Simple CalculatorEnd-term Evaluation
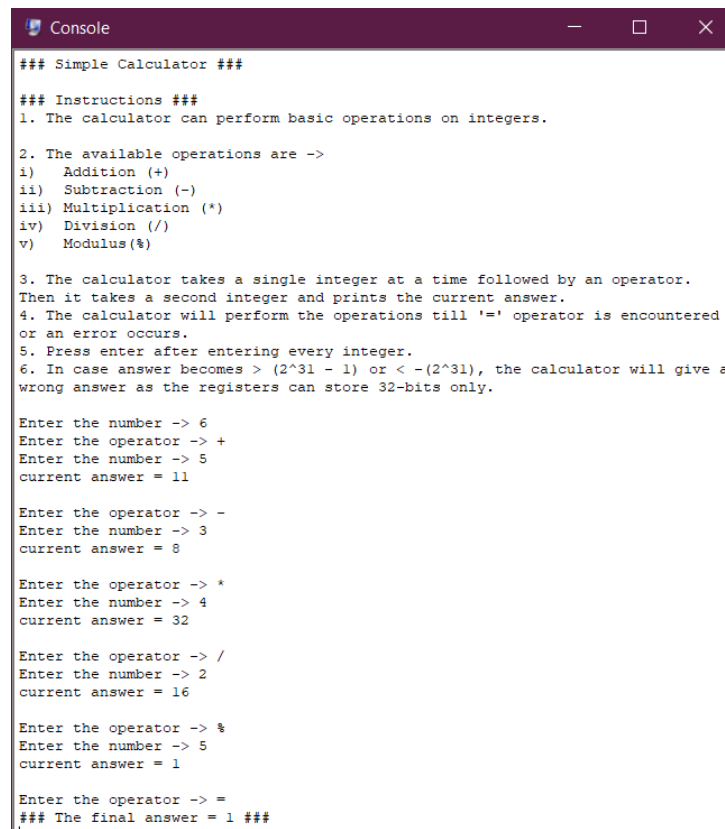
Surviving With Google

July 2022

Contents

1 The Calculator

1.1 Introduction

We have implemented a simple calculator using MIPS assembly language. The calculator can perform addition, subtraction, multiplication, division and modulus. It will take a single input at a time, and output the answer at each step, hence evaluating the expression from left to right. It will go on taking instructions till the '=' operator is encountered or an error occurs. Once '=' operator occurs, the calculator prints the final answer.

1.2 Example

Here is an example involving all the operations -


```
### Simple Calculator ###

### Instructions ###
1. The calculator can perform basic operations on integers.

2. The available operations are ->
i)    Addition (+)
ii)   Subtraction (-)
iii)  Multiplication (*)
iv)   Division (/)
v)    Modulus (%)

3. The calculator takes a single integer at a time followed by an operator.
Then it takes a second integer and prints the current answer.
4. The calculator will perform the operations till '=' operator is encountered
or an error occurs.
5. Press enter after entering every integer.
6. In case answer becomes > (2^31 - 1) or < -(2^31), the calculator will give a
wrong answer as the registers can store 32-bits only.

Enter the number -> 6
Enter the operator -> +
Enter the number -> 5
current answer = 11

Enter the operator -> -
Enter the number -> 3
current answer = 8

Enter the operator -> *
Enter the number -> 4
current answer = 32

Enter the operator -> /
Enter the number -> 2
current answer = 16

Enter the operator -> %
Enter the number -> 5
current answer = 1

Enter the operator -> =
### The final answer = 1 ###
```

Figure 1: Example: 6 + 5 - 3 * 4 / 2 % 5

In the above example the calculator evaluates the expression $6+5-3*4/2\%5$ from left to right and then prints the final answer i.e. 1.

1.3   Instructions

Here are some instructions for using the calculator -

1. The calculator can perform basic operations on integers.

2. The available operations are addition (+), subtraction (-), multiplication (*), division (/) and modulus (

3. The calculator takes a single integer at a time followed by an operator. Then it takes a second integer and prints the current answer.

4. The calculator will perform the operations till '=' operator is encountered or an error occurs (like division by 0).

5. Press enter after entering every integer.

6. In case answer becomes $> (2^{31} - 1)$ or $< -(2^{31})$, the calculator will give a wrong answer as the registers can store 32-bits only.

1.4   Members

Surviving with Google -
Suvrat Pal

Madhur Basnal

P. Lokesh Nayak