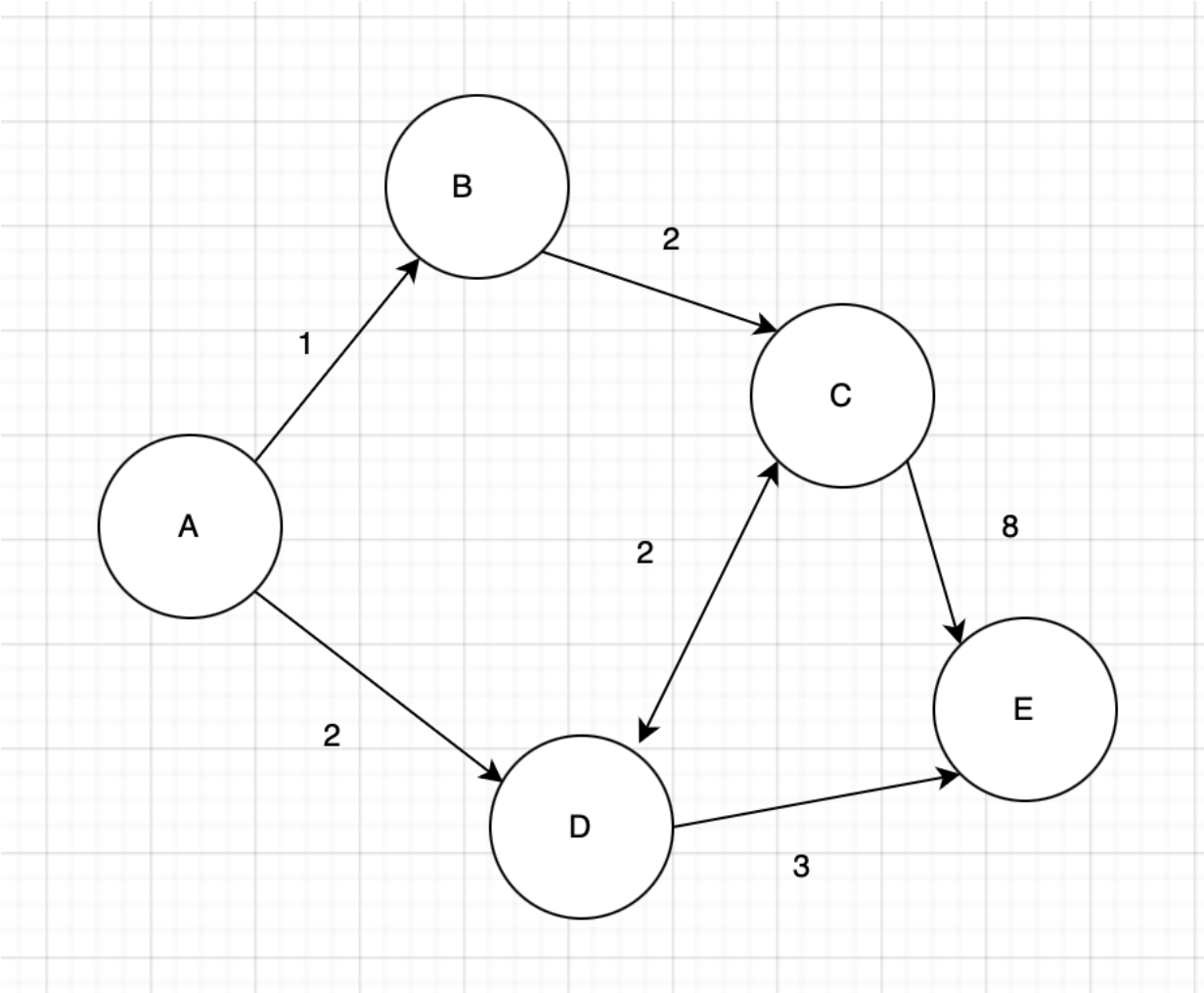
Week6_02



Cycle 1:

