

Graphics:-

Two concepts $\begin{matrix} \nearrow \text{Graph} \\ \searrow \text{Graphics} \end{matrix}$

1.) Screen is made up of pixels.

• Two points connect/ multiple points connect together, fill them, image is created, process is called graphics.

Graph :- Connect points/ Relationship b/w points or objects.

Graphics :- to draw graph using computer is called Computer graphics i.e. graphics.

1.) In assembly graphics, deep understanding

2.) Draw shapes, write text.

3.) Games codes.

Graphics In Assembly.

1.) Interrupt used for graphics,

int 10h

2.) We know that, mov ah, 2

↙
AH set function / Service Routine.

Same as different functions in graphics mode, give it in AH & called int 10h after it.

3). Graphics API functions / Service Routines.

- 00h : Set Video mode
- 01h : Set cursor lines
- 02h : Set cursor position
- 03h : Get cursor position & size
- 06h : Scroll window up
- 07h : Scroll window down.
- 08h : Read character & attribute
- 09h : Write character & attribute
- 0Ah : Write character
- 10h (AL=03h) : Toggle blinking / intensity bit
- 0Fh : Get video mode
- 13h : Write string in teletype mode.

4) Program to draw box,

function Used for BOX / Square / Rectangle.

mov ah, 06h

int 10h

} function to draw Box.

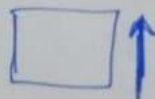
↳ Scroll up on DOSBOX screen.

5). For Set height

• How many lines up to & fill.

• With AL.

AL : Number of lines to be scrolled,
lines to be filled.

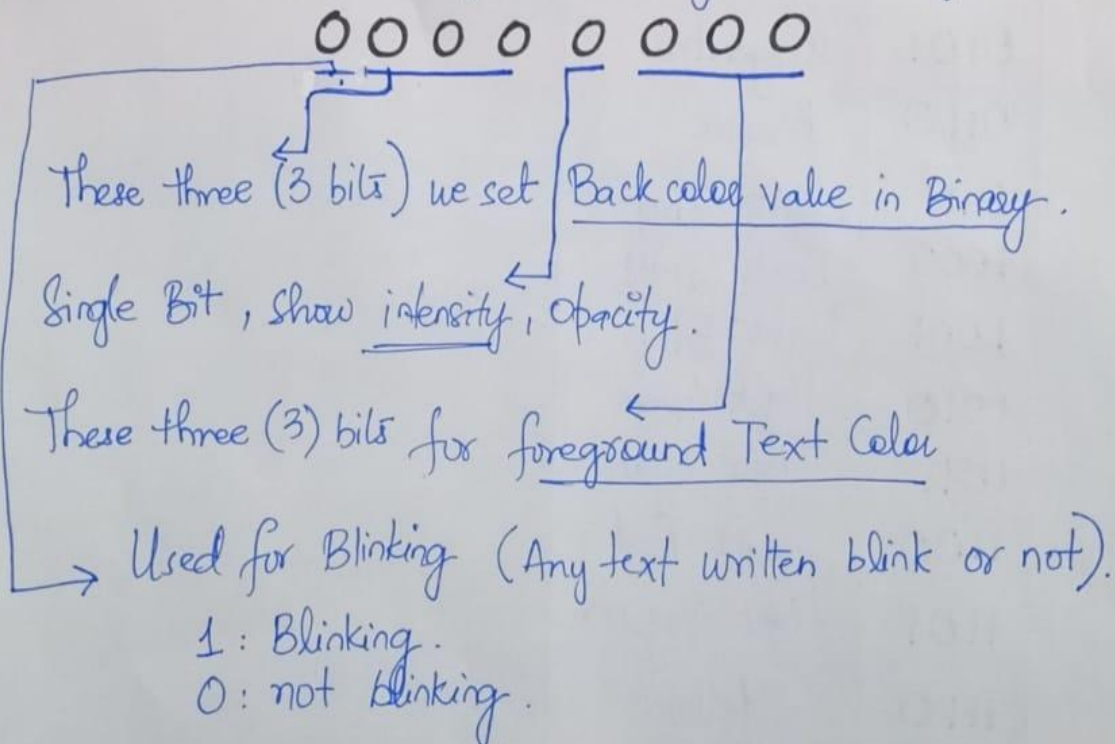


e.g. `mov al, 5` → 5# of lines
scroll up & filled.

