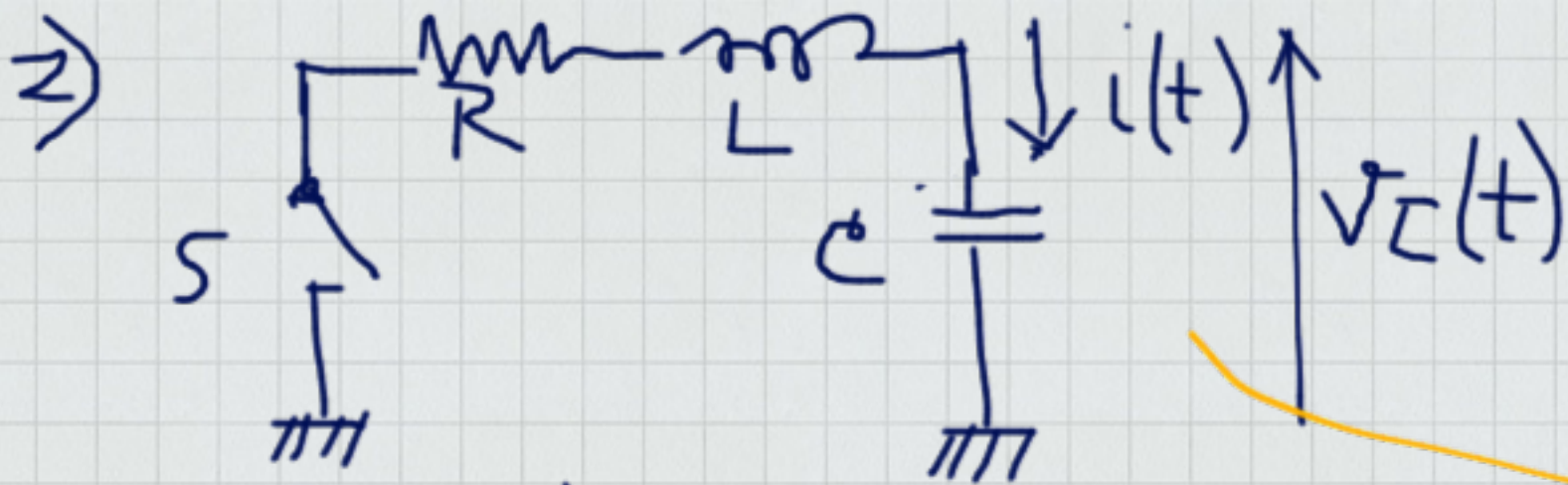




$V_C(0) = 10 \text{ Volt}$, $i(0) = 0 \text{ Amp}$
 Saklar S ditutup pada $t=0$

Nilai RLC gunakan yang
 dari Project 1 m.k.
 Perancangan Sistem Kendali
 yaitu yang nilai ζ -nya
 paling kecil, $0 < \zeta < 1$,
 kurang teredam,
 (underdamped)

$$(1) i(t) = C \frac{dV_C(t)}{dt}$$

$$\frac{dV_C(t)}{dt} = \frac{1}{C} i(t)$$

$$(2) -V_C(t) = Ri(t) + L \frac{di(t)}{dt}$$

$$\frac{di(t)}{dt} = -\frac{1}{L} V_C(t) - \frac{R}{L} i(t)$$

$$V_C(t) \triangleq x_1, \quad i(t) \triangleq x_2$$

$$\dot{x} = \begin{bmatrix} \dot{x}_1 \\ \dot{x}_2 \end{bmatrix} = \begin{bmatrix} 0 & \frac{1}{C} \\ -\frac{1}{L} & -\frac{R}{L} \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$$

$$\begin{bmatrix} x_1(0) \\ x_2(0) \end{bmatrix} = \begin{bmatrix} 10 \\ 0 \end{bmatrix}$$

$$\frac{dx(t)}{dt} = Ax(t)$$