Practical No:3

1) **Implement Bresenham circle drawing algorithm to draw any object. The object should be displayed in all the quadrants with respect to center and radius.**

Code:-

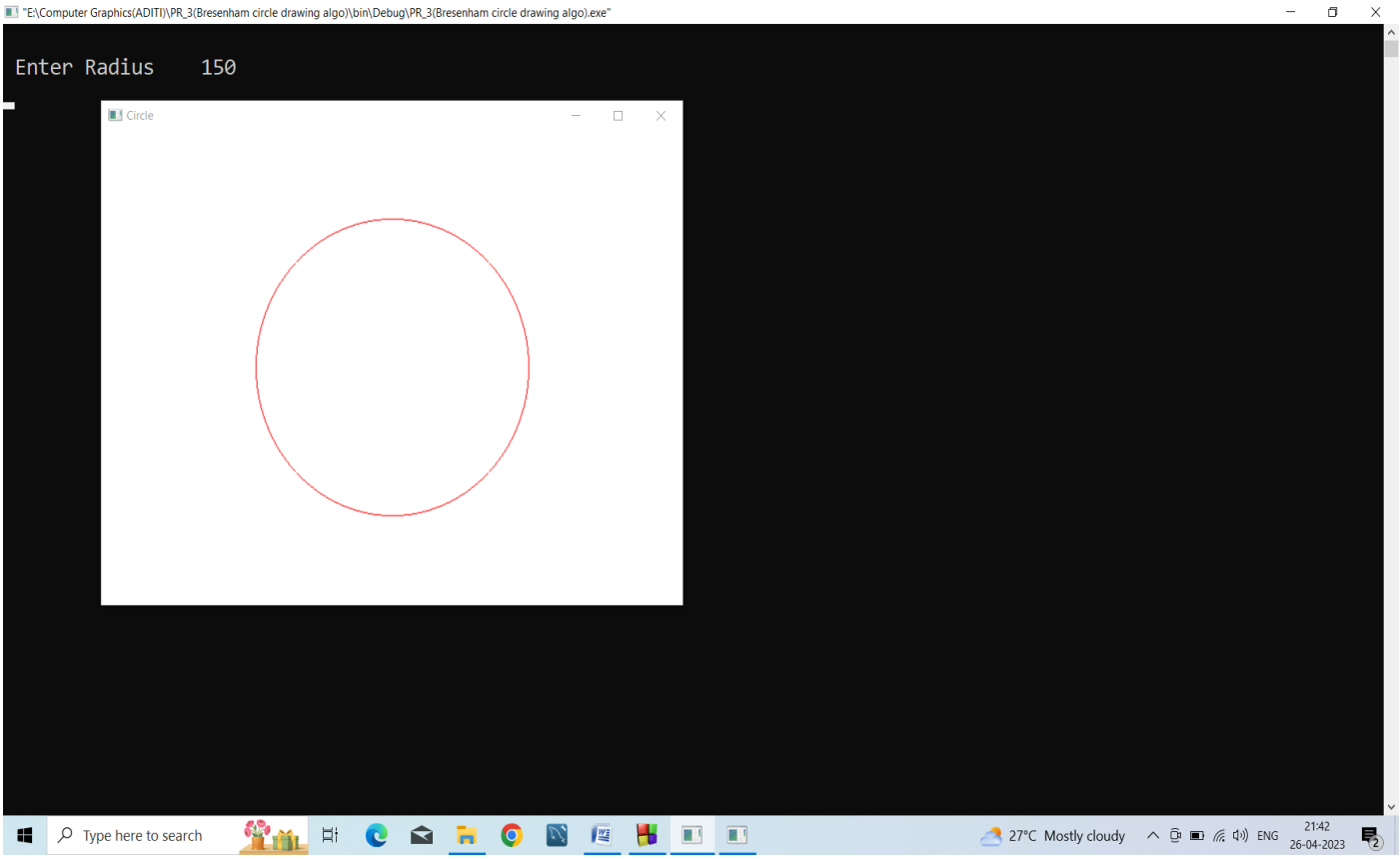
```
#include<GL/glut.h>
#include<iostream>
using namespace std;
int r;
void E_way(int x, int y){
        glBegin(GL_POINTS);
        glVertex2i(x+320,y+240);
        glVertex2i(y+320,x+240);
        glVertex2i(y+320, -x+240);
        glVertex2i(x+320, -y+240);
        glVertex2i(-x+320,-y+240);
        glVertex2i(-y+320,-x+240);
        glVertex2i(-y+320,x+240);
        glVertex2i(-x+320,y+240);
      glEnd();
      glFlush();
}
void B_circle()
{
   float d;
   d = 3 - 2*r;
   int x,y;
```

```
    x = 0 ;
    y = r ;

    do{
        E_way(x,y);
        if(d<0){
            d=d+4*x+6;
        }
        else{
            d= d+4*(x-y)+10;
            y=y-1;
        }
        x=x+1;
    }while(x<y);
}
void init(){
    glClearColor(1,1,1,0);
    glColor3f(1,0,0);
    gluOrtho2D(0,640,0,480);
    glClear(GL_COLOR_BUFFER_BIT);
}
int main(int argc, char **argv){
    cout<<"\n Enter Radius \t ";
    cin>>r;
    glutInit(&argc, argv);
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGB);
    glutInitWindowPosition(100,100);
    glutInitWindowSize(640,480);
```

```
    glutCreateWindow("Circle");
    init();
    glutDisplayFunc(B_circle);
    glutMainLoop();
    return 0;
}
```

Output:-


"E:\Computer Graphics(ADITI)\PR_3(Bresenham circle drawing algo)\bin\Debug\PR_3(Bresenham circle drawing algo).exe"
Enter Radius 150
Circle
Type here to search
27°C Mostly cloudy
ENG
21:42
26-04-2023