

FLOAT DATA TYPE :

A float data type in Java stores a decimal value with 6-7 total digits of precision. So, for example, 12.12345 can be saved as a float, but 12.123456789 can't be saved as a float.

When representing a float data type in Java, we should append the letter **f** to the end of the data type; otherwise it will save as double.

The default value of a float in Java is 0.0f. Float data type is used when you want to save memory and when calculations don't require more than 6 or 7 digits of precision.

Let's take a look at a few examples:

```
1. float a = 2.356f;
```

Here the variable a saves the value 2.356 as a float.

```
1. float x = -125.563f;
```

Here the variable x saves the value -125.563 as a float.

```
1. float q = 506.12789f;
```

RANGE :

The upper range of a float in Java is 3.4028235E38.

The lower range of a float in Java is 1.4E-45.

DOUBLE DATA TYPE :

The double data type is a double-precision 64-bit IEEE 754 floating point. Its value range is unlimited. The double data type is generally used for decimal values just like float.

The double data type also should never be used for precise values, such as currency. Its default value is 0.0d.

RANGE :

The upper range of a double in Java is 1.7976931348623157E308.

The lower range of a double in Java is 4.9E-324.

EXAMPLE:

```
public class DoubleExample3 {  
  
    public static void main(String[] args) {  
  
        double num1=581216732.323433;  
        double num2=7.83684987683688;  
        System.out.println("num1: "+num1);  
        System.out.println("num2: "+num2);  
  
    }  
  
}
```

Output:

```
num1: 5.81216732323433E8  
num2: 7.83684987683688
```