```
#include<stdio.h>
int ary[10][10],completed[10],n,cost=0;
void takeInput()
{
    int i,j;
    printf("Enter the number of villages: ");
    scanf("%d",&n);

    printf("\nEnter the Cost Matrix\n");

    for(i=0;i < n;i++)
    {
        printf("\nEnter Elements of Row: %d\n",i+1);

        for( j=0;j < n;j++)
            scanf("%d",&ary[i][j]);

        completed[i]=0;
    }

    printf("\n\nThe cost list is:");

    for( i=0;i < n;i++)
    {
        printf("\n");

        for(j=0;j < n;j++)
            printf("\t%d",ary[i][j]);
```

```
    }
}

void mincost(int city)
{
    int i,ncity;

    completed[city]=1;

    printf("%d--->",city+1);
    ncity=least(city);

    if(ncity==999)
    {
        ncity=0;
        printf("%d",ncity+1);
        cost+=ary[city][ncity];

        return;
    }

    mincost(ncity);
}

int least(int c)
{
    int i,nc=999;
    int min=999,kmin;
```

```
    for(i=0;i < n;i++)
    {
        if((ary[c][i]!=0)&&(completed[i]==0))
            if(ary[c][i]+ary[i][c] < min)
            {
                min=ary[i][0]+ary[c][i];
                kmin=ary[c][i];
                nc=i;
            }
    }

    if(min!=999)
        cost+=kmin;

    return nc;
}

int main()
{
    takeInput();

    printf("\n\nThe Path is:\n");
    mincost(0); //passing 0 because starting vertex

    printf("\n\nMinimum cost is %d\n ",cost);

    return 0;
```

}

Output

Enter the number of villages: 4

Enter the Cost Matrix

Enter Elements of Row: 1

0 4 1 3

Enter Elements of Row: 2

4 0 2 1

Enter Elements of Row: 3

1 2 0 5

Enter Elements of Row: 4

3 1 5 0

The cost list is:

0 4 1 3

4 0 2 1

1 2 0 5

3 1 5 0

The Path is:

1—>3—>2—>4—>1

Minimum cost is 7