CSE110: Principles of Programming with Java

LAB 2

What this Lab Is About:
- This program is for practicing the use of primitive data types, expressions. – Chapter 2

Use the following Coding Guidelines:
- When declaring a variable, you usually want to initialize it.
- Remember you cannot initialize a number with a string.
- Remember variable names are case sensitive.
- Use tabs or spaces to indent code within blocks (code surrounded by braces). This includes classes, methods, and code associated with ifs, switches and loops. Be consistent with the number of spaces or tabs that you use to indent.
- Use white space to make your program more readable.
- Use comments after the ending brace of classes, methods, and blocks to identify to which block it belongs.

At the beginning of each programming assignment you must have a comment block with the following information. The number in the left column indicates the line number. Go to the View menu → Line Numbers in TextPad, then you will see the line numbers, which is very helpful in fixing the errors.

```
1  //------------------------------------------------
2  // Name: your name
3  // Lab : X
4  // Title: Lab2.java
5  // Description: Explain the details in your word here!
6  // Date: mm/dd/yyyy
7  //------------------------------------------------
8
```

1. **Getting Started**

   Create a class called **Lab2**. Use the same setup for setting up your class and main method as you did for the previous assignments. Be sure to name your file **Lab2.java**.
   Hints: See the sample output below in the lab for an idea of what your program should output.

2. **Programming exercises**

   The following is a template of Lab2.java. It has three parts. Finish the part1, 2 and 3 one by one. Once you finish all parts and run the program correctly in your PC, submit the Lab2.java to the online site. The template Java code has each instruction as a comment block, but you don't have to type them in your code.

   ```
   /***************************************************
   ```
   Part 1: Declaring Variables:
   Read the following code skeleton and add your own code according to the comments.
   Ask your TA for help and/or clarification.
   Note:When you see **//-->** that is where you need to add Java code.
   ```
   ***************************************************/
   ```

```
 9  import java.util.Scanner; //import Scanner package to input values at run time
10
11  public class Lab2
12  {
13      public static void main(String[] args)
14      {
15          /*****************************************************
16          Part 1: Declaring Variables:
17          Read the following code skeleton and add your own code according to the comments.
18          Ask your TA for help and/or clarification.
19
20          Note:When you see "//-->" that is where you need to add Java code.
21          *****************************************************/
22
23          //--> declare an int called age
24          //--> declare int variables with name n1, n2, n3, n4.
25          //--> declare a double called avg
26
27          /*****************************************************
28          We are using double because average of a set of numbers can be in fraction as well
29          *****************************************************/
30
31          //--> declare a String called firstName
32          //--> declare a String called lastName
33          //--> declare a String called fullName
34
```

/***
Part 2: Assign Values to Variables
After part 1, write a segment of code which will assign values to
the variables and print out the following:
***/

```
35          /*****************************************************
36          Part 2: Assign Values to Variables
37          After part 1, write a segment of code which will assign values to
38          the variables and print out the following:
39          *****************************************************/
40
41          //--> age = ???;
42          //--> firstName= ???;
43          //--> lastName= ???;
44
45          //--> print "[firstName] is [age] years old" using the variables above
46
47          /*****************************************************
48          Concatenate both Strings firstName and lastName and store the result
49          in fullName variable.
50          *****************************************************/
51
52          //--> fullname = ???;
53          //--> print "[fullName]" here
54
```

/***
Part 3: Using Mathematical Operators
After part 2, we will be finding the average of all the 4 numbers n1,n2,n3,n4 and
will be initializing the variable avg with this result.
***/

```
55
56    /*****************************************************
97    Part 3: Using Mathematical Operators
58    After part 2, we will be finding the average of all the 4 numbers n1,n2,n3,n4 and
59    will be initializing the variable avg with this result.
      *****************************************************/
60    /*****************************************************
61    Use Scanner class to initialize the variables n1, n2, n3 and n4 to any integers of your choice.
62    *****************************************************/
63    //--> create a Scanner named input e.g. Scanner input = new Scanner (System.in)
44
65    //--> read an input integer and udpate the value of n1 using the nextInt() method
66    //--> read an input integer and update the value of n2 using the nextInt() method
67    //--> read an input integer and update the value of n3 using the nextInt() method
68    //--> read an input integer and update the value of n4 using the nextInt() method
69
70    //--> Print the input values: n1,n2,n3,n4
71
72    /*****************************************************
73    Note: Use parsing (double) before the integers to get the correct decimal value.
74    e.g.: avg= (double) (n1+n2+n3+n4)/4
      *****************************************************/
75
76
77    //-->  Print an output that says "Average of n1,n2,n3 and n4 is :[avg]"
78
79    } // end main method
80 } // end class Lab 2
```

3. **Check the smaple output**
   Below is an example of what your output **should** look like when you submit the file to the online submission site.
   Note: There are several approaches to solve a programming question. **Make sure your output is reasonable**. The goal here is for you to demonstrate that you understand the underlying concepts.

   Sample Run:
   ```
   Pratik is 22 years old.
   Pratik Iyer
   Input integer value for n1,n2,n3,n4
   1
   2
   3
   4
    The Value of n1 is:1
    The Value of n2 is:2
    The Value of n3 is:3
    The Value of n4 is:4
   The average of the four numbers is:2.5
   ```

4. **Submission:**
   Submit your Lab2.java file (NOT Lab2.class file) through the **GradeScope** in CANVAS. Your file will be submitted and a screen will show up displaying if your program compiled and what your output is when run on some sample input (in this case no input). You should then check to make sure that the actual file submitted properly and is readable to the grader.

   Important Note: You may resubmit as many times as you like until the deadline, but we will only mark your last submission.