

In this section we will cover the primitive
data types of Java and review
declaring/initializing variables

Primitive Data Types

CSCI 1250 Study Guide

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Primitive Data Types

	Data Type	Definition & Example
Non-Numeric	char	A single character <code>char letter = 'A';</code> //Single quotes for char
	boolean	true or false – Used for evaluating expressions <code>boolean check = true;</code> //Can only be true or false.
Decimal Number	float	A 32-bit floating point number <code>float number = 3.5f;</code> //needs f to denote a float literal
	double	A 64-bit floating point number (The go-to for decimal numbers) <code>double number = 2.5;</code> //Decimal literals are, by default, treated as doubles
Integer (Whole Number)	byte	8-bit number (-127 to 127). <code>byte smallNumber = 35;</code>
	short	16-bit number (-32,768 to 32,768) <code>short mediumNumber = -285;</code>
	int	32-bit number (-2^{31} to $2^{31}-1$) (The go-to for whole numbers) <code>int largeNumber = 5000;</code> //No commas for large numbers.
	long	64-bit number (-2^{63} to $2^{63}-1$) <code>long veryLargeNumber = 500000;</code>
<p>-Official Java Resources-</p> <p>https://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html</p>		

Vocabulary Review

- Declare
 - A variable declaration defines a variable with its name and data type, but has not yet been given a value.
 - Ex.
 - `int number;`
 - `char letter;`
 - `double taxRate;`
- Initialize
 - A variable is initialized when it is given its initial or first value.
 - Ex.
 - `number = 5;`
 - `char = 'A';`
 - `taxRate = 0.05;`
- Initialize and declare
 - A variable can be declared in one part of a program and then initialized in another. As seen in the examples above. A variable can also be declared and initialized in one place.
 - Ex.
 - `int secondNumber = 5;`
 - `char digit = '2';`
 - `float percentage = 0.25f;`
- Assign
 - Whenever a variable's value is updated, we say the variable is being "assigned" a new value.
 - Ex.
 - `secondNumber = 7;`
 - `digit = '7';`
 - `percentage = 0.02f;`

Example Exercises

DataPrimitiveExercises.java
DataPrimitiveExercisesAnswers.java

--Reminder--

To compile a java program use the command

```
javac FileName.java
```

For example:

```
javac DataPrimitiveExercises.java
```