**c program to find minimum cost the spanning tree by prim's algorithm**

#include<stdio.h>

int main()

{

int cost[10][10],visited[10]={0},i,j,n,no\_e=1,min,a,b,min\_cost=0;

printf("Enter number of nodes ");

scanf("%d",&n);

printf("Enter cost in form of adjacency matrix\n");

//input graph

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

{

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

{

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

            // cost is 0 then initialize it by maximum value

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

cost[i][j]=1000;

}

}

// logic for finding minimum cost spanning tree

visited[1]=1; // visited first node

while(no\_e<n)

{

min=1000;

// in each cycle find minimum cost

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

{

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

{

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

{

if(visited[i]!=0)

{

min=cost[i][j];

a=i;

b=j;

}

}

}

}

//if node is not visited

if(visited[b]==0)

{

printf("\n%d to %d cost=%d",a,b,min);

min\_cost=min\_cost+min;

no\_e++;

}

visited[b]=1;

        // initialize with maximum value you can also use any other value

cost[a][b]=cost[b][a]=1000;

}

printf("\nminimum weight is %d",min\_cost);

return 0;

}

**Output:-**

Enter number of nodes 6

Enter cost in form of adjacency matrix

0 4 4 0 0 0

4 0 2 0 0 0

4 2 0 3 2 4

0 0 3 0 0 3

0 0 2 0 0 3

0 0 4 3 3 0

1 to 2 cost=4

2 to 3 cost=2

3 to 5 cost=2

3 to 4 cost=3

4 to 6 cost=3

minimum weight is 14