the case ID variable, select Sort active file by Case ID variable.
- ▶ When the comparison is complete, check the comparison log for the differences in your data.
- ▶ For each difference, decide which entry is correct. If the active file is correct, do nothing. If the verification file is correct, edit the active file to match the verification file.

## Using the Comparison Log

Figure 16-4  
Compare Files log



```
Compare Files
File Edit Help

Active file: C:\may_data.sav
Verification file: C:\may_dble.sav
11/21/97 7:42:01 PM
Warning: Value mismatch for Case ID = 1.
Variable      Active      Verification
SATISF       1           2
Warning: The active file does not contain a matching case with the
Case ID of 1.
Warning: Value mismatch for Case ID = 2.
Variable      Active      Verification
BIRTH        1656       1
Warning: Value mismatch for Case ID = 2.
Variable      Active      Verification
CONTFALL     2
Warning: The active file contains fewer cases than the verification
file.

Ready          NUM
```

The comparison log shows you the warnings and errors that were generated as a result of the file comparison. You can save and print the comparison log. Following are the basic types of mismatches and errors:

- **Variable mismatch.** Reports variables missing from the verification file, variables missing from the active file, and whether there are no common variables to compare.
- **Value mismatch.** Reports by case with the case identified by the case number within an active file. If the case ID is specified, it is used instead of the case number.
- **Case mismatch.** If the key variable is used, reports whether cases are missing in a file. The report stops when it runs out of cases in either file.

For each difference, decide which entry is correct. If the active file is correct, do nothing. If the verification file is correct, edit the active file to match the verification file.

## ***Merging Data Files with ADDFILES***

ADDFILES is a stand-alone utility that allows you to merge data from several files. ADDFILES reads a text file of commands and uses the parameters as a guide to concatenate the files. Cases are added one after the other. The files are added in the order in which they are given in the commands. You could use ADDFILES in the following instances:

- You create five copies of a file and have five different clerks entering data into the files. At the end of the study, the five files are returned to you. You can use ADDFILES to combine the five files into one new file.
- You have five copies of a file and five different clerks entering data into the files. At the end of each day, each clerk saves the file under a new name and gives it to you. You can merge the files into one new file with ADDFILES each day. If the clerks use the same new filename each day, you can use the same syntax file every time you run ADDFILES.
- You can use ADDFILES to do spot analysis on the data entered. You can get copies of the data files from your clerk and use ADDFILES to combine the files into a new file for analysis.

Run ADDFILES at the DOS prompt. Running ADDFILES requires a plain text file of ADDFILES commands, which is named as a command line argument. ADDFILES produces a log file; everything in the log file except the commands is printed as a comment, so if you accidentally delete your file of commands, you can run ADDFILES using the log file.

You can also merge files in your statistical analysis program from SPSS Inc. If you need to reorder cases, you can do so by opening the file in your statistical analysis program.

ADDFILES is installed as part of the custom installation. If you do not currently have ADDFILES installed on your computer, rerun the setup program and choose the custom installation.

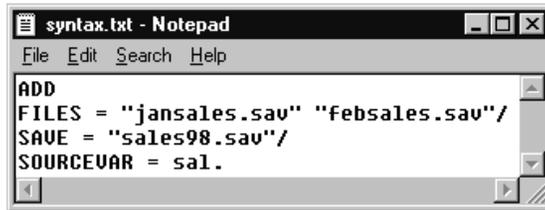
## To Merge Data Files

Imagine the following scenario: You want to collect all of your sales data for the year into an overall file, *sales98.sav*. You have sales data for the first two months of the year, *jansales.sav* and *febsales.sav*. This is the first time you are merging the files, so you will not use the MASTER subcommand. You will use the SAVE subcommand, which will create the *sales98.sav* file.

- ▶ Open Notepad or a similar text editor.

Figure 17-1

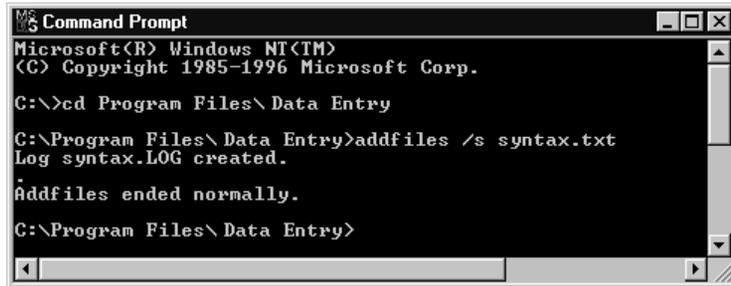
*Syntax file in Notepad*

A screenshot of a Notepad window titled "syntax.txt - Notepad". The window has a menu bar with "File", "Edit", "Search", and "Help". The text inside the window is:

```
ADD
FILES = "jansales.sav" "febsales.sav"/
SAVE = "sales98.sav"/
SOURCEVAR = sal.
```

- ▶ On the first line, type ADD.
- ▶ Type FILES = "jansales.sav" "febsales.sav"/ (names of the data files you want to merge).
- ▶ Type SAVE = "sales98.sav"/ (name of the product of the merge).
- ▶ Type SOURCEVAR = sal. (rootname of the variable that will tell which file a variable came from).
- ▶ Save the syntax file as *syntax.txt*.

Figure 17-2  
Running ADDFILES in DOS



```
Microsoft(R) Windows NT(TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\>cd Program Files\Data Entry

C:\Program Files\Data Entry>addfiles /s syntax.txt
Log syntax.LOG created.

Addfiles ended normally.

C:\Program Files\Data Entry>
```

- ▶ At the DOS prompt, type `ADDFILES /s syntax.txt`.

### Tips

- To get usage help on using `ADDFILES`, type `ADDFILES /?` at the DOS prompt.
- If you omit the optional commands, such as `MASTER`, make sure that your last line in the syntax file ends with a period (`.`); otherwise, use a slash (`/`).

