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CECS 342-04
Prof. Nguyen
September 8th, 2021

CECS 342 Lab 1

Calculator.cpp

```
3
4 #include <sstream>
5 #include <cstring>
6 #include <cmath>
7 #include <iostream>
8 using namespace std;
9
10 int main ()
11 {
12     string input;
13     getline(cin, input);
14
15     input.erase(0,1);
16     input.erase(input.size() - 1);
17
18     char temp[input.length() + 1];
19     strcpy(temp, input.c_str());
20     int j = 0;
21
22     string num[4];
23
24     for(int i = 0; i < input.length(); i++){
25         if(temp[i] == ' '){
26             j++;
27             continue;
28         }
29         else if(temp[i] == '+' || temp[i] == '-' || temp[i] == '*' || temp[i] == '/'){
30             num[j] = temp[i];
31         }
32         else{
33             num[j] += temp[i];
34         }
35     }
36
37     int x = 0;
38     int y = 0;
39
40     stringstream a(num[0]);
41     stringstream b(num[2]);
42
43     a >> x;
44     b >> y;
45     int val = 0;
46
47     if(num[1] == "+"){
48         val = x + y;
49         cout<< input << " = " << val;
50     }
51     else if(num[1] == "-"){
52         val = x - y;
53         cout<< input << " = " << val;
54     }
55     else if(num[1] == "*"){
56         val = x * y;
57         cout<< input << " = " << val;
58     }
59     else if(num[1] == "/"){
60         val = floor(x / y);
61         cout<< input << " = " << val;
62     }
63     return 0;
64 }
```

```
Command Prompt
Microsoft Windows [Version 10.0.19042.1165]
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C:\Users\Quan Do>cd Documents

C:\Users\Quan Do\Documents>cd CECS_342

C:\Users\Quan Do\Documents\CECS_342>g++ Calculator.cpp

C:\Users\Quan Do\Documents\CECS_342>Calculator
'2 - 6'
2 - 6 = -4
C:\Users\Quan Do\Documents\CECS_342>Calculator
'5 * 7'
5 * 7 = 35
C:\Users\Quan Do\Documents\CECS_342>Calculator
'1 + 3'
1 + 3 = 4
C:\Users\Quan Do\Documents\CECS_342>Calculator
'6 / 3'
6 / 3 = 2
C:\Users\Quan Do\Documents\CECS_342>
```

Calculator.java

```
4  import java.util.Scanner;
5
6  public class Calculator {
7      public static void main(String[] args) {
8          Scanner scan = new Scanner(System.in);
9          String input = scan.nextLine();
10
11          String temp = input.replaceAll("'", "");
12          String[] temp1 = temp.split(" ");
13
14          int sol = 0;
15
16          if(temp1[1].equals("+")){
17              sol = Integer.parseInt(temp1[0]) + Integer.parseInt(temp1[2]);
18              System.out.println(temp + " = " + sol);
19          }
20          else if(temp1[1].equals("-")){
21              sol = Integer.parseInt(temp1[0]) - Integer.parseInt(temp1[2]);
22              System.out.println(temp + " = " + sol);
23          }
24          else if(temp1[1].equals("*")){
25              sol = Integer.parseInt(temp1[0]) * Integer.parseInt(temp1[2]);
26              System.out.println(temp + " = " + sol);
27          }
28          else if(temp1[1].equals("/")){
29              sol = Integer.parseInt(temp1[0]) / Integer.parseInt(temp1[2]);
30              System.out.println(temp + " = " + sol);
31          }
32      }
33  }
```

Command Prompt

Microsoft Windows [Version 10.0.19042.1165]
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C:\Users\Rowla>cd Desktop

C:\Users\Rowla\Desktop>cd CECS342

C:\Users\Rowla\Desktop\CECS342>javac Calculator.java

C:\Users\Rowla\Desktop\CECS342>java Calculator.java

'12 + 34'

12 + 34 = 46

C:\Users\Rowla\Desktop\CECS342>java Calculator.java

'56 - 78'

56 - 78 = -22

C:\Users\Rowla\Desktop\CECS342>java Calculator.java

'9 * 12'

