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CSE 310
Programming Assignment #2

For part A, I made a dictionary to hold in all the necessary information, with the key being the source port and the destination port as a tuple. The values would be an array of information that includes the start time of flow, end time of flow, the transactions, and total bytes.

For part B, I realized that it is important to be calculating the RTT for each flow. The way I estimated this was for a given period, I calculated the time from the first packet being sent, and with that, there will be other packets being sent too, until I receive an ACK from the receiver to the sender of one of the packets. Roughly, the average RTTs for the given pcap file is around 0.07.

With this, we can find the information for part B. For the congestion window size, I count the number of packets being sent from Sender → Receiver for 3 RTTs. For the retransmissions, I first looked at Timeouts. I check each transaction and checked how long it took and saw if the time difference was < 2 * RTT. If it was, then it was a timeout retransmission. For the triple ack transmission, I checked to see if the sender was receiving duplicate acks and if so, I added the ack number to a array. Then if the seq number is in the special array, we know it is a result of a triple duplicate ack.