

Lab Assignment Week 08

CSC 3320 – System-level Programming

Week of February 26th, 2024

Introduction

Welcome to the seventh programming lab of CSC 3320! Today, we will be covering the following topics:

1. Functions
2. Strings

Lab Policies

- Attendance is mandatory.
- Labs must be completed **individually**.
- TAs are here to help you. Ask them for help!
- Lab assignments are due at midnight on the day of your lab.

Deliverables:

1. The C Code for your program. (.c file).
2. A screenshot of the output in the Terminal.

If you have any questions, please do not hesitate to ask your TA.

Program: Calculator

Write a C program that implements a command-line calculator. 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 Example. Your program should be able to interpret and compute the result of the following operators:

- Addition (+)
- Subtraction (-)
- Multiplication (*)
- Division (/)
- Power (**)
- Floor Division (//)
 - The result of the regular division is rounded down to the next whole number.

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. E.g. `int addition (int left, int right)`. Finally, your program should output the result to the terminal.

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

Example Output

```
Please enter an expression:
:> 51 + 4.3
51.00 + 4.30 = 55.30
```

```
Please enter an expression:
:> 2 ** 3
2.00 ** 3.00 = 8.00
```

```
Please enter an expression:
:> 2 ^ 3
Error: Invalid Operator (^)
```

Deliverables

For today's lab, you will need to upload the C program code for your Most Frequent Character program and its output in the terminal on iCollege. Please name your C code and screenshot as follows:

- C Files
 - `lastname_firstname_filename.c`
 - For example: **`hawamdeh_faris_calculator.c`**
- Screenshots
 - `lastname_firstname_filename.png`
 - For example: **`hawamdeh_faris_calculator.png`**