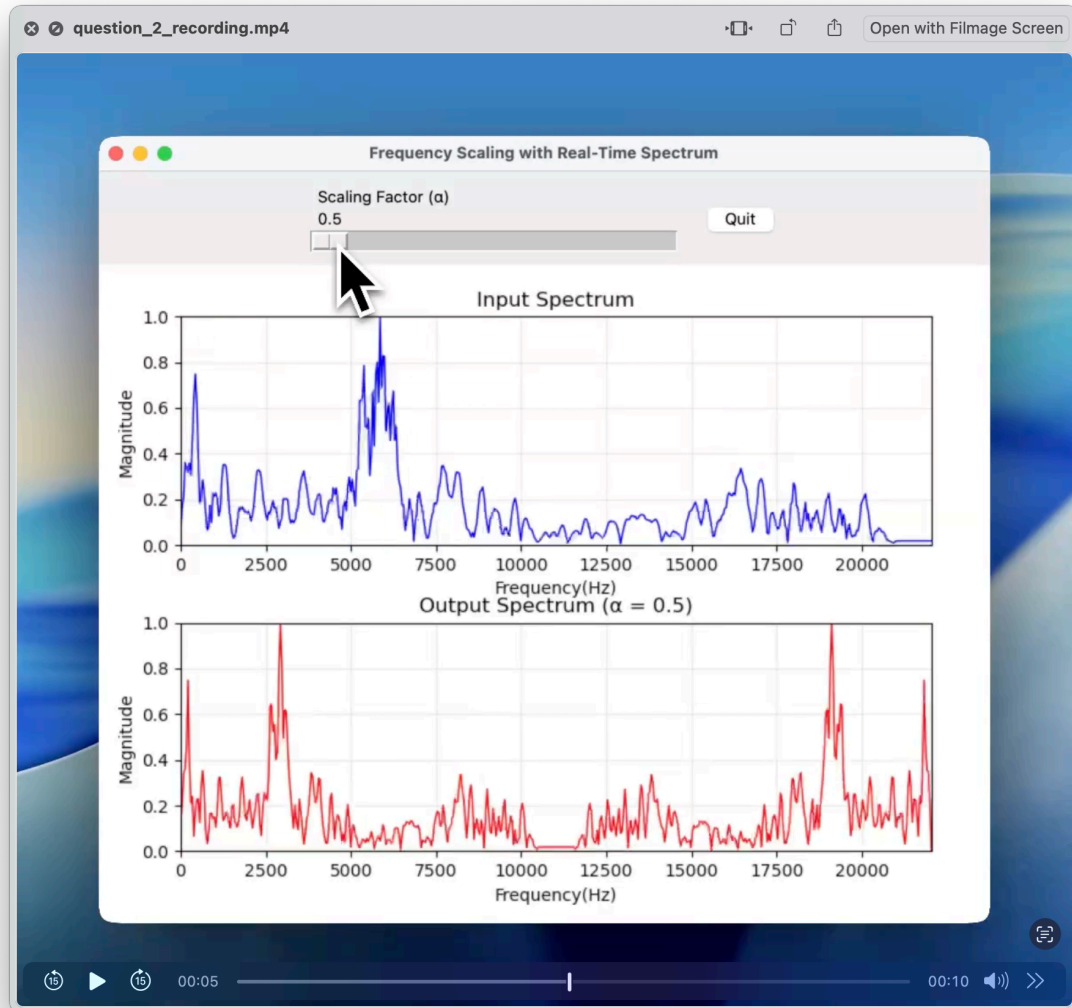# DSP Lab Exam Question 2

Overview

Add real-time visualization of input and output frequency spectra using matplotlib.

Core Methods

setup_plot()

- Creates 2-subplot figure for input/output spectrum
- Input spectrum (blue line), output spectrum (red line)

- Generated using `np.fft.rfftfreq` for proper Hz scaling

update_plot()

- Computes real FFT of both input and output blocks
- Calculates magnitude spectrum, normalizes magnitudes to [0, 1]
- Updates line data for both subplots

audio_callback()

- Copies audio blocks before processing for spectrum analysis