CSC 402 SP19 Homework Assignment 1

Objectives:

- Become familiar with basic Java program structure
- Become familiar with Java program elements:
  - Variable types
  - Operators and Expressions
  - Control structures
  - Input & Output statements (inc. StdIn, StdOut from the textbook)
  - Functions
- Be able to use Eclipse to create, debug and run basic Java programs.
- Be able to upload the required files to D2L.

You are to write a Java program for each of the following problems. Name your projects as: csc402hw1a, csc402hw1b, csc402hw1c, csc402hw1d corresponding to problems a-d below.

Once you have a program working, run it using the data indicated below, then copy/paste the console output into the top of your java source file in a comment block, **right below your name**. Upload the .java file to the submission folder.

A) Write a program to prompt the user for 2 floating point numbers, A & B. The program should print, on separate lines:

- The sum of the two numbers A + B
- The difference of the two numbers A - B
- The quotient (first/second) A / B
- The quantity: A^B, Hint pow( )

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Input:  3.5 , 4.2
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B) Write a program to prompt the user for a positive integer, N. The program will repeatedly divide the input in half, discarding any fractional part, until it becomes 1. The program should print on separate lines:

- the sequence of computed values, one per line
- the number of iterations required
- the value of $\log_2(N)$

```
Run twice
Input1:  8   Input 2 19
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C) Write a program that will prompt the user to enter GPA values one per line, stopping when the user enters a negative value. Print the following on separate lines:

- The number of valid GPAs entered.
- The sum of the GPAs
- The average GPA

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Input:
4.0
3.7
2.9
3.5
-1
```

D) Write a function with one integer parameter, N. The function will compute and return the sum of the integers from 1 to N. Name the function: sumInts.

Then write a complete program using this function. The main function will prompt the user for an integer, N. The main function will call the sumInts function for every value M from 1 up to N and print out:

- The value M
- The result of sumInts(M)
- The value of (M+1)*M / 2

```
Input:  9
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