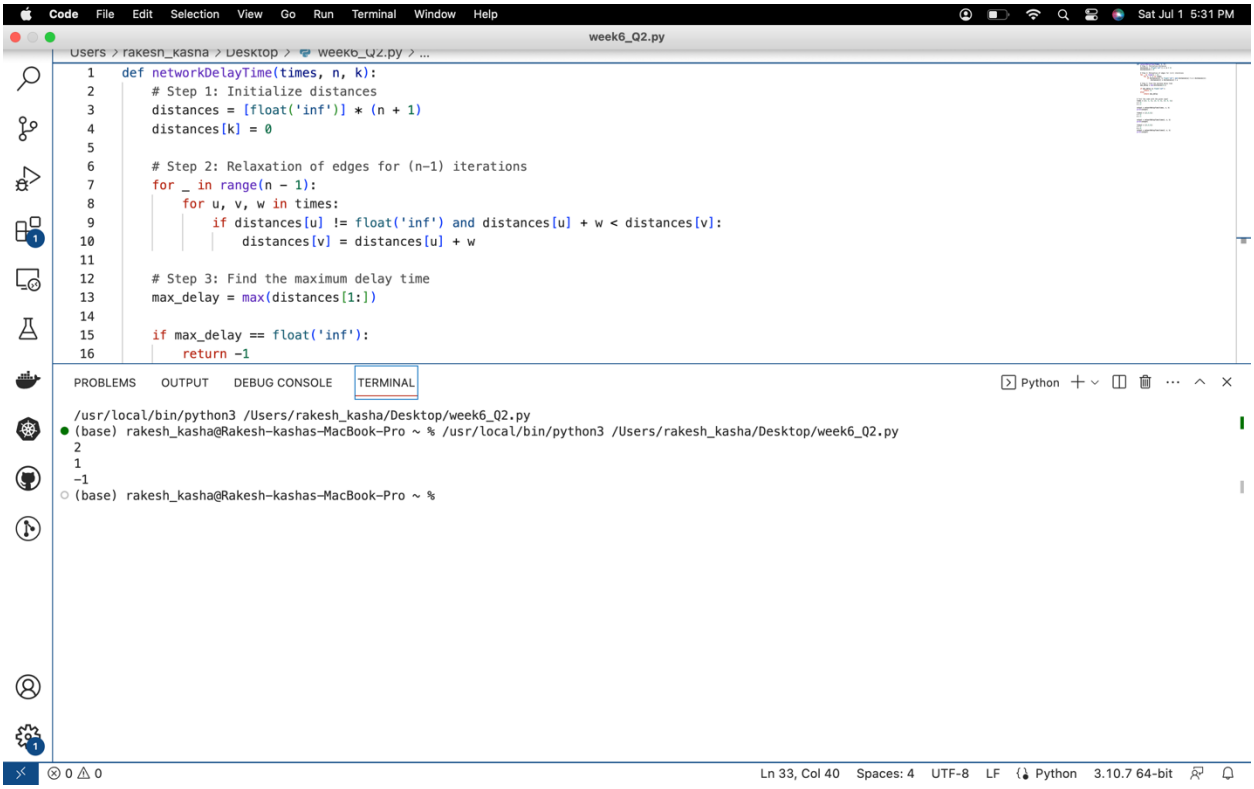
0	**1**	**3**	**2**	
A	**B**	C	D	E
0	1	3	2	
A	B	C	D	E
0	1	3	2	5
A	B	C	D	E
0	1	3	2	5
A	B	C	D	E

