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SYSEN 5411 Fall 2026

Lab 1 – Setup

Video of XRP running installation verification:

Video of XRP running my custom installation verification:

Documentation of my custom boot test code (No AI used)

* Code tests drive motors, servo, LEDs, IMU temperature, and line follow sensor
* Robot starts with the sensor over a taped line on the table
* Flash both board LEDs
* Line follow test for 1 second
* Pull a temperature measurement from the IMU
* Turn servo all the way forwards such that the catapult arm is pointing towards the front of the robot

Challenges I had

* Struggled a little with the physical attachment of the two sensors at front. I attached the ultrasonic sensor just too far off center to get the line follow sensor notch lined up, and I had to try using several different tools to get the ultrasonic clip off the robot without damaging it.
* A bit confusing juggling between the XRP web IDE and Thonny at first. I kept getting connection issues on Thonny then realized that the web IDE was connected and I had to close out of that first. Also the automatic firmware update on the web IDE pulled 1 release behind the latest release on the MicroPython site, so I ended up running machine.bootloader() in the Thonny shell and dropping in the v1.26 UF2 file manually afterwards.
* Definitely rusty with Git and Github setting up my own code repo and cloning it to local hard drive. A bunch of mucking around in documentation and old notes I had. Might be helpful to the class (or at least myself) if there was a Git/GitHub crash course for hobbyists that you could recommend we take or incorporate into a lab session this semester.