Unit Test: We cant unit test the transport layer because while it would be a perfect thing to unit test, it is physically impossible to write these unit tests for android apps. Our understanding of a unit test is that it compares inputs to outputs and since our app doesn’t do any calculating or business logic, we are not sure that we could write any relevant and or useful unit tests.

Functional Test:

Because our app is a peer to peer network mobile app, the majority of our tests involves network testing, so to test this functionality, we will do functional tests on the networking aspects of the app. We will prepare a list of steps that we will perform to test functions such as setting a username, discovering peers, connecting to peers, creating a chat room, and sending and receiving messages.

Set a username:

1. launch the app
2. tap on the username text box
3. type a username using the keyboard
4. tap the set username button
5. repeat steps 2-4 with usernames that have spaces as well as special characters to make sure that this still works
6. join a chat room and verify your username

Discovering peers/ connecting to them

1. launch app on multiple devices
2. verify that the other devices show up in the discovery list at the bottom of your screen
3. try to connect to other devices in the discovery list

Creating a chat room:

1. launch the app
2. tap the create chat room button
3. verify that another device can see the chat room
4. have other person connect to your chat room

Send/Receive messages:

1. launch app on multiple devices
2. create chat room on one device
3. have other devices connect to the newly created chat room
4. send messages from one device
5. verify that usernames and messages received on the other devices matches what you expect
6. send messages from other devices and make sure that original device can receive messages