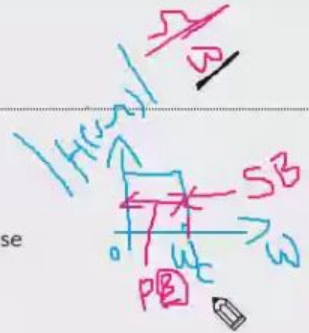
Infinite impulse response filter- IIR

Finite impulse response filter- FIR

Main Requirement of any filter is it should possess a linear phase

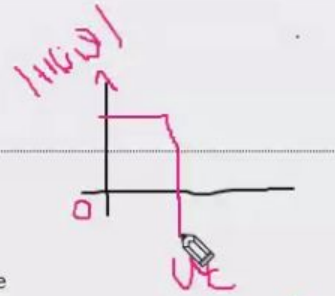
Filter- Frequency selective network



IIR — Infinite Impulse

$$y(n) = x(n) * h(n)$$

$$Y(j\omega) = X(\omega) \cdot H(\omega)$$



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$H(Z) = Y(Z)/X(Z) = 1+Z$ — $\frac{1+z^{-1}+z^{-2}}{1+z^{-1}}$ — $\frac{\text{Zeros}}{\text{Poles}}$

$y(n) - 3y(n-1) = x(n)$

$Y(z) - 3z^{-1}$

Characteristics of Commonly used Analog filters