9 * 12 = 108

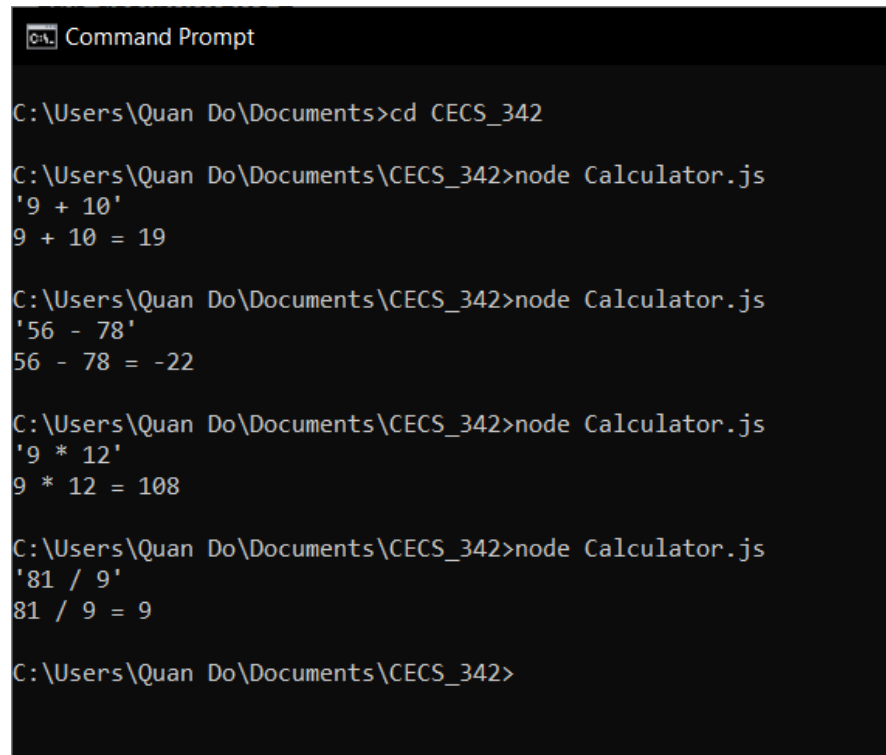
C:\Users\Rowla\Desktop\CECS342>java Calculator.java

'34 / 2'

34 / 2 = 17

Calculator.js

```
4  const readline = require("readline");
5
6  const rl = readline.createInterface({
7    input: process.stdin,
8    output: process.stdout,
9  });
10
11  rl.question("", function (answer) {
12    str = answer.replace(/'/g, "");
13    array = str.split(" ")
14
15    a = 0
16
17    if(array[1] == "+"){
18      a = parseInt(array[0], 10) + parseInt(array[2], 10)
19      console.log(`${str} = ${a}`)
20    }
21    else if(array[1] == "-"){
22      a = parseInt(array[0], 10) - parseInt(array[2], 10)
23      console.log(`${str} = ${a}`)
24    }
25    else if(array[1] == "*"){
26      a = parseInt(array[0], 10) * parseInt(array[2], 10)
27      console.log(`${str} = ${a}`)
28    }
29    else if(array[1] == "/"){
30      a = Math.floor(parseInt(array[0], 10) / parseInt(array[2], 10))
31      console.log(`${str} = ${a}`)
32    }
33    rl.close();
34  });
```



