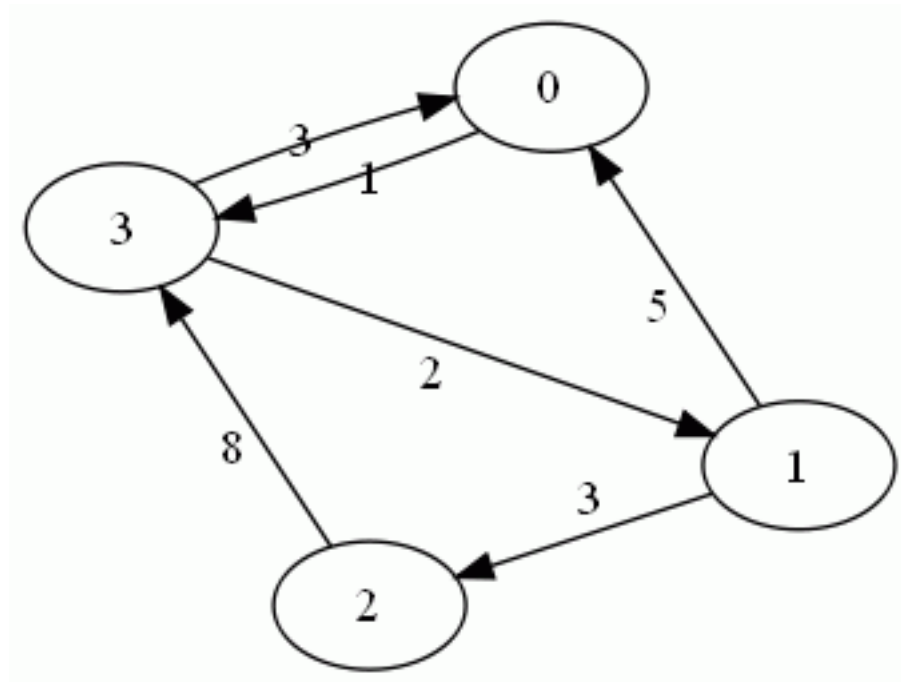


Documentation – Practical work no. 3

For graph1k:

Lowest cost walk between 1 and 100 is 141

Graph 1:



Compute distance between 1 and 3

Start = 1

End = 3

n = 4

w = [[INF, INF, INF, INF, INF],

[0, INF, INF, INF, INF],

[INF, INF, INF, INF, INF],

[INF, INF, INF, INF, INF],

[INF, INF, INF, INF, INF]]

