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Lab Report Module 6   
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CS350: Emerging Systems and Technologies  
  
 Installing the AHT20 temperature and humidity sensor was a smooth and surprisingly simple process. I followed the steps outlined in the Module Six Lab Guide, starting with the sudo pip3 install adafruit-circuitpython-ahtx0 command to install the required library. After safely shutting down the Raspberry Pi, I connected the sensor using the QWIIC cable and powered it back on.

Despite it being Father’s Day weekend with my kids around and my dad visiting from Florida, I was able to complete the entire setup and testing process without difficulty. This speaks to how user-friendly and well-documented the lab materials are. I ran the TemperatureSensorTest.py script to confirm functionality, then moved on to modifying the integration script.

The modified TemperatureSensorIntegration.py displayed temperature in both Fahrenheit and Celsius, humidity percentage, and the current date and time. A button toggle let me switch between temperature scales easily. The only minor challenge was fitting all data cleanly on the 16x2 display, which I resolved by adjusting formatting and abbreviations.

This lab not only showcased how intuitive Raspberry Pi projects can be but also served as a great example of how emerging systems are becoming more plug-and-play and IoT-ready. The QWIIC interface, combined with Python libraries and modular hardware, reflects the growing trend of making embedded systems more accessible and adaptable for rapid development and integration.