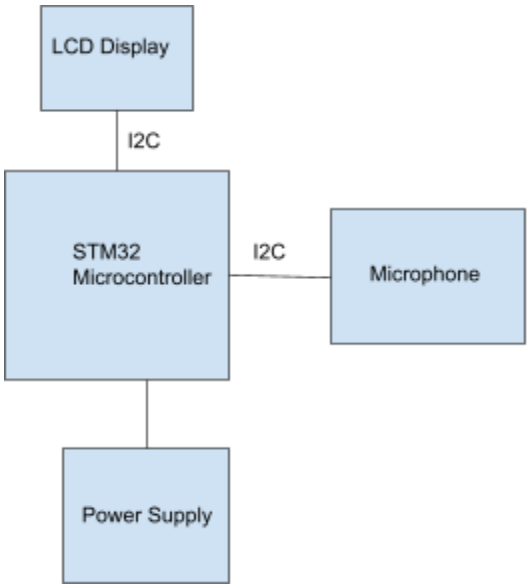
ECE153B Project Proposal: Guitar Tuner
Team: Jonathan Wilcox

Overview: For this 153B project, I am proposing to make a tuner for a guitar using the STM32L476RG. A guitar tuner is a device that takes an audio input and tells the user how in tune a note is. The guitar tuner will get its input from a microphone. The signal from the microphone will be processed through software and sent to a LCD panel to display which note is being toned to and how out of tune the note is, whether it needs to be tuned up or down.

Peripherals:
- LCD Display
- Microphone

Block Diagram:



Software Structure: This device will use an FFT algorithm (or one similar) to extract the frequency from the audio signal provided by the microphone. The device will generate an interrupt when a frequency in the acceptable range is detected. The program will then identify the frequency being played. The frequency will be displayed on the LCD display along with the corresponding note being tuned to.

Responsibility: As the sole member of this group I will be responsible for everything

Website Link: https://sites.google.com/view/153b-project-jonathan-wilcox/home