**Lab 11**

Graphics mode

Mode number **CGA Graphics**

4 320 \* 200 4 color

5 320 \* 200 4 color

6 640 \* 200 2 color

**EGA Graphics**

D 320 \* 200 16 Color

E 640 \* 200 16 color

F 640 350 Monocrome

10 640\* 350 16 color

**VGA Color**

11 640 \* 480 2 color

12 640 \* 480 16 color

13 320\* 200 256 color

**Set screen Mode**

Mov ah,0 0 function

Mov al, mode number

Int 10h

**Set background color**

Mov ah, OBH ; OBH is background function

Mov Bh,0 ; mode

Movbl , color number (0-15)

**Write graphics pixel**

Mov ah 0CH ; 0CH function is used to write pixel on screen

Moval , pixel color value ; 0-15

Mov cx, column number

Mov , dx, row number

**Read graphics pixel**

Mov ah 0DH ; 0DH function is used to Read pixel on screen

Moval , pixel color value ; 0-15

Mov cx, column number

Mov , dx, row number

**Objectives:**

Change Mode from text to Graphics

Create Line on Graphics Mode

Use Background function and change color of the Background.

**Program#1 : Create a program to print a line on screen**

.model small

.stack 100h

.code

mainproc

;set graphic mode

Mov ax,6

int 10h ; int 10h used for screen manipulation

;draw line

Mov ah,0ch

Mov al,1

Mov cx,301

mov dx,100

L1:

int 10h

inc cx

cmp cx,600

jle l1

; read keyboard

Mov ah,0

int 16h ; int 16h will communicate with keyboard

; set text mode

Mov ax,3

int 10h

return dos

Mov ah,4ch

int 21h

main endp

end main

**Write a program in Assembly Language to print following pattern:**

**0iiiiii0iiiiii0iiiiii0iiiiii0**

**Assembly Code**

.code

main proc

;4 times display "0iiiiii"

mov cx,4

outer:

mov ah,02h

mov dl,"0"

int 21h

mov bx,cx

mov cx,6

inner:

mov ah,02h

mov dl,"i"

int 21h

loop inner

mov cx,bx

loop outer

mov ah,02h

mov dl,"0"

int 21h

;return to DOS

mov ah,4ch ;exit program with return code

int 21h ;DOS exit

main endp

end main

**Object:** To display -------------------------------------------

| Sindh Madressatul Islam University |

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**Assembly Code**

.model small

.stack 100h

.data

str1 db 'Sindh Madressatul Islam University$' ;define byte

.code

main proc

; 36 times display "-"

mov cx,36

next:

mov ah,02h

mov dl,"-"

int 21h

loop next

;carriage return and line feed

mov dl,0ah

int 21h

mov dl,0dh

int 21h

;display "|"

mov ah,02h ;display character function

mov dl,"|"

int 21h

;initialize ds

mov ax,@data ;name of data segment defined by .data

mov ds,ax ;initialize ds

;display string

mov ah,09h ;display string function

mov dx,offset str1 ;get string

int 21h ;display string

;display "|"

mov ah,02h

mov dl,"|"

int 21h

;carriage return and line feed

mov dl,0ah

int 21h

mov dl,0dh

int 21h

;36 times display "-"

mov cx,36

next2:

mov ah,02h

mov dl,"-"

int 21h

loop next2

;return to DOS

mov ah,4ch ;exit program with return code

int 21h ;DOS exit

main endp

end main

**Lab Task:**

**To display ----**

**| S |**

**|M|**

**| I |**

**|U |**

**----**

**Tasks**

Change the position of the line in the above program.

Change length of the line in above program.

Create Parallel line on screen.

Create any shape on graphics mode. (Square, Triangle, rectangle)

**Solve given lab task in other file**