Lab 5: Go-Back-N & Selective Repeat

Book: Section 3.4.3, 3.4.4.

Firstname:	Mukhtar	ID:	201842774
Surname:	Sarsenbay	Lab section #	1

Q1) The window size (N) is 2. The server is going to send you 6 packets. pkt1 will be lost when it's sent the first time. Write the messages into boxes below, based on Go-Back-N protocol. Rules for Q1:
Rule1: pkt# indexing starts from 0. For simplicity, we ignore the term *deliver*. Left side - sender, right - receiver.
Rule2: You must use the exact terms as shown in Figure 3.22 from the book.
Rule3: One box must have only one message. A comma, space, round brackets must be used when necessary.
Rule4: We stop when the last ACK was sent from the Receiver. It's not required to receive them on Sender's side.
Rule5: *(wait)* is mentioned only once, after the first series of sent packets.

send pkt0

send pkt1 (loss)

(wait)

rcv pkt0

send ACK0

rcv ACK0

send pkt2

rcv pkt2, discard

send ACK0

pkt1 timeout

send pkt1

rcv pkt1

send ACK1

rcv ACK1

send pkt2

send pkt3

rcv pkt2

send ACK2

rcv pkt3

send ACK3

rcv ACK2

send pkt4

rcv ACK3

send pkt5

rcv pkt4

send ACK4

rcv pkt5

send ACK5

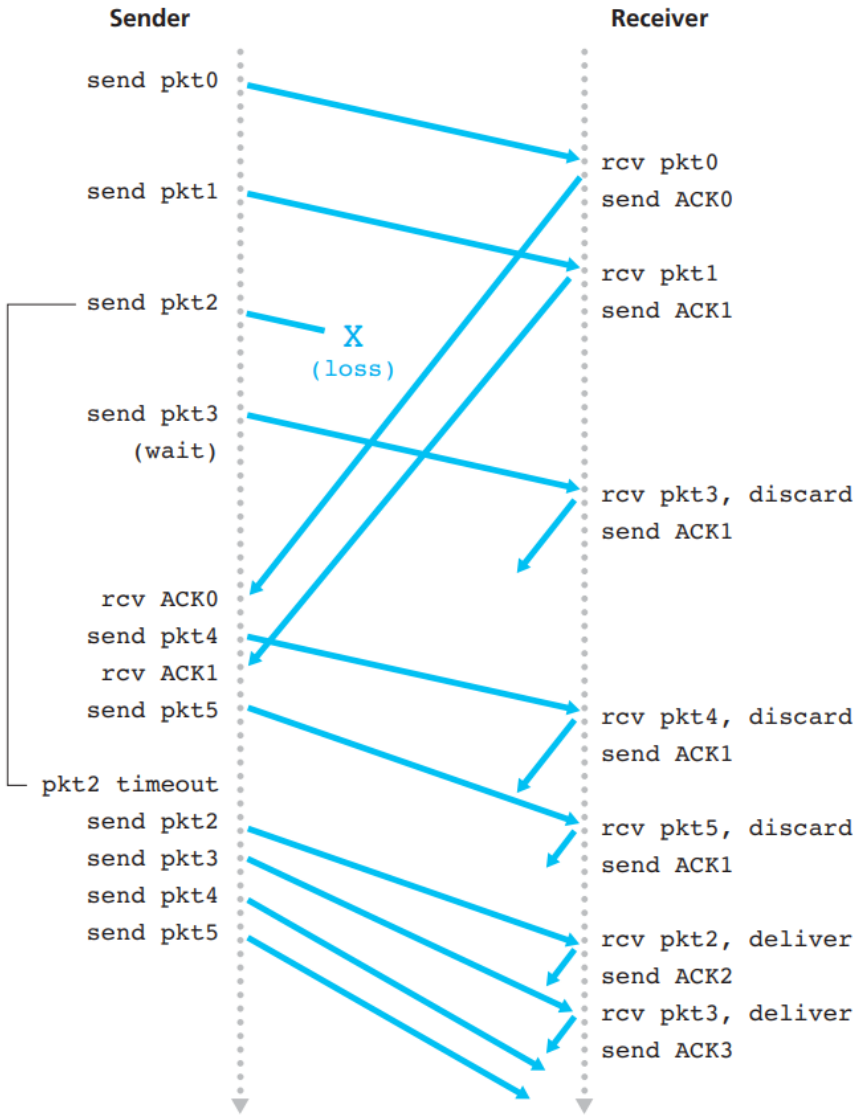

Figure 3.22 ♦ Go-Back-N in operation

Q2) The window size (N) is 2. The server is going to send you 5 packets. pkt1 will be lost when it's sent the first time. Write the messages into boxes below, based on Selective Repeat protocol.
Rule1: pkt# indexing starts from 0.
Rule2: You must use the exact terms as shown in Figure 3.26 from the book.
Rule3: One box must have only one message. A comma, space, round brackets must be used when necessary.

