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6-3 Assignment: Adding a Temperature and Humidity Sensor

For this lab, I followed the steps in the Module Six guide to install and integrate the temperature and humidity sensor into my circuit. I began by installing the AHTx0 package with the sudo pip3 install adafruit-circuitpython-ahtx0 command, then safely shut down and unplugged my Raspberry Pi before connecting the sensor to the existing Qwiic cable. Once the wiring was complete, I powered the Pi back on and ran the test script to make sure the sensor was reading data correctly. Seeing the live temperature and humidity output confirmed that the sensor was working as expected.

After that, I edited the Python integration file to format the LCD display so the first line showed the current date and time, while the second line displayed both temperature and humidity values with the correct units. My biggest challenge was keeping the data neatly formatted on the 16x2 display without text overflowing or flickering. I fixed this by adjusting the message length and updating the screen as one combined write. I was also careful to verify that the button correctly switched between Celsius and Fahrenheit. Overall, the lab went smoothly once I double-checked my wiring and code alignment, and it gave me a much clearer understanding of how sensors communicate through the I²C connection.