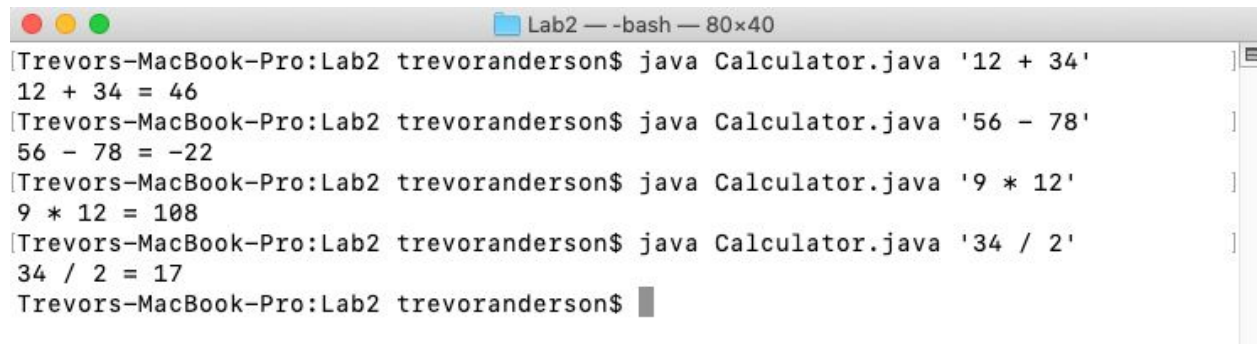


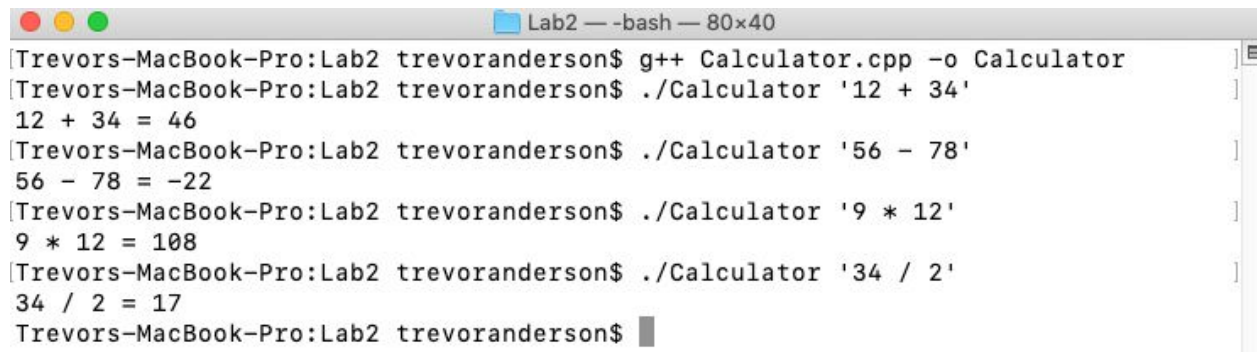
I. Terminal Screen shots

1. Java

A terminal window titled "Lab2 — -bash — 80x40" showing the execution of a Java calculator program. The user runs "java Calculator.java" four times with different arithmetic expressions. The program outputs the results of each calculation.

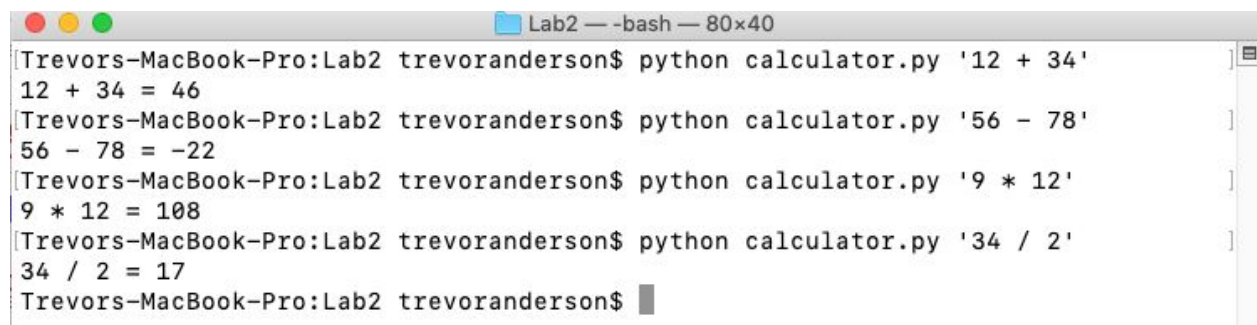
```
[Trevors-MacBook-Pro:Lab2 trevoranderson$ java Calculator.java '12 + 34']  
12 + 34 = 46  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ java Calculator.java '56 - 78']  
56 - 78 = -22  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ java Calculator.java '9 * 12']  
9 * 12 = 108  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ java Calculator.java '34 / 2']  
34 / 2 = 17  
Trevors-MacBook-Pro:Lab2 trevoranderson$
```

2. C++

A terminal window titled "Lab2 — -bash — 80x40" showing the compilation and execution of a C++ calculator program. The user first compiles "Calculator.cpp" into an executable named "Calculator" using "g++". Then, they run the executable four times with different arithmetic expressions. The program outputs the results of each calculation.

```
[Trevors-MacBook-Pro:Lab2 trevoranderson$ g++ Calculator.cpp -o Calculator]  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ ./Calculator '12 + 34']  
12 + 34 = 46  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ ./Calculator '56 - 78']  
56 - 78 = -22  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ ./Calculator '9 * 12']  
9 * 12 = 108  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ ./Calculator '34 / 2']  
34 / 2 = 17  
Trevors-MacBook-Pro:Lab2 trevoranderson$
```

