BRESENHAM'S CIRCLE ALGORITHM

Bresenham Circle \((X_c, Y_c, R)\):

**Description:** Here \(X_c\) and \(Y_c\) denote the x-coordinate and y-coordinate of the center of the circle. \(R\) is the radius.

1. Set \(X = 0\) and \(Y = R\)
2. Set \(D = 3 - 2R\)
3. Repeat While \((X < Y)\)
4. Call \(\text{Draw Circle}(X_c, Y_c, X, Y)\)
5. Set \(X = X + 1\)
6. If \((D < 0)\) Then
7. \(D = D + 4X + 6\)
8. Else
9. Set \(Y = Y - 1\)
10. \(D = D + 4(X - Y) + 10\)
[End of If]
11. Call \(\text{Draw Circle}(X_c, Y_c, X, Y)\)
[End of While]
12. Exit

**Draw Circle \((X_c, Y_c, X, Y)\):**

1. Call \(\text{Put Pixel}(X_c + X, Y_c, + Y)\)
2. Call \(\text{Put Pixel}(X_c - X, Y_c, + Y)\)
3. Call \(\text{Put Pixel}(X_c + X, Y_c, - Y)\)
4. Call \(\text{Put Pixel}(X_c - X, Y_c, - Y)\)
5. Call \(\text{Put Pixel}(X_c + Y, Y_c, + X)\)
6. Call \(\text{Put Pixel}(X_c - Y, Y_c, + X)\)
7. Call \(\text{Put Pixel}(X_c + Y, Y_c, - X)\)
8. Call \(\text{Put Pixel}(X_c - Y, Y_c, - X)\)
9. Exit