

Read a wave (WAV) file into Python, then filter it and play it to the speaker using PyAudio.

1) Matlab program:

`wave_filter_matlab.m`

This program:

- loads a wave file (speech signal)
- makes a bandpass filter
- applies the bandpass filter to the speech signal
- writes the output signal to a wave file (output_matlab.wav)
- plays the wave file

2) In Python:

`wave_filter_python.py`

This program loads the same wave file and applies the same filter as in the matlab program.

Activities:

Modify the Python program so it writes the output signal to a wave file. Then verify the wave file is the same as the wave file produced by Matlab (e.g., read both wave files into Matlab and plot the error between them).

Modify the python program so it plays a stereo signal: In the left channel, play the original signal. In the right channel, play the output signal.