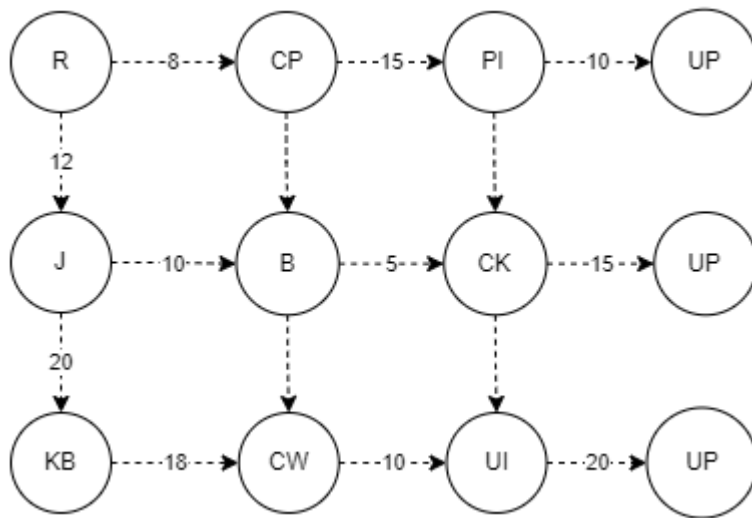


Jawaban a



R: Undagi Residence Setu,

CP: Ciputat,

PI: Pondok Indah,

J: Jatiwaringin,

B: Buaran,

CK: Cikokol,

KB: Kebayoran Baru,

CW: Cawang,

UI: Universitas Indonesia,

UP: Universitas Pamulang Kampus 3

Jawaban b

```
jarak_terdekat.py > [city_names]
1  import heapq
2
3  def dijkstra(graph, start):
4      distances = {node: float('inf') for node in graph}
5      distances[start] = 0
6
7      queue = [(0, start)]
8
9      while queue:
10         current_distance, current_node = heapq.heappop(queue)
11
12         if current_distance > distances[current_node]:
13             continue
14
15         for neighbor, weight in graph[current_node].items():
16             distance = current_distance + weight
17
18             if distance < distances[neighbor]:
19                 distances[neighbor] = distance
20                 heapq.heappush(queue, (distance, neighbor))
21
22     return distances
23
24 # Buat graf berbobot untuk representasi jarak antar simpul
25 graph = {
26     'R': {'CP': 8, 'J': 12, 'KB': 20},
27     'CP': {'PI': 15},
28     'PI': {'UP': 10},
29     'J': {'B': 10},
30     'B': {'CK': 5},
31     'CK': {'UP': 15},
32     'KB': {'CW': 18},
33     'CW': {'UI': 10},
34     'UI': {'UP': 20},
35     'UP': {}
36 }
37
38 # Tambahkan nama kota untuk setiap simpul
39 city_names = {}
40 'R': 'Undagi Residence Setu',
41 'CP': 'Ciputat',
42 'PI': 'Pondok Indah',
43 'J': 'Jatiwaringin',
44 'B': 'Buaran',
45 'CK': 'Cikokol',
46 'KB': 'Kebayoran Baru',
47 'CW': 'Cawang',
48 'UI': 'Universitas Indonesia',
49 'UP': 'Universitas Pamulang Kampus 3'
50 }
51
52 start_node = 'R'
53 distances = dijkstra(graph, start_node)
54
55 # Hitung jarak terpendek dari simpul awal ke simpul tujuan
56 end_node = 'UP'
57 shortest_distance = distances[end_node]
58 print("Jarak terpendek dari", city_names[start_node], "ke", city_names[end_node], ":", shortest_distance, "km")
59
```

Jarak terdekat:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\arifs-DESKTOP-EQJN52\Documents\unpan\Semester2\ALGORITMA DAN STRUKTUR DATA\tugas_pertemuan_18> & 'c:\python310\python.exe' 'c:\Users\arifs-DESKTOP-EQJN52\.vscode\extensions\ms-python.python-2023.10.1\pythonFiles\lib\python\debugpy\adapter\..\..\debugpy\launcher' '50484' '--' 'C:\Users\arifs-DESKTOP-EQJN52\Documents\unpan\Semester2\ALGORITMA DAN STRUKTUR DATA\tugas_pertemuan_18\jarak_terdekat.py'
Jarak terdekat dari Undagi Residence Setu ke Universitas Pamulang Kampus 3 : 33 km
```