

Lab Session 04

Introduction to Assembly Language Programming

Recall the previous basic things...

Recall the Segment & Pointer registers

#Program1: Write a program that will convert DAFFODIL to daffodil

```
.model small
.stack 100h
.data
msg db "DAFFODIL"

.code
    main proc
        mov ax,@data
        mov ds,ax

        mov si, offset msg
        mov cx,8

    Top:
        mov ax,[si]
        add ax,20h
        mov dx,ax
        mov ah,2h
        int 21h
        inc si
        loop Top
    main endp
```

#Program2: Write a program to convert DAFFODIL to LIDOFFAD.

```
.model small
.stack 100h
.data

msg db "TAPASY"

.code

    main proc
    mov ax,@data
    mov ds,ax

    mov si, offset msg
    mov cx,6
    add si,5

Top:
    mov dx,[si]
    mov ah,2h
    int 21h
    dec si
    loop Top
    main end
```

Exercise 1: Make a program to convert TAPASY to ysapat.

#Program3: write a program to make a rectangle by “ * ”.

```
.STACK 100H

.DATA

.CODE

MAIN PROC

    MOV CX, 5

    MOV BX, 5

TOP:

    MOV DL, '*'

    MOV AH, 2

    INT 21H

    DEC BX

    CMP BX, 0

    JE TOP_NEXT

    JMP TOP

TOP_NEXT:

    MOV DL, 0AH

    INT 21H

    MOV DL, 0DH

    INT 21H

    MOV BX, 5
```

```
LOOP TOP
EXIT:
    MOV AH, 4CH
    INT 21H
MAIN ENDP
END MAIN
```

#Program4: write a program to make a triangle by “ * ”

```
.MODEL SMALL
.STACK 100H
.DATA
    NL DB 0DH, 0AH, '$'
.CODE
MAIN PROC
    MOV AX, @DATA
    MOV DS, AX
    MOV CX, 5
    MOV BX, 1
FOR_1:
    PUSH CX
    MOV DL, 20H
```

```
        MOV AH, 2
FOR_2:
        INT 21H
        LOOP  FOR_2
        MOV CX, BX
        MOV DL, '*'
        MOV AH, 2
FOR_3:
        INT  21H
        LOOP  FOR_3
        LEA DX, NL
        MOV AH, 9
        INT  21H
        INC BX
        POP CX
LOOP  FOR_1
        MOV AH, 4CH
        INT    21H
MAIN ENDP
        END MAIN
```

Exercise 2: Write an assembly code for printing Pyramid with '*'.

Program5: write a program that count number of character in an input string.

```
.model small
.stack 100h
.data
.code
main proc
    mov bl,0h
top:
    mov ah,1
    int 21h
    cmp al,20h
    je top2
    inc bl
    jmp top
top2:
    add bl,30h
    mov dl,bl
    mov ah,2
    int 21h
main endp
end main
```

Good luck 😊