

**Name:Manahil Waseem**

**Sap id:54035**

**Computer Organization and Assembly Language**

**Q#1:**

org 100h

.model small

.stack 100h

.data

firstNumberPrompt DB 10,13, "Enter First Number:$"

secondNumberPrompt DB 10,13, "Enter Second Number:$"

equalMsg DB 10,13, "Numbers are Equal:$"

notEqualMsg DB 10,13, "Numbers are not Equal:$"

.code

main proc

mov ax, @data

mov dx, ax

mov dx, offset firstNumberPrompt

mov ah, 9

int 21h

mov ah, 1

int 21h

mov cl, al

mov dx, offset secondNumberPrompt

mov ah, 9

int 21h

mov ah, 1

int 21h

mov dl, al

cmp dl, cl

je equalLabel

mov dx, offset notEqualMsg

mov ah, 9

int 21h

mov ah, 4ch

int 21h

equalLabel:

mov dx, offset equalMsg

mov ah, 9

int 21h

mov ah, 4ch

int 21h

main endp

end main

**Q #2:**

**Write an assembly language program that allow user to input one-digit number and determine the number is positive or zero.**  
org 100h

.model small

.stack 100h

.data

msgPositive DB 10,13, "Number is positive.$"

msgZero DB 10,13, "Number is zero.$"

.code

main proc

mov ax, @data

mov ds, ax

mov ah, 1

int 21h

sub al, '0'

cmp al, 0

je zeroLabel

mov dx, offset msgPositive

mov ah, 9

int 21h

jmp endProgram

zeroLabel:

mov dx, offset msgZero

mov ah, 9

int 21h

endProgram:

mov ah, 4ch

int 21h

main endp

end main

**Q #3:**

**Write an assembly language that compares the values A and B and prints a message if the value in A is greater than B, less than B.**

org 100h

.model small

.stack 100h

.data

msgEnterA DB 10,13, "Enter value for A (0-9): $"

msgEnterB DB 10,13, "Enter value for B (0-9): $"

msgGreater DB 10,13, "A is greater than B.$"

msgLess DB 10,13, "A is less than B.$"

.code

main proc

mov ax, @data

mov ds, ax

mov dx, offset msgEnterA

mov ah, 9

int 21h

mov ah, 1

int 21h

sub al, '0'

mov cl, al

mov dx, offset msgEnterB

mov ah, 9

int 21h

mov ah, 1

int 21h

sub al, '0'

mov bl, al

cmp cl, bl

jg greaterLabel

jl lessLabel

greaterLabel:

mov dx, offset msgGreater

mov ah, 9

int 21h

jmp endProgram

lessLabel:

mov dx, offset msgLess

mov ah, 9

int 21h

endProgram:

mov ah, 4ch

int 21h

main endp

end main

**Q #4:**

**Create an assembly program which takes your Marks in lab mid as input,**

**if your marks are less than 5 messages should be displayed “Need hard work”**

**else print “Satisfactory”.**

org 100h

.model small

.stack 100h

.data

msgEnterMarks DB 10,13, "Enter your marks in lab mid (0-9): $"

msgHardWork DB 10,13, "Need hard work.$"

msgSatisfactory DB 10,13, "Satisfactory.$"

.code

main proc

mov ax, @data

mov ds, ax

mov dx, offset msgEnterMarks

mov ah, 9

int 21h

mov ah, 1

int 21h

sub al, '0'

mov cl, al

cmp cl, 5

jl hardWorkLabel

mov dx, offset msgSatisfactory

mov ah, 9

int 21h

jmp endProgram

hardWorkLabel:

mov dx, offset msgHardWork

mov ah, 9

int 21h

endProgram:

mov ah, 4ch

int 21h

main endp

end main