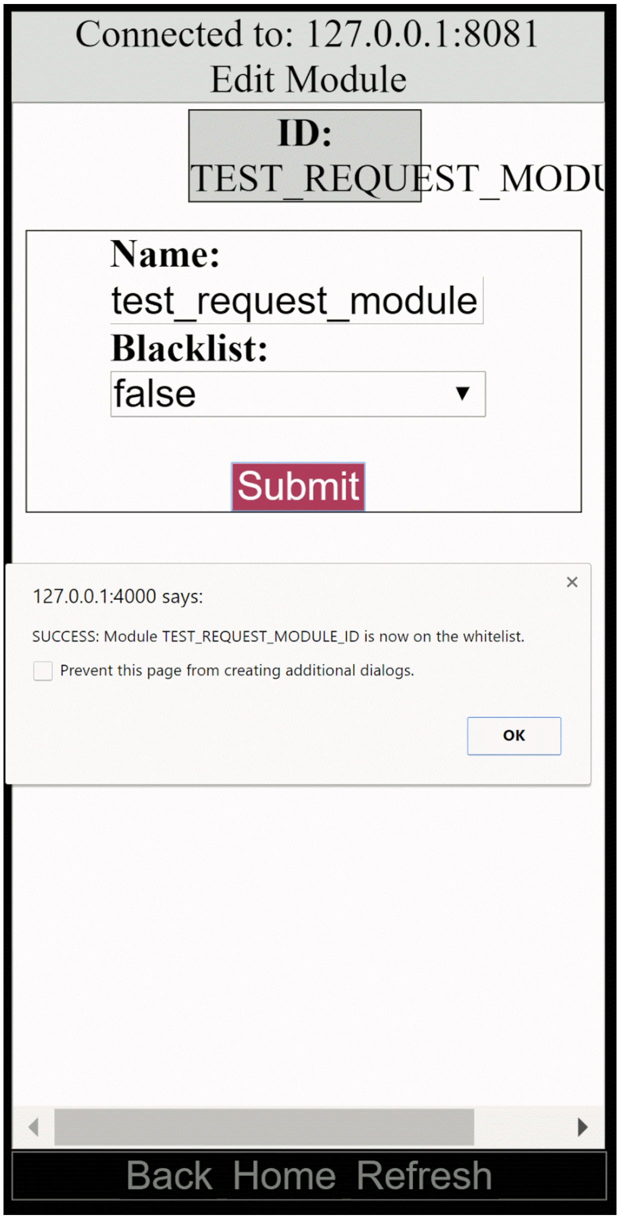
Beta Release

- **Low Target (Wizard of Oz) - 3/14**
    - Skeleton Application and basic look or usage of Android App - **Met**
    - Added 2/22: Preview of APIs for core of App and Server - **Met**
- **Desirable Target (Alpha) - 4/4**
    - Functional alerts in App and movements - **Unmet (no app)**
    - Server Functioning - **Met**
    - Basic I/O from server - **Met**
    - Deployment of a test push from server that would send a test notification to Android application. - **Unmet (no app)**
- **High Target (Beta) - 4/25**
    - Ability to add modules within the application. Ability to set user groups and administrators. - **Mostly Met***
    - Multiple devices, Successful alerts and movements with hardware devices. - **Met**
    - ***Note:** Web client was used in place of Android App due to technical issues. However, web client was made as a model of what the Android App would look like and showcased some of the functionality it would have.

- We were not able to successfully implement the Android application. Although we did implement a HTML web client closely following what the Android application might have looked like, which meant continuing to follow our UML diagram. We hit a roadblock with the Android application because creating a successful link between the server and the mobile phone was unsuccessful. Most other items were completed successfully. We were able to implement multiple modules with different arrays of sensors, which we had some customization control over. The server was successfully implemented and reached all beta goals.



