Digital Differential Analyzer (DDA)

DDA Algorithm Steps:

1. Input the starting and ending coordinates of a line:

   (x_1,y_1) and (x_2,y_2)

2. Calculate the differences:

   $$\Delta x = x_2 - x_1$$

   $$\Delta y = y_2 - y_1$$

3. Determine the number of steps:

   Steps = max ($|\Delta x|$, $|\Delta y|$)

4. Calculate the increment for each step:

   $$x_{increment} = \frac{|\Delta x|}{Steps}$$

   $$y_{increment} = \frac{|\Delta y|}{Steps}$$

5. Initialize the starting point:

   $x=x_1$, $y=y_1$

6. Iterate through the number of steps:

   - Plot the points (round(x), round(y))
   - Increment:

     $$X = x + x_{increment}$$

     $$Y = y + y_{increment}$$

7. Stop once all steps are plotted.