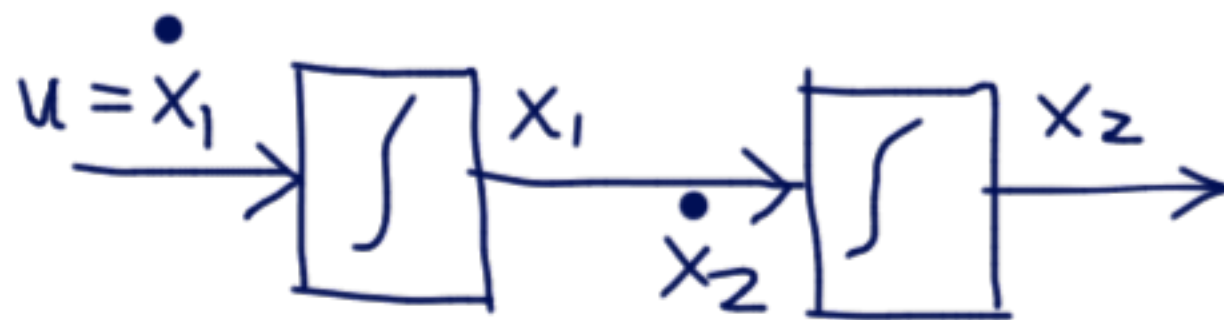


Contoh = "Double Integrator Plant"

$$\begin{aligned}\dot{x}_1 &= u \\ \dot{x}_2 &= x_1\end{aligned}$$

$$y = x_2$$



tidak stabil
 $\lambda_1 = \lambda_2 = 0$

$$\dot{x} = \begin{bmatrix} 0 & 0 \\ 1 & 0 \end{bmatrix} x + \begin{bmatrix} 1 \\ 0 \end{bmatrix} u$$

$$y = \begin{bmatrix} 0 & 1 \end{bmatrix} x$$

Controllability Matrix $P = [B \ AB] = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \rightarrow \text{rank } 2$

Observability Matrix $Q = [C^T \ A^T C^T] = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix} \rightarrow \text{rank } 2$

completely
<0>



umpan balik

peubah keadaan

$$K [1 \times 2]$$

$$K = [K_1 \ K_2]$$