DYAHAYU R .W

041 / MI 19 B.

Tugas 4 . - WINDOWING AND CLIPPING -

1. Titik awal P (1,1) $X_{min} = 1$ $X_{max} = 7$
   Titik akhir Q (10,10) $y_{min} = 1$ $y_{max} = 7$

   . Vertex P (1,1)

   $L = 0$
   $R = 0$
   $B = 0$
   $T = 0$

   ~~Verte~~ Region code untuk ujung P (1,1) adalah 0000.
   Bersifat fully visible dan tidak perlu dipotong.

   . Vertex Q (10, 10)

   $L = 0$
   $R = 1$
   $B = 0$
   $T = 1$

   Region code untuk Q (10,10) adalah 1010. Bersifat
   partially invisible dan perlu dipotong

   . Titik potong garis PQ (1,1)(10, 10)

   $$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10 - 1}{10 - 1} = 1.$$

   . Region code 1010 untuk vertex Q (10,10)

   $$T = 1 \implies X_{P_2} = X_1 + \frac{y_{max} - y_1}{M}$$
   $$= 10 + \frac{7 - 10}{1}$$
   $$= 7 . \text{ Titik potong } (7,7)$$

   $$R = 1 \implies y_{P_2} = y_1 + M(X_{max} - X_1)$$
   $$= 10 + 1 (7 - 10)$$
   $$= 7 . \text{ Titik potong } (7,7)$$

   Jadi, titik potongnya adalah (7,7)

2. $P(1,1)$ $Q(10,10)$

$x_L = 1$, $y_b = 1$ $\Delta x = x_2 - x_1 = 10 - 1 = 9$

$x_R = 7$ $y_t = 7$ $\Delta y = y_2 - y_1 = 10 - 1 = 9$

• $P_1 = -\Delta x$ $= -9$	• $q_1 = x_1 - x_L = 1 - 1 = 0$	• $q_1 / P_1 = 0$
• $P_2 = \Delta x$ $= 9$	• $q_2 = x_R - x_1 = 7 - 1 = 6$	• $q_2 / P_2 = \frac{2}{3}$
• $P_3 = -\Delta y$ $= -9$	• $q_3 = y_1 - y_b = 1 - 1 = 0$	• $q_3 / P_3 = 0$
• $P_4 = \Delta y$ $= 9$.	• $q_4 = y_t - y_1 = 7 - 1 = 6$.	• $q_4 / P_4 = \frac{2}{3}$

* $P_1, P_3 < 0$

$t_1 = \max \left(0, q_1/P_1, q_3/P_3\right)$

$= \max (0, 0, 0)$

$= 0$.

* $P_2, P_4 > 0$

$t_2 = \min \left(1, q_2/P_2, q_4/P_4\right)$

$= \min (1, \frac{2}{3}, \frac{2}{3})$

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

Karena $t_1 < t_2$,

$\cdot\ t_1 = 0$ $-t_2 = \frac{2}{3}$.

$x_1' = x_1 + t_1 \Delta x$ $x_2' = x_1 + t_2 \Delta x$

$= 1 + (0 \cdot 9)$ $= 1 + \left(\frac{2}{3} \cdot 9\right)$

$= 1$ $= 7$

$y_1' = y_1 + t_1 \Delta y$ $y_2' = y_1 + t_2 \Delta y$

$= 1 + (0 \cdot 9)$ $= 1 + \left(\frac{2}{3} \cdot 9\right)$

$= 1$ $= 7$

$(x_1', y_1') = (1,1)$ $(x_2', y_2') = (7,7)$