

NAME Rafi ULLAH

ID 14283

Semester 5th

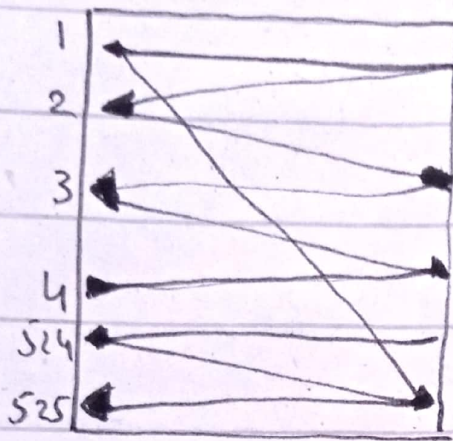
Department Bs(CS)

SUBJECT ~~Bs(CS)~~ Computer Graphics

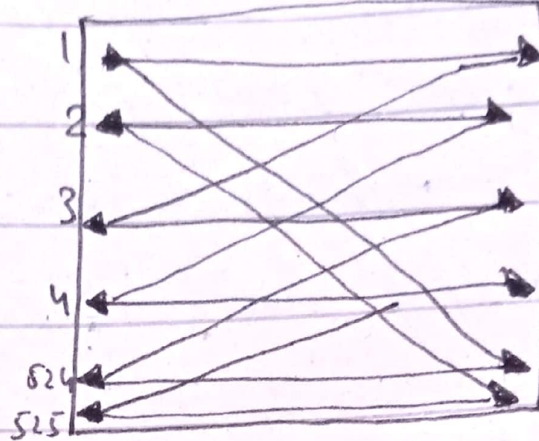
Assignment No 1

Date 20-6-2020

QUESTION NO: 1:



Non interlaced



interlaced

A non-interlaced display (appear as filter) rate is 30 frames per second which mean that line $\frac{1}{3}$ of the way down the screen and refreshed every $\frac{1}{30}$ seconds.

similarly the interlaced display also display 30 frames per seconds but here the field double the display rate.
for. e.g. consider a scan

line $1/3$ down after it swept
 it will not be swept again
 for $1/30$ seconds because the
 scan lines immediately above
 and below it are down $1/60$
 second later (double rate)

QUESTION # No: 3

Answer

Solution

Loop	@	(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)~~

$$P(x, y), \quad P_2(11, 6)$$

Step 1 =

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

$$\Delta x = 9$$

$$\Delta y = 5$$

$$2\Delta y = 10$$

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

$$e_1 = 10 - 9$$

$$e_1 = 1$$

$$e_1 = 1$$

Step No 2:

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

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

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

$$\Rightarrow 1 + 10 - 18$$

$$e_2 = -6 \text{ increment only } x$$

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$$e_2 < 0 \Rightarrow \text{so } (u_k + 1, y_k) = (2+1, 1)$$

$$(u_k + 1, y_k) = (3, 1)$$

Step #3

$$p(3, 1), e_2 = -6$$

$$e_3 = e_2 + 2\Delta x$$

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

$$\Rightarrow -6 + 10$$

$$e_3 = 4$$

$e > 0$ so increment both u and y

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

$$(u_3, y_3) = (4, 2)$$

Step #4

$$p(u_3, y_3) = (4, 2) \quad e_3 = 4$$

$$e_4 = e_3 + 2\Delta y - 2\Delta u$$

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

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

$$\boxed{e_4 = -3}$$

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$e_4 < 0$ increment only x

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

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

Step No # 5

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

$$e_4 = -3$$

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

$$\Rightarrow -3 + 10$$

$$e_5 = 7$$

$e_5 > 0$ increment both x and y

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

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

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Step No 6

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

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

$$\Rightarrow 7 + 10 - 18$$

$$\Rightarrow 7 - 7$$

$$e_6 = 0$$

increment both x and y

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

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

Step #7

$$p = (7, 4), \quad e_6 = 0$$

$$e_7 = e_6 + 2\Delta y - 2\Delta x$$

$$= 0 + 10 - 18$$

$e_7 = -7$ increment only y x

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

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

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Step No 8

$$p = (8, 4), e_7 = -7$$

$$e_8 = e_7 + 2\Delta y$$

$$e_8 = -7 + 10$$

$$e_8 = 3$$

$e > 0$ 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.

$$\Delta x = 9$$

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

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

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QUESTION NO # 2

Answer: Screen Resolution = 1024 x 786
pixels

Supporting shades = 128

only Grey = $2^7 = 7$ bit

The total number of bit require
to display a grey scale image
on

$$\text{bits} = 1024 \times 786 \times 7 = 5505024$$

Divide by 8 yields

$$\frac{\text{bits}}{8} = \frac{5505024}{8} \Rightarrow 688.128 \text{ bytes}$$

Total bytes is convert to Mb

0.65625 Mb Ans.