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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 pixel(int x,int y) {**

**glBegin(GL\_POINTS);**

**glVertex2i(x,y);**

**glEnd();**

**glFlush();**

**}**

**void circle(int xc,int yc,int r) {**

**glClear(GL\_COLOR\_BUFFER\_BIT);**

**int x=0,y=r;**

**float p=3-(2\*r);**

**pixel(x,y);**

**while(x<=y)**

**{**

**pixel(xc+x,yc+y);**

**pixel(xc+y,yc+x);**

**pixel(xc+x,yc-y);**

**pixel(xc-y,yc+x);**

**pixel(xc-x,yc-y);**

**pixel(xc-y,yc-x);**

**pixel(xc-x,yc+y);**

**pixel(xc+y,yc-x);**

**if(p<0){**

**p+=4\*x+6;**

**}**

**else {**

**p+=4\*(x-y)+10;**

**y-=1;**

**}**

**x=x+1;**

**}**

**}**

**void display() {**

**circle(xc,yc,r);**

**glEnd();**

**glFlush();**

**}**

**void Init() {**

**glClearColor(1.0,1.0,1.0,0);**

**glColor3f(0.0,1.0,0.0);**

**gluOrtho2D(0, 500, 0, 500);**

**}**

**int main(int argc, char \*argv[]){**

**printf("Enter the value of center :");**

**scanf("%d",&xc);**

**scanf("%d",&yc);**

**printf("Enter the radius of circle :");**

**scanf("%d",&r);**

**glutInit(&argc, argv);**

**glutInitWindowSize(500,500);**

**glutInitWindowPosition(100,100);**

**glutCreateWindow("BRESENHAM'S CIRCLE");**

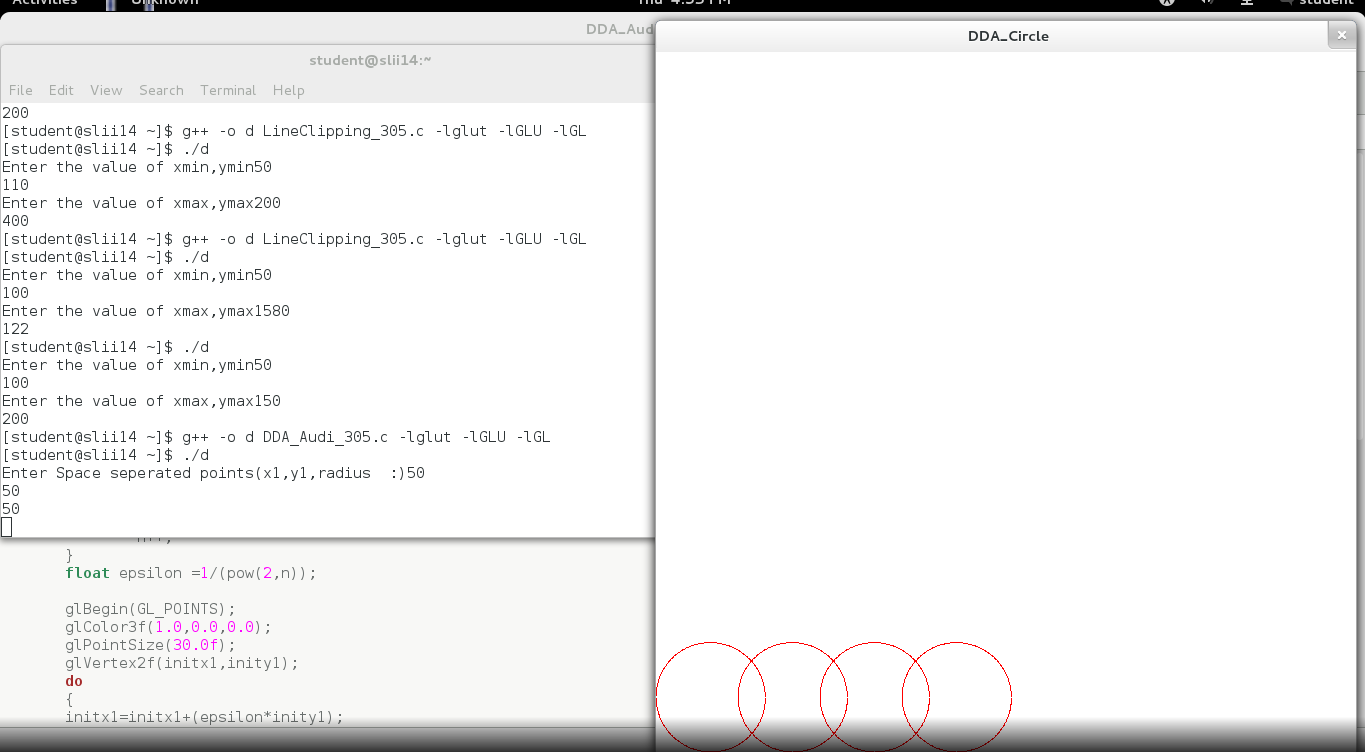
**Init();**

**glutDisplayFunc(display);**

**glutMainLoop();**

**return 0;**

**}**

**OUTPUT:  
**