

Question:

Dijkstra's Pseudocode

Figure 4.8 Dijkstra's shortest-path algorithm.

procedure dijkstra(G, l, s)

Input: Graph $G = (V, E)$, directed or undirected;
positive edge lengths $\{l_e : e \in E\}$; vertex $s \in V$

Output: For all vertices u reachable from s , $\text{dist}(u)$ is set
to the distance from s to u .

```
for all  $u \in V$ :  
     $\text{dist}(u) = \infty$   
     $\text{prev}(u) = \text{nil}$   
 $\text{dist}(s) = 0$ 
```

```
 $H = \text{makequeue}(V)$  (using  $\text{dist}$ -values as keys)
```

```
while  $H$  is not empty:
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```
     $u = \text{deletemin}(H)$ 
```

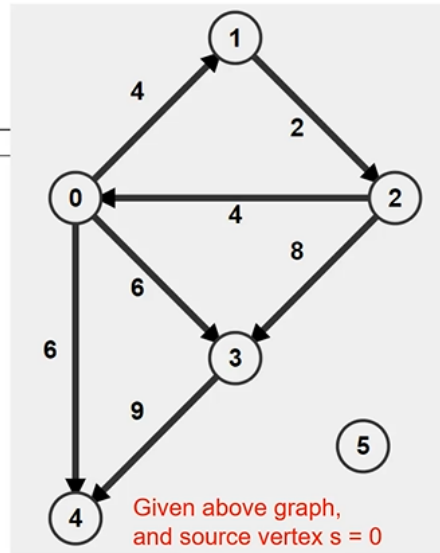
```
    for all edges  $(u, v) \in E$ :
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```
        if  $\text{dist}(v) > \text{dist}(u) + l(u, v)$ :
```

```
             $\text{dist}(v) = \text{dist}(u) + l(u, v)$ 
```

```
             $\text{prev}(v) = u$ 
```

```
             $\text{decreasekey}(H, v)$ 
```



My Answer:

Output Distance:

[0, 4, 4, 6, 6, infinity]