Assignment No. 3

Computer Graphics

1. Write and explain bresenham’s generalized Line generation algorithm for all quadrant.
2. Write down Bresenham’s Integer algorithm for all quadrants. Apply the algorithm to find out the pixel values for line L from (0, 0) to (-8,-4). Find out value of error term for every pixel, ∆x, ∆y.
3. Write down Bresenham’s incremental circle algorithm for the first quadrant. Apply the algorithm to find out pixel values for the first quadrant of circle where circle radius is 8. Find out values of ∆i, δ, and δ1.
4. Explain seed fill algorithm for 4 connected boundary defined regions.
5. Given the clipping window P (0, 0), Q (340, 0), R (340,340), and S (0,340). Find out visible portion of line AB [(-170,595), (170, 255)] and CD[(425, 85), (595,595)] against given window using cohen-sutherland algorithm.
6. Consider the window in the screen coordinates to have left, right, bottom and top edges of 0,1023,0,1023 respectively. Apply midpoint subdivision algorithm on line C with endpoints P1 (-307,631) and P2 (820, -136) to find out visible portion of line. Find out the 4 bit code for P1 and P2.