#include<stdlib.h>

#include<stdio.h>

#include <GL/glut.h>

#include <GL/gl.h>

void init() {

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowSize(600, 600);

//glutInitWindowPosition(100, 100);

glutCreateWindow("My shape");

glClearColor(0.0, 0.0, 0.0, 0.0);

gluOrtho2D(0, 400, 0, 400);

}

void drawEllipse(int xCenter, int yCenter, int rx, int ry)

{

int x = 0;

int y = ry;

int p1 = ry \* ry - rx \* rx \* ry + rx \* rx / 4;

int dx = 2 \* ry \* ry \* x;

int dy = 2 \* rx \* rx \* y;

glBegin(GL\_POINTS);

while (dx < dy)

{

glVertex2i(x + xCenter, y + yCenter);

glVertex2i(-x + xCenter, y + yCenter);

glVertex2i(x + xCenter, -y + yCenter);

glVertex2i(-x + xCenter, -y + yCenter);

if (p1 < 0)

{

x++;

dx += 2 \* ry \* ry;

p1 += dx + ry \* ry;

}

else

{

x++;

y--;

dx += 2 \* ry \* ry;

dy -= 2 \* rx \* rx;

p1 += dx - dy + ry \* ry;

}

}

int p2 = ry \* ry \* (x + 0.5) \* (x + 0.5) + rx \* rx \* (y - 1) \* (y - 1) - rx \* rx \* ry \* ry;

while (y >= 0)

{

glVertex2i(x + xCenter, y + yCenter);

glVertex2i(-x + xCenter, y + yCenter);

glVertex2i(x + xCenter, -y + yCenter);

glVertex2i(-x + xCenter, -y + yCenter);

if (p2 > 0)

{

y--;

dy -= 2 \* rx \* rx;

p2 += rx \* rx - dy;

}

else

{

y--;

x++;

dx += 2 \* ry \* ry;

dy -= 2 \* rx \* rx;

p2 += dx - dy + rx \* rx;

}

}

glEnd();

}

void display()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

drawEllipse(150, 350, 100, 50);

glFlush();

}

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

{

glutInit(&argc, argv);

init();

glutDisplayFunc(display);

glutMainLoop();

return 0;

}