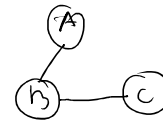


src | dest
1 | 2, 3, 4
2 | 1, 3, 4
3 | 1, 2, 4
4 | 1, 2, 3

Matrix
N+1 = 5
no of nodes.



$$\Rightarrow D(AC) = D(AB) + D(BC)$$

$$D_0 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 8 & \infty & 1 \\ 2 & \infty & 0 & 1 & \infty \\ 3 & 4 & \infty & 0 & \infty \\ 4 & \infty & 2 & 9 & 0 \end{bmatrix}$$

$$D_1 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 8 & \infty & 1 \\ 2 & \infty & 0 & 1 & \infty \\ 3 & 4 & \underline{12} & 0 & \underline{5} \\ 4 & \infty & 2 & 9 & 0 \end{bmatrix}$$

$$3-4 = 3-1 + 1-4 \\ = 4 + 1 = 5$$

$$4-2 = 4-1 + 1-2 \\ = \infty$$

$$4-3 = 4-1 + 1-3 \\ = \infty$$

$$D_1 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 8 & \infty & 1 \\ 2 & \infty & 0 & 1 & \infty \\ 3 & 4 & \underline{12} & 0 & \underline{5} \\ 4 & \infty & 2 & 9 & 0 \end{bmatrix}$$

$$D_2 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 8 & \underline{2} & \underline{1} \\ 2 & \infty & 0 & 1 & \infty \\ 3 & \underline{4} & 12 & 0 & \underline{5} \\ 4 & \infty & 2 & 3 & 0 \end{bmatrix}$$

$$1-3 = 1-2 + 2-3 \\ = 8 + 1 = 9$$

$$1-4 = 1-2 + 2-4 \\ = 8 + \infty \\ = \infty$$

$$3-4 = 3-2 + 2-4 \\ = 12 + \infty \\ = \infty$$

$$4-3 = 4-2 + 2-3 \\ = 2 + 1 = 3$$

$$3-1 = 3-2 + 2-1 \\ = 12 + \infty = \infty$$

$$4-1 = 4-2 + 2-1 \\ = 2 + \infty = \infty$$

$$D_2 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 8 & \underline{2} & \underline{1} \\ 2 & \infty & 0 & 1 & \infty \\ 3 & \underline{4} & 12 & 0 & \underline{5} \\ 4 & \infty & 2 & 3 & 0 \end{bmatrix}$$

$$4-1 = 4-3 + 3-1 \\ = 3 + 4 \\ = 7$$

$$4-2 = 4-3 + 3-2 \\ = 3 + 12 = 15$$

$$D_3 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 8 & 2 & 1 \\ 2 & \infty & 0 & 1 & \infty \\ 3 & \underline{4} & 12 & 0 & \underline{5} \\ 4 & \underline{7} & 2 & 3 & 0 \end{bmatrix}$$

$$2-4 = 2-3 + 3-4 \\ = 1 + 5 = 6$$

$$1-2 = 1-3 + 3-2 \\ = 9 + 12 \\ = 21$$

$$1-4 = 1-3 + 3-4 \\ = 9 + 5 \\ = 14$$

$$2-1 = 2-3 + 3-1 \\ = 1 + 4 \\ = 5$$

$$D_3 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 8 & 2 & 1 \\ 2 & \underline{5} & 0 & 1 & \underline{6} \\ 3 & \underline{4} & 12 & 0 & \underline{5} \\ 4 & \underline{7} & 2 & 3 & 0 \end{bmatrix}$$

$$2-1 = 2-4 + 4-1 = 6 + 7 = 13$$

$$2-3 = 2-4 + 4-3 = 6 + 3 = 9$$

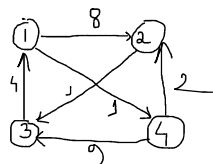
$$3-2 = 3-4 + 4-2 \\ = 5 + 2 = 7$$

$$D_4 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 3 & 4 & 1 \\ 2 & \underline{5} & 0 & 1 & \underline{6} \\ 3 & \underline{4} & 7 & 0 & \underline{5} \\ 4 & \underline{7} & 2 & 3 & 0 \end{bmatrix}$$

$$1-2 = 1-4 + 4-2 \\ = 1 + 2 \\ = 3$$

$$1-3 = 1-4 + 4-3 \\ = 1 + 3 \\ = 4$$

$$3-1 = 3-4 + 4-1 \\ = 5 + 7 = 12$$



$$D_4 = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & 0 & 3 & 4 & 1 \\ 2 & \underline{5} & 0 & 1 & \underline{6} \\ 3 & \underline{4} & 7 & 0 & \underline{5} \\ 4 & \underline{7} & 2 & 3 & 0 \end{bmatrix}$$