Report: REPL Homework 1

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In order to solve this assignment, I used lists in python to separate the operators in an input from the numbers in an input. I found the feature of creating lists and indexing in python really useful because these features helped me sort the numbers and operators in different lists. After I separated the operators and the numbers in the input, I was easily able to perform the operations in the operators list on the numbers in the number list. By indexing the lists, I performed the multiplication and division operations first and the addition and subtraction operations afterwards. Splitting the numbers and the operators in different lists was helpful because I was able to keep track of the length of both the lists which helped me ensure that the input to the program was of the correct format and of the correct length.

I kept track of the errors in the program by declaring a Boolean called errors. In order to ensure the right format, I used multiple if statements to ensure the input to the program was of the correct format. As soon as an error is found in the program, the Boolean for errors turns true, and it makes the program print out an error message. This helps improve the efficiency of the program because as soon as the program encounters an error in the input, it quits instead of going over the entire input and performing the calculations on the input.

One of the problems I ran into was returning an error for an input of numbers starting with 0 for example 000990. I found this tricky because there could be multiple 0s in front of a number, but fortunately I was able to take advantage of the string to int and the int to string conversion methods in Python.

```
if len(number) != len(str(int(number))) and int(number) != 0:
    error = True
```

By converting a number into an integer, I was able to remove the extra 0s in the beginning of the number, but since I was interested in the length of the number, I converted the number back to string and compared the length of this number to the initial number input. Any discrepancy in the length would definitely point towards the existence of 0s in the beginning of the number, therefore the error will be turned True.

I found the for loops in Python difficult to use, because I was unable to change the value of i within the for loop. Since, I did not want to use multiple for loops and affect the efficiency of my program, I ended up using while loops so that I had more control over my i which helped me better and more efficiently steer my loops.

Overall, I found Python helpful for this assignment. The feature of lists and the ability to declare variables without having to declare their types was really helpful.