## **ADDFILES Command Syntax**

```
ADD
MASTER [=] "filename"/
FILES [=] "filename" "filename" .../
[SAVE [=] "filename"]
[SOURCEVAR [=] rootname].
```

**MASTER.** You use a master file for collection purposes and for dictionary information differences should they arise. When you specify a master file, the files you are merging are added to the end of the master file. The `MASTER` subcommand is optional. When you are merging files for the first time, you do not use the subcommand. You can either specify the final file in the `SAVE` subcommand or use one of the files you are merging as the final file. For example, you are merging *jansales.sav* and *febsales.sav*. You want to save the files to *sales98.sav*, which will contain all of your sales information for a year. The first time you merge your files, you do not use the `MASTER` subcommand. You use the `SAVE` subcommand and specify *sales98.sav*. The next time you merge files, you will use the `MASTER` subcommand and will specify *sales98.sav* as the master file. In the subsequent merge, you will not use the `SAVE` subcommand.

**FILES.** Specifies the files that you want to merge. If you are not using the MASTER subcommand, be sure the file whose dictionary information you want to use is specified first. If you are not using the SAVE subcommand, be sure the file that you want your files saved to is specified first.

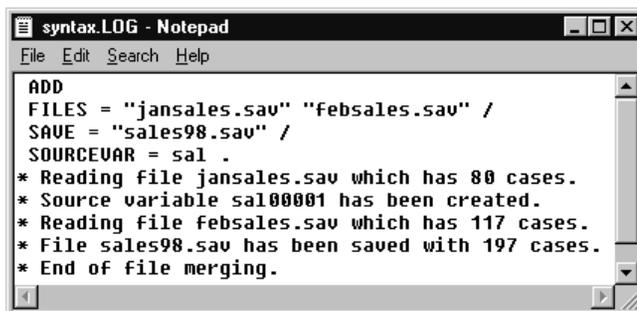
**SAVE.** Names the final file. This command is optional. If you do not specify a save file, the final file information is saved to the master file. If you do not specify a save file and do not have a master file, the first file specified in the FILES subcommand is used.

**SOURCEVAR.** This command is optional. The source variable allows you to know the origin of every case in your merged file. You specify a rootname for your output variables. The rootname cannot result in a variable name greater than 8 characters. The numbering system starts with 1 and leading zeros are used to create an 8-character name. For example, if you use *march* as your source variable and are merging three files, you create the variables *march001*, *march002*, and *march003*. The value of the source variable is 1 if the case came from the file and 0 if it did not. You will have a source variable for each file, and the final file should contain the same number of source variables as the number of files merged.

## ADDFILES Log

ADDFILES produces a plain text log file of its actions during the course of a file merge. The log file can show you what went wrong with an incomplete merge. Since the commands that ADDFILES executed are written to the log in the proper syntax format and the other items in the log are written as comments, you can use a log file as the syntax command file the next time you run ADDFILES. If you often merge the same files, you can use the log file from your first successful merge as your syntax file in subsequent merges.

Figure 17-3  
ADDFILES log file



```
syntax.LOG - Notepad
File Edit Search Help
ADD
FILES = "jansales.sav" "febsales.sav" /
SAVE = "sales98.sav" /
SOURCEVAR = sal .
* Reading file jansales.sav which has 80 cases.
* Source variable sal00001 has been created.
* Reading file febsales.sav which has 117 cases.
* File sales98.sav has been saved with 197 cases.
* End of file merging.
```

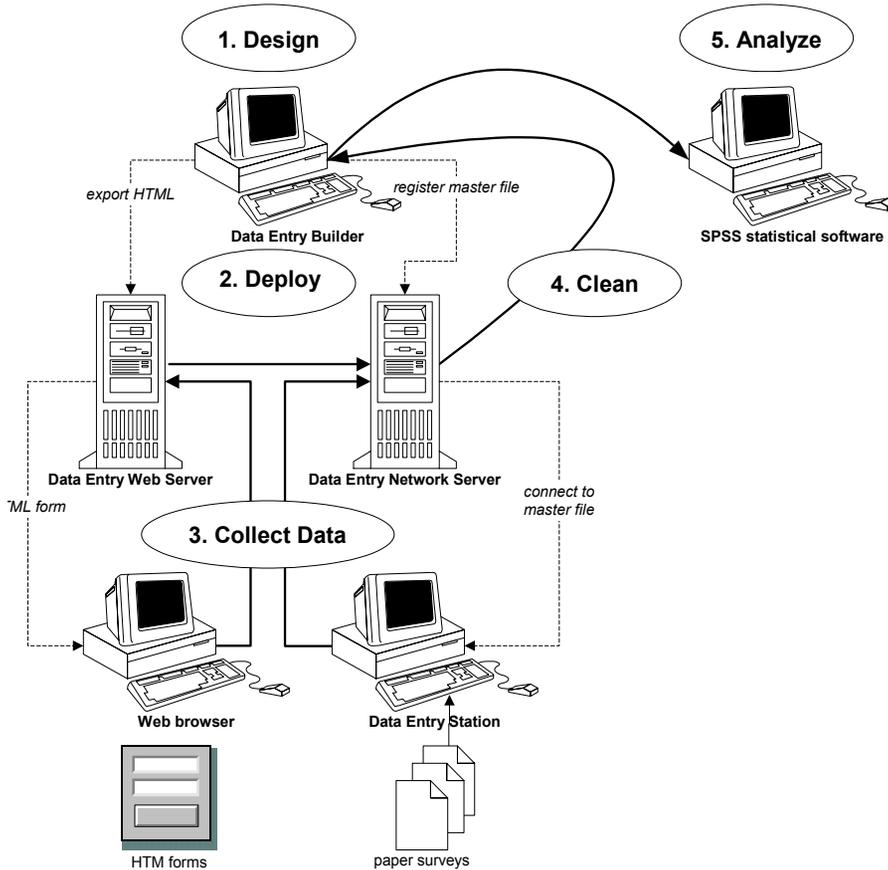
# ***Introduction to Data Entry Enterprise Server***

The appendices describe the SPSS Data Entry Enterprise Server, which is a collection of software that provides tools to allow teams at your site to gather data from surveys. It supports all stages of the process—from survey design through data collection and storage. The Data Entry Enterprise Server allows multiple users to connect and add data simultaneously.

The Data Entry Enterprise Server consists of two separate server components: the **Data Entry Network Server** and the **Data Entry Web Server**. The Data Entry Network Server receives survey cases from clients' personal computers running Data Entry Builder, Data Entry Station, or Web browsers. The Data Entry Web Server allows end users to respond to your surveys from Web browsers.

