LAB EXERCISE – 2

1. Form a 4-quadrant 2D Cartesian Coordinate space by interpreting a window of screen dimension **400 X 300** to vary between **-200 to 200** in both X and Y user-specified dimensions.
   (a) Using DDA and Bresenham's algorithm, draw the line segments with different orientations having the following coordinates:
      (i) (-10, -70) to (90, -50)
      (ii) (-70, -10) to (-50, 90)
      (iii) (-10, 70) to (90, 50)
      (iv) (70, -10) to (50, 90)
   (b) Two end-points of a line segment are input through random mouse clicks on different window locations. Scan convert and display the line segment using DDA and Bresenham's algorithm.

2. Two points, A and B, are acquired through random mouse clicks on a window.
   (a) Considering A as center, scan convert a circle having a radius of length AB. (Use Bresenham's or Mid-point algorithm)
   (b) Manipulate the location of B using a key press event to generate varying size circles.
   glutKeyboardFunc(keyFunc);
   void keyFunc(GLubyte key,GLint xMouse, GLint yMouse)

3. Take three randomly clicked points, O, A, B. O is center. OA and OB form semi-major and semi-minor axes on an ellipse. Scan convert the ellipse.