JAVA PROGRAMMING BASICS

Module 1: Java Overview

Training program

1. Java Fundamentals
2. Start programming with Java, create simple console application
3. **Classification of Data Types**
4. Primitive types in java
5. Control Flow Statements
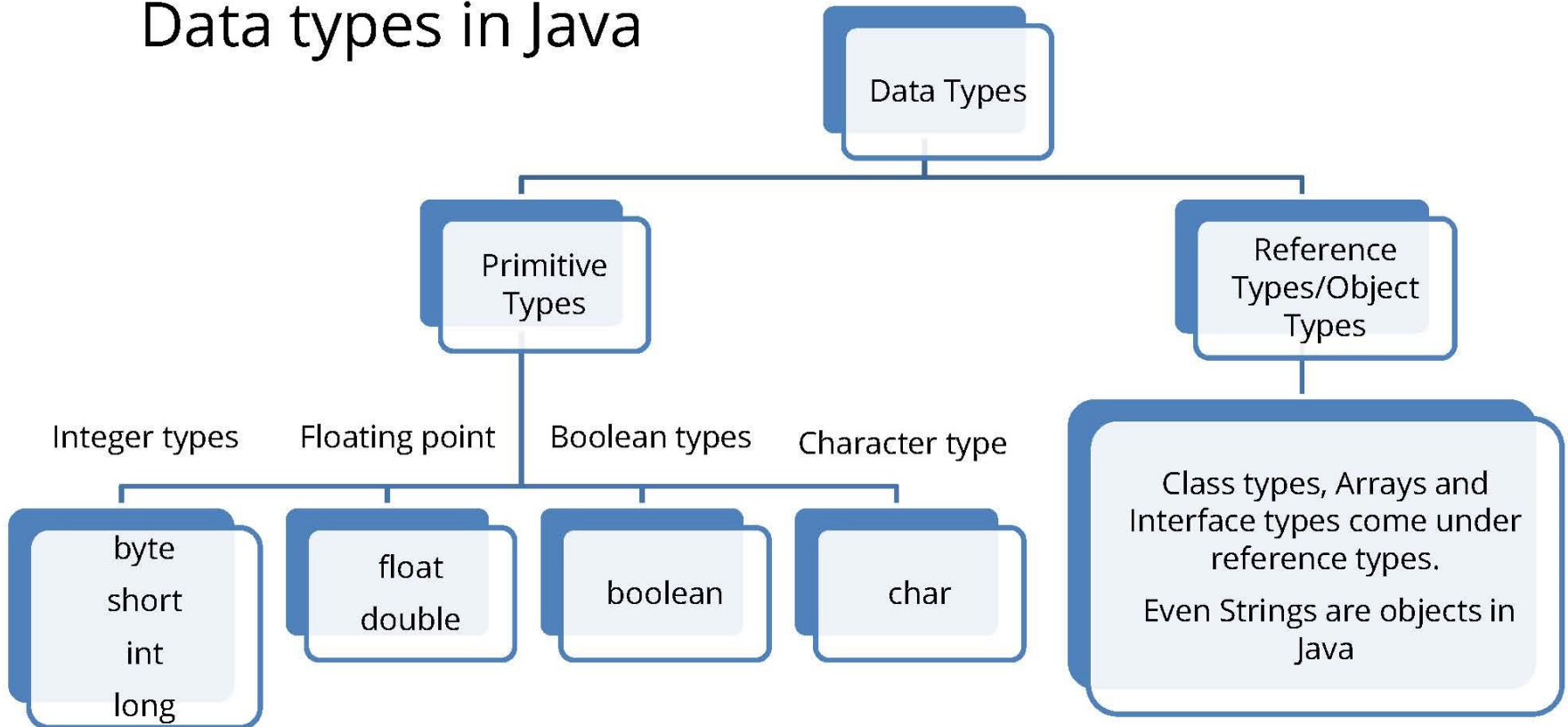6. Arrays

