Group Assignment

The assignment is to "demonstrate and compare the toolchains and development workflows for available embedded architectures" Contributors: Ben Weiss, Matti Gruener and Jacqueline Orr

Jacqueline, Matti and I all used the same toolchain for this weeks assignment (MCU: SAMD21, Language: Arduino, IDE: Arduino IDE). In our discussion, Matti and I shared a couple of other toolchains we'd used in the past and described their relative strengths and weaknesses.

Ben's Tool Chains

MCU: Feather Adalogger M0
Language: Micropython
IDE: VSCode

Pros: Adafruit MCU's have lots of great documentation. Python is very human-readable.
Cons: Micropython consistently underperformed for generating time sensitive signals (PWMs)

-MCU: Teensy 4.0
-Language: C++
-IDE: VSCode w/ PlatformIO + Github plug ins

Pros: Teensies are a really powerful MCU. PlatformIO provides a more sensible file structure.
Cons: Teennsies are expensive!

Jacqueline's Tool Chain

MCU: SAMD21
Language: Arduino flavored C/C++
IDE: Arduino

Pros: Very easy to get started!
Cons: Limitations in performance (Arduino IDE is cruddy for debugging)

Matti's Tool Chains

MCU: ESP32
Language: Micropython
IDE: VSCode (on Windows OS)

Pros: ESP32 is great for wifi and bluetooth projects.
Cons: Pushing Micropython file via VSCode was buggy.

MCU: ESP32
Language: Micropython
IDE: Wrote file in VSCode, then used MPRemote within WSL to flash code onto board

Pros: Less buggy than pushing code via VSCode
Cons: Slightly more overhead for set up