Lab 8 - C program

Aim: To find all pair of shortest path using Dijkstras algo

Code:

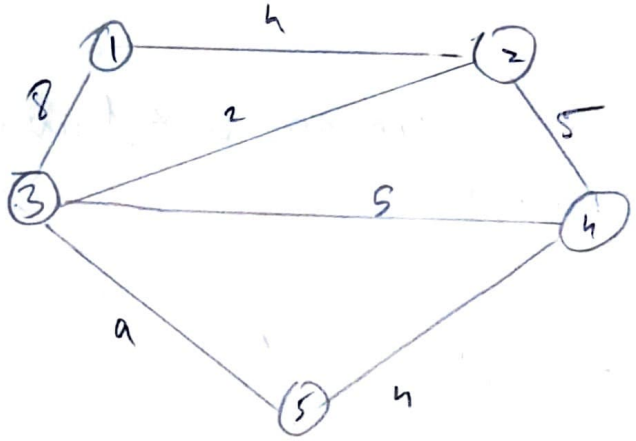
```
#include <stdio.h>
#include <conio.h>

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

int main()
{ printf("\n enter the num 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 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;
cont=1;
while(cont!=n)
{
  min=9999;
  for(j=1;j<=n;j++)
  { if(dist[j]<min && vis[j]!=1)
    { min=dist[j];
      u=j;
    }
  }
vis[u]=1;
cont++;
for(j=1;j<=n;j++)
  { if(c[u][j]<dist && vis[j]!=1)
    { dist[j]=min+c[u][j];
    }
  }
}
printf("shortest dist -> %d",u);
for(j=1;j<=n;j++)
{printf("\n%d --> %d = %d",src,j,dist[j]);
}
```

dp



Enter the number of routers

5

~~Routers~~ Enter 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