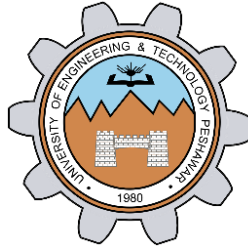

COA Lab
OPEN ENDED LAB



Fall 2020
CSE304L Computer Organization and Architecture Lab

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Class Section: **B**

“On my honor, as a student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Student Signature: _____

Submitted to:
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January 25, 2021

Department of Computer Systems Engineering
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Task1:

Write a Mips Assembly code to display Table 2 ,3 and 4 using ascii read and print instructions. print character 11 \$a0 = character to print

read character 12 \$v0 contains character read

Source code:

```
.data
    str1: .asciiz"Enter A to print table of 2\n"
    str2: .asciiz"Enter B to print table of 3\n"
    str3: .asciiz"Enter C to print table of 4\n"
    str4: .asciiz"Your Choice: "
    str5: .asciiz" X "
    str6: .asciiz" = "
    str7: .asciiz"\n"
    str8: .asciiz"Invalid Choice\n"
.text
main:
    li $v0,4
    la $a0,str1
    syscall

    li $v0,4
    la $a0,str2
    syscall

    li $v0,4
    la $a0,str3
    syscall

    li $v0,4
    la $a0,str4
    syscall

    li $v0,12
    syscall
    move $t0,$v0

    li $t1,65
    li $t2,66
    li $t3,67

    li $t4,1
```

```

li      $t6, 10      # $t6 =10

beq     $t0, $t1, Print2    # if $t0 == $t1 then Print2
beq     $t0, $t2, Print3    # if $t0 == $t2 then Print3
beq     $t0, $t3, Print4    # if $t0 == $t3 then Print4
j       Invalid           # jump to Invalid

```

Print2:

```

label:
    li $v0,4
    la $a0,str7
    syscall

    li      $t1, 2      # $t1 =2
    move    $a0, $t1    # $a0 = $t1
    li      $v0, 1      # $v0 =1
    syscall

    li $v0,4
    la $a0,str5
    syscall

    move    $a0, $t4    # $a0 = $t4
    li      $v0, 1      # $v0 =1
    syscall

    li $v0,4
    la $a0,str6
    syscall

    mul $t5,$t1,$t4
    move $a0,$t5
    li $v0,1
    syscall
    addi $t4,$t4,1
    ble $t4,$t6, label
    j      exit          # jump to exit

```

Print3:

```

label2:
    li $v0,4
    la $a0,str7
    syscall

```

```

    li      $t1, 3      # $t1 =3
    move    $a0, $t1     # $a0 = $t1
    li      $v0, 1      # $v0 =1
    syscall

    li $v0,4
    la $a0,str5
    syscall

    move    $a0, $t4     # $a0 = $t4
    li      $v0, 1      # $v0 =1
    syscall

    li $v0,4
    la $a0,str6
    syscall

    mul $t5,$t1,$t4
    move $a0,$t5
    li $v0,1
    syscall
    addi $t4,$t4,1
    ble $t4,$t6, label2
    j      exit          # jump to exit
Print4:
    label3:
        li $v0,4
        la $a0,str7
        syscall

        li      $t1, 4      # $t1 =4
        move    $a0, $t1     # $a0 = $t1
        li      $v0, 1      # $v0 =1
        syscall

        li $v0,4
        la $a0,str5
        syscall

        move    $a0, $t4     # $a0 = $t4
        li      $v0, 1      # $v0 =1
        syscall

```

```

        li $v0,4
        la $a0,str6
        syscall

        mul $t5,$t1,$t4
        move $a0,$t5
        li $v0,1
        syscall
        addi $t4,$t4,1
        ble $t4,$t6, label3
        j      exit          # jump to exit
Invalid:
        li $v0,4
        la $a0,str8
        syscall
exit:
        li      $v0, 10      # $v0 =10
        syscall

```

Output:

```

Enter A to print table of 2
Enter B to print table of 3
Enter C to print table of 4
Your Choice: B
3 X 1 = 3
3 X 2 = 6
3 X 3 = 9
3 X 4 = 12
3 X 5 = 15
3 X 6 = 18
3 X 7 = 21
3 X 8 = 24
3 X 9 = 27
3 X 10 = 30|

```