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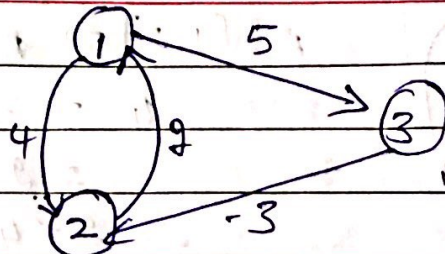
ASSIGNMENT - I

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①



$$A^0 = \begin{matrix} & \begin{matrix} 1 & 2 & 3 \end{matrix} \\ \begin{matrix} 1 \\ 2 \\ 3 \end{matrix} & \begin{bmatrix} 0 & 4 & 5 \\ 2 & 0 & \infty \\ \infty & -3 & 0 \end{bmatrix} \end{matrix}$$

$$A^1 = \begin{matrix} & \begin{matrix} 1 & 2 & 3 \end{matrix} \\ \begin{matrix} 1 \\ 2 \\ 3 \end{matrix} & \begin{bmatrix} 0 & 4 & 5 \\ 2 & 0 & 7 \\ \infty & -3 & 0 \end{bmatrix} \end{matrix}$$

$$\begin{aligned} A^0[2,2] &\Rightarrow A^0[2,1] + A^0[1,2] \\ 0 &\Rightarrow 2 + 4 \\ &\Rightarrow 6 > 0 \end{aligned}$$

$$\begin{aligned} A^0[2,3] &\Rightarrow A^0[2,1] + A^0[1,3] \\ \infty &= 2 + 5 = 7 \\ &7 > \infty \end{aligned}$$

Replace 7 with ∞

$$A^2 = \begin{matrix} & \begin{matrix} 1 & 2 & 3 \end{matrix} \\ \begin{matrix} 1 \\ 2 \\ 3 \end{matrix} & \begin{bmatrix} 0 & 4 & 5 \\ 2 & 0 & 7 \\ -\infty & -3 & 0 \end{bmatrix} \end{matrix}$$

$$\begin{aligned} A^1[1,3] &\Rightarrow A^1[1,2] + A^1[2,3] \\ 5 &= 4 + 7 = 11 \\ &\text{No replace} \end{aligned}$$

$$\begin{aligned} A^1[3,1] &\Rightarrow A^1[2,1] + A^1[3,2] \\ &= 2 + (-3) \\ &= -1 \end{aligned}$$

(2)

$$A^3 = \begin{matrix} & \begin{matrix} 1 & 2 & 3 \end{matrix} \\ \begin{matrix} 1 \\ 2 \\ 3 \end{matrix} & \begin{bmatrix} 0 & 2 & 5 \\ 2 & 0 & 7 \\ -1 & -3 & 0 \end{bmatrix} \end{matrix}$$

$$A^2[1,2] \Rightarrow A^3[3,2] + A^2[1,3]$$

$$4 = -3 + 5$$

$$= 2$$

$$\therefore 2 < 4$$

Replace 2 with 4

$$A^2[2,1] \Rightarrow A^2[2,3] + A^2[3,1]$$

$$0 = 7 - 1 = 6$$

No replace.