#include <iostream>

using namespace std;

struct node

{

    int fr, to, cost;

}p[6];

int x;

int c = 0, temp1 = 0, temp = 0;

void prims(int \*a, int b[][7], int i, int j)

{

    a[i] = 1;

    while (c < x)

    {

        int min = 999;

        for (int i = 0; i < x; i++)

        {

            if (a[i] == 1)

            {

                for (int j = 0; j < x; )

                {

                    if (b[i][j] >= min || b[i][j] == 0)

                    {

                        j++;

                    }

                    else if (b[i][j] < min)

                    {

                        min = b[i][j];

                        temp = i;

                        temp1 = j;

                    }

                }

            }

        }

        a[temp1] = 1;

        p[c].fr = temp;

        p[c].to = temp1;

        p[c].cost = min;

        c++;

        b[temp][temp1] = b[temp1][temp]=1000;

    }

  printf(" starting with city 0");

  for (int k = 0; k < x-1; k++)

    {

        cout<<"source city:"<<p[k].fr<<endl;

        cout<<"destination city:"<<p[k].to<<endl;

        cout<<"connection cost"<<p[k].cost<<endl;

    }

}

int main()

{

 printf("enter the no of cities");

cin>>x;

int a[7];

    for (int i = 0; i < x; i++)

    {

        a[i] = 0;

    }

    int b[7][7];

    for (int i = 0; i < x; i++)

  {

        for (int j = i; j < x; j++)

        {

        if(i==j)

            {

            b[i][j]=0;

            }

          else

          {

            printf("enter cost of connection if city %d is connected to city %d\n",i,j);

            cin>>b[i][j];

            b[j][i]=b[i][j];

          }

        }

    }

    prims(a, b, 0, 0);

    return 0;

}

OUTPUT:

enter the no of cities6

enter cost of connection if city 0 is connected to city 1

20

enter cost of connection if city 0 is connected to city 2

30

enter cost of connection if city 0 is connected to city 3

0

enter cost of connection if city 0 is connected to city 4

0

enter cost of connection if city 0 is connected to city 5

0

enter cost of connection if city 1 is connected to city 2

0 0

enter cost of connection if city 1 is connected to city 3

30

enter cost of connection if city 1 is connected to city 4

40

enter cost of connection if city 1 is connected to city 5

50

enter cost of connection if city 2 is connected to city 3

0

enter cost of connection if city 2 is connected to city 4

0

enter cost of connection if city 2 is connected to city 5

0

enter cost of connection if city 3 is connected to city 4

30 0

enter cost of connection if city 3 is connected to city 5

20

enter cost of connection if city 4 is connected to city 5

10

starting with city 0source city:0

destination city:1

connection cost20

source city:0

destination city:2

connection cost30

source city:1

destination city:3

connection cost30

source city:3

destination city:5

connection cost20

source city:5

destination city:4

connection cost10