***(RCA-551) Computer Graphics & Animation***

***ASSIGNMENT***

*Aim:*  ***Write*** ***a program to implement Cohen Sutherland Line clipping algorithm.***

***Write a program to implement Cohen Sutherland Line clipping algorithm.***

**Step1:**Calculate positions of both endpoints of the line

**Step2:**Perform OR operation on both of these end-points

**Step3:**If the OR operation gives 0000  
       Then  
                line is considered to be visible  
       else  
          Perform AND operation on both endpoints  
      If And ≠ 0000  
          then the line is invisible  
        else  
      And=0000  
    Line is considered the clipped case.

**Step4:**If a line is clipped case, find an intersection with boundaries of the window  
                m=(y2-y1 )(x2-x1)

**(a)** If bit 1 is "1" line intersects with left boundary of rectangle window  
                y3=y1+m(x-X1)  
                where X = Xwmin  
                where Xwminis the minimum value of X co-ordinate of window

**(b)** If bit 2 is "1" line intersect with right boundary  
                y3=y1+m(X-X1)  
                where X = Xwmax  
                where X more is maximum value of X co-ordinate of the window

**(c)** If bit 3 is "1" line intersects with bottom boundary  
                X3=X1+(y-y1)/m  
                      where y = ywmin  
                ywmin is the minimum value of Y co-ordinate of the window

**(d)** If bit 4 is "1" line intersects with the top boundary  
                X3=X1+(y-y1)/m  
                      where y = ywmax  
                ywmax is the maximum value of Y co-ordinate of the window