Ean Dodge

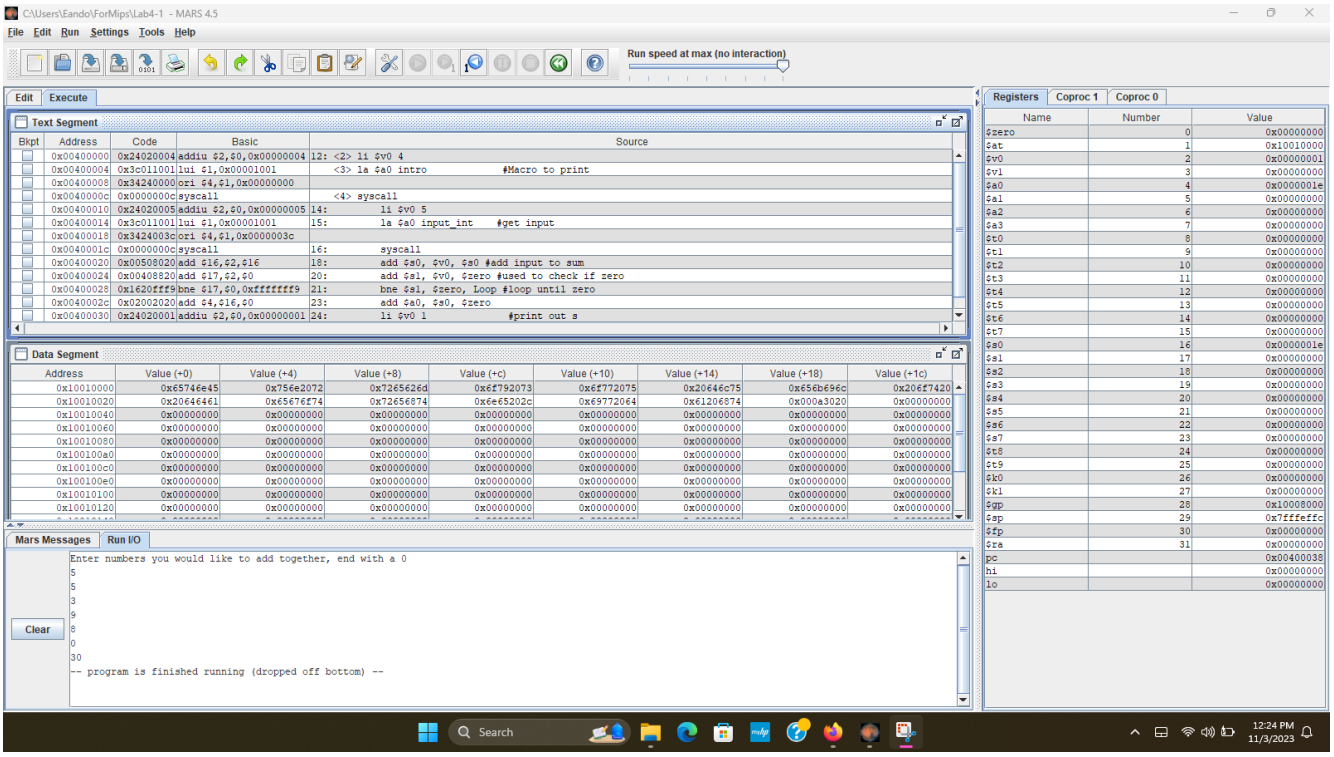
```
1.  .macro print (%problem)
2.  li $v0 4
3.          la $a0 %problem          #Macro to print
4.          syscall
5.          .end_macro
6.  .data
7.  intro: .asciiz "Enter numbers you would like to add together, end with a 0\n"
8.  input_int: .space 10
9.
10. .text
11.
12. print(intro) #prinnt intro prompt
13. Loop: #will loop back here everytime
14. li $v0 5
15. la $a0 input_int    #get input
16. syscall
17.
18. add $s0, $v0, $s0 #add input to sum
19.
20. add $s1, $v0, $zero #used to check if zero
21. bne $s1, $zero, Loop #loop until zero
22.
23. add $a0, $s0, $zero
24. li $v0 1            #print out sum
25. syscall
26.
```

Brief description:

The macro at the beginning of the program is used to print out strings. In my .text, I printed out the intro prompt. I then had a loop so that I can keep inputting numbers. In the loop, in input an integer. Then I add it to the total sum. AFter that I have my checking mechanism since it only stops if the user inputs a 0. If it equals 0, it will exit the loop, but if it does not equal 0, it will loop again. Once it exits the loop, it prints out the total sum.

