Q) Design and implement C/C++ Program to find Minimum Cost Spanning Tree of a given

connected undirected graph using Prim's algorithm.

#include<stdio.h>

#define INF 999

int prim(int c[10][10], int n, int s)

{

int v[10],i,j,sum=0,ver[10],d[10],min,u;

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

{

ver[i]=s;

d[i]=c[s][i];

v[i]=0;

}

v[s]=1;

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

{

min=INF;

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

if(v[j]==0 && d[j]<min)

{

min=d[j];

u=j;

}

v[u]=1;

sum=sum+d[u];

printf("\n%d -> %d sum=%d",ver[u],u,sum);

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

if(v[j]==0 && c[u][j]<d[j])

{

d[j]=c[u][j];

ver[j]=u;

}

}

return sum;

}

void main()

{

int c[10][10],i,j,res,s,n;

printf("\nEnter n value:");

scanf("%d",&n);

printf("\nEnter the graph data:\n");

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

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

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

printf("\nEnter the souce node:");

scanf("%d",&s);

res=prim(c,n,s);

printf("\nCost=%d",res);

}

OUTPUT:

Enter n value:3

Enter the graph data:

0 10 1

10 0 6

1 6 0

0 10 1

10 0 6

1 6 0

Enter the souce node:1

1 -> 3 sum=1

3 -> 2 sum=7

Cost=7