Interactive Computer Graphics

Lab 10 (26/10/2021)

Using OpenGL, draw the following figures. The dimensions of the various components in the figures can be considered as you wish, but the overall shape should be the same as the figures given in the question.

1. Inside-Outside test: Given a point P and a polygon window W, check if P lies inside W
2. Polygon Clipping:
    a. Sutherland-Hodgman Algorithm:
        i. Input: Vertex sequence P_1, P_2.....P_N representing polygon to be clipped, and another vertex sequence Q_1 , ...Q_M representing convex polygon
        ii. Output: The sequence of vertices of clipped polygon
        iii. Draw the clipped polygon
        iv. Try for single and multiple components of the polygon
    b. Weiler-Atherton algorithm:
        i. Fix the issue of multiple componetnts
3. Region Filling Algorithms: Implement the following
    a. Boundary-Fill Algorithm
    b. Flood-Fill Algorithm