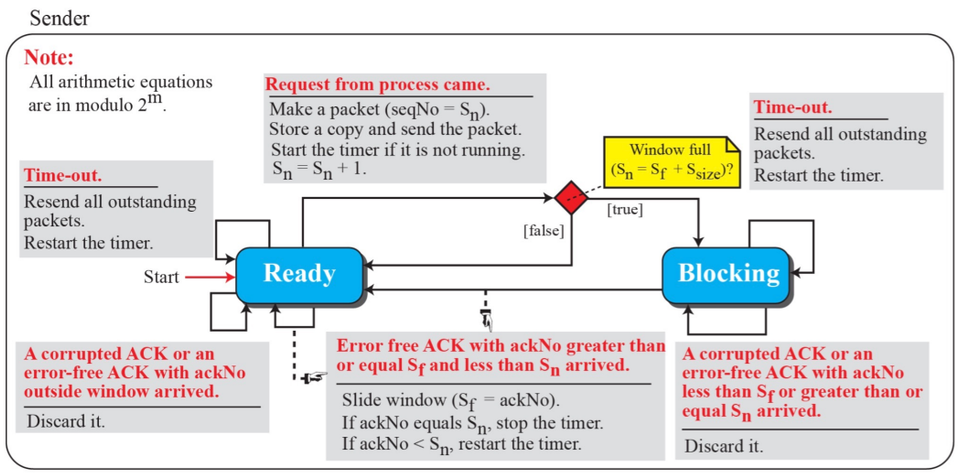
CN Assignment II

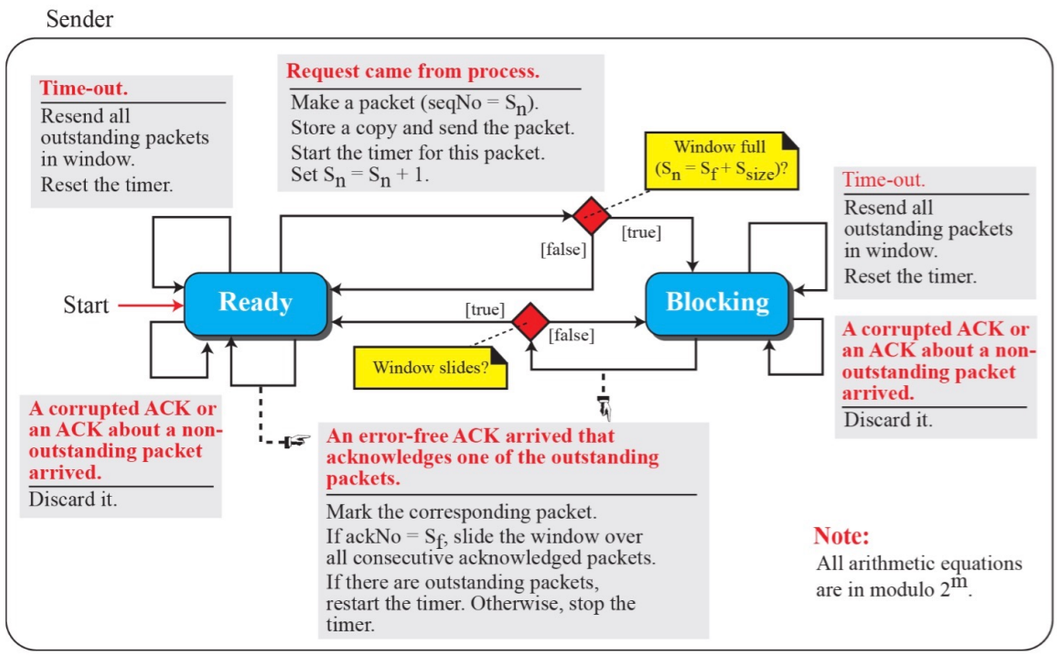
1. **With a flow diagram explain how sockets created, used and closed for data transfer at server and client side for iterative TCP communication.**

2. **With a FSM explain the sender side states for GO back N protocol.**



In a Go-Back-N (GBN) protocol, the sender is allowed to transmit several packets (when available) without waiting for an acknowledgment, but is constrained to have no more than some maximum allowable number, N, of unacknowledged packets in the pipeline.