Figure A-1

Overview of steps to conduct a survey with Data Entry Enterprise Server



- ▶ **Design.** Use Data Entry Builder to design the survey questions, valid responses, and forms.
- ▶ **Deploy.** Use Data Entry Builder to register the master file for the survey on Network Server, which deploys the survey for users of Data Entry Station and enables data collection via the Web. Optionally, export the Survey as HTML and copy it to the publish directory of Data Entry Web Server, which deploys the survey on the Web.
- ▶ **Collect data.** Use Data Entry Station to connect to Data Entry Network Server, obtain a copy of the master survey file, and enter responses from paper forms. Optionally,

distribute the URL to the Web survey. Responses are automatically sent from Data Entry Web Server to Data Entry Network Server. The response data are stored in the master file by Data Entry Network Server.

- ▶ **Clean data.** Get the data from Data Entry Network Server and use Data Entry Builder to clean the data.
- ▶ **Analyze the cleaned data.** Save the clean data with Data Entry Builder and open it in SPSS statistical analysis software.

## ***Software Components***

The full suite of Data Entry Enterprise products includes the following software components:

**Builder.** Data Entry Builder allows the survey administrator to design surveys. Survey data can also be sent from Builder using the Design or Table view. Builder is typically installed on the survey designer's personal computer.

**Station.** Data Entry Station supports a subset of Builder features. Station allows data entry clerks to enter data from completed surveys. Station is typically installed on the data entry clerks' personal computers. The use of Station is optional.

**Network Server.** Data Entry Network Server allows survey analysts and administrators to register surveys and extensions. It also has an Administrator utility that supports some configuration of Data Entry Enterprise Server. Once a survey is registered, the Network Server receives cases as they are sent from Station (or Builder) and, optionally, a respondent's Web browser. The Network Server is typically installed on an analytic server (a server that is used to run analytic applications).

**Web Server.** Data Entry Web Server, runs within Orion application server to deploy surveys as HTML forms to a Web browser, collect responses, and send responses to the Network Server. The Web Server is an optional part of the Data Entry Enterprise Server. The Web Server is typically installed on an HTTP server; however, it can be installed on the same computer as the Network Server. The use of Data Entry Web Server is optional.

**Analysis software from SPSS.** Statistical software products from SPSS Inc. allow the survey analyst to do further analysis of the survey responses after they are collected. The use of SPSS analysis software is optional.

## ***Appendix Overview***

The appendices that follow describe how to perform the following tasks:

- Designing a file for use as a master file
- Sending data to the network server
- Creating and deploying a Web survey

# ***Designing a File for Use As a Master File***

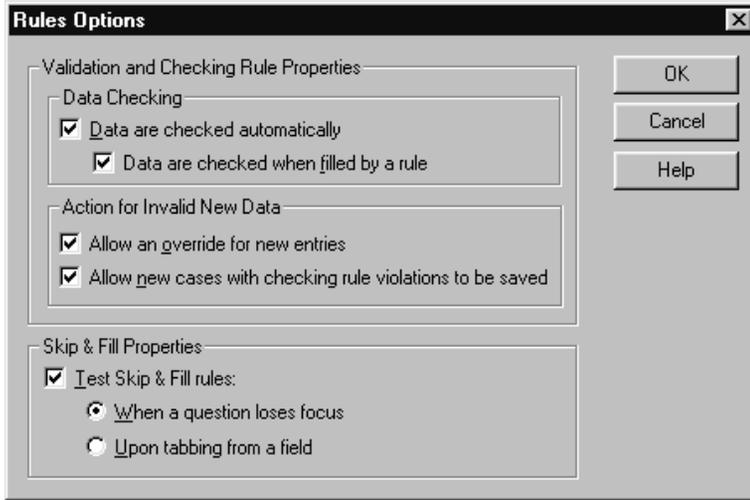
This appendix explores issues relating to files that you want to register as master files, including:

- Making decisions about when rules are to be activated
- Creating a rule that will track which user entered each case
- Registering a master file
- Editing a master file
- Double-entry and master files

## ***Master Files and Rules Activation***

When you design a file that you will use as a master file, you should make a decision about who will be responsible for cleaning the data. By setting the rules options, you can either require users to enter data that pass your Checking rules or allow them to override Checking rule errors, which would leave you to clean the data later. Thinking about this distinction before you register the master file may eliminate the need to change the rules options in the master file later.

Figure B-1  
*Rules Options dialog box*



If you want the users to clean the data, make sure that Data are checked automatically is selected and that Allow an override for new entries is deselected. If you want to clean the data at a later time, make sure that Data are checked automatically is deselected and that Allow an override for new entries is selected. When the survey is completed, you can run a checking report and clean the data.

## ***Tracking Cases***

You can use the following Checking rule to track who entered each case and at what time the case was committed. A case is committed either when it is sent or when the user moves to the next case. To use this rule, you must create in your file two additional variables to store the user ID and the time. Both of these variables should be strings. In this example, the variables are named *USERID* and *DATE*. The Checking rule is named *Track*.

```
function Track_Check()  
{  
  Vars.USERID.Value = UserID  
  x = new Date ()  
  y = x.toLocaleString ()  
  Vars.DATE.Value = y  
}
```

### **To Create the Checking Rule to Track Cases**

- ▶ Create two string variables, *USERID* and *DATE*, to hold your information.  
For more information on creating variables, see Chapter 7.

- ▶ From the Builder window menus choose:

```
Insert  
  Rule...
```

- ▶ Select Checking as the rule type, enter a name, and click OK.

- ▶ In the Rule Script window, enter the following:

```
Vars.USERID.Value = UserID  
  
x = new Date ()  
  
y = x.toLocaleString ()  
  
Vars.DATE.Value = y
```

- ▶ Close the Rule Script window.
- ▶ From the Builder window menus choose:

```
View  
  Rules
```

Your rule appears in the Builder window.

## ***Registering a Master File***

When you have a survey file that you want users to access using Data Entry Network Server, you must register it as a master file. A **master file** is on the server and open to users. When users access a master file, they are actually making a copy of the file. Each user enters data into the copy of the file and sends cases back to the server.

