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Stacks Part 1 & 2

Data Structures and Algorithms I

Stacks Test

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Project Discussion

The main goal is to use stacks to take an infixed problem and convert it into a postfix notation. Then the code will calculate the answer, which will be in a double. The program starts off with inputting the file that contains the functions. These functions will then go through the code and output the postfix version of that function. The program shows how pops and pushes work and how they affect the stack throughout the code. Then the new postfix expression will be evaluated and give the answer of the expression. This will use a stack of floats instead of characters like in part 1. The answer will be using the output file that was given by part 1. It will then take that output file and use it as an input file to find the answer.

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Test for Grocery List

This code is fairly straightforward for testing. The test expressions were given in so this code will test those 4 equations. The equations given were:

4 \* 20 - 100 + 40 / 5

(10 - 1) % 2 \* 10 + (5 + 9) \* 9 / 3

25 \* (15 - 110 / 10) / 3 + 7 % 5

(3 + (10 - 5) \* (4 - 2) - 5 / 2) / (4 + 2 \* (6 - 4))

To test this code, it will take these 4 equations and make them into a postfix equation instead of an infix equation. The expected output would be:

4 20 \* 100 - 40 5 / +

10 1 - 2 % 10 \* 5 9 + 9 \* 3 / +

25 15 110 10 / - \* 3 / 7 5 % +

3 10 5 - 4 2 - \* + 5 2 / - 4 2 6 4 - \* + /

The next step would be to get the answers for these postfix expressions. The expected output for this would be:

4 20 \* 100 - 40 5 / +

10 1 - 2 % 10 \* 5 9 + 9 \* 3 / +

25 15 110 10 / - \* 3 / 7 5 % +

3 10 5 - 4 2 - \* + 5 2 / - 4 2 6 4 - \* + /

The answer is: -12

The answer is: 52

The answer is: 35.3333

The answer is: 1.3125

This is the essentials of the test code. The code test the examples that were given and gives both the postfix expression and the answer to said postfix expression.

Sample output:

