import javafx.scene.Group;

import javafx.scene.layout.BorderPane;

import javafx.scene.shape.Circle;

import javafx.scene.shape.Line;

import javafx.scene.text.Text;

public class GraphView extends BorderPane {

private Graph<? extends Displayable> graph;

private Group group = new Group();

public GraphView(Graph<? extends Displayable> graph) {

this.graph = graph;

this.setCenter(group); // Center the group

repaintGraph();

}

private void repaintGraph() {

group.getChildren().clear(); // Clear group for a new display

// Draw vertices and text for vertices

java.util.List<? extends Displayable> vertices

= graph.getVertices();

for (int i = 0; i < graph.getSize(); i++) {

double x = vertices.get(i).getX();

double y = vertices.get(i).getY();

String name = vertices.get(i).getName();

group.getChildren().add(new Circle(x, y, 16));

group.getChildren().add(new Text(x - 8, y - 18, name));

}

// Draw edges for pairs of vertices

for (int i = 0; i < graph.getSize(); i++) {

java.util.List<Integer> neighbors = graph.getNeighbors(i);

double x1 = graph.getVertex(i).getX();

double y1 = graph.getVertex(i).getY();

for (int v: neighbors) {

double x2 = graph.getVertex(v).getX();

double y2 = graph.getVertex(v).getY();

// Draw an edge for (i, v)

group.getChildren().add(new Line(x1, y1, x2, y2));

}

}

}

}