

Elementary Data Link protocols

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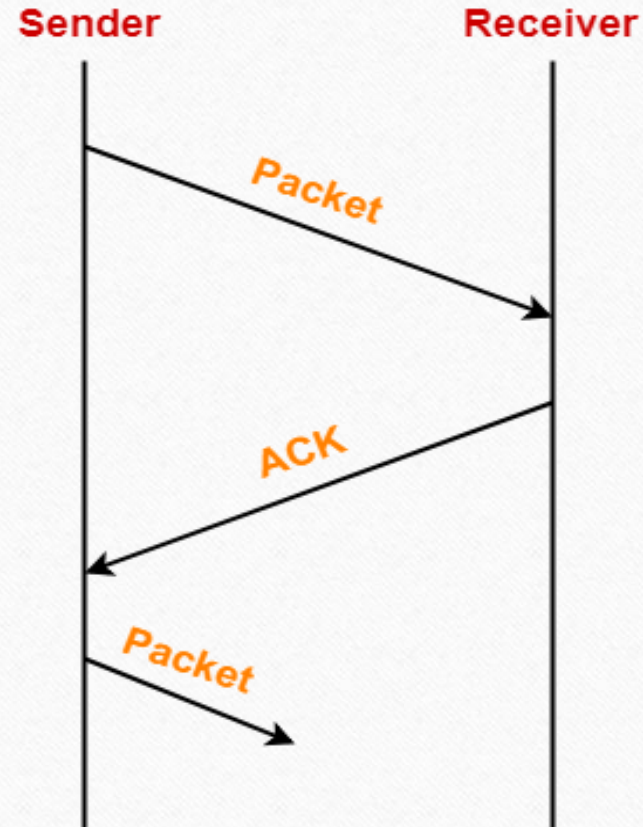
Automatic Repeat Request (ARQ)

Purpose: To ensure a sequence of information packets is delivered in order and without errors or duplications despite transmission errors & losses.

