PE 0- Java Basics

Hello, and welcome to your first homework assignment! This assignment just serves to make sure you have installed Java properly on your machine and that you know how to run a Java program. There are likely parts of this PE that have not been covered in class yet. We recommend starting with the parts you do know how to do and, the parts that have not been covered will be covered before the due date.

Part 1: Installing Java

In this class, we will be using Java 11 (openjdk). Make sure you have this version installed, even if you already have a previous version of Java. We have detailed instructions for this on the course website, see below:

- Install guide

Check to see which version of Java you have installed by running:

```
javac -version and java -version.
```

After running `javac -version`, you should see this output:

```
javac 11.0.8
```

After running `java -version`, you should see this output:

```
openjdk version "11.0.8" 2020-07-14
OpenJDK Runtime Environment AdoptOpenJDK (build 11.0.8+10)
OpenJDK 64-Bit Server VM AdoptOpenJDK (build 11.0.8+10, mixed mode)
```

Part 2: Writing and Compiling a Java Class

In order to create a Java class, you must first create a file with the .java extension. In our example here, we will use Test.java. Within the class, you will need to write a class header. For now, just memorize that you need to write public class before your class name. We will go more in depth about what exactly this means later. As for the class name, it must exactly match the name of the file.

Thus, our example should look like this:

```
public class Test {


}
```

Now that you have written a Java class, you should be able to compile your code! Navigate to the directory where you have saved this file in the command line.

After navigating to the proper directory, you will be able to compile the Java class you've just created! You do this by using the command `javac FileName.java`. Since we named our Java example file Test.java, we compile it using `javac Test.java`.

This should create a new file in your directory called `Test.class`! Created by the Java compiler, this file will contain Java bytecode, and it will not make much sense to you if you open it up. However, it makes a lot of sense to the Java Virtual Machine, or the JVM (a computing machine that allows our program to run).

If a new file was not created, your program did not compile. Read the compilation error produced in your command prompt and fix it before proceeding!

Part 3: The main Method

Remember, the method signature should look like this:

public static void main(**String**[] args) {

}

This method is critical for a Java class to be "runnable."

Write a main method for your Test class. All of the rest of the code will be written inside of your main method!

Now, you can write the contents of your first Java program! Simply, try these steps:

1. Print out "Hello, world!"
2. Declare three variables
   o An integer x
   o An integer y
   o An integer k
3. Assign a value of 8 to the variable x
4. Assign a value of 5 to the variable y
5. Assign x * y + 2 to the variable k
6. Print out the value of the variable k

Try to compile as you make changes. This will help you correct any errors you may make as you go instead of dealing with them all at the end.

To run your program, use the command `java FileName`. Since we named our file Test.java, we will use the command `java Test`. Note that we **didn't** include the .class extension after Test; it won't run if you do java `Test.class`. If you ever want to run a new version of your program after making alterations, know that you must recompile before doing so.

Good luck, and happy hacking!

Collaboration Statement

To ensure that you acknowledge collaboration and give credit where credit is due, **we require that you place a collaboration statement as a comment at the top of the Java file that you submit.** That collaboration statement should say either:

I worked on the homework assignment alone, using only course materials.

or

In order to help learn course concepts, I worked on the homework with [give the names of the people you worked with], discussed homework topics and issues with [provide names of people], and/or consulted related material that can be found at [cite any other materials not provided as course materials for CS 1331 that assisted your learning].

Recall that comments are special lines in Java that begin with //.

Submission

Please submit the assignment through Gradescope. When you log into Gradescope you should see a box with CS1331 on it. Click this box. This should take you to a page with a list of all of the current assignments. You should then be able to locate PE 0. **You only need to submit the .java file, not the .class file.**

Closing Comments

If you have trouble with any part of this homework or questions about the class in general, post a question on piazza.