To register a master file, the following conditions must be met:

- The file must be a data entry file, created in Data Entry Builder, release 1.0.4 or later. If the file was created in a previous release of Builder, you can open it in release 1.0.4 of Builder and save it. If you open the file in SPSS, you must open it in release 1.0.4 of Builder and save it before registering it.

**Note:** Files saved in Builder release 2.0 are not readable in earlier releases.

- If the file is stored anywhere other than on the server system, you must map a drive to that system.
- You must have physical access to the server to register a master file.

Registering a master file is discussed in Appendix A.

When a file is **registered**, it is open to users of both Builder and Station, who can enter and send cases to the server. The cases are stored in the master file. Users cannot view the cases on (or make changes directly to) the master file, since the server locks the files for its own use.

## ***To Map a Drive***

The directory containing the file must be shared. To share the directory:

- ▶ Open an Explorer window on the system on which the file is stored.
- ▶ Right-click on the directory and select Properties from the context menu.
- ▶ In the Properties dialog box, click the Sharing tab and select Share As.

To map a drive to the shared directory:

- ▶ On the server, right-click on the My Computer icon.

- ▶ Select Map Network Drive from the context menu.
- ▶ Choose a drive letter for the network drive.
- ▶ Select the appropriate computer and directory from the Shared Directories list.
- ▶ Make sure that Reconnect at Logon is selected. If the drive does not automatically connect, this will cause problems for users who want to connect to the file.

### ***Editing a Master File***

If you need to make changes to the master file: unregister it, make the changes using Builder, and then reregister the file. Like registering, unregistering a master file requires physical access to the server.

If users have connected to the master file and sent cases to it, you should notify them that you are making changes to the file. Once the master file is changed and reregistered, they will not be able to send cases back to the server via the file they originally connected to and saved locally. They must reconnect and get a copy of the new master file. If the users have saved cases in the local files, they cannot send those cases back to the master file if it has been modified since they originally connected to it. The local files, however, can be merged with the master file using the ADDFILES utility.

**Note:** There is a limitation to using ADDFILES to add cases to the master file. To use ADDFILES, you must unregister the master file. When you are finished using ADDFILES, you must open the file in release 1.0.4 or later of Builder and resave it before you can register it as a master file. The best course of action is to wait until the end of the data collection process to use ADDFILES.

If you decide it is necessary to make changes to the master file, following these steps should provide a smooth transition:

- Establish a time period during which you will change the master file.
- Inform the users of this time period and encourage them to send their cases to the server before the master file arrives.
- After the new master file is registered, allow the users to connect to the new master file.

For more information on ADDFILES, see Chapter 17.

## ***Double-Entry Verification and Master Files***

The Network Server is designed only to receive data; it cannot send data to Builder or Station. If you want to perform double-entry verification on a master file, you must follow this procedure:

- ▶ Create a file with variables designated for double entry.
- ▶ Register the file as a master file on the Network Server.
- ▶ Ask a user to connect to the master file on the Network Server.
- ▶ When the user finishes entering the data, he or she sends all of the cases to the Network Server.
- ▶ Unregister the master file and make a copy of it.
- ▶ Delete all of the cases from the copy of the file.
- ▶ Register the copy of the file as a master file on the Network Server.
- ▶ Give the copy of the file to a second user.
- ▶ The second user opens the file locally and switches to double-entry mode.
- ▶ The second user enters data into the file and all variables designated for double entry are verified.
- ▶ When the second user has finished entering the data, he or she sends all of the cases to the Network Server.
- ▶ You have now verified data in the master file.

# ***Sending Data to the Network Server***

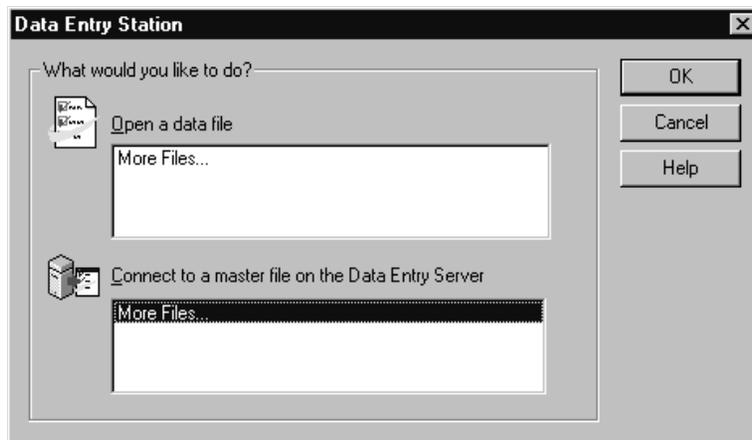
This appendix explores:

- Connecting to the network server using Builder and Station
- Sending data to the network server
- Dealing with send failures

## ***Connecting to the Server***

You can connect to the Data Entry Network Server using either Builder or Station. When you start Station, the initial dialog box allows you to choose between opening a local file or a master file. The master files are stored on the server.

Figure C-1  
*Data Entry Station dialog box*

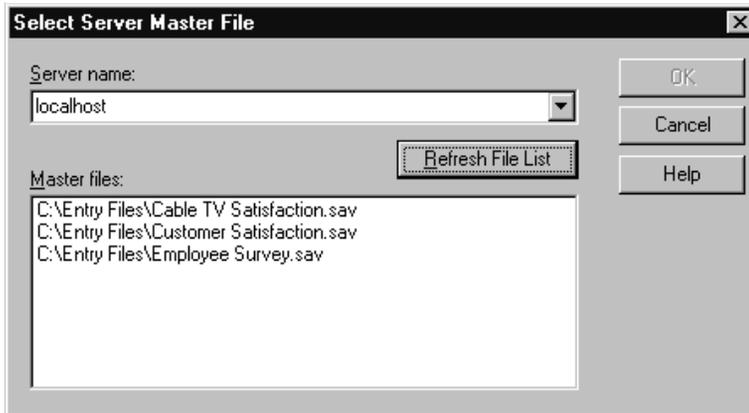


Double-clicking More Files under Connect to a master file on the Data Entry Server will open the Select Server Master File dialog box, which will allow you to specify a server address and view the names of the master files.

