Primitive Data Types

The eight primitive data types supported by the Java programming language are:

- **byte**: The `byte` data type is an 8-bit signed two's complement integer. It has a minimum value of -128 and a maximum value of 127 (inclusive

- **short**: The `short` data type is a 16-bit signed two's complement integer. It has a minimum value of -32,768 and a maximum value of 32,767 (inclusive).

- **int**: The `int` data type is a 32-bit signed two's complement integer. It has a minimum value of -2,147,483,648 and a maximum value of 2,147,483,647 (inclusive)..

- **long**: The `long` data type is a 64-bit signed two's complement integer. It has a minimum value of -9,223,372,036,854,775,808 and a maximum value of 9,223,372,036,854,775,807 (inclusive).

- **float**: The `float` data type is a single-precision 32-bit IEEE 754 floating point.

- **double**: The `double` data type is a double-precision 64-bit IEEE 754 floating point. For decimal values, this data type is generally the default choice.

- **boolean**: The `boolean` data type has only two possible values: `true` and `false`. This data type represents one bit of information.

- **char**: The `char` data type is a single 16-bit Unicode character. It has a minimum value of `'\u0000'` (or 0) and a maximum value of `'\uffff'` (or 65,535 inclusive).

The `String` class is not technically a primitive data type, but considering the special support given to it by the language, you'll probably tend to think of it as such.

- **String**: The Java programming language provides special support for character strings via the java.lang.String class. Enclosing your character string within *double quotes* will automatically create a new `String` object; e.g., `String s = "this is a string";` `String` objects are *immutable*, which means that once created their values cannot be changed.

Default Values

It's not always necessary to assign a value when a field is declared. Fields that are declared but not initialized will be set to a reasonable default by the compiler. Generally speaking, this default will be zero or `null`, depending on the data type.

Relying on such default values, however, is generally considered bad programming style.

The following chart summarizes the default values for the above data types.

Data Type	Default Value (for fields)
byte	0
short	0
int	0
long	0L
float	0.0f
double	0.0d
boolean	false
char	'\u0000'
String (or any object)	null

Quoted and re-organized from
http://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html