pkt0 sent

pkt1 sent (loss)

window full

pkt0 rcvd, delivered

ACK0 sent

ACK0 rcvd

pkt2 sent

pkt2 rcvd, buffered

ACK2 sent

ACK2 rcvd

pkt1 timeout

pkt1 resent

pkt1 rcvd

pkt1,pkt2 delivered

ACK1 sent

ACK1 rcvd

pkt3 sent

pkt4 sent

pkt3 rcvd, delivered

ACK3 sent

pkt4 rcvd, delivered

ACK4 sent

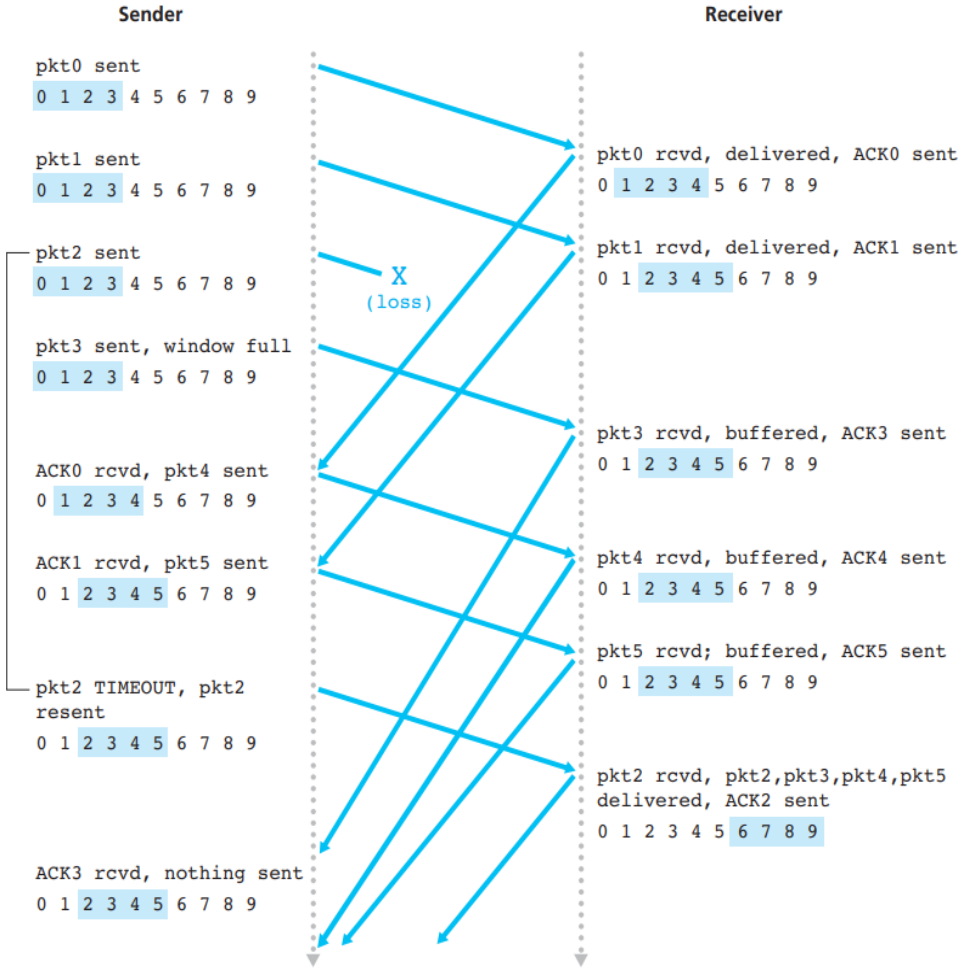

Figure 3.26 ♦ SR operation

Readme

1) Leaving even one of the first 4 fields (First name, Surname, ID, Lab section #) will lead to the nullification of the lab grade of Lab 5.
2) Boxes don't have the same weight. Some boxes weigh more than others.
3) If there's a mistake in any of the fields mentioned in point 1, in your ID or lab section, it will significantly decrease your grade and will be subject to plagiarism.

On Selective Repeat:
1) sending/receiving ACK is a separate line of message.
2) receiving out-of-order packets and buffering them must be done in a single line of message.
3) when buffered packets are being delivered, separate this message from sending ACK and receiving the packets. So, when the lost packet arrives, receive it in the 1st line, but deliver it on the 2nd line, with other buffered packets.
4) window full is mentioned only once, upon the very first occurrence.
5) we stop when the ACK of the last received packet was sent from the Receiver. It's not required to receive them on Sender's side.
6) "nothing sent" doesn't have to be mentioned.
7) timeout message must be written in a separate line of message. Resending must follow it on the next line.
8) if a single packet is received and there are no buffered packets at that moment, you must mention that it's delivered, on the same line.
9) (repetition of 3rd) if a single packet is received, but there are some buffered packets in memory, you should receive that packet in the first line, and then deliver that packet with the buffered ones on the next line.