

EXP10

23UAI313

```
#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;  
}
```