##### 6) Find Minimum Cost Spanning Tree of a given connected undirected graph using Prim's algorithm.

**#include<stdio.h> int i,j,k,v,u,n,ne=1;**

**int visited[9],min, mincost=0,cost[9][9]; int main()**

**{**

**printf("\n Prim’s Algorithm\n \tEnter the number of vertices\n\n"); scanf("%d",&n);**

**printf("Enter the cost matrix\n\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;**

**}**

**for(i=2;i<=n;i++) visited[i]=0;**

**printf("The edges of the spanning tree are\n\n"); visited[1]=1;**

**while(ne<n)**

**{**

**for(i=1,min=999;i<=n;i++)**

**{**

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

**{**

**if(cost[i][j]<min) if(visited[i]==0)**

**continue;**

**else**

**{**

**min=cost[i][j];**

**u=i;**

**v=j;**

**}**

**}**

**}**

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

**{**

**printf("%d\tEdge\t(%d,%d)=%d\n",ne++,u,v,min); mincost+=min;**

**visited[v]=1;**

**}**

**cost[u][v]=cost[v][u]=999;**

**}**

**printf("\n\t\t MINCOST=%d\n",mincost);**

**return 0;**

**}**

**7)Implement All-Pairs Shortest Paths problem using Floyd's algorithm.**

**#include<stdio.h>**

**#include<stdlib.h>**

**#define infinity 999**

**int min(int a,int b)**

**{**

**return a<b?a:b;**

**}**

**void floyd(int p[10][10],int n)**

**{**

**int i, j, k; for(k=1;k<=n;k++)**

**{**

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

**{**

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

**{**

**p[i][j]=min(p[i][j],p[i][k]+p[k][j]);**

**}**

**}**

**}**

**}**

**void main()**

**{**

**int a[10][10],i,j,n;**

**printf("\nEnter the no of vertices:");**

**scanf("%d",&n);**

**printf("\nEnter the cost matrix 0 - forself loop and 999 - for no edges\n"); for(i=1;i<=n;i++)**

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

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

**floyd(a,n);**

**printf("\nThe resultant path matrix is \n"); for(i=1;i<=n;i++)**

**{**

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

**printf("%d\t",a[i][j]);**

**printf("\n");**

**} }**