**EXPT 5**

#include <stdio.h>

#include <stdlib.h>

#define MAX 20

#define INFINITY 999

int cost[][MAX],visited[MAX];

void prims(int cost[][MAX],int n)

{

int i,j,ne=1;

int a,b,u,v,min,mincost=0;

for(i=2;i<=n;i++){

visited[i]=0;

}

printf("\nEDGES OF THE SPANNING TREE-\n");

visited[1]=1;

while(ne<n)

{

for(i=1,min=INFINITY;i<=n;i++)

{

for(j=1;j<=n;j++)

{

if(cost[i][j]<min)

if(visited[i]==0){

continue;

}

else

{

min=cost[i][j];

a=u=i;

b=v=j;

}

}

}

if(visited[u]==0||visited[v]==0)

{

printf("\n%d,EDGE(%d%d)=%d\n",ne++,a,b,min);

mincost+=min;

visited[b]=1;

}

cost[a][b]=cost[b][a]=INFINITY;

}

printf("\nMINIMUM COST = %d\n", mincost);

}

int main(int argc, char \*argv[])

{

int i,j,n;

printf("ENTER THE NUMBER OF VERTICES :");

scanf("%d",&n);

printf("ENTER THE COST MATRIX(ENTER 999 FOR INFINITY)-\n ");

for(i=1;i<=n;i++)

{

for(j=1;j<=n;j++)

{

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

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

cost[i][j]=999;

}

}

prims(cost,n);

getch();

return 0;

}