Lab 01: Software Installation

Installation

Please install the following programs on your laptop:

- KiCad - `v6.0.10`
- Git - version control software[1]
- One of the following for firmware development:
  - Visual Studio Code with PlatformIO extension (preferred)
  - Arduino IDE

Account Login

Please make sure you can log into each of the following cloud services:

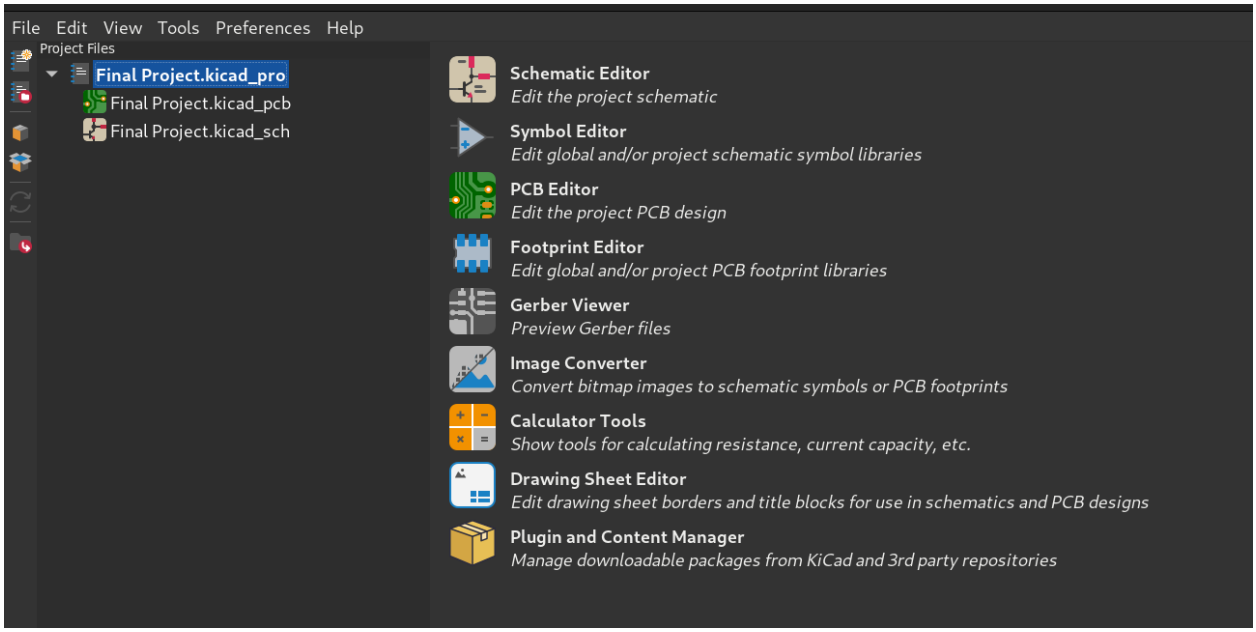
- GitLab - version control / project mangement (use Shibboleth)
- Onshape - make sure you use the Duke domain!!
- Teams - install clients on your devices

Test Installations

KiCad

- Download the following zip archive: `https://gitlab.oit.duke.edu/mlp6/kicad_test/-/archive/main/kicad_test-main.zip`
- Launch KiCad, and load the Project.

[1] Note that Mac OS requires $\geq$ `v12.5` for `Xcode`.



- Once the project is loaded, confirm that you can open the:
  - Schematic (select `Default` option for library)
  - PCB (select `Default` option for library)
  - In the PCB document window, render the 3D view of the board (`View -> 3D Viewer`)
- You should see what was shown in lecture for the schematic and PCB; the 3D view will be missing some parts.

Arduino

If you don't have one of these following boards, please order one ASAP!

- Arduino Nano 33 BLE
- Arduino Nano 33 Sense
- Arduino Nano Every[2]

When you have your board, run the following test Arduino code and confirm that you can see the `Hello World!` messages coming through the serial monitor / TTY device:

```
void setup() {
    Serial.begin(9600);
}
void loop() {
    Serial.println("Hello World!");
    delay(1000);
}
```

[2]This board is being used in BME354L this semester.

Setup Git Configuration

Follow the steps outlined here:

`https://git-scm.com/book/en/v2/Getting-Started-First-Time-Git-Setup`

If you have never used `git` before, please sign up for a Duke Pathways introductory course: `https://pathways.duke.edu/modulepage/135`.