If you are using Builder or if you already have Station open, you can connect to the server by choosing Connect to Master File on the File menu, which will open the Select Server Master File dialog box.

Figure C-2

Select Server Master File dialog box



The first time that you connect to the server, you must set the server system address. The server system address is the name or the IP address of the system on which the Data Entry Network Server is installed. Contact your survey administrator if you do not know the server system address. Once you have specified a server system address, you will not have to do so again unless the server location changes or you need to connect to a different network server on a different system.

**Note:** If you use the server name for the address, do not use slashes. For example, if the server name is DESERVR, you should enter DESERVR. Your survey administrator may specify a port number. If you should use DESERVR, port 1277, you should enter DESERVR:1277 as the address.

After you specify the server address, click the Refresh File List button. Then you can select the master file that you want to open.

When you open a file on the server, you are actually creating a local copy of the file without any cases in it. If you save the copy immediately, you can then access that copy for subsequent entry sessions. This allows you to download the copy only once and enter data for as long as the master file is registered.

## ***To Connect to a Master File***

- ▶ In the Station dialog box, double-click More Files under Connect to a master file on the Data Entry Server.
- or*
- ▶ From the Station window menus choose:
  - File
  - Connect to Master File...
- ▶ In the Server dialog box, enter the server system's name or IP address.
- ▶ Click the Refresh File List button.
- ▶ In the Master files list, double-click the file that you want to open.
- ▶ You can now enter cases into your copy of the master file.

## ***Sending Cases Back to the Server***

The data you enter are stored in your copy of the master file. Periodically, you should send your data back to the server. When you send cases to the server, they are stored in the master file and are not available for recall or viewing.

When you begin a session, send your first completed case to the server to make sure the server and the file are both available. You can send cases to the server as often as you wish. When you end the session, you will be asked if you want to save the file. Although you can save the file and send the cases back later (as long as the registered file has not changed), it is recommended that you send any remaining cases to the server before ending a session.

**Note:** If you receive the error message Cannot connect to the Data Entry Server, you should save your file locally. Contact your survey administrator. When the network server is available, you should restart Builder or Station, open the local file, and send your cases to the server.

## ***To Send Cases Back to the Server***

- ▶ From the Form window menus choose:
  - Data
    - Send Case
  - or*
  - Data
    - Send All Cases
- ▶ Alternatively, to send just one case, you can use the Send Case icon on the toolbar.

**Note:** After you send cases to the server, you are unable to access them.

## ***Dealing with Send Failures***

There may be occasions in which you will receive notices of send failures. The server may be unreachable, in which case you should try to send the cases at a later time.

If you receive a warning indicating that there is no matching master file on the server, you should contact the survey administrator. It is possible that the master file was moved or changed. Save your file locally, since your survey administrator can use the ADDFILES facility to combine the data with the file.

# ***Creating and Deploying a Web Survey***

With Data Entry Web Server, you can create surveys, deploy them on the Web, and automatically manage your data collection and cleaning.

Data Entry Web Server works in conjunction with your Web server software and our data collection server, known as the Network Server. Your Web server displays your survey as a normal HTML page. When an Internet user answers your survey and submits the information, the Data Entry Web Server collects the data and sends it to the Network Server, where it is saved in a master file in *.sav* format. When your survey is complete, you can open the *.sav* file in SPSS for data analysis or in SPSS Data Entry Builder for cleaning.

This appendix explores:

- Creating a survey for the Web
- Rules and the Web
- Exporting your file to HTML
- Registering a master file
- Deploying your survey on the Web

## ***Creating a Survey for the Web***

The process for creating a form for the Web is the same as that for creating any form. Place questions on the form, define your variables, and, if you choose, create rules.

When you export a form to HTML, the questions on your form are exported in the order in which they appear on the form. Questions are exported from left to right. The

order in which you create the questions and the tab order of the questions have no bearing on the order of questions when they are exported. The browser controls the tab order of questions.

Question numbers are exported. Lines and rectangles are not exported. If you want to include lines in your HTML page, you can edit the HTML file.

When you create a form that you plan to export to HTML, you should keep in mind certain browser limitations. Although you can achieve two-dimensional layout in HTML, browsers do not support pinpoint placement of controls the way Builder does. Also, do not overlap questions or place controls inside one another.

People are more likely to fill out a form if it is easy to use. Following are some tips for making an online form easier to use:

- The SPSS Data Entry Web Server works with Microsoft Internet Explorer (versions 4.0 and higher). Although Netscape Navigator (versions 4.0 and higher) is generally supported, certain versions may not function optimally. You may want to include a text annotation on your survey that tells users which browser to use.
- Add instructions in text annotations to aid the user. You should instruct the user to use the Previous Form and Next Form buttons to navigate between pages, instead of the Web browser's Back and Next buttons. (The Previous Form and Next Form buttons are created automatically when you export your survey to HTML.)

**Note:** If users use the Web browser's Back and Next buttons, rules may not behave as expected.

- Break the form into pages by inserting forms.
- Design the form with plenty of white space so that it does not appear cluttered. Unlike paper forms, you are not restricted to a single page or a single form. You can place many questions on a form and when the form appears in the browser, respondents can scroll easily through the questions.
- Avoid creating disabled questions, since there is no way to disable and enable questions in the Web browser.
- Use only the letters A–Z and numbers 0–9 in your filenames. Avoid using spaces.
- Lines and rectangles are not exported to HTML. If you want lines in your form, you can edit the HTML file to include lines.
- If you want to password-protect your survey, ask your Webmaster or system administrator to create a login and password facility compatible with your Internet server software. You can also specify that the survey is secure when you export. If you do this, contact your Data Entry Enterprise Server administrator.

## ***Graphics and the Web***

You can include graphics on a form you are designing for the Web. The graphic file must be in either *.jpg* or *.gif* format.

