COMPUTER GRAPHICS

(E2UC402B)

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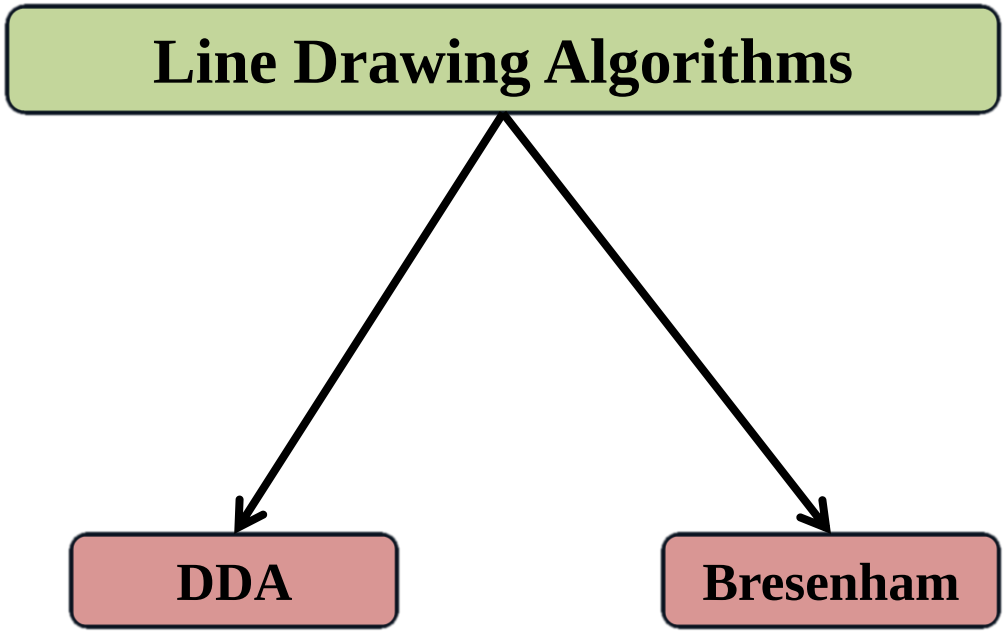
Line Drawing Algorithms
DDA
Bresenham

DDA Line Drawing Algorithm

(Digital Differential Analyzer)

Step 1: Enter the value of starting point (X1,Y1) and end point (X2,Y2)

Step 2: Xk=X1 and Yk=Y1

Step 3: Calculate the slope of line i.e. m

$$m = (Y2-Y1) / (X2-X1)$$

Step 4: Check value of m

DDA Line Drawing Algorithm

Step 5: If m == 1 CASE I

Step 6: for (Xk=X1; Xk<=X2; Xk++)

Plot the point Xk and Yk

Yk= Yk+ 1

DDA Line Drawing Algorithm

Step 7: If m < 1 CASE II

Step 8: for (Xk=X1; Xk<=X2; Xk++)

Plot the point Xk and (abs) Yk

Yk= Yk + m

DDA Line Drawing Algorithm

Step 9: If m > 1 CASE III

Step 10:for (Yk=Y1; Yk<=Y2; Yk++)

Plot the point (abs) Xk and Yk

Xk= Xk + 1/m

Step 11: Exit

Advantage & Disadvantage

Advantage

1. Not Require advance skill
2. Fast method for line generation

Disadvantage

More computation is required in case of floating point arithmatic operation

Any

QUESTION

OR

DOUBT