CSE423

Quiz:2

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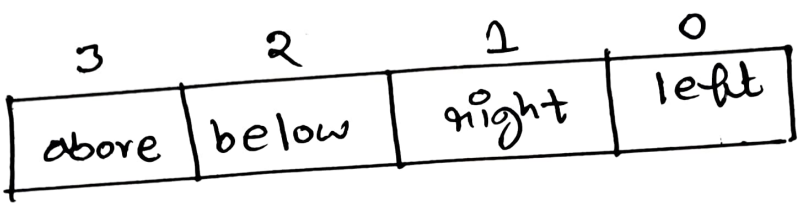
Sec : 07

Ans. to the ques. No:- 1

We can determine the ~~point of~~ position of a 2-D point by using Region code in the following manner

Region Code:



if a point is inside the clipping window the outcode will be '0000'

if a point is just above the clipping window then -

outcode → 0100

So, the outcode will be determind by using 1 in the bit and it will be given with respect to the clipping window.

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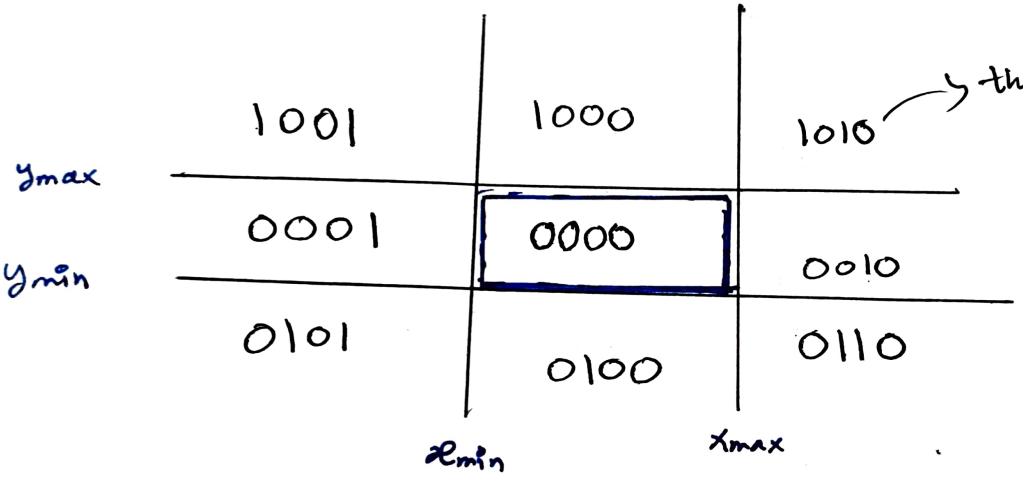

3	2	1	0
above	below	right	left

Region Code

Outcode → Outcode represents the position with respect to the window.

ased on the outcode:

if outcode is '0000' → Completely inside the window

if " " anything but '0000' then there can be two cases.

① completly outside the window

② partially " " "

if any 2 bit ~~has a com~~. is matched, the value is. 1 then we can say the points are completely outside.

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(4)

