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Semester:5

Batch:2

Course: CS6111- Computer Networks

Lab – Experiment 12- Link State Algorithm

Code:

import java.util.\*;

public class LinkRoute {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter the number of nodes : ");

int nodes = sc.nextInt();

int[] preD = new int[nodes];

int min = 999, nextNode = 0;

int[] distance = new int[nodes];

int[][] matrix = new int[nodes][nodes];

int[] visited = new int[nodes];

System.out.println("Enter the cost matrix");

for (int i = 0; i < distance.length; i++) {

visited[i] = 0;

preD[i] = 0;

for (int j = 0; j < distance.length; j++) {

matrix[i][j] = sc.nextInt();

if (matrix[i][j]==0)

matrix[i][j] = 999;

}

}

distance = matrix[0];

visited[0] = 1;

distance[0] = 0;

for (int counter = 0; counter < nodes; counter++) {

min = 999;

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

if (min > distance[i] && visited[i]!=1) {

min = distance[i];

nextNode = i;

}

}

visited[nextNode] = 1;

for (int i = 0; i < nodes; i++)

if (visited[i]!=1)

if (min+matrix[nextNode][i] < distance[i]) {

distance[i] = min+matrix[nextNode][i];

preD[i] = nextNode;

}

}

int j;

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

if (i!=0) {

System.out.print("Path = " + i);

j = i;

do {

j = preD[j];

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

}

while(j != 0);

System.out.println();

System.out.print("Cost = " + distance[i]);

}

System.out.println("\n");

}

}

}

Output:

