StacksOnStacks Arduino Testing

Purpose

The purpose of this document is to state the testing policy our team adopted for testing the Arduino and the results from the implementation of the testing.

Procedure

We tested our Arduino module by testing it's connectivity to the Android application with varying distance between the Arduino and the phone on which the application is installed. Secondly, we tested whether the Arduino opens the boom gate with a series of characters as input.

Below is a table of results for testing the connectivity with varying distances without any interferences from any physical object . The character 'o' is inputted to open the gate:

Distance	Expected result	Actual result	Test status
1m	Open	Open	Passed
5m	Open	Open	Passed
10m	Remain closed	Open	Failed
20m	Remain closed	Remain closed	Passed

Below is a table of results for testing whether the gate opens when a series of different characters are inputted to open the gate:

Character input	Expected result	Actual result	Test status
'o'	Open	Open	Passed
'a'	Remain closed	Remain closed	Passed
'asad'	Remain closed	Remain closed	Passed
'open'	Remain closed	Remain closed	Passed

Conclusion

We come to the conclusion that our Arduino gives us the expected output for approximately 90% of our test cases. The key concept that we gain from this testing is that our Arduino BLE signal weakens and hence does not give out the required output when the distance between the user and Arduino is 10m. We will not be requiring any device to connect with the Arduino when it is 10m apart; hence, we can disregard that test result and conclude that our Arduino module works perfectly, as expected.