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Module 6 reflection

In completing Module Six, I worked through the integration of a temperature and humidity sensor with a 16x2 LCD display on my Raspberry Pi. The goal was to display real-time temperature and humidity data along with the current date and time, and to allow switching between Celsius and Fahrenheit using a button. I began by wiring the sensor and button correctly and running the provided test script to verify that the sensor was working. After confirming the sensor was functional (Taking about three minutes, best install ever), I moved on to modifying the integration script to meet the lab’s requirements.

The main challenges I faced were related to software configuration and permissions. Initially, I encountered errors due to missing packages and the system blocking `pip` installs due to Python 3.12's restrictions. I overcame this by using sudo env “PATH=$VIRTUAL\_ENV/bin:$PATH” python3.... This is what I have been using due to me being in a virtual environment to install the packages I need. At this point, the script is running correctly and displaying the expected output on the LCD. All the key functionality is working: temperature and humidity are shown in the correct format, the time updates live, and the button toggles between Fahrenheit and Celsius. I feel confident about the hardware and software setup, but I would still appreciate confirmation that the button wiring and GPIO setup are optimal. Overall, this module helped deepen my understanding of real-time sensor integration and multi-threaded display management in Python on the Raspberry Pi.