

Code:

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

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;
            }
        }
    }
}
```

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

```

Output:

```

enter the no of vertices:      5

enter the cost matrix:
9999 3 9999 7 9999
3 9999 4 2 9999
9999 4 9999 5 6
7 2 5 9999 4
9999 9999 6 4 9999

enter the source node:  1

the shortest distance is:

1----->1=0
1----->2=3
1----->3=7
1----->4=5
1----->5=9

...Program finished with exit code 0
Press ENTER to exit console.

```