• Where did the bulk of logic occur? (3 pts)

      The bulk of the logic took place in the function processReceiveAndSendRespond(). The server side implementation had more going on with it than the client side, mostly because I opted to not have the client acknowledge the server's acknowledgements.

• How were the timeouts resolved? What happened if timeouts have been resolved? (3+ 2 pts)

      I saved segments sent out by the client in a buffer, and removed them from that buffer once the client received an acknowledgment from the server. The processSend() function on the client re-sent any packets that were still in the buffer after 3 iterations.

• How was the packet dropping handled? (2 pts)

      If data packets were dropped, they were re-sent after not receiving acknowledgements from the server. If acknowledgement packets were dropped, sometimes a future acknowledgement of higher ack value would clear the outbuffer, but I also resent acknowledgments to duplicate packets in case no new acknowledgements were received by the client.

• How was the retransmission policy implemented (5 pts)?

      In the client side of the processSend() function. I saved sent segments in a buffer along with the value of the iteration they were sent. If 3 iterations had passed and they were still in the buffer, they were re-sent and had their iteration value updated.

Short Data Screenshot

Long Data Screenshot

```
DataReceivedFromClient:

...We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one t
hat we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.

...we shall send to the moon, 240,000 miles away from the control station in Houston, a giant rocket more than 300 feet tall, the length of this football field, made of new metal alloys, some of which have not yet been invented, capable of standing heat and stresses several
times more than have ever been experienced, fitted together with a precision better than the finest watch, carrying all the equipment needed for propulsion, guidance, control, communications, food and survival, on an untried mission, to an unknown celestial body, and then re
turn it safely to earth, re-entering the atmosphere at speeds of over 25,000 miles per hour, causing heat about half that of the temperature of the sun--almost as hot as it is here today--and do all this, and do it right, and do it first before this decade is out.

JFK - September 12, 196
Press enter to continue...
--------------------------------------------------------------------------------------
Time (iterations) = 420
Client------------------------------------------
Sending segment:  seq: 1248, ack: -1, data:
Server------------------------------------------
Sending ack:  seq: -1, ack: 1240, data:
Sending ack:  seq: -1, ack: 1240, data:
Main------------------------------------------
DataReceivedFromClient:

...We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one t
hat we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.

...we shall send to the moon, 240,000 miles away from the control station in Houston, a giant rocket more than 300 feet tall, the length of this football field, made of new metal alloys, some of which have not yet been invented, capable of standing heat and stresses several
times more than have ever been experienced, fitted together with a precision better than the finest watch, carrying all the equipment needed for propulsion, guidance, control, communications, food and survival, on an untried mission, to an unknown celestial body, and then re
turn it safely to earth, re-entering the atmosphere at speeds of over 25,000 miles per hour, causing heat about half that of the temperature of the sun--almost as hot as it is here today--and do all this, and do it right, and do it first before this decade is out.

JFK - September 12, 196
Press enter to continue...
--------------------------------------------------------------------------------------
Time (iterations) = 421
Client------------------------------------------
Resending segment:  seq: 1240, ack: -1, data: 2

Resending segment:  seq: 1244, ack: -1, data:
Server------------------------------------------
Sending ack:  seq: -1, ack: 1240, data:
Sending ack:  seq: -1, ack: 1240, data:
Sending ack:  seq: -1, ack: 1252, data:
Sending ack:  seq: -1, ack: 1252, data:

JFK - September 12, 1962

$$$$$$$$ ALL DATA RECEIVED $$$$$$$$
countTotalDataPackets: 473
countSentPackets: 868
countChecksumErrorPackets: 44
countOutOfOrderPackets: 16
countDelayedPackets: 86
countDroppedDataPackets: 44
countAckPackets: 397
countDroppedAckPackets: 43
# segment timeouts: 208
TOTAL ITERATIONS: 421
PS C:\Users\patri\Documents\School\OSU\CS 372>
```