Connected to: 127.0.0.1:8081

Edit Module

ID: TEST_REQUEST_MODU

Name: test_request_module

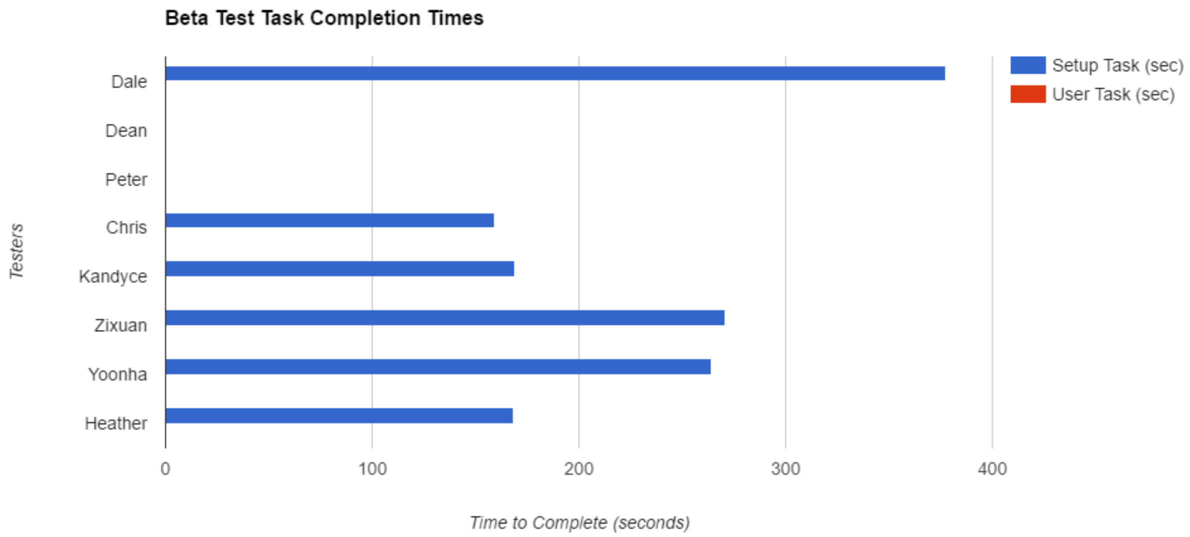
Blacklist: false

127.0.0.1:4000 says:

SUCCESS: Module TEST_REQUEST_MODULE_ID is now on the whitelist.

□ Prevent this page from creating additional dialogs.

- For the testing of the beta release, we had two main tasks, whose steps can be found here. The first task, which will be referred to as the Setup Task, was to have the user log themselves into the system, add a new module (from a Raspberry Pi, not the web client), test the new module, and change the module’s name. The second task, which will be referred to as the User Task, was similar to the User Task from Alpha Release; via the web client, the tester would add a new user, edit that user’s blacklist status and name, remove that user, and check via the logs, notifications, or users page that the user was properly removed. For all tests, we would preset the web client to the login screen, reset the server to a brand new state, and reset the Pi (i.e. the new module to be added) to its desktop from a reboot; we would also have another module from Alpha Release pre-set up to be on the server as well when the tester begins their tasks. After all the tests, we would ask them a few questions about their perceived difficulty of the tasks, what made their tasks harder/easier to complete, along with any general feedback/critique of our system; these questions can be found on the tasks document linked above.



- Out of the 9 beta tests run (1 with the client, and 8 with beta testers), most users had difficulties with adding the module to the server via command line interface. That issue stemming from the fact that most users were not familiar with the Raspbian Operating system for Pi. Our client, being very familiar with how computers work, and having a background of computer science, had no issues with the terminal and the execution of those commands. Two of the tests were counted as failures, mostly because our hardware was acting up in the middle of testing. Another test failed due to running out of time to test. After those hardware issues were worked around, by moving the client from a dedicated computer to the server computer, and a module from the network, there were no further issues with the system. We had not fully anticipated some of these issues as developers, being overly familiar with the system itself. The average amount of time it took for a user to figure out how to complete the Setup Task was almost 4 minutes (234.79 seconds), with a max time of over 6 minutes (377.71 seconds) and a minimum time of over 2.5 minutes (159 seconds). The system itself had a crunched test time due to the scheduling of the class, and a much longer time would be needed to test the implementation of the system itself. Some common feedback we received was to make the instructions clearer, as we found out that people who weren't familiar with the system tended to easily get lost; we also had critiques of the module adding process being difficult, which we had anticipated.