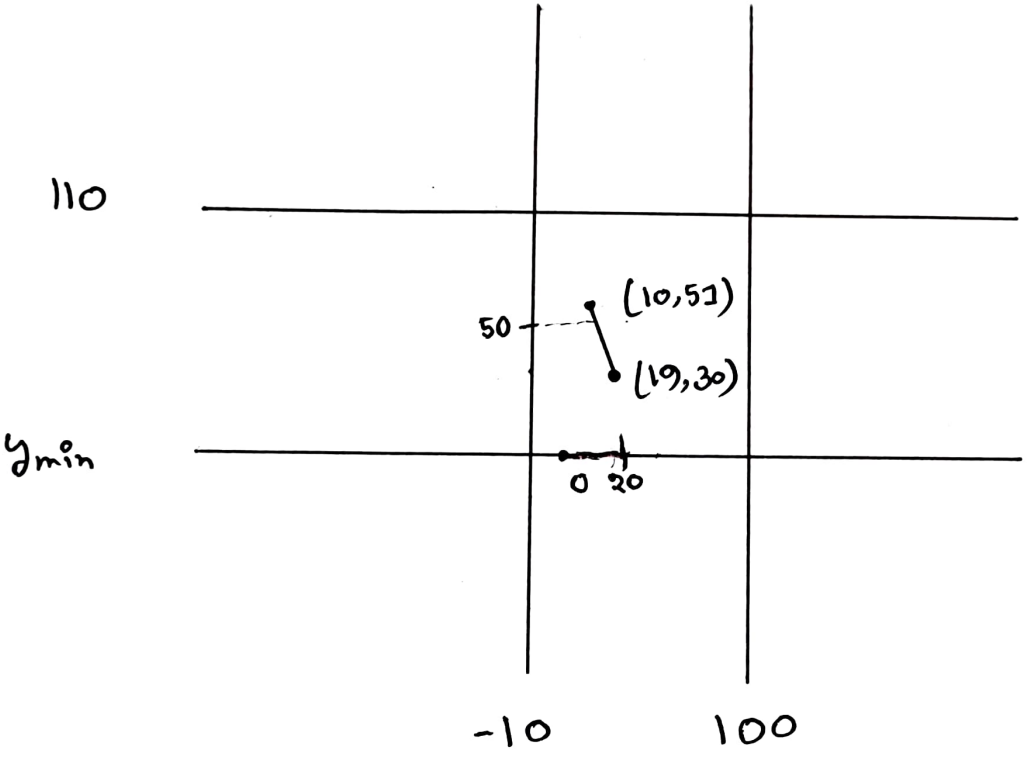
Ans. to the ques. No: 2

Here,

$x_0 = 19$ $y_0 = 30$ $x_1 = 10$ $y_1 = 51$

Clipping window: $x_{min} = -10$, $x_{max} = 100$

$y_{max} = 110$



Here, to get a trivally rejected line,

$(y_0, y_1) < y_{min}$

So, $(30, 51) < y_{min}$

So, the y_{min} should be greater than 51

~~$s = y_{min}$~~

then, the set, $s = \{52, 53, 54, 55 \ldots\}$

Here, $y_{min} = 52$

So, the smallest integer number is $s = 52$

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Ans. to the ques. No: 3

Drawbacks of cohen-sutherland algorithm:

1. Multiple clipping
2. Too many condition checking
3. The clipping window has to be rectangular. Other forms are ~~not~~ not workable with this algorithm.

Ans. to the ques. No: 4

Clipping Region: (-220, -150) to (120, 250)

Line : (250, 150), to (100, 260)

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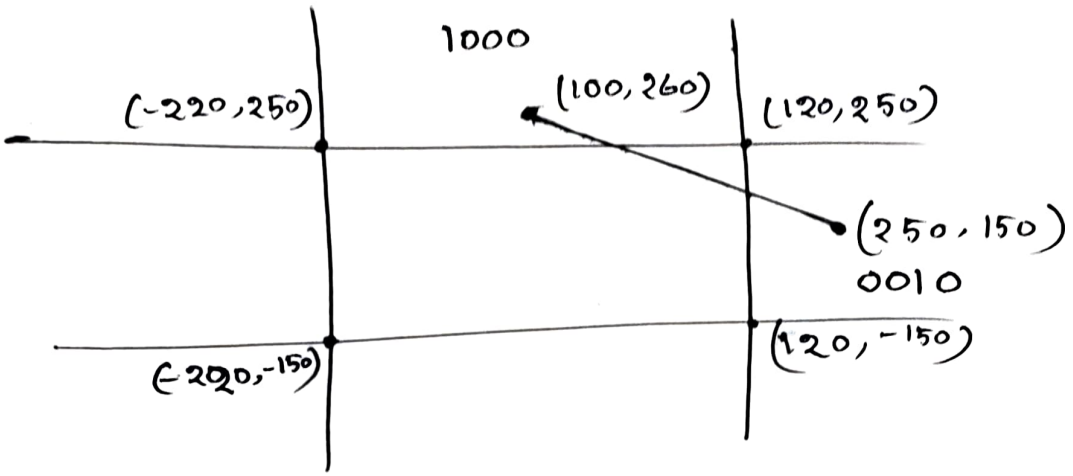
19301051
(8)



OC1 = 0010

OC2 = 1000

OC1 == OC2 is not equals to 0000 so, not completely inside there is no common bit so not completely outside.

Now, For ~~goto~~ OC1

$$x_1, y_1 = (x_{max}, y_1 + m(x_{max} - x_1))$$

$$= 120, \quad 150 + \frac{260-150}{100-250}(-130)$$

$$= 120, 236.67$$

So, OC1 = 0000 (re-calculated value)

For ~~out~~ OC2:

$$(x, y) = \left(y_{max}, \quad x_0 + \frac{1}{m}(y_{max} - y_0) \right)$$

$$= \left(250, \quad 250 + \frac{1}{-\frac{11}{15}} (250 - 150) \right)$$

$$= 250, 113.64$$

Outcode 2 = 0000

So, OC1 = 0000
OC2 = 0000
] Re calculated

Now the line is completely inside.

line segment:

120, 245.33 to 250, 113.64