3. Python 3

A terminal window titled "Lab2 — -bash — 80x40" showing the execution of a Python 3 calculator program. The user runs "python calculator.py" four times with different arithmetic expressions. The program outputs the results of each calculation.

```
[Trevors-MacBook-Pro:Lab2 trevoranderson$ python calculator.py '12 + 34']  
12 + 34 = 46  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ python calculator.py '56 - 78']  
56 - 78 = -22  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ python calculator.py '9 * 12']  
9 * 12 = 108  
[Trevors-MacBook-Pro:Lab2 trevoranderson$ python calculator.py '34 / 2']  
34 / 2 = 17  
Trevors-MacBook-Pro:Lab2 trevoranderson$
```

4. Go

```
Lab2 — -bash — 80x40
[Trevors-MacBook-Pro:Lab2 trevoranderson$ go run calculator.go '12 + 34'
46
[Trevors-MacBook-Pro:Lab2 trevoranderson$ go run calculator.go '56 - 78'
-22
[Trevors-MacBook-Pro:Lab2 trevoranderson$ go run calculator.go '9 * 12'
108
[Trevors-MacBook-Pro:Lab2 trevoranderson$ go run calculator.go '34 / 2'
17
Trevors-MacBook-Pro:Lab2 trevoranderson$
```

5. JavaScript (Node.js)

```
Lab2 — -bash — 80x40
[Trevors-MacBook-Pro:Lab2 trevoranderson$ node calculator.js '12 + 34'
46
[Trevors-MacBook-Pro:Lab2 trevoranderson$ node calculator.js '56 - 78'
-22
[Trevors-MacBook-Pro:Lab2 trevoranderson$ node calculator.js '9 * 12'
108
[Trevors-MacBook-Pro:Lab2 trevoranderson$ node calculator.js '34 / 2'
17
Trevors-MacBook-Pro:Lab2 trevoranderson$
```

II. Source Code

1. Java

```
//Basic user input calculator for Java
public class Calculator {
    public static void main(String[] args) {
        String[] input = args[0].split(" ");
        int in1 = Integer.parseInt(input[0]);
        int in2 = Integer.parseInt(input[2]);
        int out;
```

```

        if (input[1].equals("+")) out = in1 + in2;
        else if(input[1].equals("-")) out = in1 - in2;
        else if(input[1].equals("*")) out = in1 * in2;
        else if(input[1].equals("/")) out = in1 / in2;
        else out = in1 / in2;

        System.out.println(args[0] + " = " + out);
    }
}

```

2. C++

```

//Basic user input calculator for C++ with switch statement
#include <iostream>
using namespace std;

int main(int argc, char *argv[])
{
    char *str[10];
    str[0] = strtok(argv[1], " "); // Splits spaces between words in str
    str[1] = strtok (NULL, " ");
    str[2] = strtok (NULL, " ");
    //convert string to int
    int in1 = atoi(str[0]);
    int in2 = atoi(str[2]);
    const char *op = str[1];

    switch (*op) {
        case '+':
            std::cout << in1 << " + " << in2 << " = " << in1 + in2 << "\n";
            break;
        case '-':
            std::cout << in1 << " - " << in2 << " = " << in1 - in2 << "\n";
            break;
        case '*':
            std::cout << in1 << " * " << in2 << " = " << in1 * in2 << "\n";
            break;
        case '/':

```

```

        std::cout << in1 << " / " << in2 << " = " << in1 / in2 << "\n";
        break;
    }
    return 0;
}

```

3. Python 3

```

import sys
#takes the equation from the command line argument and splits it up by space
arg = sys.argv[1]
string = arg.split(' ')
#converts string to integers
in1 = int(string[0])
in2 = int(string[2])
if string[1] == '+':
    print in1 , '+' , in2, '=', in1 + in2
elif string[1] == '-':
    print in1 , '-' , in2, '=', in1 - in2
elif string[1] == '*':
    print in1 , '*' , in2, '=', in1 * in2
elif string[1] == '/':
    print in1 , '/' , in2, '=', in1 / in2

```

4. Go

```

package main
import (
    "fmt"
    "os"

```

```

    "strings"
    "strconv"
)
func main() {
    input := strings.Split(os.Args[1], " ")
    in1, err1 := strconv.ParseInt(input[0], 10, 64)
    in2, err2 := strconv.ParseInt(input[2], 10, 64)
    if err1 == nil && err2 == nil {
        var out int64
        if input[1] == "+" {
            out = in1 + in2
        } else if input[1] == "-" {
            out = in1 - in2
        } else if input[1] == "*" {
            out = in1 * in2
        } else {
            out = in1 / in2
        }

        fmt.Println(out)
    }
}

```

5. JavaScript (Node.js)

```
var array = process.argv[2].split(" ");
```

```
var in1 = parseInt(array[0], 10);
```

```
var in2 = parseInt(array[2], 10);
```

```
if (array[1] == '+')
```

```
    console.log(in1 + in2);
```

```
else if (array[1] == '-')
```

```
    console.log(in1 - in2);
```

```
else if (array[1] == '*')
```

```
    console.log(in1 * in2);
```

```
else if (array[1] == '/')
```

```
    console.log(in1 / in2);
```