**Analysis & Design of Algorithms Lab (BCSL404)**

**Program 1:**

Design and implement C/C++ program to find Minimum Cost Spanning Tree of a given connected undirected graph using Kruskal’s algorithm.

**Code:**

#include<stdio.h>

int ne=1, min\_cost=0;

void main()

{

int n,i,j,min,a,u,b,v,cost[20][20],parent[20];

printf("Enter the number of vertices: ");

scanf("%d", &n);

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

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

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

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

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

parent[i]=0;

printf("\n The edges of spanning tree are\n");

while(ne<n)

{

min=999;

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

{

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

{

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

{

min=cost[i][j];

a=u=i;

b=v=j;

}

}

}

while(parent[u])

u=parent[u];

while(parent[v])

v=parent[v];

if(u!=v)

{

printf("Edge %d\t(%d->%d)=%d\n",ne++,a,b,min);

min\_cost=min\_cost+min;

parent[v]=u;

}

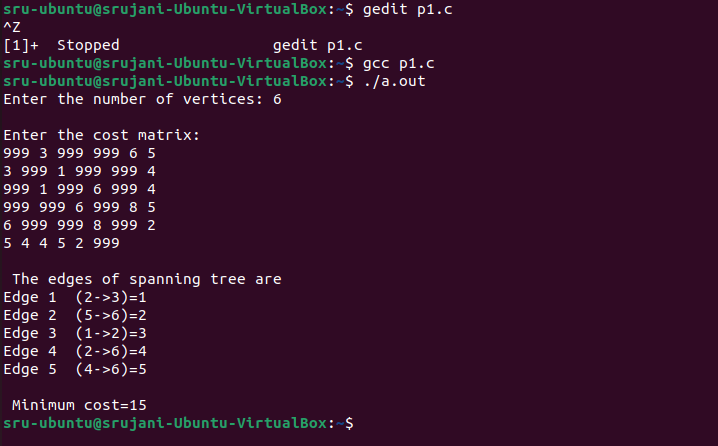
cost[a][b]=cost[a][b]=999;

}

printf("\n Minimum cost=%d\n",min\_cost);

}

**Output:**

****