k = 0

i = 0

v = 3

w [3][1] = INF

i = 1

v = 0

w [0][1] = 5

v = 2

w [2][1] = 3

```

    i = 2
        v = 3
            w [3][1] = INF
    i = 3
        v = 0
            w [0][1] = INF
        v = 1
            w [1][1] = INF
w = [[INF, 5, INF, INF, INF],
     [0, INF, INF, INF, INF],
     [INF, 3, INF, INF, INF],
     [INF, INF, INF, INF, INF],
     [INF, INF, INF, INF, INF]]
k = 1
    i = 0
        v = 1
            w [1][2] = INF
        v = 3
            w [3][2] = 6
    i = 1
        v = 0
            w [0][2] = INF
        v = 2
            w [2][2] = INF
    i = 2
        v = 3
            w [3][2] = min (6, 11) = 6
    i = 3
        v = 0
            w [0][2] = INF
        v = 1
            w [1][2] = INF
w = [[INF, 5, INF, INF, INF],
     [0, INF, INF, INF, INF],
     [INF, 3, INF, INF, INF],
     [INF, INF, 6, INF, INF],
     [INF, INF, INF, INF, INF]]
k = 2
    i = 0
        v = 1
            w [1][3] = INF
        v = 3
            w [3][3] = INF

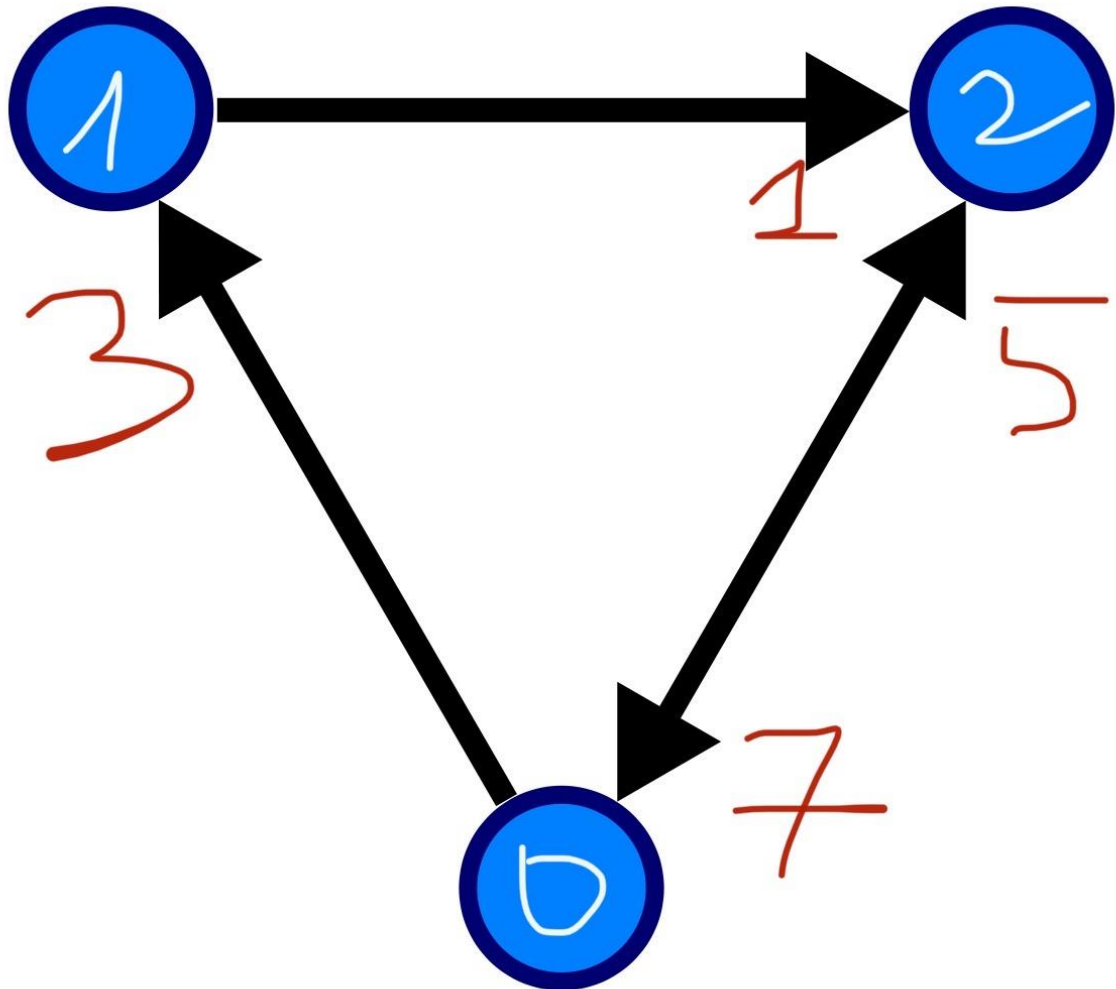
```

```

i = 1
    v = 0
        w [0][3] = INF
    v = 2
        w [2][3] = INF
i = 2
    v = 3
        w [3][3] = INF
i = 3
    v = 0
        w [0][3] = 9
    v = 1
        w [1][3] = 8
w = [[INF, 5, INF, 9, INF],
     [0, INF, INF, 8, INF],
     [INF, 3, INF, INF, INF],
     [INF, INF, 6, INF, INF],
     [INF, INF, INF, INF, INF]]
k = 3
    i = 0
        v = 1
            w [1][4] = INF
        v = 3
            w [3][4] = 10
    i = 1
        v = 0
            w [0][4] = 13
        v = 2
            w [2][4] = 11
    i = 2
        v = 3
            w [3][4] = INF
    i = 3
        v = 0
            w [0][4] = 13
        v = 1
            w [1][4] = INF
w[end] = w [3] = [INF, INF, 6, INF, INF]
Minimum cost path is 6

```

Graph 2:



Cost between 0 and 2

Start = 0

End = 2

N = 3

$W = [[0, \text{INF}, \text{INF}, \text{INF}], [\text{INF}, \text{INF}, \text{INF}, \text{INF}], [\text{INF}, \text{INF}, \text{INF}, \text{INF}], [\text{INF}, \text{INF}, \text{INF}, \text{INF}]]$

k = 0

i = 0

v = 1

w [1][1] = 3

v = 2

w [2][1] = 5

i = 1

v = 2

w [2][1] = 5

i = 2

v = 0

w [0][1] = INF

W = [[0, INF, INF, INF], [INF, 3, INF, INF], [INF, 5, INF, INF], [INF, INF, INF, INF]]

k = 1

i = 0

v = 1

w [1][2] = INF

v = 2

w [2][2] = INF

i = 1

v = 2

w [2][2] = 4

i = 2

v = 0

w [0][2] = 12

W = [[0, INF, 12, INF], [INF, 3, INF, INF], [INF, 5, 4, INF], [INF, INF, INF, INF]]

k = 2

i = 0

v = 1

w [1][3] = 15

v = 2

w [2][3] = 17

i = 1

v = 2

w [2][3] = 17

i = 2

v = 0

w [0][3] = 11

W = [[0, INF, 12, 11], [INF, 3, INF, 15], [INF, 5, 4, 17], [INF, INF, INF, INF]]

w [end] = w [2] = [INF, 5, 4, 17] => minimum cost path between 0 and 2 is 4