ADA LAB

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4 - B

Dijkstra's algorithm:

```c
#include <stdio.h>
    int n, c[10][10], src, dist[10], vis[10];
    void dijkstra ();
int    main ()
{

    printf(" Enter the number of vertices
    in  the  graph");
    scanf("%d", &n);
    printf("Enter the cost adjacency
    matrix \n");
    for(int i=0;  i<n&; i++)
    {
      for (int j=0; j<n, j++)
      {
          scanf("%d", c[i][j]);
      }
    }
    printf("Enter source vertex \n");
    scanf("%d", &src);
    dijkstra ();
    printf(" shortest path from \n");
```

```c
for( int i=1; i<=n; i++)
{
    printf("%d -> %d = %d ",src, i, dist[i]);
}
}

void dijkstra()
{ int u;
int     count=0 min ;
for( int i = 1; i<=n; i++)
    dist[i] = cost[src][i];
vis[src] =1;

while (count < n)
{
    min = 999;
    for( int i = 1; i<=n; i++)
    {
        if ( dist[i] < min && vis[i]==0)
        {
            min = dist[i];
            u = i;
        }
    }
    vis[u] = 1;
```

```
for ( int i = 1 ; i<=n; i++)
{
    if ( (dist[u] + cost[u][i]) < dist[i] && vis[i]==)
    {
        dist[i] = dist[u] + cost[u][i];
    }
}
    count++;
}
}
```

Modifications:

```
int number[10];
    for (int i = 0 ; i<n; i++)
    {   if(i == src) number[i] = 1
        number[i] = 0;          // (struck out)
        else
        number[i] = 2; // since minimum no. of
                                    nodes in any path is
                                    2

    increment   number[i]        if
    dist[u] + cost[u][i] < dist[i]
```

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