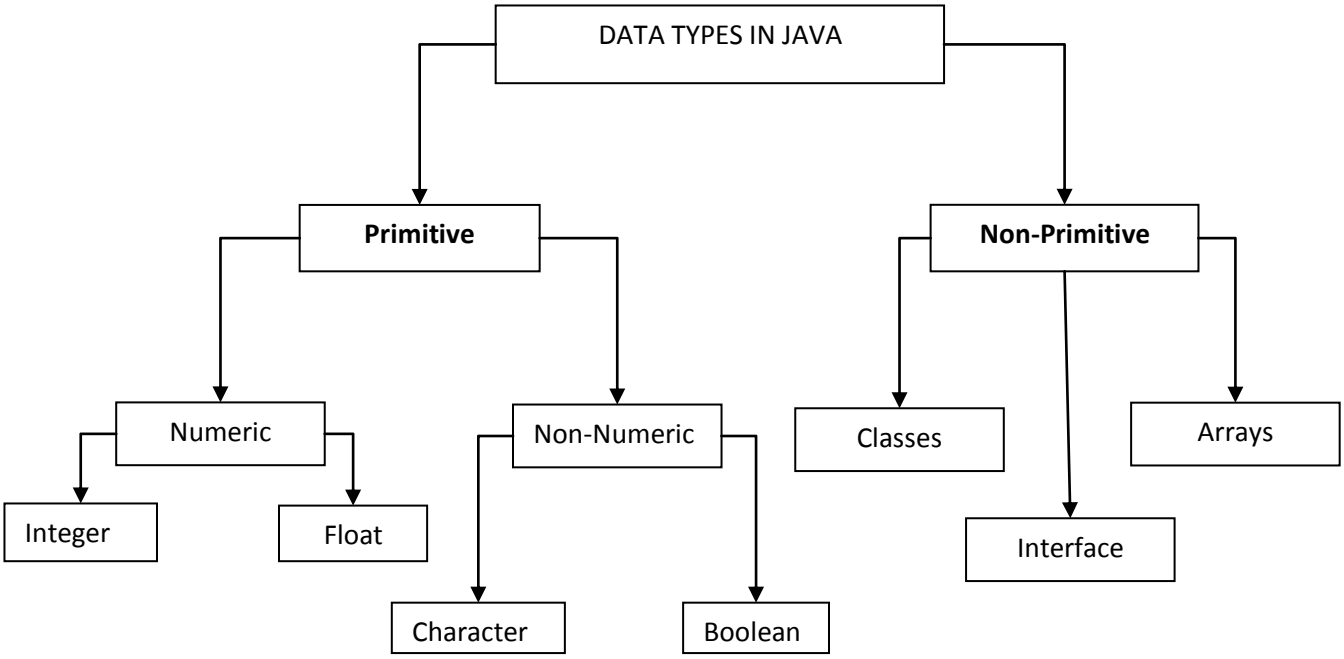
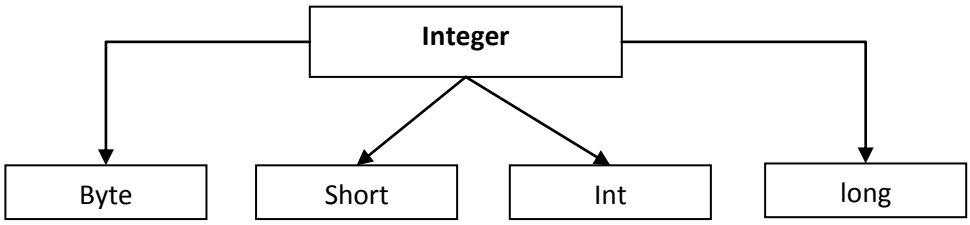
Data Types

Every variable in Java has a data type. Data types specify the size and type of values that can be stored. Java language is rich in its data types. The variety of data types available allows the programmer to select the type appropriate to the needs of the application. Various categories of java data types are shown in below figure:



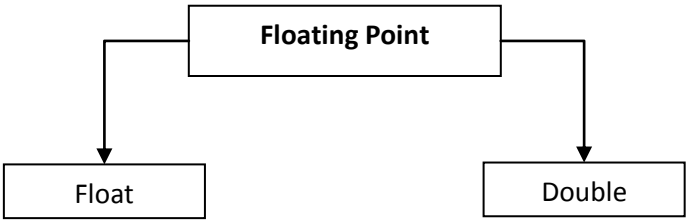
Integer Types

Integer types can hold whole numbers such as 123, -96 and 5678. The size of the values that can be stored depends on the integer data types we choose. Java supports four types of integer *viz.* **byte, short, int** and **long** as shown below:



Floating Point types

Floating point types can hold numbers containing fractional parts such as 27.59 and -1.37. there are two kinds of floating point storage in java *viz.* **float** and **double** as shown below:



The **float** type values are single-precision numbers while the **double** types represent double precision numbers.

The floating point numbers are treated as double-precision quantities. To force them to be in single precision mode, we must append f or F to the numbers. Ex. 1.23f or 7.56657F

Character type

In order to store character constants in memory, Java provides a character data type called **char.** The char type assumes a size of 2 bytes but, basically, it can hold only a single character.

Boolean type

Boolean type is used when we want to test a particular condition during the execution of the program. There are only two values that a Boolean type can take: **true** or **false.** Boolean type is denoted by keyword **Boolean** and uses only one bit of storage.

Program to convert the given temperature in Fahrenheit to celsius using the conversion formula:

$$C = \frac{F - 32}{1.8}$$

Program:

```
public class Celsius
{
        public static void main (String args[])
        {
                float fahrenheit, celsius;
                fahrenheit = 43;
                celsius = (fahrenheit-32)/1.8;
                System.out.println("Temperature in celsius is: "+celsius);
        }
}
```

Output:

Temperature in celsius is: 6.1111111