

Assignment 1

Due march 12th

Given the calculator code I would like you to finish the function stub in order to actually calculate.

there are a couple of methods of doing this, but the one I would like you to use (that I think is easiest) is using an expression tree.

<https://www.geeksforgeeks.org/expression-tree/>

Things of note:

You could easily find full code of how to do this online (or even in this article) - I ask that you refrain from using those, as doing it yourself is learning an algorithm and applying it (which is necessary for the interviews you will have to do in your career if you want to be employed)

ChatGPT

Feel free to use chat gpt to understand the algorithm better (or in ways similar to what I outline below), but please actually use your human brain to consider the problem.

Chatgpt is a great tool. One way I like to use it: when I was learning how to do python, I came from a javascript background. Something easy you can do is say: "what is the python equivalent of this method in javascript" - I strongly encourage this usage, as it will let you transition your skills from c++ into skills in javascript very effectively, but be sure to take it a step beyond by actually reading the mdn documentation about it.

Some things you will likely need for this assignment

Basic node class:

```
class Node{
  constructor(val = null, left = null, right = null){
    this.val = val;
    this.left = left;
    this.right = right;
  }
}
```

converting a string into an array:

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String/split

writing a recursive solution for binary trees:

<https://medium.com/@siddharthgupta555t/finally-understanding-recursion-and-binary-search-trees-857c85e72978>

stack refresher:

<https://www.geeksforgeeks.org/stack-data-structure/>

using array like a stack:

javascript has no built-in stack / queue

push:

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/push

pop:

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/pop

Submission expectations:

Please link a public github repo to your code

Please submit a video recording of you performing various operations, using all operators

(+, -, *, /) and parenthesis

please hit = sign on the page to get a result and output it on the display

Please feel free to go ahead and add more styling to the app to make it look nicer if you so choose (you will earn brownie points by me if you do so - potentially extra credit depending on how nice it is~!)