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//Created By Ritwik Chandra Pandey
//On 5th Nov' 2021
//Minimum spanning tree - Kruskal's Algorithm

#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
int i,j,k,a,b,u,v,n,e,s,d,w,ne=1;
int min,mincost=0,cost[9][9],parent[9];
int find(int);
int uni(int,int);
void kruskal() {
	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;
				}
			}

		}
		u = find(u);
		v= find(v);
		if(uni(u,v)){
			printf("Edge cost from %d to %d : %d\n", a,b,min);
			mincost = mincost + min;
			ne++;
		}
		cost[a][b] = cost[b][a] = 999;

	}
		printf("Minimum cost of spanning tree = %d\n",mincost);


}
int find(int i) {
	while(parent[i])
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                i=parent[i];
        return i;
}
int uni(int i,int j) {
        if(i!=j) {
                parent[j]=i;
                return 1;
        }
        return 0;
}
void main() {
        printf("Enter the number of vertices : ");
        scanf("%d",&n);
        printf("Enter the number of edges : ");
        scanf("%d",&e);
        for(i=1;i<=e;i++) {
                printf("Enter source : ");
                scanf("%d",&s);
                printf("Enter destination : ");
                scanf("%d",&d);
                printf("Enter weight : ");
                scanf("%d",&w);
                if(s<=0 || d<=0 || s> n || d > n || w < 0 ) {
                        printf("Invalid data.Try again.\n");
                        i--;
                        continue;
                }
                cost[s][d]=w;
        }
        for(i=1;i<=n;i++) {
                for(j=1;j<=n;j++) {
                        if(cost[i][j]==0)
                                cost[i][j]=999;
                }
        }
        printf("The edges of Minimum Cost Spanning Tree are : \n");
        kruskal();
}
```