Module contents

- Classification of Data Types
  - Brief overview of data types in Java
  - Difference between primitive and reference data types
  - Pointers in java

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Brief overview of data types in Java

Data types in Java

```
                          Data Types
                              |
          ┌───────────────────┴───────────────────────────┐
     Primitive                                        Reference
      Types                                          Types/Object
                                                        Types
```

Integer types	Floating point	Boolean types	Character type	
byte short int long	float double	boolean	char	Class types, Arrays and Interface types come under reference types. Even Strings are objects in Java

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What is primitive type in Java

- There is a special group of data types (also known as primitive types) that will be used quite often and contain small and simple data (between one and eight bytes, depending on the type).

- The primitive type variables hold the value, and it's place on the stack so its much more efficient

- Java determines the size of each primitive type. These sizes do not change from one machine architecture to another
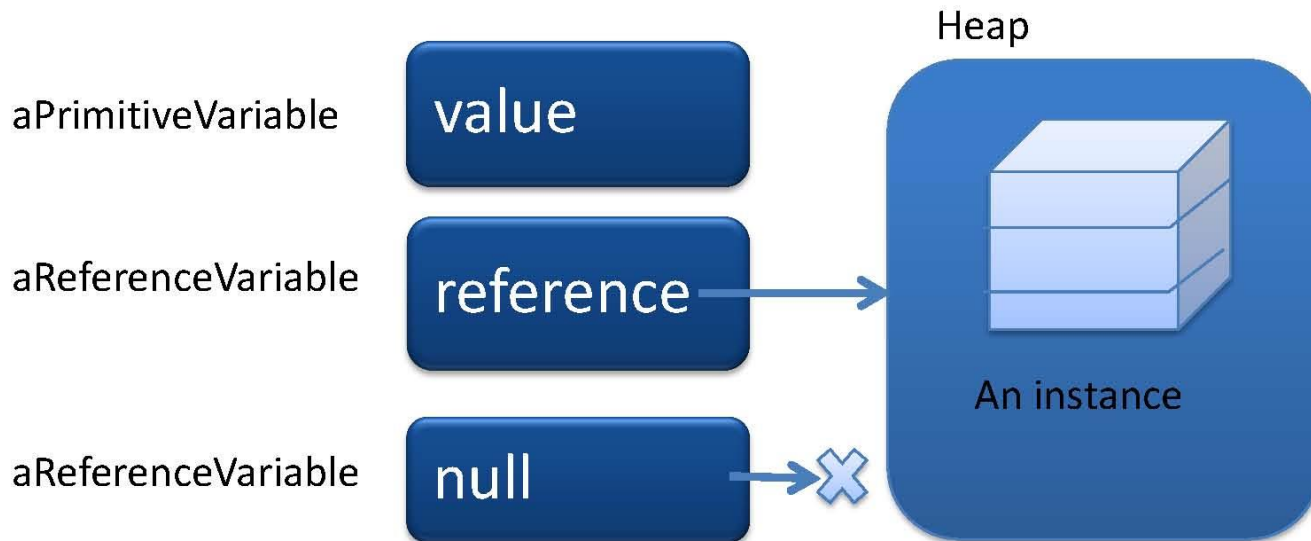
Java primitive types

- The Java programming language defines eight primitive types:
  - Logical –*boolean*
  - Textual –*char*
  - Integral –*byte, short, int, and long*
  - Floating –*double and float*

What is reference in Java

- In Java, the name of an object is a reference to that object.

- It contains the memory address (but you couldn't manipulate with it directly) at which the object is stored.

- The syntax for using the reference is pretty simple. Just use the "dot" notation.

- val.doJob( );

Difference between primitive and reference data types

aPrimitiveVariable | value

aReferenceVariable | reference

aReferenceVariable | null

Heap

An instance

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What is a pointer ?

Pointer variable (or just "pointer") is similar to a reference in Java **except that a** pointer **contain the memory address** of any variable type (Java references only refer to objects) and you can directly manipulate with it (change the address value)

There are no pointers in Java