

## Server-side log:

First, server received five correct packets. Then it received another five packets, emulated one correct packet and four packets with errors (by running "client.c" as client)

```
linzhihaodeAir:Assignment_1 linzhihao$ ./server
Listening for client messages...

ACK - Packet 0
ACK - Packet 1
ACK - Packet 2
ACK - Packet 3
ACK - Packet 4
----- End of one packets set -----

Reject - Packet 0 (Missing_end_id_error: Last bytes of packet-65280)
Reject - Packet 1 (Length_error: Error_length-8 Correct_length-255)
Reject - Packet 3 (Out_of_sequence: should receive packet 2)
ACK - Packet 2
Reject - Packet 2 (Duplicated packet: received packet 2 again)
----- End of one packets set -----
```

## Client-side log:

First, client will send five correct packets. Then it will send another five packets, emulating one correct packet and four packets with errors (by running "client.c" as client)

```
[linzhihaodeAir:Assignment_1 linzhihao$ ./client
Client: Sending packet 0
Server: ACK - Packet 0

Client: Sending packet 1
Server: ACK - Packet 1

Client: Sending packet 2
Server: ACK - Packet 2

Client: Sending packet 3
Server: ACK - Packet 3

Client: Sending packet 4
Server: ACK - Packet 4

----- Error Handling Test Start -----

Client: Sending packet 0
Server: Reject packet 0 - Missing end ID.

Client: Sending packet 1
Server: Reject packet 1 - Length mismatch.

Client: Sending packet 3
Server: Reject packet 3 - Out of sequence. should receive packet 2

Client: Sending packet 2
Server: ACK - Packet 2

Client: Sending packet 2
Server: Reject packet 2 - Duplicated packet. received packet 2 again
```

----- ack\_timer timeout -----

```
[linzhihaodeAir:Assignment_1 linzhihao$ ./client  
Client: Sending packet 0  
Client: resending packet 0. attempt no.1 / 3  
Client: resending packet 0. attempt no.2 / 3  
Client: resending packet 0. attempt no.3 / 3  
Server does not respond
```

----- **Outputs of Additional Test Cases** -----

### Server-side log:

----- Case-1 out of sequence ----- (output by running "Case-1.c" as client)

```
[linzhihaodeAir:Assignment_1 linzhihao$ ./server  
Listening for client messages...  
  
ACK - Packet 0  
ACK - Packet 1  
Reject - Packet 3 (Out_of_sequence: should receive packet 2)  
ACK - Packet 2  
ACK - Packet 3  
----- End of one packets set -----
```

----- Case-2 length mismatch ----- (output by running "Case-2.c" as client)

```
[linzhihaodeAir:Assignment_1 linzhihao$ ./server  
Listening for client messages...  
  
ACK - Packet 0  
Reject - Packet 1 (Length_error: Error_length-32 Correct_length-255)  
ACK - Packet 2  
ACK - Packet 3  
ACK - Packet 4  
----- End of one packets set -----
```

----- Case-3 end of packet missing ----- (output by running "Case-3.c" as client)

```
[linzhihaodeAir:Assignment_1 linzhihao$ ./server  
Listening for client messages...  
  
ACK - Packet 0  
ACK - Packet 1  
ACK - Packet 2  
Reject - Packet 3 (Missing_end_id_error: Last bytes of packet-65295)  
ACK - Packet 4  
----- End of one packets set -----
```

----- Case-4 duplicate packet ----- (output by running "Case-4.c" as client)

```
[linzhihaodeAir:Assignment_1 linzhihao$ ./server
Listening for client messages...

ACK - Packet 0
ACK - Packet 1
ACK - Packet 2
Reject - Packet 2 (Duplicated packet: received packet 2 again)
ACK - Packet 3
----- End of one packets set -----]
```

### Client-side log:

----- Case-1 out of sequence ----- (output by running "Case-1.c" as client)

```
[linzhihaodeAir:Reject_Cases linzhihao$ ./c1
Client: Sending packet 0
Server: ACK - Packet 0

Client: Sending packet 1
Server: ACK - Packet 1

Client: Sending packet 3
Server: Reject packet 3 - Out of sequence. should receive packet 2

Client: Sending packet 2
Server: ACK - Packet 2

Client: Sending packet 3
Server: ACK - Packet 3]
```

----- Case-2 length mismatch ----- (output by running "Case-2.c" as client)

```
[linzhihaodeAir:Reject_Cases linzhihao$ ./c2
Client: Sending packet 0
Server: ACK - Packet 0

Client: Sending packet 1
Server: Reject packet 1 - Length mismatch.

Client: Sending packet 2
Server: ACK - Packet 2

Client: Sending packet 3
Server: ACK - Packet 3

Client: Sending packet 4
Server: ACK - Packet 4]
```

----- Case-3 end of packet missing ----- (output by running "Case-3.c" as client)

```
[linzhihaodeAir:Reject_Cases linzhihao$ ./c3  
Client: Sending packet 0  
Server: ACK - Packet 0  
  
Client: Sending packet 1  
Server: ACK - Packet 1  
  
Client: Sending packet 2  
Server: ACK - Packet 2  
  
Client: Sending packet 3  
Server: Reject packet 3 - Missing end ID.  
  
Client: Sending packet 4  
Server: ACK - Packet 4
```

----- Case-4 duplicate packet ----- (output by running "Case-4.c" as client)

```
[linzhihaodeAir:Reject_Cases linzhihao$ ./c4  
Client: Sending packet 0  
Server: ACK - Packet 0  
  
Client: Sending packet 1  
Server: ACK - Packet 1  
  
Client: Sending packet 2  
Server: ACK - Packet 2  
  
Client: Sending packet 2  
Server: Reject packet 2 - Duplicated packet. received packet 2 again  
  
Client: Sending packet 3  
Server: ACK - Packet 3
```