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|  | **Computer Organization & Assembly Language**  **BSCS-3**  **Department of Computer Science**  **Bahria University, Lahore Campus** |

**Assignment: [1]**

Date: Week 6, 31st March 2023

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Roll No: \_03-134221-003\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Evaluation of CLO** | **Question Number** | **Marks** | **Obtained Marks** |
| **CLO2: Develop programming concepts of Assembly language.** | 1 | 5 |  |
| 2 | 5 |  |
| 3 | 5 |  |
|  |  |  |
| **Total Marks** | | **15** |  |

**Question 1: [Marks: 5]**

Implement a subprogram that prompt the user for 3 numbers, finds the median (middle value) of the 3, and returns that value to the calling program.

.data

prompt1: .asciiz "Please enter an 1 integer: "

prompt2: .asciiz "Please enter an 2 integer: "

prompt3: .asciiz "Please enter an 3 integer: "

result: .asciiz "You median is : "

.text

.

li $v0,4

la $a0,prompt1

syscall

li $v0,5

syscall

move $s0, $v0

li $v0,4

la $a0,prompt2

syscall

li $v0,5

syscall

move $s1, $v0

li $v0,4

la $a0,prompt3

syscall

li $v0,5

move $s2, $v0

syscall

li $v0, 4

la $a0, result

syscall

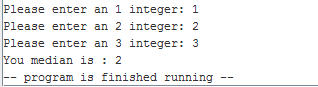
li $v0, 1

move $a0, $s1

syscall

li $v0, 10

Syscall



**Question 2: [Marks: 5]**

Write a recursive program to calculate factorial numbers. Use the definition of factorial as F(n) = n \* F(n-1).

.data

prompt1: .asciiz "Please enter integer: "

c:.asciiz "your number must be in btween 0 to 100 :"

a: .asciiz "result : "

q: .asciiz"your numbbers average is :"

d: .asciiz"your dime is :"

n: .asciiz"your nickle is :"

p: .asciiz"your penny is :"

.text

addi $t5,$zero,1

addi $t4,$zero,1

addi $t3,$zero,1

li $v0,4

la $a0,a

syscall

li $v0,4

la $a0,prompt1

syscall

li $v0,5

syscall

move $t1,$v0

beq $t5,$t4,val

val:

#add $t0,$t0,1

sub $t6,$s1,1

beq $s1,$t3,r

sub $t0,$t1,1

mul $t2,$t1,$t0

beq $t1,$t6,r1

beq $s1,$t3,r

sub $t0,$t0,1

b val

r :

#sub $t0,$t0,$t4

li $v0,4

la $a0,q

syscall

li $v0 ,1

move $a0,$t1

syscall

li $v0,10

syscall

r1:

sub $t1,$s1,1

mul $t2,$s1,$t1

**Question 04:** **[Marks: 5]**

Prompt the user for a number from 3..100, and determine the prime factors for that number. For example, 15 has prime factors 3 and 5. 60 has prime factors 2, 3, and 5. You only have to print out the prime factors, not how many times they occur (for example, in the number 60 2 occurs twice).