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CN LAB

Dijkstra's Algorithm

1. min distance function

```
=> def minDistance(self, dist, sptSet):
       min = sys.maxsize
       for v in range(self.V):
           if dist[v] < min and sptSet[v] == False:
               min = dist[v]
               min_index = v
       return min_index
```

2. dijkstra's Algorithm

```
def dijkstra(self, src):
    dist = [sys.maxsize] * self.V
    dist[src] = 0
    sptSet = [False] * self.V
    Path = {}
    for _ in range(self.V):
        Path[_] = []
    for _ in range(self.V):
        u = self.minDistance(dist, sptSet)
        sptSet[u] = True
        for v in range(self.V):
```

if self.graph[u][v] > 0 and sptSet[v]
== False and dist[v] > dist[u] + self.graph[u][v]:
dist[v] = dist[u] + self.graph[u][v]
if u == src:
Path[v].append(u)
else:
Path[v].append(u)
Path[v].append(v)
self.printTable(dist, src, path)

Eg:-