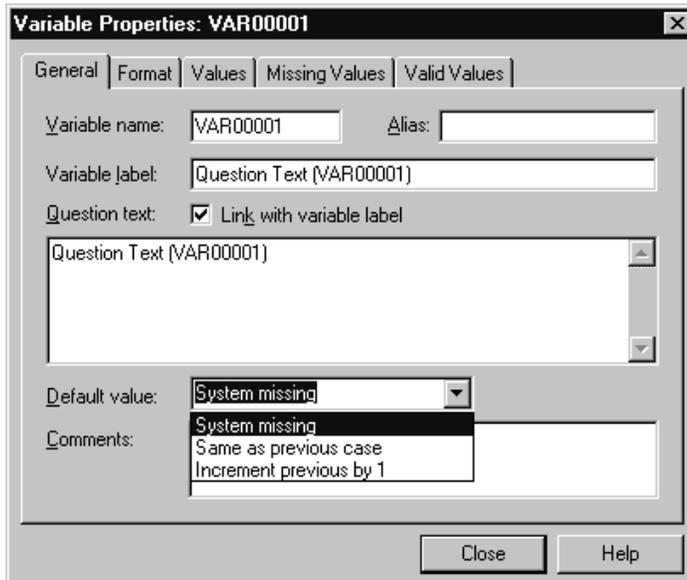
When you export a file that contains images, the graphics files are copied to the exported *WebFiles* folder. The graphics files are renamed according to their Form and Name properties in Builder. For example, a graphics file may be named *Form1Picture1.jpg*.

**Tip:** Use the Name property in the Properties window to change the default name for pictures to something more descriptive or more closely matching the original filename of the graphic.

## ***Defining Variables for a Web-Based Survey***

Defining variables for a Web-based survey is essentially the same as defining variables for an online or paper-based survey. You specify the name and type of the variable and can then specify variable values, missing values, and valid values.

Figure D-1  
Variable Properties General tab



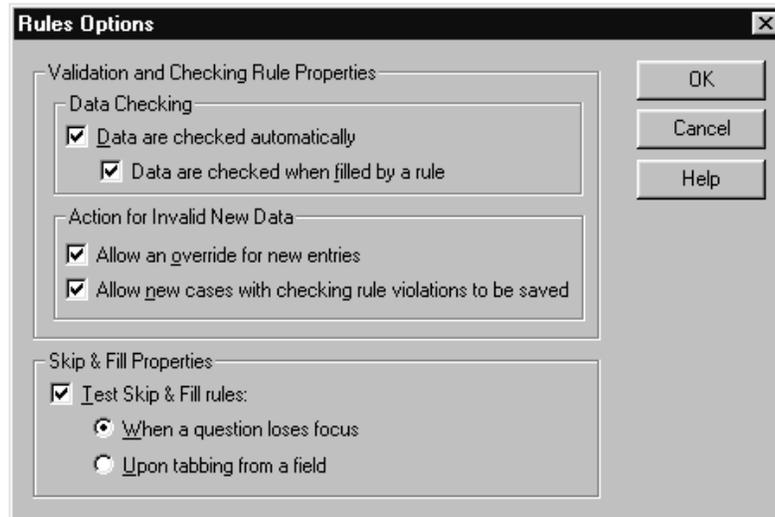
The screenshot shows a dialog box titled "Variable Properties: VAR00001". It has five tabs: "General", "Format", "Values", "Missing Values", and "Valid Values". The "General" tab is selected. The "Variable name" field contains "VAR00001" and the "Alias" field is empty. The "Variable label" field contains "Question Text (VAR00001)". The "Question text" field contains "Question Text (VAR00001)" and has a checked checkbox for "Link with variable label". Below this is a text area containing "Question Text (VAR00001)". The "Default value" dropdown menu is open, showing "System missing" as the selected option, with other options being "System missing", "Same as previous case", and "Increment previous by 1". The "Comments" field is empty. At the bottom are "Close" and "Help" buttons.

However, there is one major difference in defining variables for Web-based surveys. When you select the default value using the General tab of the Variable Properties window, you may only use System missing or a defined number or string, such as 0 or Internet user. Same as previous case and Increment previous by 1 are not supported in surveys when exported to HTML and will be replaced with System missing during export.

### ***Creating Rules for the Web***

Rules behave slightly differently for Web forms than for conventional data entry forms. To account for these differences, you must set your Rule Options carefully. The special settings are as follows:

Figure D-2  
Rules Options dialog box



**Data Checking.** When Data are checked automatically is selected, Validation rules are activated when the Internet user answers the question, and Checking rules are activated when the Internet user submits a case or uses the Next Page button to advance to another form. If you *do not* select Data are checked automatically, your Validation and Checking rules *are not* exported to HTML. If you select Data are checked when filled by a rule, Validation rules are activated when a question is filled as part of a Skip & Fill rule. This setting is optional for forms that you want to export to HTML.

**Action for Invalid New Data.** You do not need to select Allow an override for new entries. This option is not applicable to Web forms. Allow new cases with checking rule violations to be saved controls whether a user can submit a case when a Checking rule is violated. How you set this option is a matter of personal preference. However, you may want your rules to be lenient for the Internet user, since people may not take the time to correct answers and may just abandon the survey if their initial answers are not accepted.

**Skip & Fill Properties.** If Test Skip & Fill rules is not selected, none of your Skip & Fill rules are exported to HTML. When a question loses focus and Upon tabbing from a field are not applicable to rules on the Web.

You should also keep the following guidelines in mind to create better rules for the Web:

- You are strongly encouraged to use the Rule Wizard to create rules that you plan to export with Web surveys. Rules created with the Wizard will always work on the Web.
- People are going to fill out surveys only if they are easy to use and efficiently designed. If you create rules that are too strict, you may not get a good response rate because people may abandon a survey that is difficult or demanding.
- To avoid confusion when you use Checking rules, questions that are being checked in relation to each other should appear on the same form.
- When you create a Checking or Validation rule, always specify a *custom* alert message that will make sense to a Web user. In your custom alert, you should specify the question number or question text as well as a hint that will help the user enter a correct value. Two examples are: Your answer to question 5 is invalid; please enter a number only or Your answer to the question “How old are you” is invalid; you must enter a number between 1 and 100.

**Note:** Before exporting your file to HTML, you should always test your rules in Builder to ensure that they are working correctly.

### ***Advanced Issues in Rule Creation***

You can use the Rule Scripts window to create rules for the Web or to edit rules created in the Rules Wizard. You must be familiar with JScript to create complex or custom rules, and you should take special care in testing your rules in Builder and then on the Web.

