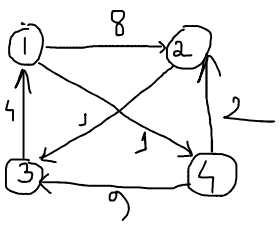
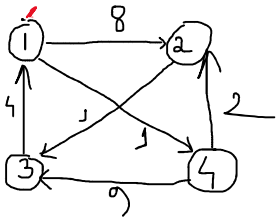
Floyd warshall n section

03 April 2025 15:08



Src	Dest
1	2, 3, 4
2	1, 3, 4
3	1, 2, 4
4	1, 2, 3



Graph → No of nodes = N = 4

No. of matrix = N+1 = 4+1 = 5

Dimension = N×N. = 4×4.

D_0 =

	1	2	3	4
1	0	8	∞	1
2	∞	0	1	∞
3	4	∞	0	∞
4	∞	2	9	0

D_1 =

	1	2	3	4
1	0	8	∞	1
2	∞	0	1	∞
3	4	12	0	5
4	∞	2	9	0

3-2 = 3-1 + 1-2
= 4 + 8 = 12

3-4 = 3-1 + 1-4
= 4 + 1 = 5.

4 to 2 = 4 to 1 + 1 to 2
= ∞.

4 to 3 = 4 to 1 + 1 to 3 = ∞

D_1 =

	1	2	3	4
1	0	8	∞	1
2	∞	0	1	∞
3	4	12	0	5
4	∞	2	9	0

D_2 =

	1	2	3	4
1	0	8	9	1
2	∞	0	1	∞
3	4	12	0	5
4	∞	2	3	0

1 to 3 = 1 to 2 + 2 to 3 = 8 + 1 = 9

1 to 4 = 1 to 2 + 2 to 4 = 8 + ∞ = ∞.

3 to 1 = 3 to 2 + 2 to 1 = 12 + ∞ = ∞

3 to 4 = 3 to 2 + 2 to 1 = 12 + ∞ = ∞

4 to 1 = 4 to 2 + 2 to 1
= 2 + ∞ = ∞

4 to 3 = 4 to 2 + 2 to 3
= 2 + 1 = 3.

D_2 =

	1	2	3	4
1				

D_3 =

	1	2	3	4

$D_2 =$

	1	2	3	4
1	0	8	9	1
2	∞	0	1	∞
3	4	12	0	5
4	∞	2	3	0

$D_3 =$

	1	2	3	4
1	0	8	9	1
2	5	0	1	6
→ 3	4	12	0	5
4	7	2	3	0

1 to 2 = 1 to 3 + 3 to 2 = 9 + 12 = 21

1 to 4 = 1 to 3 + 3 to 4 = 9 + 5 = 14

4 to 1 = 4 to 3 + 3 to 1 = 3 + 4 = 7

2 to 1 = 2 to 3 + 3 to 1 = 1 + 4 = 5.

2 to 4 = 2 to 3 + 3 to 4 = 1 + 5 = 6.

4 to 2 = 4 to 3 + 3 to 2 = 3 + 12 = 15

$D_3 =$

	1	2	3	4
1	0	8	9	1
2	5	0	1	6
→ 3	4	12	0	5
4	7	2	3	0

1 to 2 = 1 to 4 + 4 to 2 = 1 + 2 = 3

1 to 3 = 1 to 4 + 4 to 3 = 1 + 3 = 4

$D_4 =$

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