NAME: NAMAN SINGH
SECTION: 4-B
ADA LAB 2

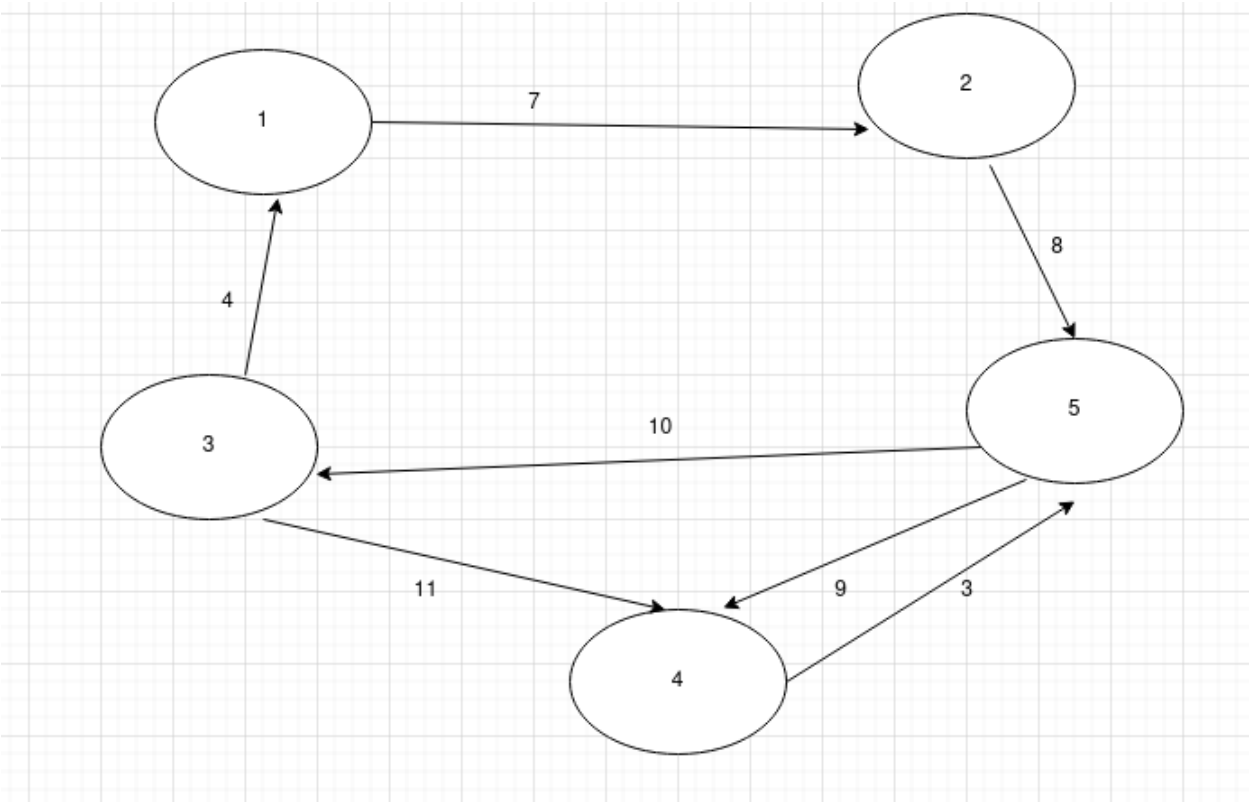
CODE : (MODIFICATION INCLUDED)

```
#include <stdio.h>
int src, dest[10], cost[10][10], n, vis[10],number[10];
void dijkstras()
{
	int i, count, min, u;
	for (i = 1; i <= n; i++)
	dest[i] = cost[src][i];
	for (i = 1; i <= n; i++)
	{
	if(i==src)
	number[i]=1;
	else
	number[i]=2;
	}
	vis[src] = 1;
	count = 1;
	while (count < n)
	{
	min = 999;
	for (i = 1; i <= n; i++)
	{
	if (dest[i] < min && vis[i] == 0)
	{	min = dest[i];
		u = i;
	}
	}
	vis[u] = 1;
	for (i = 1; i <= n; i++)
	{
	if ((dest[u] + cost[u][i]) < dest[i] && vis[i] == 0)
	{
		dest[i] = dest[u] + cost[u][i];
		number[i]=number[u]+1;
	}
	}
	count++;
	}
}
```

```
void main()
{
        int i, j;
        printf("Enter number of vertices\n");
        scanf("%d", &n);
        printf("Enter cost adjacency matrix\n");
        for (i = 1; i <= n; i++)
        {
        for (j = 1; j <= n; j++)
        {
        scanf("%d",&cost[i][j]);
        }
        }
        printf("Enter source vertex\n");
        scanf("%d",&src);
        dijkstras();
        printf("Shortest path from\n");
        for (i = 1; i<= n; i++)
        printf("\n %d to %d= %d number of nodes : %d", src, i, dest[i],number[i]);
}
```

OUTPUT :

INPUT GRAPH :



OUTPUT :

```
1 to 1= 0 number of nodes : 1
1 to 2= 7 number of nodes : 2
1 to 3= 25 number of nodes : 4
1 to 4= 24 number of nodes : 4
1 to 5= 15 number of nodes : 3
```