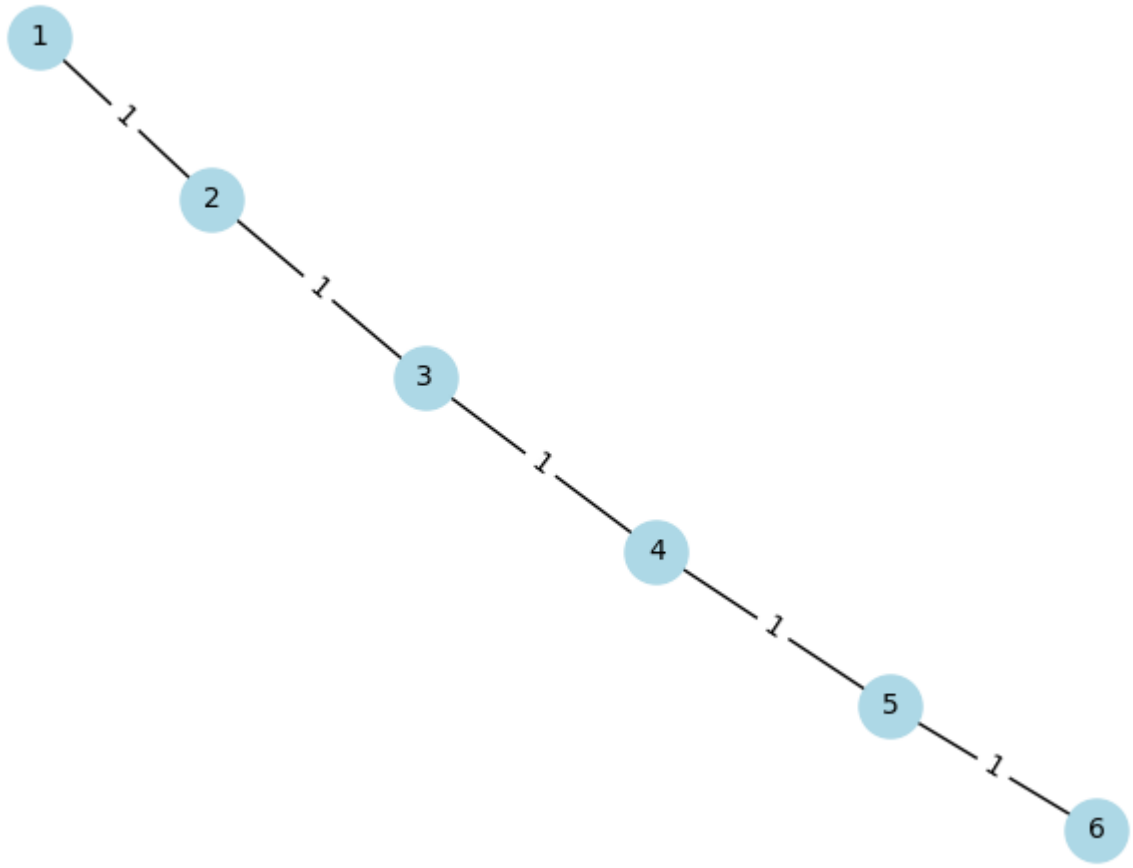
Routing Exercise



Consider the network in the figure and assume that:

- The adopted routing is
- The order of message generation follows router numeric order
- The order of message arrival follows router numeric order

Write down the list of generated messages and the final routing table. You can omit messages that are received but do not alter the routing table of the receiving router.

