Arjun Dass

CS-537 Interactive Computer Graphics

Programming Assignment 3

Implementation:

I have completed the Programming Assignment 3 of implementing Polygon Clipping using Sutherland – Hodgman Algorithm in Java. The algorithm works by extending each line of the convex clip polygon in turn and selecting only vertices from the subject polygon that are on the visible side.

My implementation of Sutherland – Hodgman Algorithm covers all the scenarios of polygon clipping. The algorithm implementation checks if the all the vertices of the figure lie inside a region or not. It also checks If the entire figure is inside or outside the region.

The implementation also covers some complex cases where two or more vertices of the polygon lies inside the region. The algorithm colors the entire part of the polygon which lies inside the region.

Challenges:

It was relatively to implement the part of the algorithm where it checks whether all the vertices of the polygon are inside or outside the region and color that part. However, I found it really challenging and interesting to consider the other cases where only a few vertices lies inside or outside the region. Also, considering the number of vertices of a polygon made it more challenging. I overcome all these challenges by considering each case at a time and then integrating all of them to get the final output.

Submission:

My submission includes four java files namely, clipper.java, clipTest.java, extendedCanvas.java, and simpleCanvas.java. I only altered the clipper.java file and rest of the files are unaltered. Apart from that, there is also a output.png file which shows the output of my program and a documentation file named Documentation.pdf