Midpoint Circle Drawing Algorithm

Step 1: Start

Step 2: Declare the required variables:

x, y → current plotting coordinates

r → radius of the circle

cx, cy → coordinates of the center

d → decision parameter

Step 3: Take input values for radius (r) and center (cx, cy).

Step 4: Set the initial point:

x = 0

y = r

Step 5: Compute the initial decision parameter:

d = 1 - r

Step 6: Repeat the process while x is less than or equal to y:

If d < 0:

  x = x + 1

  d = d + 2x + 1

Else:

$x = x + 1$

$y = y - 1$

$d = d + 2(x - y) + 1$

Step 7: For each calculated (x, y), obtain the remaining symmetric points in all eight octants and convert them into actual screen coordinates using:

$X = x + cx$

$Y = y + cy$

Step 8: Plot all the calculated pixel positions.

Step 9: End.