6). If `writ` `mov al, 00h`,
full screen filled

7). For Set Color: Used `bh`.
`mov bh, Color Value`.

• Color value should given in binary, because of 8 bits.



Remember ① Because box not blink, If not writing
text (only text will blink),
If not writing text the value set 0 or 1,
no matter.

② Set 000 for foreground ^{text} color if only draw Box

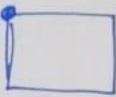
Back Color Value in Binary.

Binary	Color
0000	Black
0001	Blue
0010	Green
0011	Cyan
0100	Red
0101	Magenta
0110	Brown
0111	Light Gray
1000	Dark Gray
1001	Light Blue
1010	Light Green
1011	Light Cyan
1100	Light Red
1101	Light Magenta
1110	Yellow
1111	White

Give Color as, `mov bh, 00010000b` (9).
for Blue color intensity & text set 0.

- 8). Starting Position of Box :: Need to give points.
- Set starting quadrants of Box.
 - Set points in `ch, cl`.

CH: Top Row of Window.

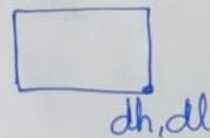
CL: Left Most Column of Window `ch, cl` 

if `mov ch, 0`
`mov cl, 0` } set first corner of screen.

- 9). Bottom:-

DH: Bottom row of Window

DL: Right most Column of Window



- 10). Height set by `dh`,
Width set by `dl`

if given `mov dh, 24`
`mov dl, 24.`

- 11). if write `mov dx, 184fh` full screen quadrants fill.

10.
• model small

• code

main proc.

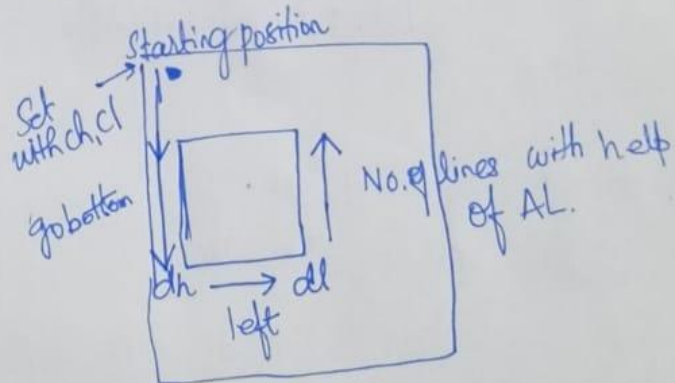
mov ah, 6 → Set function first
mov al, 10 → No. of lines set.
mov bh, 00010000b → Set color.

mov ch, 0
mov cl, 0 } starting position.

mov dh, 25
mov dl, 25 } set Bottom & left.

int 10h → Call Interrupt.

mov ah, 4ch
int 21h
main endp
end main



DOSBox Status Window

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT

File Edit Search View Options Help

C:\GRAPHICS.ASM

```
_model small
.stack 100h
.data
.code
main proc
mov ah,6
mov al,10
mov bh,00100000b
mov ch,0
mov cl,0
mov dh,25
mov dl,25
int 10h
mov ah,4ch
int 21h
main endp
end main
```

F1=Help | Line:1 Col:1

DOSBox Status Window

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX

1 directory c:\mp\

51690 + 464854 Bytes sym

0 Warning Errors

0 Severe Errors

C:\>link graphics.obj;

ler Version 5.00

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Copyright (C) Microsoft Co

bol space free

C:\>graphics

er Version 3.60

rp 1983-1987. All rights reserved.

C:\>_