Computer Organization and Architecture

Post-Lab Report

Lab 02

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Class	Computer Organization and Architecture CPE343(**BCE-5B**)
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POST LAB

Question:

Write the Total Marks program with separate strings for each input by using loop which runs four times. So, there should only be two syscalls inside the loop.

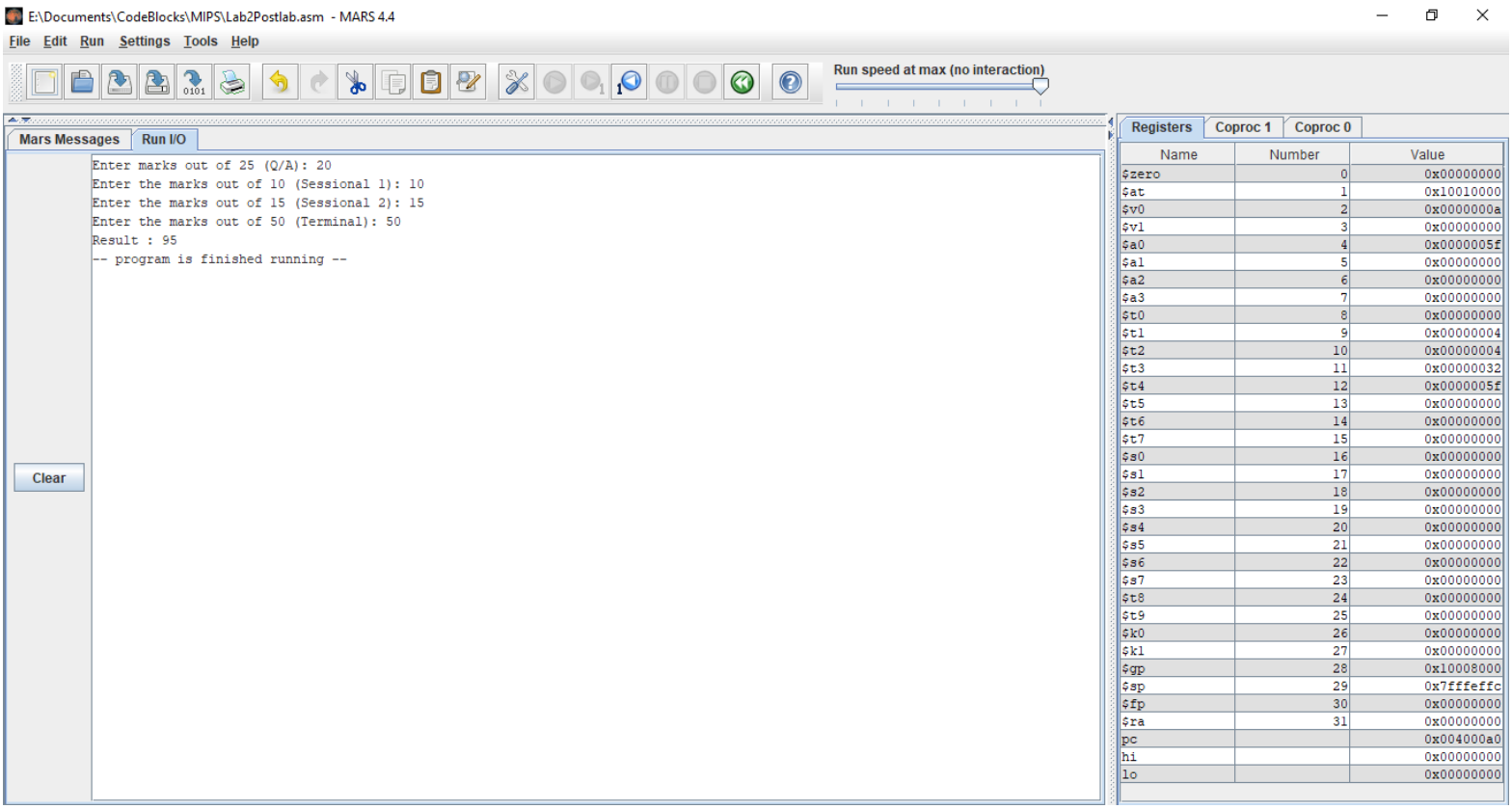
Solution:

