Unit 5 Lab 11
Learning Targets

Essential Questions

- What are the adafruit_io MQTT commands?
- How is MQTT different from HTTP?
- Can we use MQTT to create a simple Weather Station?

Key takeaways

- Adafruit_io MQTT commands are methods associated with an MQTT client object.
- The MQTT methods highlight the publication/subscription model of MQTT:
  - io.connect()
  - io.subscribe()
  - io.on_message()
  - io.publish()
- These MQTT methods are callback functions that link the MQTT client methods to python functions you create.
- MQTT maintains a connection.

Teaching Tips

Lab 11 exposes students to the benefits of the MQTT pub/sub model.

Students again duplicate parts of Lab 8 (aka Lab 10) and should see a quicker response time when comparing performance of Lab 10 vs Lab 11 since MQTT maintains a connection and MQTT sends notifications of changes on subscribed feeds.

The callback methods are a bit tricky to understand but students should do their best to use the samples provided as models for future exploration.

The weather station should get students thinking about possibilities for final projects. The Feather Sense offers lots of possibilities. What sensors will they use? What "problem" might they want to solve?