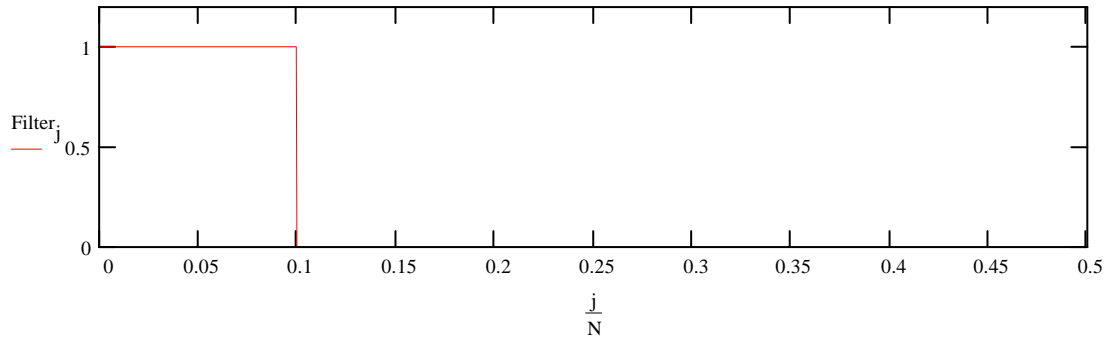


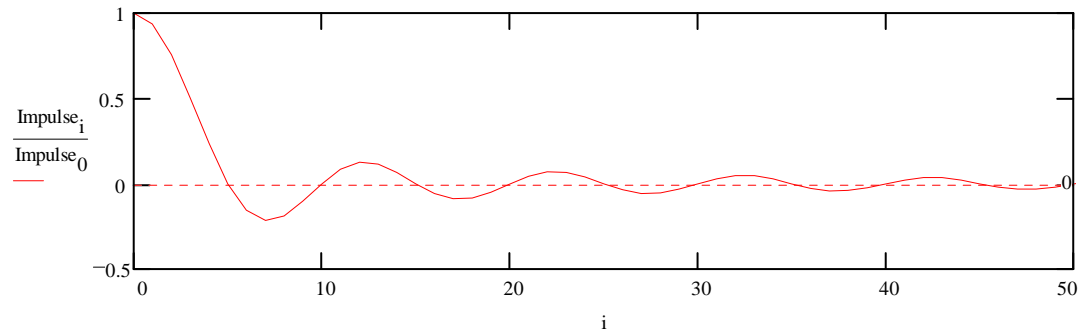
Ideal reconstruction filter:

Low-pass rectangular filter with cut-off at Nyquist frequency (sample rate / 2):

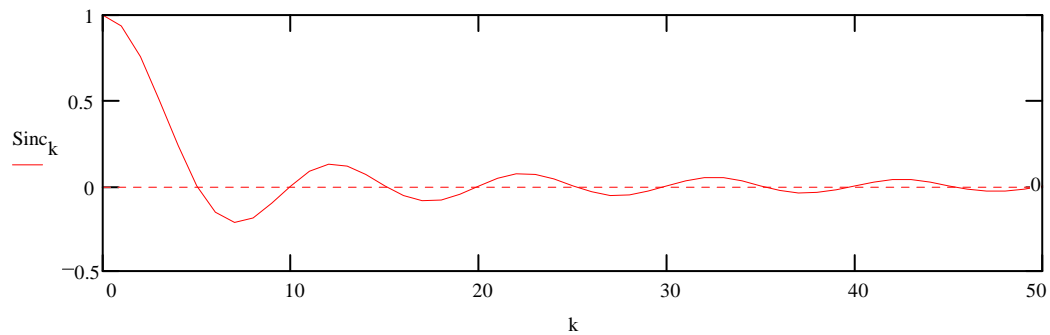
$$\text{Filter}_j := 0 \quad k := 0.. \frac{N}{10} \quad \text{Filter}_k := 1$$



Use the inverse Fourier transform to get the impulse response: $\text{Impulse} := \text{IFFT}(\text{Filter})$



That's just the sinc function: $k := 1..50 \quad \text{Sinc}_0 := 1 \quad \text{Sinc}_k := \frac{\sin\left(\pi \cdot \frac{k}{5}\right)}{\pi \cdot \frac{k}{5}} \quad k := 0..50$



An FIR filter convolves the signal with the filter impulse response:

$$k := 0.. \frac{N}{2} - 1 \quad \text{Sig}_i := \text{SampSig}_i \quad \text{Sig}_{i+N} := \text{SampSig}_i \quad \text{Filtered}_i := \sum_{k=0}^{N-1} \text{Impulse}_k \cdot \text{Sig}_{i+k}$$

