DAA Assignment

import java.util.\*;

public class Graph {

private int V;

private LinkedList<Integer>[] adjList;

private List<int[]> edgeList;

public Graph(int vertices) {

this.V = vertices;

adjList = new LinkedList[V];

edgeList = new ArrayList<>();

for (int i = 0; i < V; i++) {

adjList[i] = new LinkedList<>();

}

}

public void addEdge(int src, int dest) {

adjList[src].add(dest);

adjList[dest].add(src); // For undirected graph

edgeList.add(new int[]{src, dest});

}

public void printGraph() {

System.out.println("Adjacency List:");

for (int i = 0; i < V; i++) {

System.out.print("Vertex " + i + " is connected to:");

for (int j : adjList[i]) {

System.out.print(" " + j);

}

System.out.println();

}

}

public void printEdgeList() {

System.out.println("Edge List:");

for (int[] edge : edgeList) {

System.out.println("Edge: " + edge[0] + " - " + edge[1]);

}

}

public static void main(String[] args) {

// Create a graph with 4 vertices

Graph graph = new Graph(4);

// Add edges to connect each vertex to every other vertex

graph.addEdge(0, 1);

graph.addEdge(0, 2);

graph.addEdge(0, 3);

graph.addEdge(1, 2);

graph.addEdge(1, 3);

graph.addEdge(2, 3);

// Print the adjacency list representation of the graph

graph.printGraph();

// Print the edge list representation of the graph

graph.printEdgeList();

}

}