LAB #10
Comparing C/C++ with Java

First!!!
Log into Canvas, and make sure you Lab grades are correct. Make sure you clear any unresolved lab disputes in this lab with your lab TAs. TAs will not answer anymore lab questions after this lab!!!

Second!!
For those of you who didn’t finish lab #9, finish this lab, and make sure you get checked off for it because we don’t have another lab!!!

Third!
Please read the entire lab before proceeding to make sure you understand everything that needs to be completed for this last lab of the quarter!!!
Java is a different kind of language, where you need the compiler for development and a virtual machine for running the program. This is because Java is a hybrid approach. First, the source code is compiled into Java Bytecode, and then the bytecode is interpreted by the java virtual machine, which allows it to be run on any platform. Here is how you need to compile and run a java program on our ENGR system:

```
flip1 ~/cs161_files 135% javac intFun.java
flip1 ~/cs161_files 136% java intFun
enter int:
10
10
flip1 ~/cs161_files 137%
```

Now you have compiled and run your first Java program. It is very similar to C/C++, but just a little different! Now, let’s take it a step further.

(5 pts) Explore how to make loops, a function, and an array in Java

What would you do if you were told to learn Java on your own? Part of your job is to explore code and resources you would use to learn Java. Convince your TA that you have figured out how to write a loop, function (they call them methods), and create an array in Java, before you can move forward. Answer the following questions:

Loops:
- What types of loops are supported in Java?
- What is the syntax of these loops?

Arrays:
- How do you create a static array of ints? (Is this possible?)
- How do you create a dynamic array of ints? (Is this possible?)

Functions:
- How do you create a function in Java, i.e. what is the syntax?
- How is an int passed to a function (by value or reference)? Can you change this?
- How is an array passed to a function (by value or reference)? Can you change this?
• Write the syntax for functions to get an integer from the user, creates an array of this length, initialize an array with values, and prints the array. Total functions: 4

Now, write a Java program that has 4 functions to create and fill an array of \( x \) ints. Here is an example run of the program…

```java
flip1 ~/cs161_files 162% javac intFun.java
flip1 ~/cs161_files 163% java intFun
How big is the array?
5
5
1 2 3 4 5
flip1 ~/cs161_files 164%
```

Hope this was fun!!!

Enjoy your summer break!!!