Testing Matrix

Project FishWorks / ECET 291 / 9.24.2024

Sebastien, Eric, Kayleb and Braden

Ref #	Requirement	Test	Pass/Fail Criteria
1	Devices communicate with base station.	Send messages between base station and all connected devices.	Devices send and receive all uncorrupted messages.
2	Base station communicates with MQTT server.	Send message to and from base station to MQTT server.	Base Station send and receive all uncorrupted messages after successful connection to broker.
3	Web app connects to MQTT server.	Send messages to and from to app and MQTT server.	Web app sends and receives all uncorrupted messages after successful connection to broker.
4	Device - Humidity Sensor	Change humidity by blowing on sensor with warm air from lungs.	Detect changes in humidity within $+/- 2\%$. (user definable per type of habitat)
5	Device - Air Temperature Sensor	Change air temp sensor by holding in hand.	Detect changes in air temperature within $+/-0.2°C$. (user definable per type of habitat)
6	Device - Water Temperature Sensor	Change water temp sensor by holding in hand.	Detect changes in water temperature $+/- 0.5°C$. (our tank water temperature range 18-23)
7	Device - AC Outlet Control	Send message form app to turn on/off outlet.	Web app can turn off/on an AC outlet.
		Responds to global alerts.	Responds as programed to global alerts.
8	Device - Leak Detection	Spill water on the leak sensor.	Leak detection triggers Alarm state and Buzzer within 10 seconds.
9	Device – PH Sensor	Place in calibration solution.	Sensor detects correct PH level for chosen calibration solution.
10	Device - LED Lighting Control	Use app to change lighting brightness settings.	Lights dim/turn on and off.
11	Web app UI has widgets for all connected devices	Open dashboard in web app while connected to a base station with connected devices.	Widgets are displayed correctly in dashboard for all devices connected to the base station.

12	Historical data logged on base station SD card	Remove SD card from base station and download data from SD card	Can download correctly logged historical data uncorrupted from SD card.
13	Base station can send email warnings and alerts to users when received by devices.	Have one or more devices send warnings and alerts to base station.	User receives email from base station with details of the alerts within 1 minute of the alert being triggered by the device.

Cover Imagery Produced by OpenAI