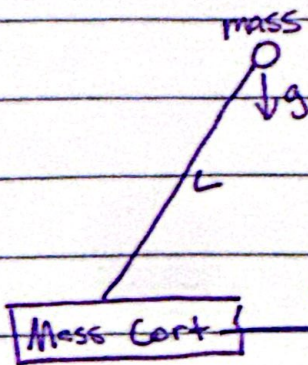


$$x = \begin{bmatrix} \theta: \text{Angle of pole} \\ x: \text{Position of cart} \\ \dot{\theta}: \text{Pole velocity} \\ \dot{x}: \text{Cart Velocity} \end{bmatrix}$$

(Jacobian)

$$\frac{d}{dt} x = f(x) \xrightarrow{\frac{Df}{Dx} | x} \dot{x} = Ax + Bu$$

$$\dot{x} = Ax + Bu$$



u : Force on cart in x -direction