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TUGAS GRAFIKA KOMPUTER

"CLIPPING"

Soal :

1. Diketahui titik awal P (1,1) dan titik akhir di Q (10,10), dengan area clipping xmin = 1, ymin=1, xmax= 7 dan ymax=7 selesaikan dengan clipping Cohen-Sutherland.

2. Berdasarkan soal no 1 lakukan clipping menggunakan Liang-Barsky dimana xl =1, xr= 7, yb = 1 dan yt = 7.

Jawab :

1. Diket : P (1,1), Q (10,10), dan Xmin,Ymin=1, serta Xmax,Ymax=7

Xmin = 1	➔	1>=1	P = 0000
Xmax = 1	➔	1<7	
Ymin = 1	➔	1>=1	
Ymax = 1	➔	1<7	

Xmin = 10	➔	10>1	P = 0101
Xmax = 10	➔	10>7	
Ymin = 10	➔	10>1	
Ymax = 10	➔	10>7	

➡ Titik potong pada garis PQ

m = $\frac{y1-y2}{x2-x1} = \frac{10-1}{10-1} = \frac{9}{9} = 1$

Karena R1, maka yp2 adalah

yp2 = y1+m (Xmin - x1) = 1+1(1-1) = 0 = 1,0

Karena T1, maka xp2 adalah

xp2 = x1 + $\frac{ymax-y1}{m}$ = 1 + $\frac{7-1}{1}$ = 7 } (xp2,Ymax) = (7,7)

Maka, titik potong nya adalah (1,0) dan (7,7)

2. Diket : P (1,1), Q (10,10), dan xl,yb=1, serta xr,yt=7

dx = x2-x1 = 10-1 = 9
dy = y2-y1 = 10-1 = 9

jadi,
P1 = -dx = -9
P2 = dx = 9
P3 = -dy = -9
P4 = dy = 9

Q1 = x1-x2 = 1-1 = 0, **Q2** = xr-x1 = 7-1 = 6, **Q3** = y1-yb = 1-1 = 0, **Q4** = yt-y1 = 7-1 = 6

Alhasil,

T1 < T2 → T1 = 0

X1 = x1+dx.T1 = 1+9.0 = 1
Y1 = y1+dy.T1 = 1+9.0 = 1 } (1,1)

T2 = $\frac{2}{3}$

X2 = x1+dx.T2 = 1+3.$\frac{2}{3}$ = 1+2 = 3
Y2 = y1+dy.T2 = 1+9.$\frac{2}{3}$ = 1+6 = 7 } (3,7)