**Note:** You can use all functions, methods, and constants to create rules for the Web, with the exception of the color constants. For example, NMiss, Any, or NotAny are functions you can use in rules for the Web.

The following global methods are supported:

FormCount()

GetCurrentForm()

SetCurrentForm(name)

The following global properties are supported:

Forms

Vars

The following properties and methods are supported for forms:

FormObjects

Name(+ Question, Set, Matrix Objects)

SetFocus()

GetFirstResponseGlyph()

GetNextResponseGlyph()

The following properties and methods are supported for questions:

Name

Varset

SetFocus()

GetDictItem()

The following properties and methods are supported for matrix questions:

Name(+ Question Objects)

The following properties and methods are supported for multiple response set questions:

Name(+ Question Objects)

VarSet

SetFocus()

GetDictItem()

The following properties and methods are supported for variables:

Value

Name(only get...)

IsValid()

IsValidNotValid()

IsMissing()

IsLabeled()

## To Export to HTML

- ▶ From the Builder menus choose:

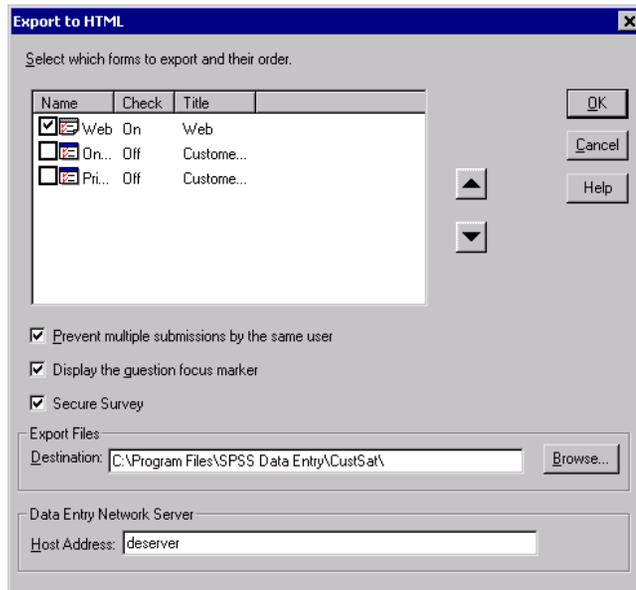
File

Export

To HTML...

Figure D-3

*Export to HTML dialog box*



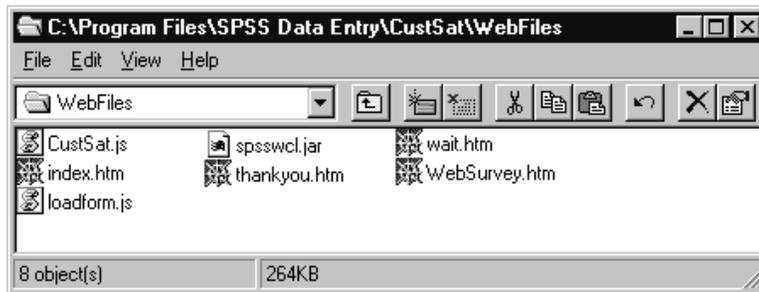
- ▶ In the Export to HTML dialog box, select the forms that you want to export.
- ▶ If necessary, click the arrow buttons to change the order of the forms. The order in which they appear on the list is the order in which they will be exported and linked together with the Previous Form and Next Form buttons. The Previous Form and Next Form buttons are created automatically when you export your survey to HTML.
- ▶ Select the options for the chart export:
  - Prevent multiple submissions by the same user.** This option prevents ballot stuffing. When the user submits a survey, the Data Entry Web Server puts a cookie on the user's computer to prevent the user from accessing the survey again.
  - Display the question focus marker.** This option displays an arrow in the HTML survey to indicate the current question.
  - Secure survey.** This option limits access to the survey to only specific users. A user list must be imported into the *mySQL* database for Data Entry Enterprise Server. For more information about importing users, refer to the *SPSS Data Entry Enterprise Server Administrator's Guide*. The user will be prompted for a user name and password when accessing the Web survey. Secure surveys also provide users with a button for backing up the user's current responses and stopping the survey. When the user logs back in, the survey begins where the user left off.
- ▶ In the Data Entry Collection Server section, type the address of the Data Entry Network Server—for example, `deserver`. If you do not know the address of the Network Server, contact your system administrator.
- ▶ Click OK.

## Exported Files

When you export to HTML, you create two folders: *WebFiles* and *Master*. The two folders are created as subfolders of a folder named after the survey.

Figure D-4

*Files for the Web server*



The files found in the *WebFiles* folder include:

**Formname.jsp.** For each form in the survey that you export, you generate a JavaServer Page (JSP) file, which is named after a specific form. For example, if your survey contains two forms named *GenderForm* and *AgeForm*, the name of the JSP files is *GenderForm.jsp* and *AgeForm.jsp*, respectively.

**Index.htm.** Sets up the frames and controls how the form files are displayed in the browser.

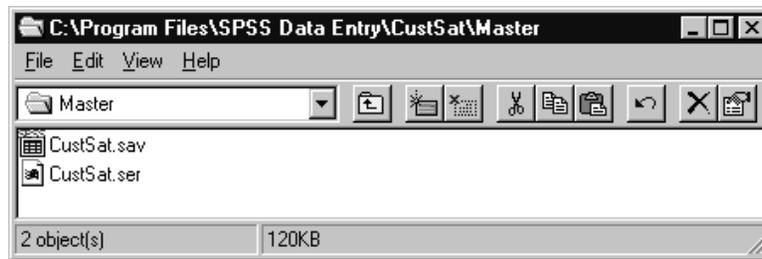
**Thankyou.htm.** The final file that the user sees after submitting answers. You may want to edit this file to display contact or company information or to provide additional links to direct users after they have finished taking your survey. For example, you can provide a link to take users back to your company's home page.

**Wait.htm.** The message that the user sees while waiting for the browser to load the survey.

**Filename.js.** A JavaScript (JS) file that contains the rules for the survey. It is named after the name of the file you exported to HTML. For example, if the file you exported was named *CustSat.sav*, the Java Script file is named *CustSat.js*. You should not edit this file.

