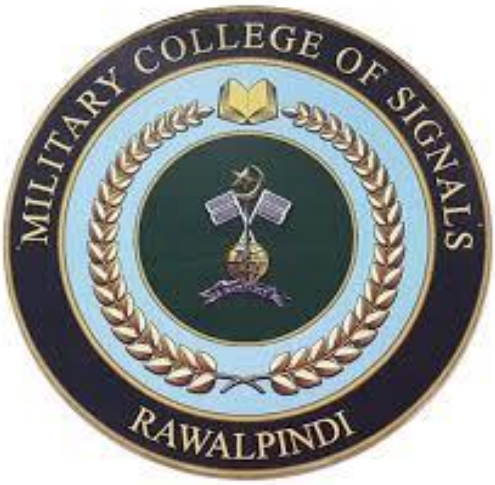

Computer Architecture and Organization

Lab Report #11

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Class: BESE-26 C

Exercise 11.1:

Write a program in assembly to check if the number is positive or negative.

Code:

```
org 100h

include emu8086.inc
.data
    a dw 0
.code
    print "Enter a number: "
    call scan_num
    printn ""
    mov a,cx
    cmp a,0
    jl pre
    je pra
    jmp pr
    pra:
    print "Number is zero"
    jmp endproc
    pr:
    print "Number is positive!"
    jmp endproc
    pre:
    print "Number is negative! "
    jmp endproc
    endproc:



    DEFINE_SCAN_NUM
    DEFINE_PRINT_NUM
    DEFINE_PRINT_NUM_UNS


ret
```

Output:

Exercise 11.2:

Write a program in assembly to check following condition If (num >0) and (num<100)

Num = num * 2

Code:

```
org 100h

include emu8086.inc

.data
    a dw 0
    b dw 2

.code
    print "Enter a number: "
    call scan_num
    printn ""

    mov a,cx
    cmp a,0
    jg pre
    jmp pr

    pr:
    mov ax,a
    print "Number: "
    call print_num
    jmp endproc

    pre:
```

```
    cmp a,100
    jl pra
    jmp pr

    pra:
    mov ax,a
    mul b
    print "Number*2: "
    call print_num
    jmp endproc

    endproc:



    DEFINE_SCAN_NUM
    DEFINE_PRINT_NUM
    DEFINE_PRINT_NUM_UNS
ret
```

Output:

Exercise 11.3:

Write a program in assembly which takes marks from the user and allot the grade accordingly

A → 100-80
B → 70-79
C → 60-69
D → 50-59
F → 0-49

If number is not in range display message "Incorrect number Entered".

Code:

```
org 100h

include emu8086.inc

.data
    num dw 0
.code

    print "Enter your marks: "
    call scan_num
    mov num,cx
    printn ""
    cmp num,0
    jge first
    jmp port

    first:
    cmp num,49
    jle b
    jmp second

    b:
    print "Grade is F."
    jmp endproc

    second:
    cmp num,59
    jle c
    jmp third

    c:
    print "Grade is D."
    jmp endproc

    third:
    cmp num,69
    jle d
    jmp fourth

    d:
    print "Grade is C."
```

```
    jmp endproc

    fourth:
    cmp num,79
    jle e
    jmp fifth

    e:
    print "Grade is B."
    jmp endproc

    fifth:
    cmp num,100
    jle f
    jmp port

    f:
    print "Grade is A."
    jmp endproc

    port:
    print "Incorrect number entered!"
    jmp endproc

    endproc:

    DEFINE_SCAN_NUM
    DEFINE_PRINT_NUM
    DEFINE_PRINT_NUM_UNS
ret
```

Output: