Midterm Laboratory Activity 4

Score:

Name: _____
Subject Code & Schedule: _____
Course and Year: _____

TITLE: Counters and Accumulators

LEARNING OBJECTIVES:

At the end of this activity, the students should be able to:

1. Identify the purpose of using counters and accumulators.
2. Differentiate counters from accumulators.
3. Create a complete Java program that simulates the purpose of counters and accumulators.

INSTRUCTIONS:

1. Make sure you have your own individual account.
2. Always keep your account secret to others to avoid unauthorized access to your files.
3. Always save your work and log-off when not using the computer.
4. By now you should have been familiarized using your text editor.
5. By now you should know how to create, save, compile, execute, and debug programs in Java.
6. Use the skills and learning obtained in Prelim Activity 1 to Midterm Activity 3 in order for you to successfully finish the learning objectives of this module.

DURATION: Two to Three Meetings

HANDS-ON:

1. Log-on using your own individual account. Use your own **username** and **password.**
2. Open your text editor.
3. Write your next Java program:
   3.1. Write your next program by copying the source code shown below to your text editor.

```
/* Programmed by: <write your name here>
   Program title: Count.java
   Program Date: <write the date today here> */

import java.io.*;
public class Count{
  public static void main(String[] args){
   int i, n, ctr;
   String input = " ";
   ctr = 0;

   BufferedReader in = new  BufferedReader(new
                            InputStreamReader(System.in));

   for(i = 1; i<=10; i++){
      System.out.print("Input integer number: ");
      try{
        input = in.readLine();
      }catch(IOException e){
        System.out.println("Error!");
      }

      n = Integer.parseInt(input);

      if(n >=0){
        ctr = ctr + 1;
       }
   }
   System.out.println("The total value for counter is " + ctr);
  }
}
```

3.2. Save your program as **`Count.java`** then compile your program until no errors and warnings are reported.
3.3. Run your program.
3.4. Simulate and write what will be displayed on the screen.

3.5. What do you think is being counted in the program?

_____
_____
_____
_____

4. Revise your **Count.java** program and save it as **Count2.java**. Thereafter, the user will be asked to input 10 integer numbers and display how many of these 10 numbers are even and how many are odd. Use only one variable for your counter.

4.1. Write your complete Java program here:

4.3. Run your program.
4.4. Simulate and write what will be displayed on the screen.

4.5. What do you think is the purpose of counters?

5. Write your next program by copying the source code shown below to your text editor.
   5.1. Create a new program and save it as **Accum.java**

```
/* Programmed by: <write your name here>
   Program title: Accum.java
   Program Date: <write the date today here> */

public class Accum{
  public static void main(String[] args){
      int i, n, sum = 0;
      String input = " ";
       BufferedReader in = new  BufferedReader(new
                           InputStreamReader(System.in));

      for(i = 0; i<10; i++){
        System.out.print("Input integer number: ");
        try{
          input = in.readLine();
        }catch(IOException e){
          System.out.println("Error!");
        }

        n = Integer.parseInt(input);
       sum = sum + n;
      }
      System.out.println("The sum of the integers is " + sum);
  }
}
```

   5.2. Save then compile your program until no errors and warnings are reported.
   5.3. Run your program.
   5.4. Simulate and write what will be displayed on the screen.

5.5. What do you think is being accumulated in your program?

_____
_____
_____
_____

6. Revise your **Accum.java** program and save it as **Accum2.java.** Thereafter, the user will be asked to input 10 integer numbers and display the sum of all even numbers and the sum of all odd numbers.

6.1. Write your complete Java program here:

6.3. Run your program.
6.4. Simulate and write what will be displayed on the screen.

6.5. What do you think is the purpose of accumulators?

_____
_____
_____
_____
_____
_____
_____
_____
_____

7. Differentiate now counters from accumulators.

_____
_____
_____
_____
_____
_____
_____
_____
_____