The screenshot shows a Windows Command Prompt window with the title "Command Prompt". The user is in the directory "C:\Users\Quan Do\Documents\CECS_342". They run the command "node Calculator.js" three times, each with a different arithmetic expression. The script correctly calculates the results: 9 + 10 = 19, 56 - 78 = -22, and 9 * 12 = 108. The final command shown is "81 / 9", which would result in 9.

```
C:\Users\Quan Do\Documents>cd CECS_342

C:\Users\Quan Do\Documents\CECS_342>node Calculator.js
'9 + 10'
9 + 10 = 19

C:\Users\Quan Do\Documents\CECS_342>node Calculator.js
'56 - 78'
56 - 78 = -22

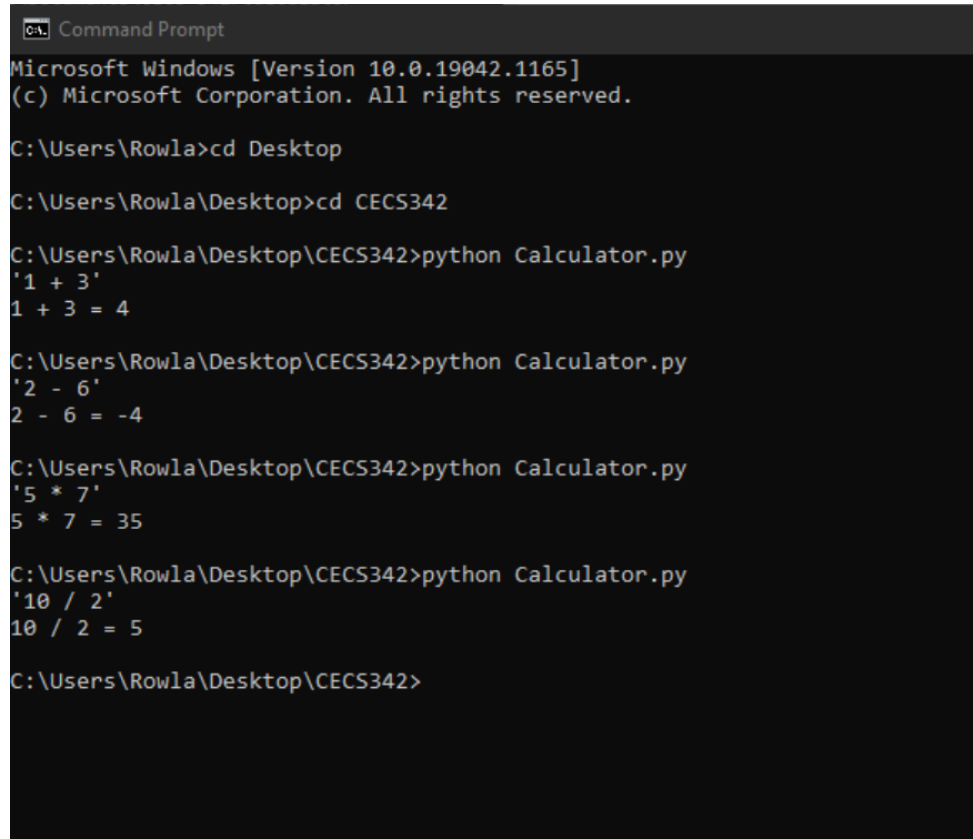
C:\Users\Quan Do\Documents\CECS_342>node Calculator.js
'9 * 12'
9 * 12 = 108

C:\Users\Quan Do\Documents\CECS_342>node Calculator.js
'81 / 9'
81 / 9 = 9

C:\Users\Quan Do\Documents\CECS_342>
```

Calculator.py

```
4  x = input().replace("'", "")
5
6  a = 0
7  b = 0
8
9  if '+' in x:
10     a = x.split('+')
11     b = int(a[0]) + int(a[1])
12 elif '-' in x:
13     a = x.split('-')
14     b = int(a[0]) - int(a[1])
15 elif '/' in x:
16     a = x.split('/')
17     b = int(a[0]) // int(a[1])
18 elif '*' in x:
19     a = x.split('*')
20     b = int(a[0]) * int(a[1])
21
22 print(x + " = " + str(b))
??
```



```
C:\> Command Prompt
Microsoft Windows [Version 10.0.19042.1165]
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C:\Users\Rowla>cd Desktop

C:\Users\Rowla\Desktop>cd CECS342

C:\Users\Rowla\Desktop\CECS342>python Calculator.py
'1 + 3'
1 + 3 = 4

C:\Users\Rowla\Desktop\CECS342>python Calculator.py
'2 - 6'
2 - 6 = -4

C:\Users\Rowla\Desktop\CECS342>python Calculator.py
'5 * 7'
5 * 7 = 35

C:\Users\Rowla\Desktop\CECS342>python Calculator.py
'10 / 2'
10 / 2 = 5

C:\Users\Rowla\Desktop\CECS342>
```