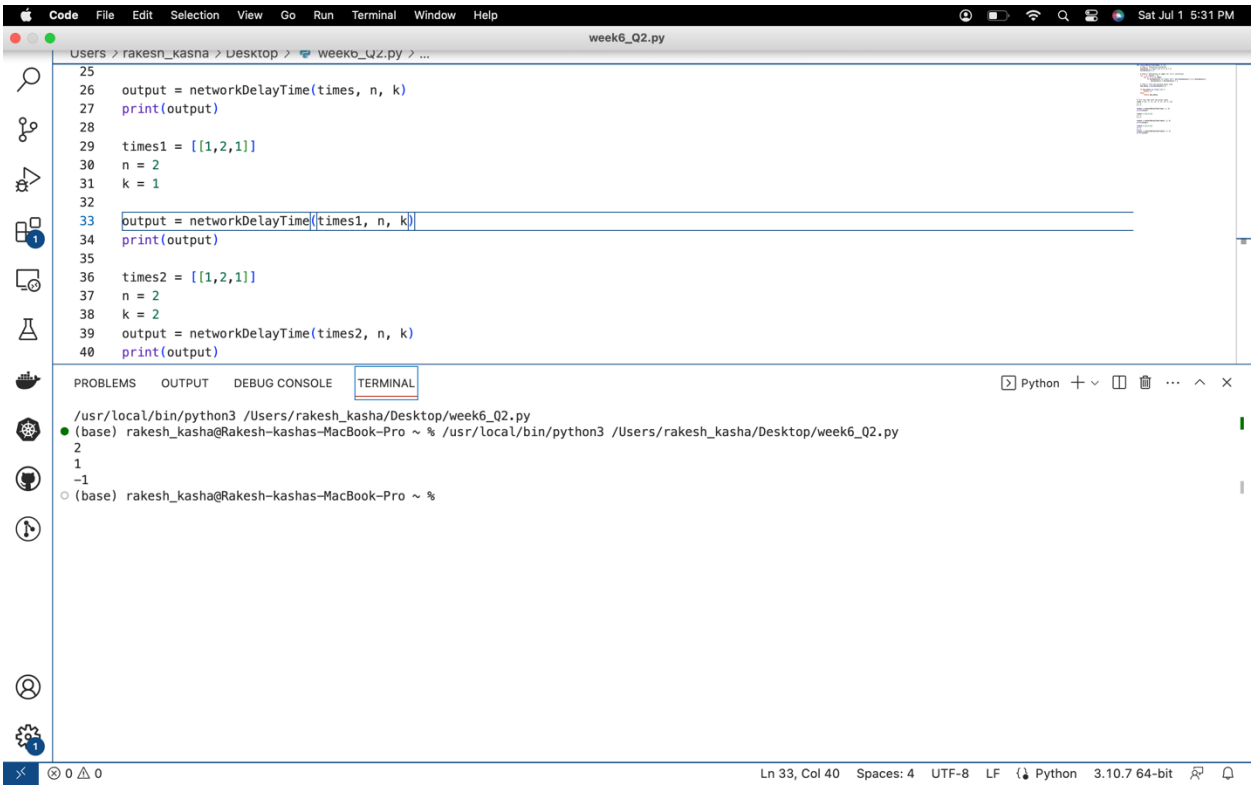
CYCLE 2:

0	1	3	2	5
A	B	C	D	E

```
def networkDelayTime(times, n, k):
    # Step 1: Initialize distances
    distances = [float('inf')] * (n + 1)
    distances[k] = 0

    # Step 2: Relaxation of edges for (n-1) iterations
    for _ in range(n - 1):
        for u, v, w in times:
            if distances[u] != float('inf') and distances[u] + w < distances[v]:
                distances[v] = distances[u] + w

    # Step 3: Find the maximum delay time
    max_delay = max(distances[1:])

    if max_delay == float('inf'):
        return -1
    else:
        return max_delay


# Test the code with the given input
times = [[2, 1, 1], [2, 3, 1], [3, 4, 1]]
n = 4
k = 2

output = networkDelayTime(times, n, k)
print(output)

times1 = [[1,2,1]]
n = 2
k = 1

output = networkDelayTime(times1, n, k)
print(output)

times2 = [[1,2,1]]
n = 2
k = 2
output = networkDelayTime(times2, n, k)
```

```
print(output)
```




Code File Edit Selection View Go Run Terminal Window Help
Sat Jul 1 5:31 PM
week6_Q2.py
Users › rakesh_kasha › Desktop › week6_Q2.py › ...
25
26 output = networkDelayTime(times, n, k)
27 print(output)
28
29 times1 = [[1,2,1]]
30 n = 2
31 k = 1
32
33 output = networkDelayTime(times1, n, k)
34 print(output)
35
36 times2 = [[1,2,1]]
37 n = 2
38 k = 2
39 output = networkDelayTime(times2, n, k)
40 print(output)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Python
/usr/local/bin/python3 /Users/rakesh_kasha/Desktop/week6_Q2.py
(base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ % /usr/local/bin/python3 /Users/rakesh_kasha/Desktop/week6_Q2.py
2
1
-1
(base) rakesh_kasha@Rakesh-kashas-MacBook-Pro ~ %
0 0
Ln 33, Col 40 Spaces: 4 UTF-8 LF Python 3.10.7 64-bit