Daffodil International University

Department of Computer Science and Engineering

Final Assessment, Spring 2021

Course Code: CSE421, Course Title: Computer Graphics

Date: 13-04-21, Time: 9:00 am-11:59 pm

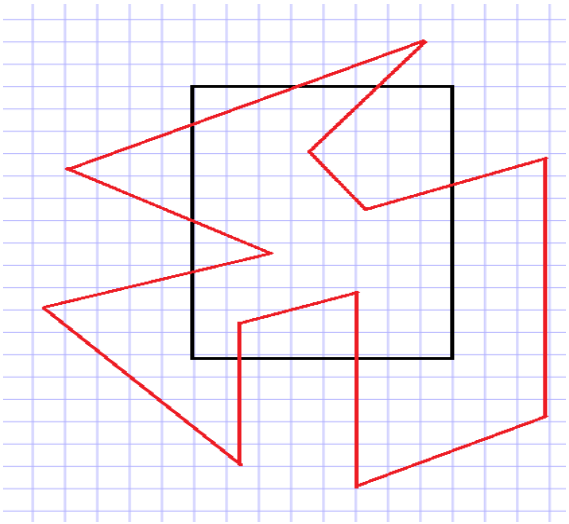
1. In the following figure RED concave object is a Subject polygon and BLACK convex object is a clipping window. Which algorithm should you use to clip this polygon?

Instructions:

** Show the whole procedure using anticlockwise direction only.

** Here, Vertices of RED polygon will be your name of Capital Letter. Do not use same character, take only the first character.

[If your name is Ripon Hossain Chowdhury then RED polygon will be RIPONMYHSACWDU. Please add or delete if the number of vertices of polygon did not match with your name's character.]



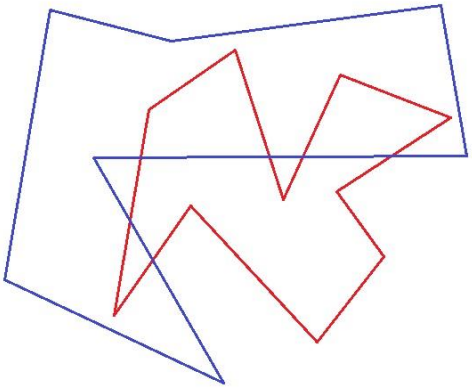
2. Find the categories of lines AB, CD, EF, GH & IJ. Perform clipping using Cohen-Sutherland algorithm where, AB {(-8, 10), (-1, 11)}, CD {(2, 6), (5, 11)}, EF {(0, 3), (4, 5)}, GH {(-6, 3), (-1, 6)} & IJ {(2, 0), (8, 7)}
where $X_{Min} = -4, X_{Max} = 6, Y_{Min} = 1, Y_{Max} = 8$

3. In the following figure RED concave object is a Subject polygon and **BLUE** concave object is a clipping window. Which algorithm should you use to clip this polygon?

Instructions:

** Show the whole procedure using anticlockwise direction only.
** Here, Vertices of RED and **BLUE** polygon will be your name of Capital Letter and small letter respectively. Do not use same character, take only the first character.

[If your name is Ripon Hossain Chowdhury then RED polygon will be RIPONMYHSACWDU and **BLUE** polygon will be riponmyhsacwdu. Please add or delete if the number of vertices of polygon did not match with your name's character.



4. In the following figure, the Cube is an object in the three-dimensional plane.

- Rotate the points (**) degree along Y and Z-axis.
- Shear the points (***) units in X and Y-axis.
- Reflect the Cube in Z direction

** Last two digit of your ID (Ex. 172-15-1234, then it will be 34 degree
*** Third digit from last of your ID's last portion (Ex. 172-15-1234, then it will be (-2) units