

To implement project 4, I used the transport layer to establish a connection between a listening server and connecting clients. The clients transport their username with the CONNECT function, and then they use simple msg, whisper, and listusr commands to continue interfacing with the server. The client and server devices buffer all the data they seek to transmit, and all data which is sent to them. They read and send this data on a timer, according to how much can be read and sent according to the Socket layer's remaining receive and remaining send buffer size. All commands simply have their fields separated by spaces, and then the end of a command is indicated by `\r\n` as specified in the project guidelines. To set up the test server, I simply call `Socket.listen(41)`, and then the client just makes a few broadcast and whisper and listusr calls to show that all of the functions are properly working. Once each client receives and reads any responses it gets from the server, they will print this information into the `APPLICATION_CHANNEL`.