Lab 3 - Arithmetic and Conditionals

Instructions

Open your Terminal application and log into cs.bridgewater.edu.

When executing the commands below, do not type the $. The $ represents your command prompt.

Print your working directory. This is your home directory.

```
$ pwd
```

Change your working directory to the root directory of your repository. In the command below replace *your-BC-username* with your personal BC username.

```
$ cd your-BC-username
```

Print your working directory.

```
$ pwd
```

Identify the portion of the path that is printed to the screen that is your home directory and identify the part that is your repository directory.

_____ / _____
home directory repository

Make a directory named **csci101** inside your repository.

```
$ mkdir csci101
```

Change your working directory to **csci101**.

```
$ cd csci101
```

Make a directory named **labs** inside your csci101 directory.

```
$ mkdir labs
```

Change your working directory to your **labs** directory.

```
$ cd labs
```

Make a directory named **lab3** inside your labs directory.

Change your working directory to **lab3**.

Use the VI editor to create and open a file named **Lab3.java**.

Write a simple program that prints your name to the screen.

Exit VI. To do so, press the **esc** key to get into command mode, then press **:x** to save the file and exit VI.

Compile the program.

```
$ javac Lab3.java
```

Run your program.

```
$ java Lab3
```

Write code to your program to satisfy the following program specification.

After writing **each statement**,

- save the file and exit VI
- compile the program
- run your program
- ask yourself does the program behave as you expected.

Program Specification

Ask the user to enter an integer.
Read the integer into a variable named **value1**.
Ask the user to enter a second integer.
Read the integer into a second variable named **value2**.
Compute the sum of the two integers and save the sum in a third variable named **sum**.
Print to the screen, **"Sum: "** followed by the value of the variable named **sum**.

Change the value of the variable named **value1** to **20**.
Change the value of the variable named **value2** to **30**.
Compute the sum of the two integers and save the sum in the variable named **sum**.
Print to the screen, **"Sum: "** followed by the value of the variable named **sum**.

Ask the user to enter an odd integer.
Read the integer into a variable named **oddNumber**.

Divide **oddNumber** by **2** and store the result in an **integer** variable named **result1**.
Print to the screen, **"odd division 1: "** followed by the value of the variable named **result1**.

Divide **oddNumber** by **2** and store the result in a **double** variable named **result2**.
Print to the screen, **"odd division 2: "** followed by the value of the variable named **result2**.

Divide **oddNumber** by **2.0** and store the result in a **double** variable named **result3**.
Print to the screen, **"odd division 3: "** followed by the value of the variable named **result3**.

Write down what you deduce from the three outputs above?

As the user to enter a decimal number that is between **7.3** and **10.5**.
Read the decimal number into a variable named **length.**

Use an if statement to print **"length is greater than 7.3"** only if the value in the variable **length** is greater than 7.3.

Use a if-statement to print **"length is less than 10.5"** only if the value in the variable **length** is less than 10.5.

Use an if statement to print **"length is greater than 7.3 AND length is less than 10.5"** only if the value in the variable **length** is greater than 7.3 and the value is less than 10.5.

Change the value of the variable named **length** to **1**.

Use an if statement to print **"length is greater than 7.3 AND length is less than 10.5"** only if the value in the variable length is greater than 7.3 and the value is less than 10.5.

Ask the user to enter their middle initial.
Read the character into a variable named **middleInitial**.

Use an if-statement to print **"middle initial is E"** if the value in the variable **middleInitial** is a capital E.

Use an if statement to print **"length is greater than 7.3 and middle initial is E"** if the value in the variable length is greater than 7.3 and the value in the variable middleInitial is a capital E.

Change the value in the variable named **length** to **3.33**.
Change the value in the variable named **middleInitial** to the character **P**.

Use an if statement to print **"length is greater than 7.3 and middle initial is E"** if the value in the variable length is greater than 7.3 and the value in the variable middleInitial is a capital E.