AIM:

Develop a program to obtain routing table for each node using Distance Vector Routing Algorithm by considering the given subnet with weights indicating delay between Nodes.

PROGRAM:

#include<stdio.h>

struct node

{

unsigned dist[20];

unsigned from[20];

}rt[10];

int main()

{

int costmat[20][20];

int nodes,i,j,k,count=0;

clrscr();

printf("\nEnter the number of nodes : ");

scanf("%d",&nodes);

printf("\nEnter the cost matrix :\n");

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

{

for(j=0;j<nodes;j++)

{

scanf("%d",&costmat[i][j]);

costmat[i][i]=0;

rt[i].dist[j]=costmat[i][j];

rt[i].from[j]=j;

}

}

do

{

count=0;

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

for(j=0;j<nodes;j++)

for(k=0;k<nodes;k++)

if(rt[i].dist[j]>costmat[i][k]+rt[k].dist[j])

{

rt[i].dist[j]=rt[i].dist[k]+rt[k].dist[j];

rt[i].from[j]=k;

count++;

}

}while(count!=0);

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

{

printf("\nFor router %d",i+1);

for(j=0;j<nodes;j++)

{

printf("\t\nnode %d via %d Distance %d ",j+1,rt[i].from[j]+1,rt[i].dist[j]);

}

}

getch();

}

/\*output:

Enter the number of nodes : 5

Enter the cost matrix :

0 5 2 3 99

5 0 4 99 3

2 4 0 99 4

3 99 99 0 99

99 3 4 99 0

For router 1

node 1 via 1 Distance 0

node 2 via 2 Distance 5

node 3 via 3 Distance 2

node 4 via 4 Distance 3

node 5 via 3 Distance 6

For router 2

node 1 via 1 Distance 5

node 2 via 2 Distance 0

node 3 via 3 Distance 4

node 4 via 1 Distance 8

node 5 via 5 Distance 3

For router 3

node 1 via 1 Distance 2

node 2 via 2 Distance 4

node 3 via 3 Distance 0

node 4 via 1 Distance 5

node 5 via 5 Distance 4

For router 4

node 1 via 1 Distance 3

node 2 via 1 Distance 8

node 3 via 1 Distance 5

node 4 via 4 Distance 0

node 5 via 1 Distance 9

For router 5

node 1 via 3 Distance 6

node 2 via 2 Distance 3

node 3 via 3 Distance 4

node 4 via 3 Distance 9

node 5 via 5 Distance 0

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