Section Assessment 01

By: Hello World

Purpose:

- Demonstrate the use of Variables to store information
- Show understanding of Mathematical operators
- Implement conditional statements with if-else branches, and logical operators
- Show an understanding of basic String methods
- Build a simple billing app

Background:

The city of Maryville needs with billing Civilian and Enterprise customers as they have been requiring the city clerk to put in a lot of hours. To help out the city clerk you have been tasked with building an accounting system. Today you are going to build a simple demo of how you would bill residents for their electrical consumption.

The Program:

Step 1:

You will first want to declare all your variables for this project. Two of them have already been given: The monthly base cost for a Civilian, and the monthly base cost for the enterprise.

```
final double baseCostCivilian = 100;
final double baseCostEnterprise = 300;
```

You will want to declare variables for at least the following items:

- The type of Customer (You will ask them to input 1 if they are a Civilian, and 2 if they are an Enterprise).
- The hours of electricity that are used
- The cost before the discount

- The discount
- The discount in a dollar amount
- The amount budgeted
- The rate per hour(Enterprise and Civilians have different rates, Discussed in step 5)
- The variance between budget and cost before the discount
- And finally the total cost

Be aware that some of these variables will require two or maybe even three variables to be created to store the information correctly.

Step 2:

You will need to grab the customer's info in the terminal. This will require you to print out the lines the customer will see before they input their information. This should say something to the effect of:

```
Welcome to Electricity Bill Calculator !
Please type a 1 if you are a Civilian Customer, and a 2 if you are an Enterprise customer
```

Your program should not crash if the user gives the console a customer that doesn't exist such as 0 or 100.

Step 3:

You will then ask the customer how many hours of electricity they used for the month. This question should look like this within the terminal.

```
How many hours of electricity did you use ?
```

Again your program should not crash if the customer types in a negative number.

Step 4:

Afterward, you will declare your if-branch to determine whether the customer is a civilian customer or if they are a business customer.

You will then want to write a variable to capture the type of customer as a String.

Ex. This variable should have the value of either ”Civilian” or “Enterprise”.

Step 5:

Within the branches that you have created you are going to calculate the monthly cost of electricity given the hourly rate of electricity:

The rate for a Civilian	The rate for an Enterprise
0.05 cents per hour	0.10 cents per hour

This calculation will be the cost before the discount

Step 6:

You will then ask the customer what they budgeted to spend and capture that into a variable, afterward determining the variance of what the customer spent.

If the civilian customer spent between $140 - $150 or budgeted to only spend $140 to $150 give them a 10% discount on their total price.

If the enterprise customer spent between $400 - $430 or budgeted to only spend between $400 - $430 give them a 5% discount on their total price

Step 7: You will then print all of this information out. The final result should include:

1. The type the customer was
2. Their budgeted price
3. How much they spent before the discount
4. What is the variance between what they spent and their budgeted price
5. Their discount in percentage and in dollars
6. The total that they spent

All answers should be in dollar amounts meaning that decimals should be rounded to two decimal places.