Database Status Update:

In regards to our database we have set it up to be hosted using Google Firestore as it supports the real time up to date functionality we were looking for. Using Firestore we are able to set up secure login's for users to make sure that only desired people can access the control of the greenhouse system. As well, we have set the database to only accept read and write operations from authenticated users as an added security feature in case of an unwanted user somehow accessing the database. For reading and writing to and from the database, we make writes from the Broadcom development platform to the database based on the readings we get from our sensors inside the greenhouse and make reads from the android application to display the information in an easy to read format for the user. We also have implemented the function of manually controlling devices from the application by sending "ON" or "OFF" values to the database from the application and picking those values up in the firmware code and making changes based on what has been selected. We have limited the amount of reads and writes that both our firmware and application make on the database for the sole purpose of not flooding or overwhelming the database with too many requests which would possibly slow it down. As well for the fact that Firestore limits the amount of reads and writes daily and we do not want to exceed that limit as it would cause both the firmware and application to crash. As for connection to a wireless network, as long as both devices are connected to the internet they will work seamlessly together. However, if the android application is not connected to the internet it will not be able to poll the database causing errors in the retravel of data and if the development platform loses connection to the internet the application would only be able to see the last updated information sent to the database and would not be able to make manual changes to the devices. In the case of unit production and testing considerations, we would be able to set up a sample database for the devices to read from to make sure the connection to the database was solid and that the reads were accurate. As long as we had a test device and test database we would be able to know which values to expect and what the outcome of the code should be like to make sure everything was working the way it should.

The full documentation and project updates can be found here:
https://github.com/Aidenbolos/Green-Sense