lowest cost walk from 0 to 2

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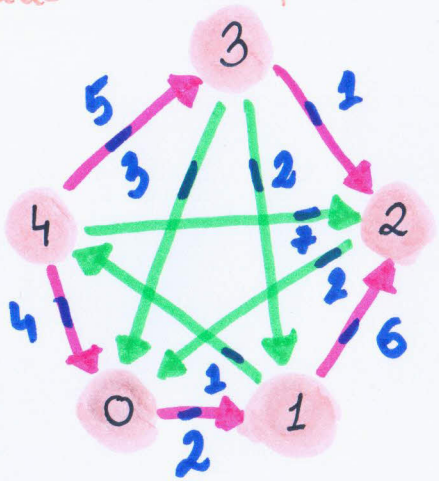
5 vertices

Manual execution for Lab work 3



10 edges

	edge	cost
1)	0 → 1	2
2)	1 → 2	6
3)	1 → 4	1
4)	2 → 0	2
5)	3 → 0	3
6)	3 → 1	2
7)	3 → 2	1
8)	4 → 0	4
9)	4 → 2	7
10)	4 → 3	5

$W =$ / D^1

	0	1	2	3	4
0	0	2	inf	inf	inf
1	inf	0	6	inf	1
2	2	inf	0	inf	inf
3	inf	2	1	0	inf
4	4	inf	7	5	0

next =

	0	1	2	3	4
0	0	1	None	None	None
1	None	1	2	None	4
2	0	None	2	None	None
3	0	1	2	3	None
4	0	None	2	3	4

$w[0][1]+w[1][2]<w[0][2]$

$D^2 =$ / D^1W

	0	1	2	3	4
0	0	2	8	inf	3
1	5	0	6	6	1
2	2	4	0	inf	5
3	3	2	1	0	3
4	4	6	6	5	0

$w[1][4]+w[4][3]$ next =

	0	1	2	3	4
0	0	1	1	None	1
1	4	1	2	4	4
2	0	0	2	None	1
3	0	1	2	3	1
4	0	0	3	3	4

$w[2][0]+w[0][1]<w[2][1]$

$w[2][0]+w[0][3]<w[2][4]$

$w[3][1]+w[1][4]<w[3][4]$

$w[4][3]+w[3][2]<w[4][2]$

$w[4][0]+w[0][1]<w[4][1]$

$t=3.$

$D^3 = D^2W =$

	0	1	2	3	4
0	0	2	8	8	3
1	5	0	6	6	1
2	2	4	0	10	5
3	3	2	1	0	3
4	4	6	6	5	0

$w[0][1]+w[1][3]+w[4][3]<w[0][3]$

$w[1][0]+w[0][1]+w[1][4]+w[4][3]<w[1][3]$

next =

	0	1	2	3	4
0	0	1	1	4	1
1	4	1	2	4	4
2	0	0	2	4	1
3	0	1	2	3	1
4	0	0	3	3	4

$D^4 = D^3W =$

	0	1	2	3	4
0	0	2	8	8	3
1	5	0	6	6	1
2	2	4	0	10	5
3	3	2	1	0	3
4	4	6	6	5	0

next =

	0	1	2	3	4
0	0	1	1	4	1
1	4	1	2	4	4
2	0	0	2	4	1
3	0	1	2	3	1
4	0	0	3	3	4

The lowest cost from 0 (vertex1) to 2 (vertex2) is equal to 8 ($D^4[0][2]$)

The path is: path(0,2)

↳ path = [0]

↳ v1 = next[0][2] = 1

path = [0,1]

↳ v1 = next[1,2] = 2

=> path = [0,1,2]

exits when v1 = v2.

0 → 1 → 2

cost = 8