Tarea#3

Análisis de sistemas lineales.

Cristian Angulo Ramirez.

Función de transferencia:

$$\frac{v_0(s)}{v_i(s)} = \frac{Ls^2}{L * s^2 + R * s + \frac{1}{C}}$$

Los valores de los componentes;

L=1mH

R=1KΩ

C=1µF

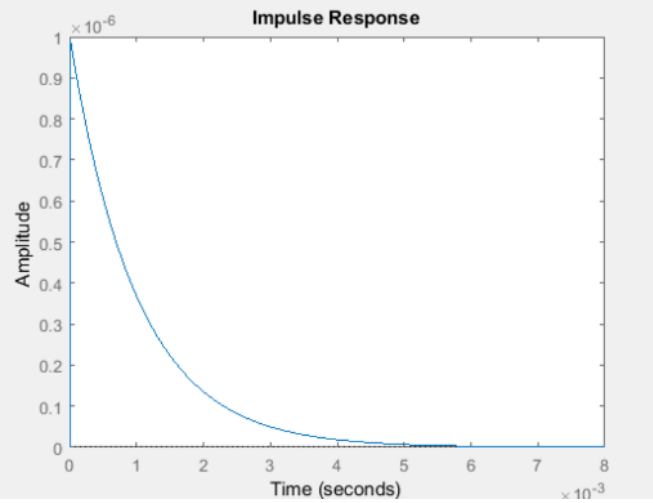
Impulso

$$V_0(s) = \frac{L * s^2}{L * s^2 + R * s + \frac{1}{C}} * 1$$

Aplicando fracciones parciales y con la transformada de Laplace.

$$\frac{0.001s^2}{0.001s^2 + 1000s + \frac{1}{1x10^{-6}}}$$

$$e^{-100t} - 1000000e^{-1x10^6 t} + 1$$



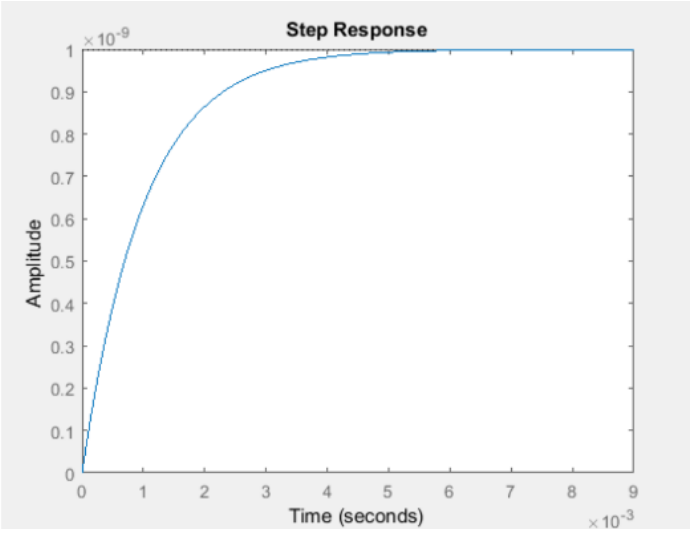
Escalón

$$v_0(s) = \frac{L * s^2}{L * s^2 + K * s + \frac{1}{C}} * \frac{1}{s}$$

Aplicando fracciones parciales y con la transformada de Laplace

$$\frac{0.001s^2}{0.001s^2 + 1000s + \frac{1}{0.000001}} * \frac{1}{s}$$

$$0.001(1000e^{-100\,000t} - 1.00e^{-1000t})$$



Rampa

$$v_0(s) = \frac{Ls^2}{L * s^2 + K * s + \frac{1}{C}} * \frac{1}{s^2}$$

Aplicando fracciones parciales y con la transformada de Laplace

$$\frac{0.001s^2}{0.001s^2 * +1000s + \frac{1}{0.000001}} * \frac{1}{s^2}$$

$$1x10^{-6} * e^{-1000t} - 1x10^{-6} * e^{-100\,000t}$$