

## **Algorithm: DDA Line Drawing Algorithm**

1. Accept the starting point coordinates  $(x_1, y_1)$  and the ending point coordinates  $(x_2, y_2)$ .
2. Calculate the differences:
  - o  $dx = x_2 - x_1$
  - o  $dy = y_2 - y_1$
3. Determine the number of steps required as the maximum of  $|dx|$ ,  $|dy|$ , and  $\lceil dx \rceil$ ,  $\lceil dy \rceil$ .
4. Compute the incremental values:
  - o  $x_{inc} = dx / \text{steps}$
  - o  $y_{inc} = dy / \text{steps}$
5. Initialize the starting values  $x = x_1$ ,  $y = y_1$ .
6. Repeat the following steps from  $k = 0$  to  $k = \text{steps}$ :
  - Plot the pixel at  $(\text{round}(x), \text{round}(y))$ .
  - Update the values of  $x$  and  $y$  by adding  $x_{inc}$  and  $y_{inc}$  respectively.
7. Continue the process until the end point is reached.