**Computer Organization and Architecture**

**Post-Lab Report**

**Lab 01**

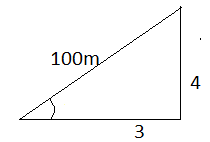


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| Group Members Name & Reg #: | **Muhammad Haris Irfan**  **(FA18-BCE-090)** |
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| Class | Computer Organization and Architecture CPE343(**BCE-5B**) |
| Instructor’s Name | Dr. Adeel Israr |

POST LAB

Question:

Write a program that calculates the lengths of base and perpendicular for the following triangle where the ratio of length of perpendicular to base is 4:3



Solution:

I am attaching my commented code below,

#Title : Lab 1 PostLab. Filename: Lab1PostLab.asm

#Author: Muhammad Haris Irfan. Date: 19-09-20

#Roll Number: FA18-BCE-090 Description: Pythagorus Th.

#Registers: $t1, $t2, $t3,$t4,$t5,$t6, $v0, $a0

#################### Data Segment ############################################################

.data

msg1: .asciiz "Enter the value of hypotenuse? " #Msg to promt user to enter Hyp value

msg2: .asciiz "The Value of Perpendicular is : " #Msg to apper in output screen

msg3: .asciiz "\nThe Value of Base is : " # Msg to appear in output screen

#########################Code Segment ######################################################

.text

la $a0,msg1 #Load msg1

li $v0,4 #output msg1

syscall

li $v0,5 #input integer

syscall

move $t1,$v0 #copy $vo to $t1

li $t2,5 #put 5 to $t2

DIV $t3,$t1,$t2 #divide hyp by t2

MUL $t4, $t3,4 #mul t3 by 4

la $a0,msg2 #Load msg2

li $v0,4 #print msg2

syscall

move $a0, $t4 #move t4 to a0

li $v0, 1 #print t4

syscall

la $a0,msg3 #Load msg3

li $v0,4 #print msg3

syscall

MUL $t5, $t4,3 #multiply t4 by 3

DIV $t6, $t5,4 #divide t5 by 4

move $a0, $t6 #move t6 to a0

li $v0,1 #print integer

syscall

li $v0,10 #exit

syscall

The result for this program is shown below,

A screenshot of a computer

Description automatically generated

Critical Analysis:

In This lab, we learnt about the basics of assembly language, such as its writing pattern, the structure and different types of commands used in it, we also implemented some commands such as ADD, MUL, DIV, li and la. Moreover, to complete our tasks, we used registers and tried to understand the functionality of different registers.

\_\_\_\_\_\_THE END\_\_\_\_\_\_\_

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