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Part1 Report

1. What are the differences between multiplexing done in a UDP socket vs a TCP socket? What would happen if we were to use the same IP and Port number for transferring data to different clients in our implementation of UDP Putah? (3 points)

   While TCP socket needs to establish the connection to each client before transferring data, UDP does not. The connection won't be reliable if we were to use the same IP and port number for transferring data.

2. Why does TCP require three messages to establish the connection? What would go wrong if you were to attempt building the connection with two messages? (3 points)

   Since TCP is connection oriented. It must establish a connection between client and server before transferring data. If only two messages were used when building the connection, either side of the client or server may go wrong. For instance, if there are only ACK and ACK/SYN messages, the client side may not reach the server side but won't be detected during the connection building stage.

3. Explain how you implemented the sharing of connection socket port numbers between the client and the server in your implementation. Justify your choice of header and message content in sharing this information. (4 points)

For my header, I chose source port, destination port, sequence number, acknowledgment number and flags as all the components. For the flags I include ACK, SYN, and FIN tags. Since I thought these fields are enough for the implementation.