Java is an object-oriented programming language however not all data types are objects. In fact, a String is the only data type that has to be an object. Java relies on what are known as primitive data types. The 8 primitives in Java are (in order of byte size):

1. byte (a number, 1 byte)

2. boolean (true or false, 1 byte)

3. short (a number, 2 bytes)

4. char (a character, 2 bytes)

5. int (a number, 4 bytes)

6. float (a floating point number, 4 bytes)

7. long (a number, 8 bytes)

8. double (a floating point number, 8 bytes)

\* A floating point number is a number that has a decimal point, ex. 3.1459, 3.0, 9.06

When you declare a variable you must declare it's data type. To create a variable of type integer simply declare the type (int) the name for the variable and what it equals.

int num = 8;

You can also declare a variable and then assign it's value later.

int num;

num = 8;

You might want to use this if the value of your variable is going to be determined later in the program.

To define a double simply declare the data type.

double num = 9.7;

If you want to use a float (to save memory) you will have to typecast your number.

float num = (float) 9.7;

or you can use the shorthand

float num = 9.7f;

Type Casting is an easy way to convert data from one data type to another data type. For example, you can typecast an int data type to a double data type.

int i = 5;

double d = (double) i;

You can not cast a double down to an int, for this you would have to use a method such as

double d = 5.25;

int i = d.intValue();

Declaring a long, short or byte follow the same pattern as declaring an int or double.

Every number datatype can use mathematical operators such as +, -, \*, / to manipulate the values. If you want more advanced operations you can refer to the Math class (https://docs.oracle.com/javase/8/docs/api/java/lang/Math.html)

A char is a single character and is declared like

char c = 'c';

A char uses single quotes and can only be one character. A String is declared with double quotes. A String is not a primitive data type it is of the class Object.

String str = "Hello";

You can join strings together using string concatenation with the plus (+) operator.

String str1 = "Hello ";

Strirng str2 = "World";

System.out.println(str1 + str2); // will print out Hello World

A boolean is a special primitive data type it only accepts values of true or false. This is helpful for comparisons.

boolean keepGoing = true; // declaring the boolean

// here the if statements check the truth of the boolean variable keepGoing

// if it is true the code will execute

if (keepGoing) {

System.out.println("I will keep going");

}