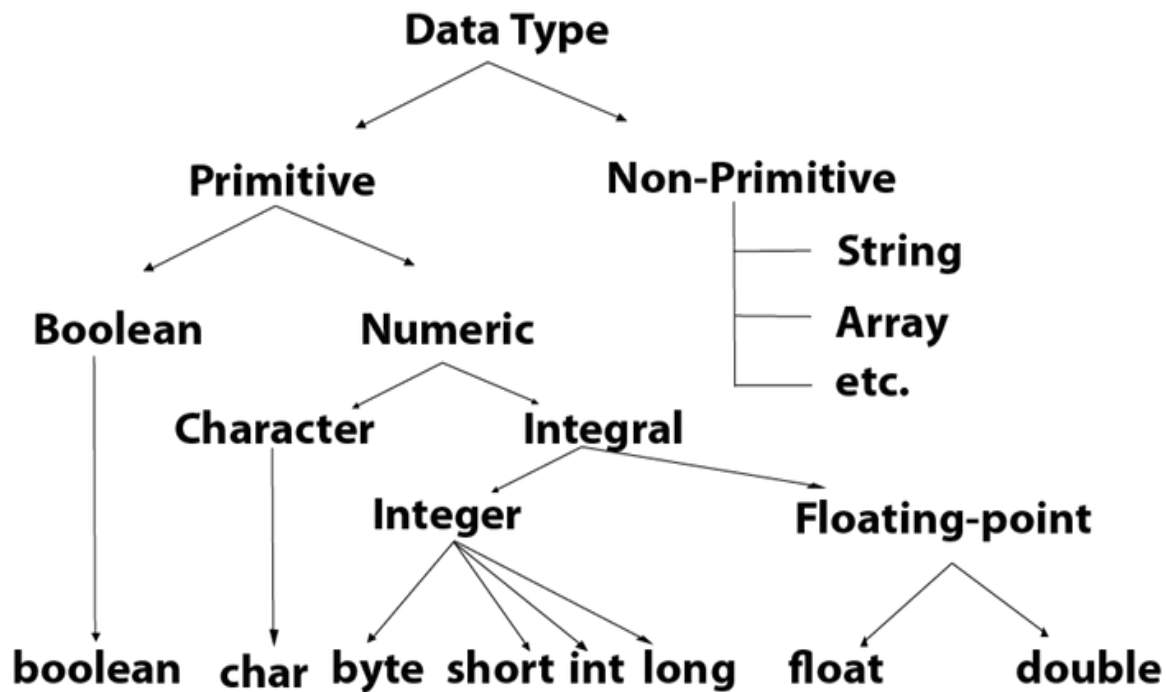# Data Types in Java

Data types specify the different sizes and values that can be stored in the variable. There are two types of data types in Java:

Primitive Data Types

A primitive data type specifies the size and type of variable values, and it has no additional methods.

There are eight primitive data types in Java:

Data Type	Size	Description
Byte	1 byte	Stores whole numbers from -128 to 127

Short	2 bytes	Stores whole numbers from -32,768 to 32,767
Int	4 bytes	Stores whole numbers from -2,147,483,648 to 2,147,483,647
Long	8 bytes	Stores whole numbers from -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
Float	4 bytes	Stores fractional numbers. Sufficient for storing 6 to 7 decimal digits
Double	8 bytes	Stores fractional numbers. Sufficient for storing 15 decimal digits
Boolean	1 bit	Stores true or false values
Char	2 bytes	Stores a single character/letter or ASCII values

Non-Primitive Data Types

Non-primitive data types are called **reference types** because they refer to objects.

Examples of non-primitive types are Strings, Arrays, Classes, Interface, etc.

The main difference between primitive and non-primitive data types are:

- Primitive types are predefined (already defined) in Java. Non-primitive types are created by the programmer and is not defined by Java (except for String).

- Non-primitive types can be used to call methods to perform certain operations, while primitive types cannot.

- A primitive type has always a value, while non-primitive types can be null.

- A primitive type starts with a lowercase letter, while non-primitive types starts with an uppercase letter.

- The size of a primitive type depends on the data type, while non-primitive types have all the same size.