

EE 415 Project: Subband Coder Project

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Introduction

Playing Audio in Python

Playing an array containing a signal as audio is not a feature included by default in Python. This functionality was needed as the signal must be modified through filters before playing it back. To solve this, two Python modules, `soundfile`, which is able to read audio files as arrays, and `sounddevice`, which is able to play arrays as audio through the speakers, were installed.

Saving Files and Differences Between Precisions

Python does not seem to have a direct equivalent to MATLAB's `fwrite()` and `fread()` functions in a way that also supports modifying precision. The closest method to achieve the same effect was using a combination of NumPy's `ndarray.astype()` and `save()` functions.

| file | float16 | float32 | float64 |
|------|---------|---------|---------|
| v0 | 414 KB | 828 KB | 1655 KB |
| v1 | 414 KB | 828 KB | 1655 KB |