I am attaching my commented code below,

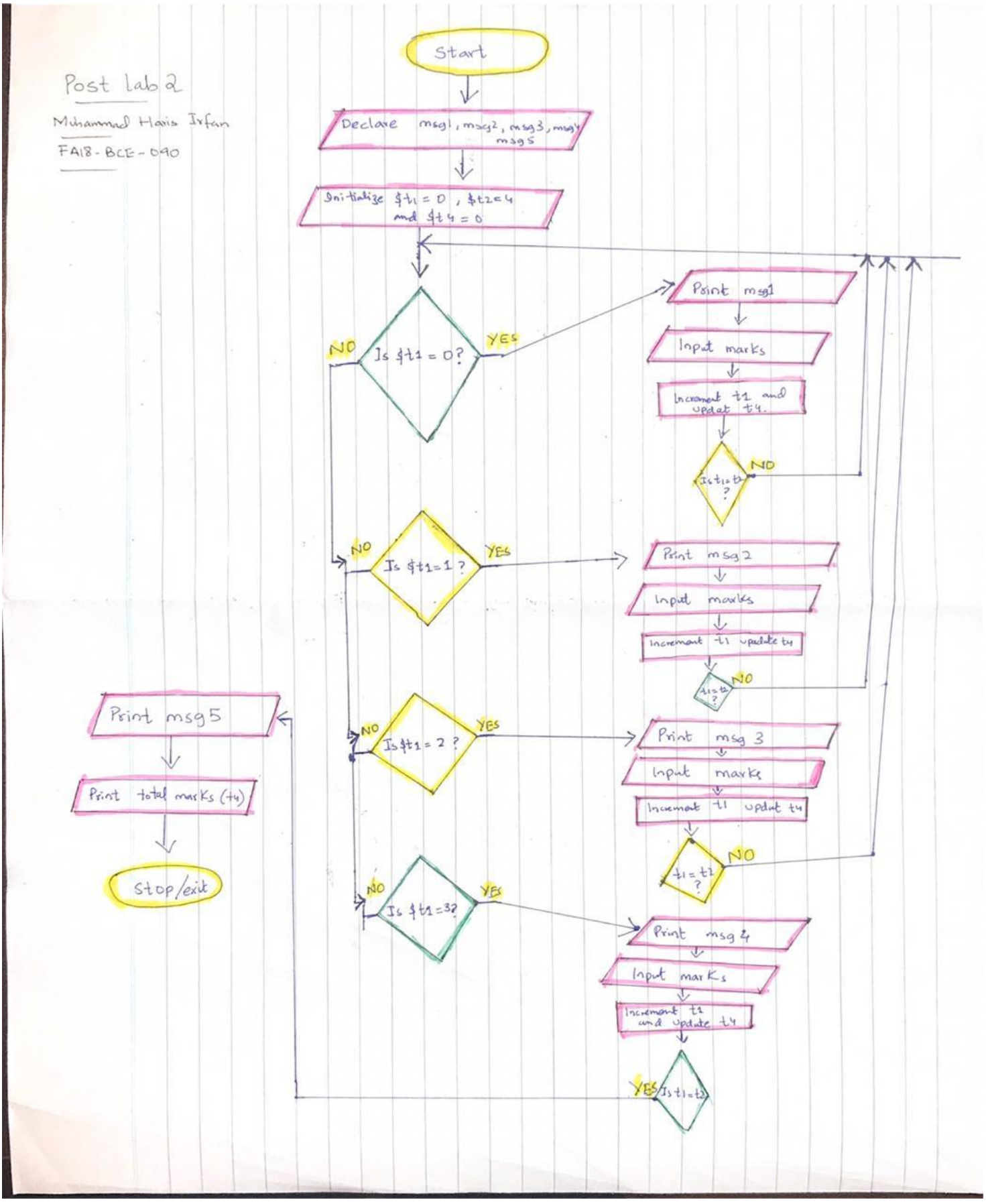
```
#Title : Lab2Postlab.                          Filename: Postlab Lab2.asm
#Author: Muhammad Haris Irfan.                 Date: 26-09-20
#Roll Number: FA18-BCE-090                     Description: Two syscalls in the loop
#Registers: $t1, $t2, $t3,$t4, $v0, $a0
################ Data Segment  ########################################
.data
msg1: .asciiz "Enter marks out of 25 (Q/A): "
msg2: .asciiz "Enter the marks out of 10 (Sessional 1): "
msg3: .asciiz "Enter the marks out of 15 (Sessional 2): "
msg4: .asciiz "Enter the marks out of 50 (Terminal): "
msg5: .asciiz "Result : "


###################### Code Segment ##########################
.text
main:

li $t1, 0 # temp var counter for loop

li $t2, 4 # exit condition
li $t4,0
##############################loop#####################
Loop:
  beq $t1,0, first
  beq $t1,1, second
  beq $t1,2, third
  beq $t1,3, fourth
first:
   la $a0,msg1  #load
   j here
second:
  la $a0,msg2  #load
  j here
third:
   la $a0,msg3  #load
   j here
fourth:
   la $a0,msg4  #load
   j here
```

```
here:
  li $v0,4    #output
  syscall


  li $v0,5              #read integer
  syscall
  move $t3, $v0
  add $t4, $t3, $t4         #adding total


   add $t1, $t1, 1 #increment counter


bne $t2, $t1, Loop              #if t1 is not equal to t2 then goto loop

#####################loop end############################

la $a0,msg5  #load
  li $v0,4
  syscall   #output

 li $v0,1 #integer output
move $a0,$t4
syscall

   li $v0,10 #loads the service that exits
   syscall
```

The result for this program is shown below,



Flow chart of the task:



Critical Analysis/ Conclusion:

In This lab, we learnt about printing Strings using Syscall, Conditional execution of Loops and If-Else Statements. We also implemented these commands in Different tasks. Moreover, we also made handwritten Flowcharts for each task, depicting the working of our code.

_____THE END_____