There are three types

- 1) Stop-and-Wait ARQ**
- 2) Go-Back N ARQ**
- 3) Selective Repeat ARQ**

Stop & Wait ARQ

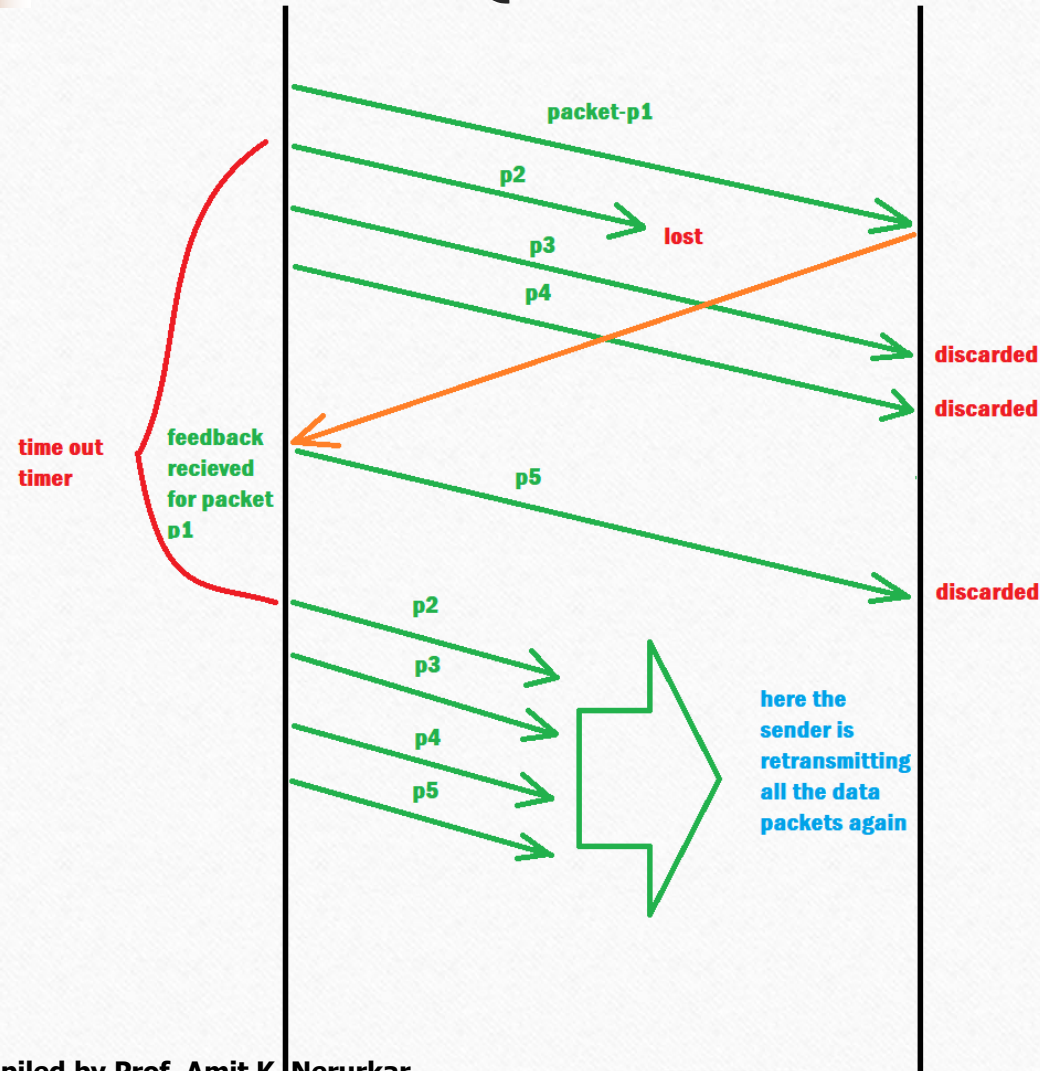


Sender sends one data packet and then waits for its acknowledgement.

Sender sends the next packet only after it receives the acknowledgement for the previous packet.

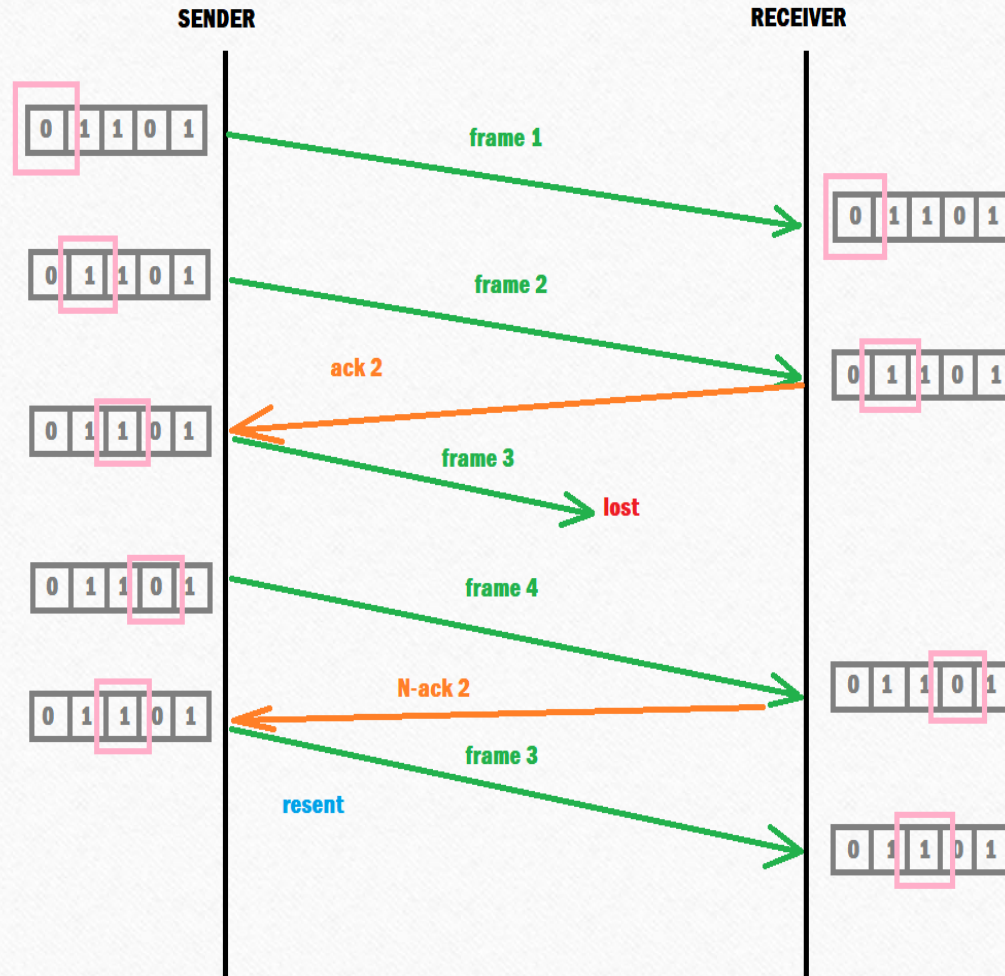
Stop and Wait Protocol

Go-Back N ARQ



Now as the time out time index of p2 expires, the sender goes back 3 packets and starts sending all the data packets from p2 to p5 again.

Selective Repeat



We can see **frame3** is lost during the transmission & was unable to reach the receiver, but the next frame, which is **frame4** is transmitted and also accepted by the receiver, who then sends a negative acknowledgment due to which the sender only transmits **frame3**

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Thank You

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