26/12/22

Lab 8 - C program.

Aim: To find all pair shortest path using Dijkstra's algo.

Code:

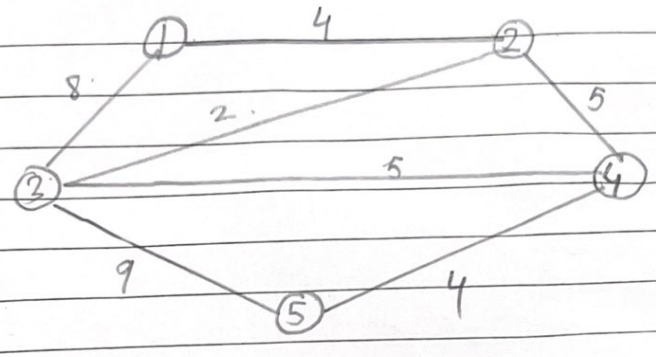
```
#include<stdio.h>
#include<conio.h>

int c[10][10], n, src;
void dijkstra();

int main()
{
printf("\n enter the number of vertices \n");
scanf("%d", &n);
printf("\n enter the cost matrix \n");
for(int i=1; i<=n; i++)
{
    for(int j=1; j<=n; j++)
    {
        scanf("%d", &c[i][j]);
    }
}
printf("\n enter the source vertex \n");
scanf("%d", &src);
dijkstra();
return 1;
}

void dijkstra()
{
int dist[10], vis[10], j, count, min, u;
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 shortest dist are is \n");
for(j=1; j<=n; j++)
{
```

printf("\n %d ----> %d = %d \n", src, dist[j]);

}.

OR



Enter the number of routers

5

Enter the cost matrix:

	1	2	3	4	5
1	0	4	8	0	0
2	4	0	2	5	0
3	8	2	0	5	9
4	0	5	5	0	4
5	0	0	9	4	0

1 ---> 1 = 0

1 ---> 2 = 4

1 ---> 3 = 6

1 ---> 4 = 9

1 ---> 5 = 13.

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