**Image Files.** If your survey includes images, copies of the files are placed in the *WebFiles* folder.

Figure D-5  
*Files for the network server*



The files found in the *Master* folder include:

**Filename.ser.** An important file that must reside with the *.sav* file in order to collect data properly.

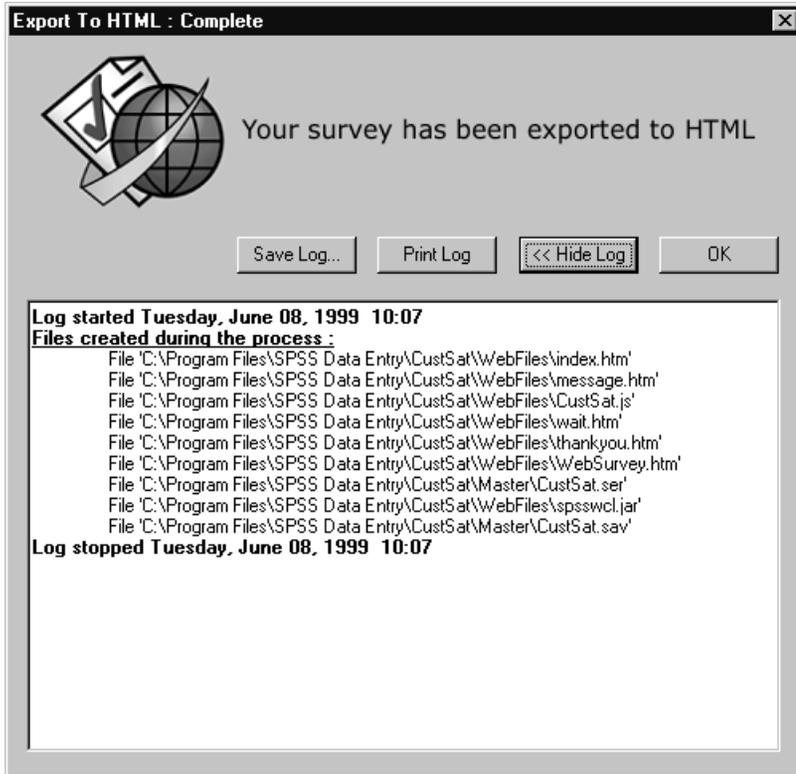
**Filename.sav.** When you export a file to HTML, you create a copy of your original data entry file (*.sav*) in the *Master* folder. This is the file that you will register as a master file on the Network Server.

**Filename.js.** For each file that you export, you generate a JavaScript (JS) file, which is named after your file. For example, if the name of your file is *WebSurvey*, the name of your JS file is *WebSurvey.js*.

**Note:** The original file remains on your system after your export to HTML, in addition to the copy in the *Master* folder. If you want to make substantial changes, such as deleting a variable, you should delete your exported folders, open your original file in Builder, make the changes, and export your file to HTML. When making changes, it is recommended that you edit your original *.sav* file and reexport instead of editing the copy of the survey created during the export process.

## Export Log

Figure D-6  
Export log



You can use the export log as a diagnostic tool for examining problems with your exported forms and also to see exactly what was and was not exported.

After you export your file to HTML, you can view the log by clicking the View Log button in the Export Status dialog box, and save the log by clicking the Save Log button. It is recommended that you save your logs with unique names to avoid overwriting previous logs.

## ***Editing Your HTML***

Once you export your file into HTML, you can view the file locally on your browser by dragging the file from an Explorer window into your browser. Open *filename.htm* instead of *index.htm* because *index.htm* will not allow you to see your questions. If you want to make changes to the way it looks, you can edit the HTML file. Before you edit your HTML file, you should save a copy of it.

You can edit your HTML files in an HTML editor or in a text editor. When manually editing HTML files, you should make only minor or cosmetic changes. For example, you can add lines to enhance the appearance of your survey or change the colors. If you want to make substantial changes, such as deleting a question or changing the order of the questions, you should delete your exported folders, open the original file in Builder, make your revisions, and reexport the file to HTML.

## ***Deploying Your Survey Online***

Deploying your survey online is a two-step process:

- Register your data entry file as a master file on the Network Server.
- Place the *WebFiles* folder in your Web server's public HTML directory.

## ***Registering Your Master File***

In order to receive data into your file, you must register it as a master file on the Network Server.

To register a master file, the following conditions must be met:

- The file must be a data entry file created in release 1.0.4 or later of Builder.
- If the file is stored anywhere other than the server system, you must map a drive to that system.
- You must have physical access to the server to register a master file.

To access the Network Server, double-click the SPSS Data Entry Network Server icon in the Control Panel.

## ***To Register a Master File***

- ▶ From the Windows Start menu choose:
  - Settings
  - Control Panel
- ▶ Double-click the SPSS Data Entry Network Server icon.
- ▶ On the Files tab of the Server dialog box, click the Add button.
- ▶ In the dialog box, browse to find the file you want to register as a master file.
- ▶ Select the file and click Open.

**Note:** If the file you want to register is stored anywhere other than on the server system, you must map a drive to that system.

For more information on registering files and the Network Server, see Appendix A.

## ***Deploying Your Survey on the Web***

After you export your data file to HTML, you must place the *WebFiles* folder in your Web server's designated public directory, which is the area where your Web server software stores the files it displays on the Web. If you do not know which directory this is, contact your system administrator. Once the survey is deployed on the Web, you can then publicize the link. Internet users will take the survey and submit the data to the Web server, which will then transmit the data to the master file on the Network Server, where it is saved in SPSS format.

If the survey designer identified the survey as a secure survey when exporting it to HTML, users must enter the correct user names and passwords before being able to access the survey. Additionally, users can exit the secure survey at any time by clicking Stop and return later. Clicking this button saves the user's responses up to that point. When the user logs back in to the survey, the survey starts where the user left off. Clicking Stop and return later does *not* transmit the survey responses to the master file.

## ***Completion of Data Collection***

Once you have completed your Web survey, you can clean your data in Builder or SPSS, or you can analyze them in SPSS.

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