3. **With a FSM explain the sender side states for Selective repeat protocol.**



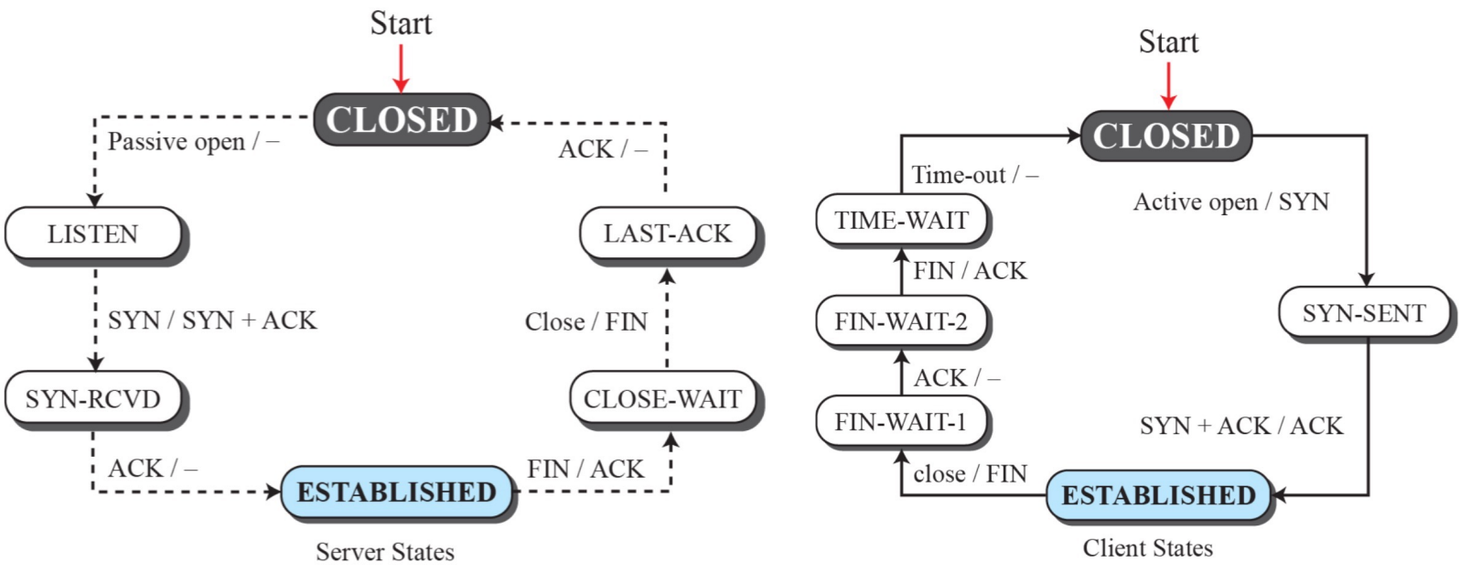
When used as the protocol for the delivery of **messages**, the sending process continues to send a number of frames specified by a *window size* even after a frame loss. Unlike Go-Back-N ARQ, the receiving process will continue to accept and

acknowledge frames sent after an initial error; this is the general case of the sliding window protocol with both transmit and receive window sizes greater than 1.

4. **Give a diagram showing different segments exchanged between server and client for the example shown below:**

   Client and server establish a TCP connection with 9800 and 1200 as ISNs respectively. Then client transmits two data segments with 2500 bytes each and server responds with a 3000 byte segment. At the end they use three way handshaking for connection termination.

5. **Using a state transition diagram explain Half close scenario in TCP.**



Every TCP connection consists of two half-connection which are closed independently of each other. So if one end sends a FIN, then the other end is free to just ACK that FIN (instead of FIN+ACK-ing it), which signals the FIN-sending end that it still has data to send. So both ends end up in a stable data transfer state other than ESTABLISHED--namely FIN_WAIT_2 (for the receiving end) and CLOSE_WAIT (for the sending end). Such a connection is said to be half closed and TCP is actually designed to support those scenarios, so half closed connections is a TCP feature.