Bahria University,

Karachi Campus



LAB EXPERIMENT NO.

**07**

LIST OF TASKS

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| TASK NO | OBJECTIVE |
| **1** | **Write a program to take a and b as input and if a > 0 then add a +b else a-b.** |
| **2** | **Write a program to take a and b as input and if a < b then print “a is less than b” else print “a is greater than b”.** |
| **3** | **Write a program to take a and b as input and if a != b then print “a” and increment a with 1 else print “b” with increment 1.** |
| **4** | **Write a program in MIPS assembly language that takes input from user and print whether the input is greater or less than 10 and also shift input left and right 4 bits.** |  |
| **5** | **Write a program in MIPS assembly language that takes input from user and print whether the input is greater or less than 10 and also shift input left and right 4 bits.** |
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Submitted On:

Date: 14/12/2021

**Example No 1 : Write a program to take a and b as input and if a > 0 then add a +b else a-b.**

**Solution :**

li $v0,1

b Exit

syscall

True:

add $t3,$t1,$t2

move $a0,$t3

li $v0,1

syscall

b Exit

Exit:

li $v0,10

syscall

Syscall

Move $t1,$v0

la $a0,input2

li $v0,4

syscall

li $v0,5

syscall

move $t2,$v0

bgtz $t1,True

sub $t3,$t1,$t2

move $a0,$t3

.data

input1: .asciiz "Enter First Number "

input2: .asciiz "Enter Second Number "

add: .asciiz "The Addition is "

sub: .asciiz "\nThe Subtraction is "

.text

.globl main

main:

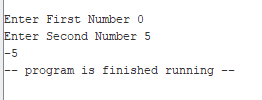
la $a0,input1

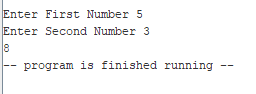
li $v0,4

syscall

li $v0,5

**Output :**





**EXAMPLE No 2 : Write a program to take a and b as input and if a < b then print “a is less than b” else print “a is greater than b”.**

**Solution :**

syscall

li $v0,5

syscall

move $t1,$v0

la $a0,input2

li $v0,4

syscall

li $v0,5

syscall

move $t2,$v0

blt $t1,$t2,True

la $a0,print2

li $v0,4

syscall

b Exit

True:

la $a0,print1

li $v0,4

syscall

b Exit

Exit:

li $v0,10

syscall

.data

input1: .asciiz "Enter First Number "

input2: .asciiz "Enter Second Number "

add: .asciiz "The Addition is "

sub: .asciiz "\nThe Subtraction is "

print1: .asciiz "The a is less than b"

print2: .asciiz "The a is greater than b"

.text

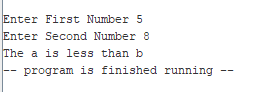
.globl main

main:

la $a0,input1

li $v0,4

**Output :**



**EXAMPLE No 3 : Write a program to take a and b as input and if a != b then print “a” and increment a with 1 else print “b” with increment 1.**

**Solution :**

li $v0,5

syscall

move $t1,$v0

la $a0,input2

li $v0,4

syscall

li $v0,5

syscall

move $t2,$v0

bne $t1,$t2,True

addi $t1,$t1,1

move $a0,$t1

li $v0,1

syscall

b Exit

True:

addi $t2,$t2,1

move $a0,$t2

li $v0,1

syscall

b Exit

Exit:

li $v0,10

syscall

.data

input1: .asciiz "Enter First Number "

input2: .asciiz "Enter Second Number "

add: .asciiz "The Addition is "

sub: .asciiz "\nThe Subtraction is "

print1: .asciiz "The a is less than b"

print2: .asciiz "The a is greater than b"

.text

.globl main

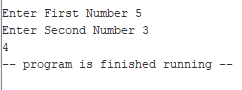
main:

la $a0,input1

li $v0,4

syscall

**Output :**



**Task 1 : Write a program to check whether the input taken from user is greater than 0 or not. If the input is greater than 0, Do logical right shift operation on the input else do logical left shift operation on input.**

**Solution :**

bgt $t1,$zero,True

sll $t2,$t1,2

la $a0,output1

li $v0,4

syscall

move $a0,$t2

li $v0,1

syscall

True:

srl $t2,$t1,2

la $a0,output1

li $v0,4

syscall

move $a0,$t2

li $v0,1

syscall

b Exit

Exit:

li $v0,10

syscall

.data

input1: .asciiz "Enter First Number "

output1: .asciiz "Right shift "

output2: .asciiz "left shift "

.text

.globl main

main:

la $a0,input1

li $v0,4

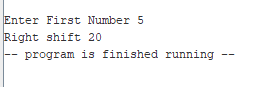
syscall

li $v0,5

syscall

move $t1,$v0

**Output :**



**Task 2 : Write a program in MIPS assembly language that takes input from user and print whether the input is greater or less than 10 and also shift input left and right 4 bits.**

**Solution :**

.data

syscall

li $v0,5

syscall

move $t1,$v0

bgt $t1,$t4,True

la $a0,less

li $v0,4

syscall

la $a0,left

li $v0,4

syscall

sll $t2,$t1,4

move $a0,$t2

li $v0,1

syscall

b Exit

True:

la $a0,greater

li $v0,4

syscall

la $a0,right

li $v0,4

syscall

sll $t2,$t1,4

move $a0,$t2

li $v0,1

syscall

b Exit

Exit:

li $v0,10

syscall

greater: .asciiz "The Number is

greater than 10 \n"

less: .asciiz "The Number is

less than 10 \n"

num: .asciiz "Enter First Number"

const: .word 10

right: .asciiz "The Right Shift "

left: .asciiz "The Left Shift "

.text

.globl main

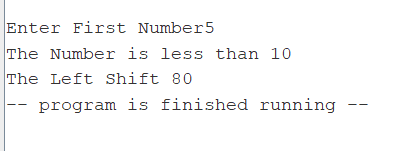
main:

lw $t4,const

la $a0,num

li $v0,4

**Output :**

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**Text

Description automatically generated**