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# Subject: Computer Graphics & Gaming Lab

## Develop a program for Bresenham's circle drawing algorithm and also draw a pattern using Bresenham's a circle drawing algorithm

#include<GL/glut.h>  
#include<GL/gl.h>  
#include<stdio.h>  
#include<math.h>  
  
int xc, yc, r;  
  
void disp(int x, int y)  
{  
glClear(GL\_COLOR\_BUFFER\_BIT);  
glBegin(GL\_POINTS);  
glColor3f(0.0f,0.0f,0.0f);  
glVertex2d(x,y);  
}  
  
void BCir()  
{  
double x,y;  
double xn, yn, pk;  
x= 0;  
y= r;  
xn = x;  
yn = y;  
disp(xn,yn);  
pk = 3 - 2\*r;  
do  
{  
        if(pk<0)  
        {  
                pk = pk + 4\*xn +6;  
                xn = xn+1;  
        }  
        else  
        {  
                pk = pk + 4\*xn -4\*yn +10;  
                xn = xn+1;  
                yn = yn-1;  
        }  
  
disp(xn+xc, yn+yc);  
disp(yn+xc, xn+yc);  
disp(-yn+xc, xn+yc);  
disp(xn+xc, -yn+yc);  
disp(-xn+xc, -yn+yc);  
disp(-yn+xc, -xn+yc);  
disp(yn+xc, -xn+yc);  
disp(-xn+xc, yn+yc);  
  
}while(xn<=yn);  
  
glEnd();  
glFlush();  
}  
  
  
void init()  
{  
glClearColor(0,1.0,1.0,0);  
glColor3f(0.0f,0.0f,0.0f);  
gluOrtho2D(0,640,0,480);  
}  
  
int main(int argc,char \*argv[])  
{  
printf("Enter two end points of the line to be drawn:\n");  
printf("\nEnter Center Point( xc , yc):\n");  
scanf("%d%d",&xc,&yc);  
printf("\nEnter Radiuc(r):\n");  
scanf("%d",&r);  
glutInit(&argc,argv);  
glutInitWindowSize(400,400);  
glutInitWindowPosition(100,100);  
glutCreateWindow("Bresenhams Circle Algo");  
init();  
glutDisplayFunc(BCir);  
glutMainLoop();  
return 0;  
}

OUTPUT:  
