

## Lab Assignment

1. Write a program to draw a line using DDA Algorithm.
2. Write a program to draw a line using Bresenham line drawing Algorithm.
3. Write a program to draw a circle using midpoint circle drawing Algorithm.
4. Write a program to draw an ellipse using midpoint circle drawing Algorithm.
5. Write a program to draw a pie chart with levels given the data for various sectors.
6. Write a program to draw a line plot for different given points.
7. Write a program to draw a histogram with levels for the given data values.
8. Write a program Draw a limaçon for given parameters.
9. Write a program to draw a three leaf for given parameters.
10. Write a program to draw a four leaf for given parameters.
11. Write a program to draw a cardioid for given parameters.
12. Draw a dotted, dashed, dash dotted, solid line in the same graph with different data lines.
13. Write a program to show different lines with Butt Cap for given length & width of line.
14. Write a program to show different lines with Round Cap for given length & width of line.
15. Write a program to show different lines with squared projection cap for given length & width of line.
16. Write a program to draw bevel join for two connecting lines.
17. Write a program to draw miter join for two connecting lines.
18. Write a program to draw Round join for two connecting lines.
19. Write a pen & brush program for round & rectangular shape options.
20. Apply antialiasing operation on Bresenham mid point line drawing algorithm.
21. Apply antialiasing methods for a boundary fill to avoid any jaggy appearance near the boundaries.
22. Write a program to show the translation in a 2D geometry.
23. Write a program to show the Scaling in a 2D geometry.
24. Write a program to show the rotation in a 2D geometry.
25. Write a program to show the reflection in a 2D geometry.
26. Write a program to show the shearing in a 2D geometry.
27. Write a program to implement the Cohen Sutherland algorithm for line clipping.
28. Write a program to implement Weiler Atherton algorithm for line clipping.
29. Implement an algorithm for polygon clipping.
30. Make a program for making an electric circuit with the help of various components & their connections.  
Design the Gates & apply the dragging technique to fit a particular gate into the circuit.
31. Using rubber band techniques implement the Circle, line & rectangle.
32. Using dragging techniques implement Circle, line & rectangle & also the technique to erase part of the symbol drawn.

33. Taking the input points from the user implement cardinal splines.
34. Taking the input points from the user implement Bezier curves.
35. Taking the input points from the user implement B-splines.
36. Make a wire polygon mesh for a sphere.
37. Make a wire polygon mesh for a Torus.
38. Make a wire polygon mesh for an Ellipsoid.
39. Make a wire polygon mesh for a super ellipsoid.
40. Make a wire polygon mesh for a Cylinder.
41. Write a program to show scaling in three dimensional spaces using a cuboid.
42. Write a program to show rotation in three dimensional spaces using a cuboid.
43. Write a program to show translation in three dimensional spaces using a cuboid.
44. Write a program to show reflection in three dimensional spaces using a cuboid.
45. Write a program to show shearing in three dimensional spaces using a cuboid.
46. Show 3 D clipping using an extension of the 2D clipping algorithm.
47. Implement a back face detection procedure using a perspective projection to view visible faces of a convex polyhedron.
48. Implement the depth buffer method to display the visible surfaces in a scene containing any number of polyhedrons.
49. Implement the A-buffer algorithm to display a scene containing both opaque and transparent surfaces.
50. Write a program that uses the depth sorting method to display the visible surfaces in a scene containing several polyhedrons.