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Assignment : (1)

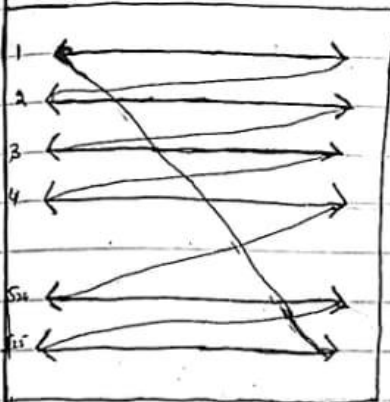
Subject : Computer Graphic

Submitted to : Mam Sana Jahan

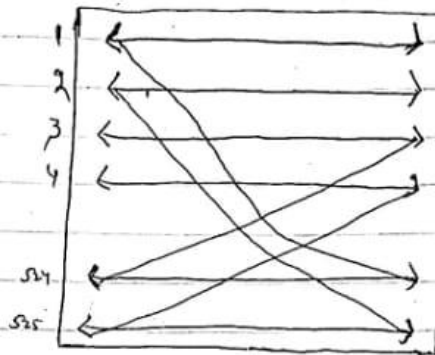
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Question No = 1

Ans



Non-Interlaced.



Interlaced

A non-interlaced display (appear as flicker) rate is 30 frames per second which mean that scan line ($\frac{1}{30}$) of the way down the screen and refreshed very $\frac{1}{30}$ second.

Similarly that interlaced display also display 30 frames per second but here the field double the display rate.

(e.g) : consider a scan line ($\frac{1}{30}$) down after it swept it will not be swept again for ($\frac{1}{30}$) seconds because the scan line immediately above and below it are drawn ($\frac{1}{60}$) second rate (double rate).

Question No = 2

Ans

Screen Resolution = 1024×768 Pixel

Supporting Shades = 128

only Grey = $2^7 = 7$ bit

The total amount of bit required to display a grey scale image on screen

$$\text{bits} = 1024 \times 768 \times 7 = 5505024$$

Divide by 8 yields

$$\frac{\text{bits}}{8} = \frac{5505024}{8} \Rightarrow 688128 \text{ bytes}$$

Total bytes is convert to Mb

$$\Rightarrow \underline{\underline{0.65625 \text{ Mbs}}}$$

Question = 3

Ans:

Loop	e	(x,y)
1	1	(2,1)
2	-6	(3,1)
3	4	(4,2)
4	-3	(5,2)
5	7	(6,3)
6	0	(7,4)
7	-7	(8,4)
8	3	(9,5)

$$P(2,1), R(11,6)$$

Step = 1

$$P(2,1) \quad R(11,6)$$

$$\Delta x = 9$$

$$\Delta y = 5$$

$$2\Delta y = 10$$

$$e_1 = 2\Delta y - \Delta x$$

$$e_1 = 10 - 9$$

$$e_1 = 1$$

$$(e_1 = 1)$$

Step = 2

$$e_2 = e_1 + 2\Delta y - 2\Delta x$$

$$e_2 = e_1 + 2\Delta y - 2\Delta x$$

$$\Rightarrow 1 + 10 - 2(9)$$

$$\Rightarrow 1 + 10 - 18$$

$$\boxed{e_2 = -6} \quad \text{Increment only } x$$

$$e_2 < 0 \Rightarrow \text{So } (x_{k+1}, y_k) = (2+1, 1)$$

$$(x_{k+1}, y_{k+1}) = (3, 1)$$

Step No = 3

$$P(3, 1), \quad e_2 = -6 \quad e_3 = e_2 + 2\Delta y$$

$$\Rightarrow -6 + 2(5)$$

$$\Rightarrow -6 + 10$$

$$\boxed{e_3 = 4}$$

$e > 0$ So Increment both x only

$$(x_{k+1}, y_{k+1}) = (3+1, 1+1) \quad (x_3, y_3) = (4, 2)$$

Step No = 4

$$P(x_3, y_3) = (4, 2) \quad e_3 = 4 \quad e_4 = e_3 + 2\Delta x - 2\Delta y$$

$$\Rightarrow 4 + (10 - 18)$$

$$\Rightarrow 4 + (-7)$$

$$e_4 = -3$$

$e_4 < 0$ increment only x

$$(x_{4+1}, y_4) = (4+1, 2)$$

$$(x_4, y_4) = (5, 2)$$

Step No = 5

$$P(x_4, y_4) = (5, 2) \quad e_4 = -3$$

$$e_5 = e_4 + 2\Delta x$$

$$\Rightarrow -3 + 10$$

$$e_5 = 7$$

$e_5 > 0$ increment both x and y

$$(x_{5+1}, y_{5+1}) = (5+1, 2+1)$$

$$(x_5, y_5) = (6, 3)$$

Step = No = 6

$$P = (6, 3) \quad e_5 = -7$$

$$e_6 = e_5 + 2\Delta y - 2\Delta x$$

$$\Rightarrow 7 + 10 - 18$$

$$\Rightarrow 7 - 7$$

$$\Rightarrow e_6 = 0$$

$$\boxed{e_6 = 0}$$

Increment both x and y

$$\Rightarrow (x_{7+1}, y_{7+1}) = (6+1, 3+1)$$

$$\boxed{(x_7, y_7) = (7, 4)}$$

Step No 7

$$P (7, 4), \quad e_6 = 0 \quad e_7 = e_6 + 2\Delta y - 2\Delta x \\ = 0 + 10 - 18$$

$$\boxed{e_7 = -7} \quad \text{Increment only } x$$

$$\Rightarrow (x_{k+1}, y_k) = (7+1, 4)$$

$$(x_8, y_8) = (8, 4)$$

$$\text{STEP} = 8$$

$$P = 8, 4, \quad e_7 = -7 \quad e_8 = e_7 + 2\Delta x$$

$$e_8 = -7 + 10$$

$$e_8 = 3$$

$e_8 > 0$ Increment both x and y

$$(x_{k+1}, y_{k+1}) = (8+1, 4+1)$$

$$(x_9, y_9) = (9, 5)$$

We will stop here because $(\Delta x - 1)$ is
stop condition

$$\Delta x = 9$$

$$(\Delta x - 1) = (9 - 1)$$

$$(\Delta x - 1) = 8$$