**PROGRAM NO.:– 14**

**AIM:** **Write a program to solve travelling salesman problem using dyanamic programming.**

**SOURCE CODE:**

#include<stdio.h>

#include<conio.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++)

{

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]);

}

}

}

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;

}

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);

}

void main()

{

clrscr();

takeInput();

printf("\n\nThe Path is:\n");

mincost(0);

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

getch();

}

**Output:**

