**BRESENHAM’S LINE ALGORITHM**

**Input: Starting point (x1, y1), Ending point (x2, y2)**

**1. Calculate Differences:**

Δx = |x2 - x1|

Δy = |y2 - y1|

**2. Determine Line Orientation:**

If Δx>= Δy:

Line has a shallow slope

Else:

Line has a steep slope

**3. Set Step Directions:**

SX = 1 if x2 > x1,

SX= -1 if x2 < x1

SY = 1 if y2 > y1,

SY = -1 if y2 < y1

**4. Initialize Decision Parameter:**

**If shallow slope:**

err = 2Δy - Δx

Else:

err = 2Δx - Δy

**5. Plot Initial Point:**

Plot (x, y) = (x1, y1)

**6. Iterate Until Endpoint:**

**If shallow slope:**

For x from x1 to x2:

Plot (x, y)

If err >= 0:

y += SY

err -= 2Δx

err += 2Δy

**Else:**

For y from y1 to y2:

Plot (x, y)

If err >= 0:

x += SX

err -= 2Δy

err += 2Δx

**7. Terminate:**

Stop when (x, y) = (x2, y2)