Stop-and-Wait Protocol

1. Stop and wait protocol is data link layer protocol for transmission of frames over noiseless channels
2. It provides unidirectional data transmission with low control facilities but without error control facilities. (both part cant send data at the same time)
3. The idea of stop-and-wait protocol is straight forward
4. After transmitting one frame, the sender waits for an acknowledgement before transmitting the next frame.
5. Primitives:
   1. Sender:
      1. Send one data packet at a time.
      2. Send the next packet only after receiving ACK for the previous.
   2. Receiver
      1. Receive and consume data packet
      2. After consuming packet, ACK need to be sent (Flow control)
6. Problems
   1. Problems due to lost data
      1. Sender waits for ack for an infinite amount of time
      2. Receiver waits for data for an infinite amount of time.
   2. Problems due to lost ACK
      1. Sender waits for an infinite amount of time for ack.
   3. Problems due to delayed ACK/data.
      1. After timeout on the sender side, a delayed ack might be wrongly considered as ack of some other data packet.
      2. 