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Lab04

Report04

The objective of this assignment is to create a more complex calculator branching off of the first simple calculator we had created from Lab02. Using the basic functions of the first calculator we branch off into a more complex calculator having it do complex equations involving parentheses, an infinite memory bank and more.

Major variables used in the assignment would be the functions used, an import of sys, and variables:

Functions – SimpleExpressionIsValid, EvaluateSimpleExpression, main, run, infiniteMem, evaluateComplexExpression, and evaluateComplexExpression2

These functions roles were to be used to be called on later to help with computing the equations.

SimpleExpressionIsValid – this function was to valdiate the equations and see whether they were true or false.

EvaluateSimpleExpression – this function is used to evaluate the equations to get the results

Run – a basic function to take in the users input to either end the program or continue with the program.

Main – the main function that takes the users input to either end or validate the equations to then evaluate the equation.

infiniteMem – this function was used to help store the users input and sum of the equation into a dictionary/list and saved for later if it were to be called on later.

evaluateComplexExpression – a function that evaluates a far more complex equations involving parentheses up to 3.

evaluateComplexExpression2 – a function that does what evaluateComplexExpression does plus more.

Variables and more - expr, while loop, opers, and paren:

Expr – this variable was used to store the users input and then is used within functions to get the answers.

Opers – this variable stored a list of all the operations for the equations.

Paren – this variable stored a list for parenthese to be used for the complex calculator.

While loop – this loop is used for the program to continue its operations for as long as infinite until the user inputs the command to end the program.

How this program work is, with step by step by process through the calling of different functions, it takes the simple functions of a calculator to a more complex version and then evaluates the users input. First it will valid whether the users input was a valid equation. After validation the next operation would be for it to solve/evaluate if the answer is true, otherwise the outcome would be False and the user will be asked to reenter the equation.

Problems I’ve encounter would be when I try to add the inputs into a list it ends up erasing the previous entered input for the infinite memory. For the first complex expression I wasn’t sure if I was needed to only have at most 3 terms so I hard coded to be that way. Secondly for the second complex expression I was not able to evaluate the equation with the first way of being arbitrary. As I wasn’t sure on how to do so. I think using the .isdigit may have been a terrible choice of validating the equations thus making the outcome of this assignment a lot harder than it should have.