**Bresenham’s Line Algorithm:**

import matplotlib.pyplot as plt

def bresenham\_line(x0, y0, x1, y1):

points = []

dx = x1 - x0

dy = y1 - y0

p = 2 \* dy - dx # Initial decision parameter

x, y = x0, y0

points.append((x, y)) # Store the first point

for \_ in range(dx):

x += 1

if p < 0:

p = p + 2 \* dy

else:

y += 1

p = p + 2 \* dy - 2 \* dx

points.append((x, y))

return points

# Example usage

pts = bresenham\_line(3, 2, 10, 6)

x, y = zip(\*pts)

plt.plot(x, y, color='blue', marker='o')

plt.title("Bresenham's Line Algorithm (|m| < 1)")

plt.xlabel("X-axis")

plt.ylabel("Y-axis")

plt.grid()

plt.show()

