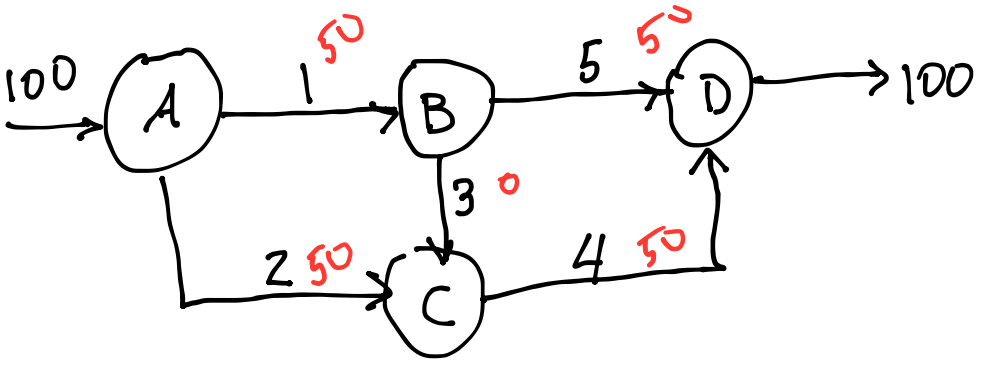


$X_2 + \cancel{X_3} = 100 + \cancel{X_3} - X_1$ $\qquad X_2 + X_1 = 100$

1) $X_1 + X_2 = 100$ $\qquad X_1 + X_2 = 100$

2) $X_1 = X_5 + X_3$ $\qquad X_1 - X_3 - X_5 = 0$

$X_2 + X_3 - X_4 = 0$

3) $X_2 + X_3 = X_4$ $\qquad X_4 + X_5 = 100$

4) $X_4 + X_5 = 100$

$$\begin{bmatrix} 1 & 1 & 0 & 0 & 0 \\ 1 & 0 & -1 & 0 & -1 \\ 0 & 1 & 1 & -1 & 0 \\ 0 & 0 & 0 & 1 & 1 \end{bmatrix} \begin{bmatrix} X_1 \\ X_2 \\ X_3 \\ X_4 \\ X_5 \end{bmatrix} = \begin{bmatrix} 100 \\ 0 \\ 0 \\ 100 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 1 & 0 & 0 \\ 1 & 0 & -1 & 0 \\ 0 & 1 & 1 & -1 \\ 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} X_1 \\ X_2 \\ X_3 \\ X_4 \end{bmatrix} = \begin{bmatrix} 100 \\ X^5 \\ 0 \\ 100 - X_5 \end{bmatrix}$$

$X_1 + X_2 = 100$ ✓

X_2

$X_1 - X_3 - X_5 = 0$

$X_2 + X_3 - X_4 = 0$

$X_4 + X_5 = 100$

$X_1 = 100 - X_2$

$X_1 - X_3 - X_5 = 0$

$X_3 - X_4 = -X_2$

$X_4 + X_5 = 100$

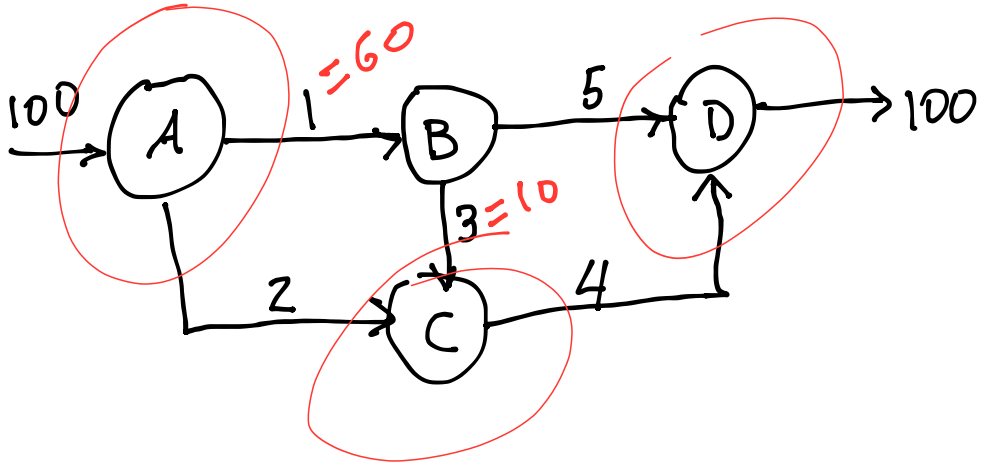
$$\begin{matrix} & X_1 & X_3 & X_4 & X_5 \end{matrix}$$
$$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & 0 & -1 & -1 \\ 0 & 1 & -1 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}$$

$$\begin{bmatrix} 100 - X_2 \\ 0 \\ -X_2 \\ 100 \end{bmatrix}$$

$AX = B$

~~$AX - B = 0$~~

$\|AX - B\|_{min}$



$X_1 = 60$

$X_3 = 10$

$$\begin{pmatrix} 1 & 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & -1 & 0 \\ 0 & 0 & 0 & 1 & 1 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \end{pmatrix} \begin{pmatrix} X_1 \\ \vdots \\ X_5 \end{pmatrix} = \begin{pmatrix} 100 \\ 0 \\ 100 \\ 60 \\ 10 \end{pmatrix}$$