EXERCISE 05: DATA TYPES



Application Development



# Name: <your name goes here>

**Purpose**: The purpose of this assignment is to give you practice working with the primitive Java data types.

Perform each of the following activities. If you have questions, issues, or doubts, please ask for help and do not just guess!

1. Be sure the file name of this document starts with your School ID which is followed by a single blank and that is followed by “Exercise05.doc”.
2. Be sure you have replaced the “<your name goes here>” (including the “<” and the “>”) with your name.
3. In the space provided, list each of the Java language data types using the Java reserved words:

1. Some data types represent the same kinds of data values, but use a different amount of computer memory to show the values. List the names of these groups of data types here:

1. Java programs consist of variables and constants. Variable values can be modified, and have names so they can be referenced by the program. Constants come in two forms: literal constants and named constants. Named constants use identifiers, just like a variable, to refer to a constant value. Unlike a variable, however, Java will not allow you to change the value of a named constant. Literal constants express a value that can be determined just by looking at the characters of the value. In the space provided, list the data type name for each of the different literal constants and on the same line, show an example for it. One example has been provided.

Float 3.1415926F

1. Not all integer and real values can be exactly expressed in the computer. We use binary representations of these values to simulate integer and real calculations, but there are limitations on what the computer can represent. What limitations are placed upon integer data types in Java?
2. The various data types in Java have differing memory requirements when it comes to storing a value. For each of the data types you listed in your answer in item 3 above, specify the minimum number of bytes required to store a value in memory.

1. The character data type supports a very diverse collection of character sets. Not all of these character sets can be directly used within a Java program. What are two different ways that these “special” characters can be used within the source code of a Java program as a character constant?
2. This is the end of the exercise. Save your work and upload this exercise to the LMS following the instructions given in Exercises 1 and 2. (I’m assuming you have changed the name at the top of this document and properly renamed the document to start with your SchoolID before you did anything else, **because** you followed the instructions in steps one and two, right?)