Message sequence

```
1 -> 2: 1:0
2 -> 1: 1:10000; 2:0
2 -> 3: 1:1; 2:0
3 -> 2: 1:10000; 2:10000; 3:0
3 -> 4: 1:2; 2:1; 3:0
4 -> 3: 1:10000; 2:10000; 3:10000; 4:0
4 -> 5: 1:3; 2:2; 3:1; 4:0
5 -> 4: 1:10000; 2:10000; 3:10000; 4:10000; 5:0
5 -> 6: 1:4; 2:3; 3:2; 4:1; 5:0
6 -> 5: 1:10000; 2:10000; 3:10000; 4:10000; 5:10000; 6:0
1 -> 2: 1:0; 2:10000
2 -> 1: 1:10000; 2:0; 3:1
2 -> 3: 1:1; 2:0; 3:10000
3 -> 2: 1:10000; 2:10000; 3:0; 4:1
3 -> 4: 1:2; 2:1; 3:0; 4:10000
4 -> 3: 1:10000; 2:10000; 3:10000; 4:0; 5:1
4 -> 5: 1:3; 2:2; 3:1; 4:0; 5:10000
5 -> 4: 1:10000; 2:10000; 3:10000; 4:10000; 5:0; 6:1
5 -> 6: 1:4; 2:3; 3:2; 4:1; 5:0; 6:10000
6 -> 5: 1:10000; 2:10000; 3:10000; 4:10000; 5:10000; 6:0
1 -> 2: 1:0; 2:10000; 3:10000
2 -> 1: 1:10000; 2:0; 3:1; 4:2
2 -> 3: 1:1; 2:0; 3:10000; 4:10000
3 -> 2: 1:10000; 2:10000; 3:0; 4:1; 5:2
3 -> 4: 1:2; 2:1; 3:0; 4:10000; 5:10000
4 -> 3: 1:10000; 2:10000; 3:10000; 4:0; 5:1; 6:2
4 -> 5: 1:3; 2:2; 3:1; 4:0; 5:10000; 6:10000
5 -> 4: 1:10000; 2:10000; 3:10000; 4:10000; 5:0; 6:1
5 -> 6: 1:4; 2:3; 3:2; 4:1; 5:0; 6:10000
6 -> 5: 1:10000; 2:10000; 3:10000; 4:10000; 5:10000; 6:0
1 -> 2: 1:0; 2:10000; 3:10000; 4:10000
2 -> 1: 1:10000; 2:0; 3:1; 4:2; 5:3
2 -> 3: 1:1; 2:0; 3:10000; 4:10000; 5:10000
3 -> 2: 1:10000; 2:10000; 3:0; 4:1; 5:2; 6:3
3 -> 4: 1:2; 2:1; 3:0; 4:10000; 5:10000; 6:10000
4 -> 3: 1:10000; 2:10000; 3:10000; 4:0; 5:1; 6:2
4 -> 5: 1:3; 2:2; 3:1; 4:0; 5:10000; 6:10000
```

```
5 -> 4: 1:10000; 2:10000; 3:10000; 4:10000; 5:0; 6:1
5 -> 6: 1:4; 2:3; 3:2; 4:1; 5:0; 6:10000
6 -> 5: 1:10000; 2:10000; 3:10000; 4:10000; 5:10000; 6:0
1 -> 2: 1:0; 2:10000; 3:10000; 4:10000; 5:10000
2 -> 1: 1:10000; 2:0; 3:1; 4:2; 5:3; 6:4
2 -> 3: 1:1; 2:0; 3:10000; 4:10000; 5:10000; 6:10000
```

Final routing tables

Node 1

```
1: nh=1, cost=0
2: nh=2, cost=1
3: nh=2, cost=2
4: nh=2, cost=3
5: nh=2, cost=4
6: nh=2, cost=5
```

Node 2

```
2: nh=2, cost=0
1: nh=1, cost=1
3: nh=3, cost=1
4: nh=3, cost=2
5: nh=3, cost=3
6: nh=3, cost=4
```

Node 3

```
3: nh=3, cost=0
2: nh=2, cost=1
1: nh=2, cost=2
4: nh=4, cost=1
5: nh=4, cost=2
6: nh=4, cost=3
```

Node 4

```
4: nh=4, cost=0
3: nh=3, cost=1
2: nh=3, cost=2
1: nh=3, cost=3
5: nh=5, cost=1
6: nh=5, cost=2
```

Node 5

```
5: nh=5, cost=0
4: nh=4, cost=1
3: nh=4, cost=2
2: nh=4, cost=3
1: nh=4, cost=4
6: nh=6, cost=1
```

Node 6

```
6: nh=6, cost=0
5: nh=5, cost=1
4: nh=5, cost=2
3: nh=5, cost=3
2: nh=5, cost=4
1: nh=5, cost=5
```