CMPE 230: SYSTEMS PROGRAMMING

In this project, the primary objective is developing an interpreter for a scientific calculator, using C programming language. The calculator has basic arithmetic operations, binary operations and functions. The interpreter is responsible for checking the input for possible syntax errors and generating the correct result unless the input is invalid.

Execution of program is done by using the terminal, so it can be said that the program interface is the terminal of OS. The program doesn’t need any parameters. Inserting the file path of the executable file of program to the terminal is sufficient for execution of the program. Termination of the program is done by the termination command of terminal (e.g. Ctrl + C for Windows).

As it was written earlier, the main functionality of the program is calculating the result of given input by a user. The input is directly taken from the terminal, since the program doesn’t take any parameters, all the user has to do is inserting the operation to the terminal and pressing the Enter button. Unless the input has an error, given operation is done by the program. In case of an invalid input, “Error!” message will be printed to the terminal.

The operations can be categorized into two groups: equations (a = 2 \* 5) and non-equations (2 \* 5). For equations, left hand side of an operation must be a variable. Right hand side of an operation is considered as the value of the variable, which is stored in the program for the upcoming operations. After the assignment, nothing will be printed to the terminal. Whereas for non-equations, the result is printed to the terminal.