package Lab2;

import javax.swing.JFrame;

import com.jogamp.opengl.GL2;

import com.jogamp.opengl.GLAutoDrawable;

import com.jogamp.opengl.GLCapabilities;

import com.jogamp.opengl.GLEventListener;

import com.jogamp.opengl.GLProfile;

import com.jogamp.opengl.awt.GLCanvas;

import com.jogamp.opengl.glu.GLU;

class FirstGLEventListener implements GLEventListener {

/\*\*

\* Interface to the GLU library.

\*/

private GLU glu;

/\*\*

\* Take care of initialization here.

\*/

public void init(GLAutoDrawable gld) {

GL2 gl = gld.getGL().getGL2();

glu = new GLU();

gl.glClearColor(0.0f, 0.0f, 0.0f, 1.0f);

gl.glViewport(-10, -10, 10, 10);

gl.glMatrixMode(GL2.***GL\_PROJECTION***);

gl.glLoadIdentity();

glu.gluOrtho2D(-10.0, 10.0, -10.0, 10.0);

}

/\*\*

\* Take care of drawing here.

\*/

public void display(GLAutoDrawable drawable) {

GL2 gl = drawable.getGL().getGL2();

gl.glClear(GL2.***GL\_COLOR\_BUFFER\_BIT***);

// for drawing individual pixels

gl.glPointSize(5); //increase pixel size

gl.glBegin(GL2.***GL\_POINTS***);

gl.glColor3f(1, 0.5f, 0); //color orange

//printing number 33; make sure values of x and y are within viewport range in init()

dda(gl, -7, 5, -2, 5);

dda(gl, -2, 0, -2, 5);

dda(gl, -7, 0, -2, 0);

dda(gl, -2, -5, -2, 0);

dda(gl, -7, -5, -2, -5);

gl.glColor3f(1,1,0); //color yellow

dda(gl, 2, 5, 7, 5);

dda(gl, 7, 0, 7, 5);

dda(gl, 2, 0, 7, 0);

dda(gl, 7, -5, 7, 0);

dda(gl, 2, -5, 7, -5);

gl.glEnd();

}

public void dda (GL2 gl, double x1, double y1, double x2, double y2) {

double x = x1;

double y = y1;

gl.glVertex2d(x, y);

double m = (y2 - y1) / (x2 - x1);

if(m > -1 && m < 1) {

while(x < x2) {

x = x + 0.001;

y = y + 0.001 \* m;

gl.glVertex2d(x, y);

}

}

else {

while (y < y2) {

y = y + 0.001;

x = x + (0.001 / m);

gl.glVertex2d(x, y);

}

}

}

public void reshape(GLAutoDrawable drawable, int x, int y, int width, int height) {

}

public void displayChanged(GLAutoDrawable drawable, boolean modeChanged, boolean deviceChanged) {

}

public void dispose(GLAutoDrawable arg0) {

}

}

public class Rafsan\_18301033\_Assign02 {

public static void main(String args[]) {

// getting the capabilities object of GL2 profile

final GLProfile profile = GLProfile.*get*(GLProfile.***GL2***);

GLCapabilities capabilities = new GLCapabilities(profile);

// The canvas

final GLCanvas glcanvas = new GLCanvas(capabilities);

FirstGLEventListener b = new FirstGLEventListener();

glcanvas.addGLEventListener(b);

glcanvas.setSize(400, 400);

// creating frame

final JFrame frame = new JFrame("DDA Frame");

// adding canvas to frame

frame.add(glcanvas);

frame.setSize(640, 480);

frame.setVisible(true);

}

}