# Homework 02

*CSC/DSCI 1301 – Principles of CS/DS I*

*Due Date: March 8$^{th}$ at midnight*

Please thoroughly read the instructions for the homework and its deliverables! Your program should be typed up. We will not accept handwritten code or images of code as submissions.

## Program: Terminal Calculator

Write a Python program that implements a calculator in the terminal. Your program should accept an entire expression as input. You can assume that the expression will always be composed of a left-hand numeric value, an arithmetic operator, and a right-hand numeric value. See the example output for what the expression looks like. Your program should be able to interpret and compute the result of the following operators:

- Addition (+)
- Subtraction (-)
- Multiplication (*)
- Division (/)
- Modulus (%)
- Power (**)
- Floor Division (//)

Each of the operators should be implemented as separate functions where their arguments are the left-hand side value and the right-hand side value of the expression. E.g. addition (left, right). Finally, your program should output the result to the terminal.

Your calculator program should allow the user to enter multiple arithmetic expressions as input until a stop word is detected to end the program. There should be at least two valid stop words, one of which should be a single-letter shortcut. Ex. 'quit' and 'q'.

Note: Your calculator must support floating-point inputs and results. Also, your program should provide an error message when an invalid operator or expression is entered.

## Example Output

```
Please enter an Expression

:> 3 * 5
Result: 3 * 5 = 15

:> 15 / 4
Result: 15 / 4 = 3.75

:> 7 // 2
Result: 7 // 2 = 3

:> 2 ** 2
Result: 2 ** 2 = 4

:> 4 +
Error: Invalid Expression - (4 +)


:> quit
```

## Deliverables

For this program, you will need to provide the Python files containing your code as well as screenshots of the output of your program or, optionally, a screen recording. Please name your files as follows:

- Python Files
    - lastname_firstname_filename.py
    - For example: **hawamdeh_faris_calculator.py**
- Screenshots
    - lastname_firstname_filename.png
    - For example: **hawamdeh_faris_calculator.png**
- Or Recording
    - lastname_firstname_filename.mp4
    - For example: **hawamdeh_faris_calculator.mp4**

## Important

**Homework should be your own individual effort! You may not work on this as a group. If you have questions about this assignment, please ask your instructor, your Lab TAs, or a Tutor. Do not ask your peers!**

**Your style of coding is just as important as the correctness of your program. Unlike your programs in the lab, you will be evaluated on your variable names and use of comments in addition to the program output. Your code must include a block comment at the top of your Python file with your name and a description of your program. Your variable names should be meaningful and conform to snake_case.**