21M.370 Digital Instrument Design
Lab assignment 2 - Feb 14

Goals:

1. Install Arduino and the ESP32 framework
2. Solder headers to the ESP32, 4 potentiometers, and 4 buttons
3. Be able to upload test code to the ESP32 and monitor in Arduino and in Python

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Assignment description:

Our goal for this week is to get comfortable working with Arduino, the ESP32 and breakout PCB, and some simple sensors.

Assemble your kit

The first thing we will do is assemble our kit. Assemble a cardboard box, and put into it:

1. An ESP32
2. A m370 breakout PCB
3. 4 potentiometers
4. 4 buttons
5. 2 sets of 40-pin socket-to-socket cables
6. micro-usb cable if you need it

Install software

To install Arduino and support for the ESP32 within arduino follow the instructions at https://github.com/collaborative-music-lab/NIME/blob/master/ESP32/README.md

Solder ESP32 and sensor

The following video tutorials cover basic soldering and electronics for our first instrument:

Main class youtube playlist
Soldering the ESP32
Assembling potentiometers
Assembling buttons
Plugging into the breakout board
Basic electronics

You will need to solder:

- the ESP32
- 4 potentiometers
- 4 buttons

Test in Arduino

Once everything is soldered, you can plug into the breakout board (watch the videos above if you need help) and test your sensors using code similar to the lab3_test firmware in NIME/Class/Labs/lab 3