**CGG ASSIGNMENT 2**

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Block B1

Topic: Program to draw Olympic Symbol using DDA Circle Drawing Algorithm

Code:

#include<stdio.h>

#include<GL/gl.h>

#include<GL/glut.h>

#include <math.h>

float epsilon(int r)

{

int n;

for (int i = 1; i<r; i++)

{

if ((pow(2, i) <= r) && (r<pow(2, i + 1)))

{

n = i + 1;

break;

}

}

return pow(2, -n);

}

void circle(int x,int y, int r)

{

float x1, t1, x2, t2;

int n = 1;

float start\_x ;

float start\_t ;

x1 = r;

t1 = 0;

start\_x = r;

start\_t=0;

float e = epsilon(r);

do {

x2 = x1 + (e \* t1);

t2 = t1 - (e \* x2);

glBegin(GL\_POINTS);

glVertex2i(x2+x, t2+y);

glEnd();

x1 = x2;

t1 = t2;

} while ((t1 - start\_t)<e || (start\_x - x1)>e);

}

void display(void)

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(0.0,0.0,1.0);

circle(0-2\*100,0+1.7\*200,200);

glColor3f(1.0,1.0,1.0);

circle(0+200,0+1.7\*200,200);

glColor3f(1.0,0.0,0.0);

circle(0+200+2\*200,0+1.7\*200,200);

glColor3f(1.0,1.0,0.0);

circle(0,0,200);

glColor3f(0.0,1.0,.0);

circle(0+4\*100,0,200);

glFlush();

}

int main(int argc, char \*\*argv)

{

glutInit(&argc,argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowPosition(0,0);

glutInitWindowSize(500,500);

glutCreateWindow("Using DDA algorithm for circle pattern");

glClearColor(0.0,0.0,0.0,0);

gluOrtho2D(-1500,1500,-1500,1500);

glutDisplayFunc(display);

glutMainLoop();

return 0;

}

Output:

