Design and Analysis of Algorithms – 20ISL57A

Program 8 - Implement travelling salesman problem using dynamic programming.

```
#include<stdio.h>
int a[10][10], visited[10], n, cost=0;
int least(int c)
{
	int i,nc=999;
	int min=999,kmin;
	for(i=0;i <n;i++)
	{
		if((a[c][i]!=0)&&(visited[i]==0))
			if(a[c][i] +a[i][c] < min)
			{
				min=a[i][0]+a[c][i];
				kmin=a[c][i];
				nc=i;
			}
	}
	if(min!=999)
		cost+=kmin;
	return nc;
}
void mincost(int city)
{
	int i,ncity;
	visited[city]=1;
	printf("%d -->",city+1);
	ncity=least(city);
	if(ncity==999)
	{
		ncity=0;
		printf("%d",ncity+1);
```

```
            cost+=a[city][ncity];
            return;
        }
        mincost(ncity);
}
int main()
{
        int i,j;
        printf("Enter No. of Cities:\n");
        scanf("%d",&n);
        printf("Enter Cost Matrix\n");
        for(i=0;i<n;i++)
        {
            for( j=0;j<n;j++)
                scanf("%d",&a[i][j]);
            visited[i]=0;
        }

        printf("The Path is:\n");
        mincost(0);
        printf("\nMinimum cost: %d", cost);
}
```