

DDA (Digital Differential Analysis) Line Drawing Algorithm

Consider a Cartesian plane and a line segment that connects points (x, y) and (x_1, y_1) .

This line segment can be seen as an infinite set of aligned points on a "path." The equation describing this set of points is:

$$y = mx + c$$

where m is the slope of the line, and c is the y-intercept. Knowing m and c , we can find every point on the line by:

1. Projecting the x and y elements of the points onto the axes to find the lengths of the two legs of a right triangle:

$$\Delta x = x_b - x_a$$

$$\Delta y = y_b - y_a$$