**Lab2 Task-2**

**CCCN 221 – Computer Architecture**

**Lab Instructor: Abdullah Abbasi Submission Time: As per BB**

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**Instructions:**

1. **This is a closed book and closed notes.**
2. **Copying with colleagues will be marked 0.**
3. **For answer used this text color**

**Marks:**

|  |  |  |  |
| --- | --- | --- | --- |
| Exercises | 1 | 1 | Total |
| Allocated | 1 | 1 | 2 |
| Obtained |  |  |  |
| **CLO, PLO, SO** | 3.1, V3, S05 | 3.1, V3, S05 |  |

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Note: Student must attach the code and the screenshot of the Final output.**

**Assemble and run the code using MIPS/QtSPIM only.**

1. **Run the following code and attach the Final output. [1 Mark]**

**A**. **Fill the below table values based on the following program.**

|  |  |  |
| --- | --- | --- |
| Register | Value Before Run | Value After Run |
| t0 | 0x00000000 | 0x00000004 |
| t1 | 0x00000000 | 0x00000004 |

.data

no1: .word 2

no2: .word 4

.text

main:

lw $t0, no1($zero)

lw $t1, no2($zero)

move $t2,$t0

move $t0, $t1

move $t1, $t0

li $v0,10

syscall

1. **Write a MIPS program to divide two numbers “**first number is **9** and second number is **4” and prints its result with the values of Quotient and Remainder and attach the screenshot of the Final output**.

**[1 Mark]**

**Fill the values.**

|  |  |
| --- | --- |
| **Register values** | **Value After Run** |
| **$a0** | 0x00000001 |
| **$t0** | 0x00000000 |
| **$t1** | 0x00000009 |
| **$s0** | 0x00000002 |
| **$s1** | 0x00000000 |
| **hi** | 0x00000001 |
| **lo** | 0x00000002 |

**.data**

**Msg0: .asciiz "Lab2 Task2 by Amin Selhabi 2140632"**

**Msg1: .asciiz "\n The result is: "**

**Msg2: .asciiz "\n The Quotient is: "**

**Msg3: .asciiz "\n The Remainder is: "**

**.text**

**#printing Msg0**

**li $v0, 4**

**la $a0, Msg0**

**syscall**

**#Calculating the division**

**addi $t1, $zero, 9**

**addi $t2, $zero, 4**

**div $s0, $t1, $t2**

**#Quotient**

**mflo $s3**

**#Remainder**

**mfhi $s4**

**# The result is:**

**li $v0, 4**

**la $a0, Msg1**

**syscall**

**li $v0, 1**

**add $a0, $zero, $s0**

**syscall**

**#Quotient**

**li $v0, 4**

**la $a0, Msg2**

**syscall**

**li $v0, 1**

**add $a0, $zero, $s3**

**syscall**

**#Remainder**

**li $v0, 4**

**la $a0, Msg3**

**syscall**

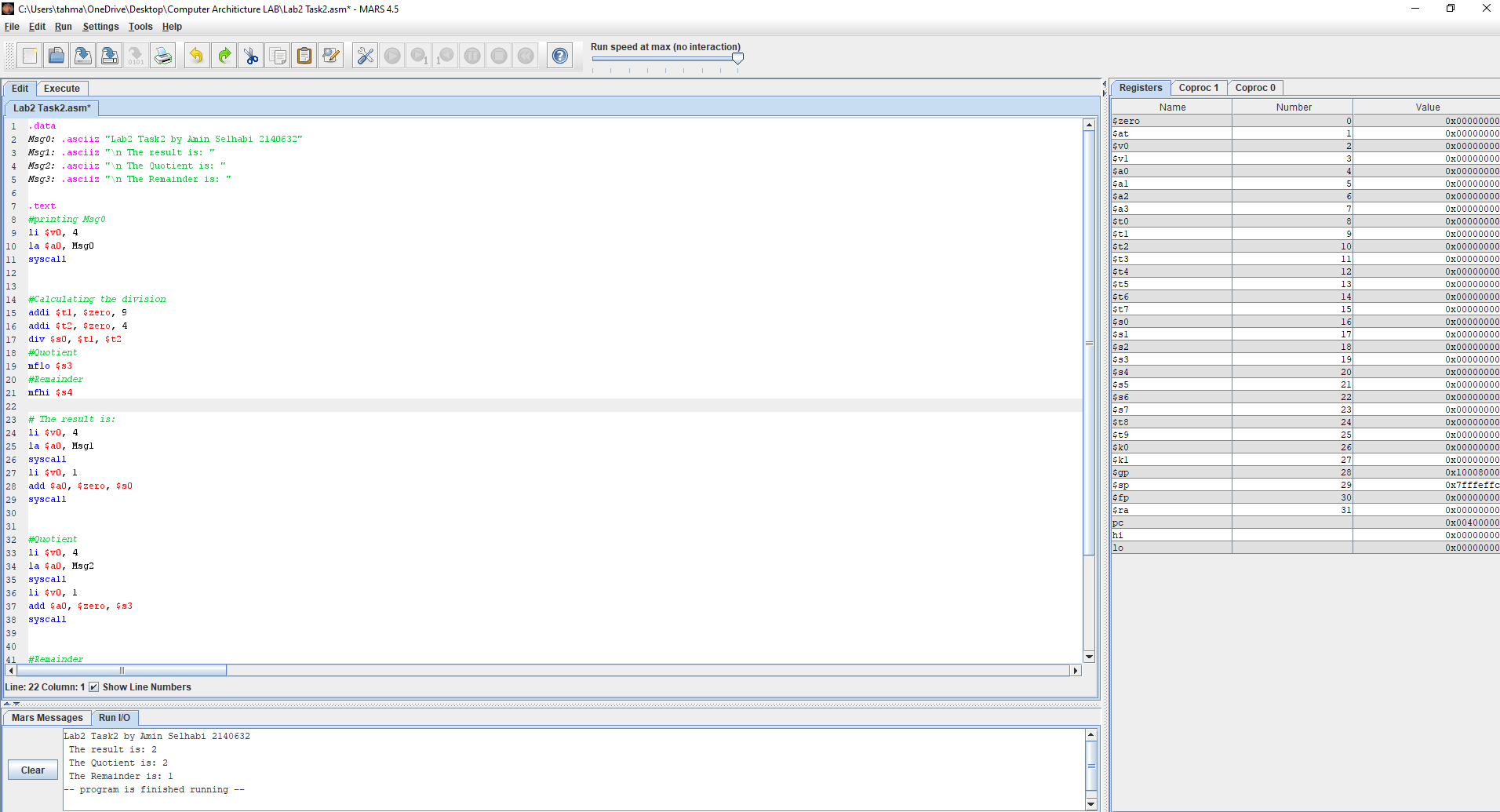
**li $v0, 1**

**add $a0, $zero, $s4**

**syscall**

**li $v0, 10**

**syscall**



Graphical user interface, application, Word

Description automatically generated

Table

Description automatically generated