

## Problem S-3

```
using WAV
using DSP

x, fs = wavread("../Homework3/Speech.wav")
h = [1; zeros(Float64, Int64(fs/2-1), 1); 1/4]
h = collect(h)
y = conv(h, x)
y = y./abs.(max.(y))

wavwrite(y, "echo_speech.wav", Fs=fs)

run('pdflatex HW5-S3.tex')
```

This code modifies the input signal `Speech.wav` by convolving it with the impulse response  $[1, 0, \dots, 0, 0.25]$ , a quarter second long, to create a quarter-amplitude echo lagging the input by a quarter second.