

1. Perform individual prioritization

Robin's priorities

Milk	100
Tea	0
Coffee	0
Juice	0

Alice's priorities

Milk	10
Tea	20
Coffee	30
Juice	40

John's priorities

Milk	10
Tea	30
Coffee	50
Juice	0

2. Multiply priorities by stakeholder importance coefficient
(Robin – 0.5, Alice – 0.7, John – 1)

$$0.5 * \begin{bmatrix} 100 \\ 0 \\ 0 \\ 0 \end{bmatrix} = \begin{bmatrix} 50 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

$$0.7 * \begin{bmatrix} 10 \\ 20 \\ 30 \\ 40 \end{bmatrix} = \begin{bmatrix} 7 \\ 14 \\ 21 \\ 28 \end{bmatrix}$$

$$1 * \begin{bmatrix} 10 \\ 30 \\ 50 \\ 0 \end{bmatrix} = \begin{bmatrix} 10 \\ 30 \\ 50 \\ 0 \end{bmatrix}$$

3. Calculate the final priorities

$$\begin{bmatrix} 50 \\ 0 \\ 0 \\ 0 \end{bmatrix} + \begin{bmatrix} 7 \\ 14 \\ 21 \\ 28 \end{bmatrix} + \begin{bmatrix} 10 \\ 30 \\ 50 \\ 0 \end{bmatrix} = \begin{bmatrix} 67 \\ 44 \\ 71 \\ 28 \end{bmatrix}$$

Final priorities

Milk	67
Tea	44
Coffee	71
Juice	28