****RV COLLEGE OF ENGINEERING**

***(Autonomous Institution Affiliated to VTU, Belagavi)***

**Department of Computer Science & Engineering**

**Bengaluru – 560 059**

**PROGRAM 2**

Write a program to generate a circle using Bresenham’s circle drawing technique. User can specify inputs through keyboard/mouse.

#include<stdio.h>

#include<gl/glut.h>

int xc, yc, r;

void drawCircle(int xc, int yc, int x, int y)

{

glBegin(GL\_POINTS);

glVertex2i(xc + x, yc + y);

glVertex2i(xc - x, yc + y);

glVertex2i(xc + x, yc - y);

glVertex2i(xc - x, yc - y);

glVertex2i(xc + y, yc + x);

glVertex2i(xc - y, yc + x);

glVertex2i(xc + y, yc - x);

glVertex2i(xc - y, yc - x);

glEnd();

}

void circleBres(int xc, int yc, int r)

{

int x = 0, y = r;

int d = 3 - 2 \* r;

while (x < y)

{

drawCircle(xc, yc, x, y);

x++;

if (d < 0)

d = d + 4 \* x + 6;

else

{

y--;

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

}

drawCircle(xc, yc, x, y);

}

}

void display()

{

int j;

glClear(GL\_COLOR\_BUFFER\_BIT | GL\_DEPTH\_BUFFER\_BIT);

circleBres(xc, yc, r);

glFlush();

}

void myinit()

{

glClearColor(1.0, 1.0, 1.0, 0);

glColor3f(0, 0, 1.0);

glPointSize(5.0);

gluOrtho2D(0.0, 500, 0.0, 500);

}

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

{

int j;

printf("Enter coord of centre of circle & radius: ");

scanf("%d%d%d", &xc, &yc, &r);

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB | GLUT\_DEPTH);

glutInitWindowSize(500, 500);

glutInitWindowPosition(100, 100);

glutCreateWindow("Bresenhams Circle");

glutDisplayFunc(display);

myinit();

glutMainLoop();

}

Output:



