#include <iostream>

using namespace std;

int n, c[20][20], i, j, visited[20];

void prim();

int main()

{

clock\_t start,end;

double clk;

cout << "Enter number of vertices \n";

cin >> n;

cout << "Enter the cost matrix \n";

start=clock();

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

{

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

cin >> c[i][j];

visited[i] = 0;

}

prim();

end=clock();

clk=(double)(end-start)/CLOCKS\_PER\_SEC;

cout<<"the run time is "<<clk<<"sec";

return 0;

}

void prim()

{

int min, a, b, k, count = 0, cost = 0;

min = 999;

visited[1] = 1; /\* 1st vertex is visited \*/

while (count < n - 1)

{

min = 999;

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

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

if (visited[i] && !visited[j] && min > c[i][j])

{

min = c[i][j];

a = i;

b = j;

}

cout << a << "--->" << b << " = " << c[a][b] << endl;

cost += c[a][b];

visited[b] = 1;

count++;

}

cout << "Total cost of Spanning tree is " << cost << endl;

}