Part II: Create a program that uses a loop

You will create a new program called **LastNameFirstInitialLab6**. Using the appropriate loop type, a user will be allowed to enter as many whole numbers as he or she wishes to. When the user enters a -1 (negative 1), the entry will stop. The program will do the following tasks:

- calculate how many numbers were entered.
- calculate the sum of all of the numbers entered.
- calculate how many numbers were entered that are even.
- calculate the average of all of the numbers entered.
- convert the sum to a binary number
- display the count, sum, even number count, average, and the sum in binary.

> The Integer class has a toBinaryString() method which takes an integer and the base in which the integer needs to be converted that will allow you to convert any integer to its equivalent base number. The form of its use is:
>
> **Integer.toString(numberToBeConverted, base);** // to convert to binary, use 2 as the base.

Add the necessary import statement(s), and the comments for the integrity statement, lab number, and programmer name and course name in the correct places. As always, it must also print out the lab #, programmer's name, course name and section #, and the program information.

Notes:

- Your program must look like the sample using the same verbiage. I suggest that you look at the samples before you begin so you will know what this program will look like.
- Do not go above the objectives of the assignment.
- Make sure your program uses proper indentation and wise use of whitespace. You can select Source from the menu and then select Format. This will automatically help with indentation and some whitespace issues. However, check it yourself afterward to be sure it is as readable as possible.
- The grading rubric is at the end of the assignment.

To Submit this lab:

In Canvas, upload the Java file to the assignment. This will be the file called **LastNameFirstInitialLab6.java**.

Bonus (5 additional points):

Put your program within a **do while loop** so that the user can chose to run the program as many times as she or he wishes. The prompt will be: **Do you want to do this again? Enter a Y to continue or a N to quit**. The control variable is a character data type. Once the user has quit, thank the user for playing. The user needs to be able to enter a capital Y or a small letter y to continue.

SAMPLE RUN SCREENS

Values shown in bolded blue are variables.

RUN #1

Lab Six
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This program will use a while loop to accept integers from a user
until the user enters a -1
The program will count the number of values entered, calculate the sum & average of the numbers,
show how many of the numbers are even, and display the number in binary form

Please enter a whole number. Enter a -1 (negative 1) to stop: 1
Please enter a whole number. Enter a -1 (negative 1) to stop: 2
Please enter a whole number. Enter a -1 (negative 1) to stop: 3
Please enter a whole number. Enter a -1 (negative 1) to stop: 4
Please enter a whole number. Enter a -1 (negative 1) to stop: 5
Please enter a whole number. Enter a -1 (negative 1) to stop: 6
Please enter a whole number. Enter a -1 (negative 1) to stop: 7
Please enter a whole number. Enter a -1 (negative 1) to stop: -1

You entered **7** numbers
The sum of all of the numbers entered is **28**
The average of all of the numbers entered is **4.00**
Of these numbers, **3** of them is/are even.
The sum in binary is **11100**

Notice the use of printf to set the decimal places to 2 for the average.