**DISTANCE VECTOR ROUTING**

#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;

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];//initialize the distance equal to cost matrix

rt[i].from[j]=j; // initialize the source node

}

}

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("\n\n For router %d\n",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]);

}

}

**OUTPUT**