Conclusion:

I knew what to do here, it was a simple algorithm. I loop and add every time.


C:\Users\Eando\ForMips\Lab4-1 - MARS 4.5
File Edit Run Settings Tools Help
Run speed at max (no interaction)
Edit Execute
Text Segment
Bkpt Address Code Basic Source
0x00400000 0x24020004 addiu $2,$0,0x00000004 12: <2> li $v0 4
0x00400004 0x3c011001 lui $1,0x00001001 <3> la $a0 intro #Macro to print
0x00400008 0x34240000 ori $4,$1,0x00000000
0x0040000c 0x0000000c syscall <4> syscall
0x00400010 0x24020005 addiu $2,$0,0x00000005 14: li $v0 5
0x00400014 0x3c011001 lui $1,0x00001001 15: la $a0 input_int #get input
0x00400018 0x3424003c ori $4,$1,0x0000003c
0x0040001c 0x0000000c syscall 16: syscall
0x00400020 0x00508020 add $16,$2,$16 18: add $s0, $v0, $s0 #add input to sum
0x00400024 0x00408820 add $17,$2,$0 20: add $s1, $v0, $zero #used to check if zero
0x00400028 0x1620fff9 bne $17,$0,0xfffffff9 21: bne $s1, $zero, Loop #loop until zero
0x0040002c 0x02002020 add $4,$16,$0 23: add $a0, $s0, $zero
0x00400030 0x24020001 addiu $2,$0,0x00000001 24: li $v0 1 #print out s
Data Segment
Address Value (+0) Value (+4) Value (+8) Value (+c) Value (+10) Value (+14) Value (+18) Value (+1c)
0x10010000 0x65746e45 0x756e2072 0x7265626d 0x6f792073 0x6f772075 0x20646c75 0x656b696c 0x206f7420
0x10010020 0x20646461 0x65676f74 0x72656874 0x6e65202c 0x69772064 0x61206874 0x000a3020 0x00000000
0x10010040 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
0x10010060 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
0x10010080 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
0x100100a0 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
0x100100c0 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
0x100100e0 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
0x10010100 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
0x10010120 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000 0x00000000
Mars Messages Run I/O
Clear
Enter numbers you would like to add together, end with a 0
5
5
3
9
8
0
30
-- program is finished running (dropped off bottom) --
Registers Coproc 1 Coproc 0
Name Number Value
$zero 0 0x00000000
$at 1 0x10010000
$v0 2 0x00000001
$v1 3 0x00000000
$a0 4 0x0000001e
$a1 5 0x00000000
$a2 6 0x00000000
$a3 7 0x00000000
$t0 8 0x00000000
$t1 9 0x00000000
$t2 10 0x00000000
$t3 11 0x00000000
$t4 12 0x00000000
$t5 13 0x00000000
$t6 14 0x00000000
$t7 15 0x00000000
$s0 16 0x0000001e
$s1 17 0x00000000
$s2 18 0x00000000
$s3 19 0x00000000
$s4 20 0x00000000
$s5 21 0x00000000
$s6 22 0x00000000
$s7 23 0x00000000
$t8 24 0x00000000
$t9 25 0x00000000
$k0 26 0x00000000
$k1 27 0x00000000
$gp 28 0x10008000
$sp 29 0x7fffeffc
$fp 30 0x00000000
$ra 31 0x00000000
pc 0x00400038
hi 0x00000000
lo 0x00000000
Search
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11/3/2023