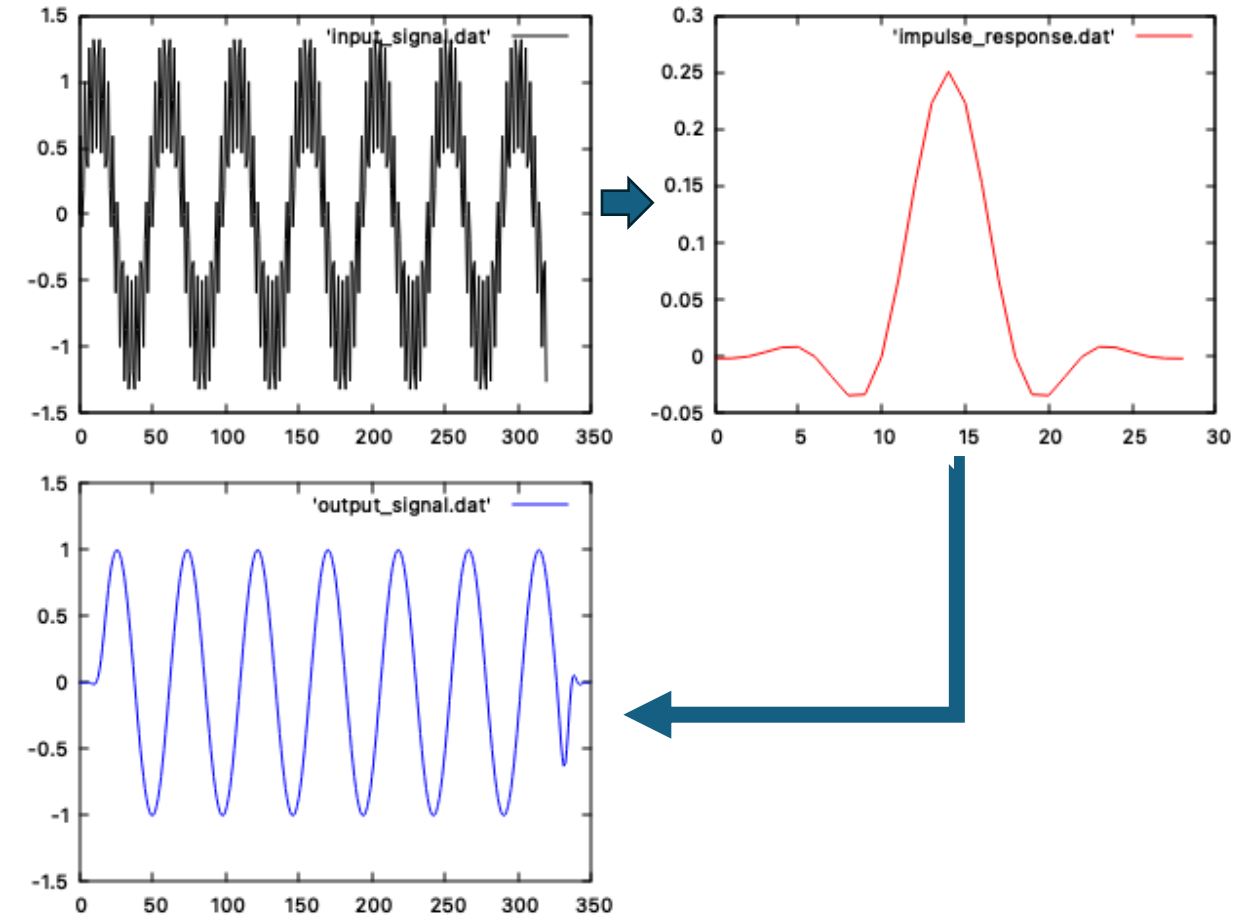
# Convolution

$$y[i] = \sum_{j=0}^{M-1} h[j]x[i-j]$$




The code outputs 3 graphs the. The First graph “input_signal” is convolved with our impulse response which can be seen on the top right graph. The impulse response has a cutoff frequency of 6k Hz. The final graph on bottom left is a 1kHz signal. This demonstrates that the 1kHz signal was extracted from the input signal where it was hidden. By using convolution, the 1kHz signal was filtered out of the high frequency components.