

#### 4)Dijkstras

```
#include<stdio.h>
#include<conio.h>
void dijkstras();
int c[10][10],n,src;
void main()
{
    int i,j;
    printf("enter no of vertices \n");
    scanf("%d",&n);
    printf("enter the cost matrix\n");
    for(i=1;i<=n;i++){
        for(j=1;j<=n;j++){
            scanf("%d",&c[i][j]);
        }
    }
    printf("\n enter the source node:\t");
    scanf("%d",&src);
    dijkstras();
}
void dijkstras()
{
    int vis[10],dist[10],u,j,count,min;
    for(j=1;j<=n;j++)
    {
        dist[j]=c[src][j];
    }
```

```
for(j=1;j<=n;j++)
{
    vis[j]=0;
}
dist[src]=0;
vis[src]=1;
count=1;
while(count!=n)
{
    min=9999;
    for(j=1;j<=n;j++)
    {
        if(dist[j]<min && vis[j]!=1)
        {
            min=dist[j];
            u=j;
        }
    }
    vis[u]=1;
    count++;
    for(j=1;j<=n;j++)
    {
        if(min+c[u][j]<dist[j]&&vis[j]!=1)
        {
            dist[j]=min+c[u][j];
        }
    }
}
```

```
printf("\n The shortest distance is :\n");  
for(j=1;j<=n;j++)  
{  
    printf("\n %d--->%d=%d",src,j,dist[j]);  
}  
}
```