

Pers. Keadaan:

$$\begin{array}{c} \downarrow [n \times 1] \\ \dot{x} = \underbrace{A}_{[n \times 1]} x + \underbrace{B}_{[n \times 1]} u \\ \uparrow [n \times 1] \end{array}$$

Pers. Keluaran:

$$\begin{array}{c} \downarrow [k \times 1] \\ y = \underbrace{C}_{[k \times 1]} x + \underbrace{D}_{[k \times 1]} u \\ \uparrow [k \times 1] \end{array}$$

$$\begin{array}{l} A = [n \times n] \\ B = [n \times m] \end{array}$$

$$\begin{array}{l} C = [k \times n] \\ D = [k \times m] \end{array}$$

Contoh:

Suatu sistem mempunyai 2 masukan, 3 keluaran dan 5 peubah keadaan, akan dimodelkan dengan model Ruang Keadaan. Tentukan dimensi matrix A, B, C dan D!

Jawab:

$$m = 2 \quad k = 3 \quad n = 5$$

$$A [5 \times 5], B [5 \times 2], C [3 \times 5], D [3 \times 2]$$