Raspberry Pi Audio Servo Driver Project

# Goals

* Run on Raspberry Pi
* Replace Cowlacious Audio Servo Driver based on Scary Terry design, Wee Little Talker, etc.
* Support 3 modes: step function to full open or closed, like Scary Terry, proportional movement, and frequency analyzer-based movement like the Wee Little Talker
* Support either external audio input or sound from SD card
* Support sending the audio out to an amplified speaker

# Initial version 0.7 Release

* Play audio on SD card – standardize file name as v01.wav through v10.wav in vocals folder
* Output server controls based on step function
* Output sound to external speaker
  + Add option for just left channel to go out
* Proper stream, pyaudio and servo shutdowns.
* PIR trigger – use button wait for. Interrupt caused problems with PyAudio
* Microphone input = if PIR ON, then same as FILES. IF PIR OFF, then turn eyes on or off and set external trigger on startup.
* volume based and frequency band modes
* Multiple tracks
* Write initial documentation
* Trigger out for external controller (e.g., Maestro servo controller)
* Add GPIO pins to config
* volume based and frequency band modes

# Next Releases

* GUI for config
  + <https://codereview.stackexchange.com/questions/241519/tkinter-widget-for-managing-ini-files-through-configparser>
* Revise Documentation

# Beyond that

* Ambient tracks: Ambient tracks – a01 through a10 in ambient folder
* External utility to maximize volume (vocals, ambient, or both)
* Revise Documentation
* Add a “TUNING” mode so you can adjust type, levels, and servo max and mins while it’s running, on the fly (have the sw read from the config.ini file each loop, read only).
* Handle mp3 files
  + <http://zulko.github.io/blog/2013/10/04/read-and-write-audio-files-in-python-using-ffmpeg/>
  + <https://askubuntu.com/questions/919788/convert-mp3-file-to-wav-using-the-command-line>
  + <https://github.com/jiaaro/pydub/blob/master/API.markdown>
* Use the timer function in PIR mode as a delay before re-triggering is allowed.