Reliable Data Transfer Sender

	Alternating Bit	Go Back *n*	Selective Repeat	Cumulative Acknowledgment
Sender initialization	The sender has one state variable: • `nextSequenceNumber` (initial value 0) is the sequence number to be used for the next outgoing packet.	The sender has two state variables: • `windowStart` (initial value 0) is the start index of the send window. • `nextSequenceNumber` (initial value 0) is the sequence number to be used for the next outgoing packet.	The sender has two state variables: • `windowStart` (initial value 0) is the start index of the send window. • `nextSequenceNumber` (initial value 0) is the sequence number to be used for the next outgoing packet.	The sender has two state variables: • `windowStart` (initial value 0) is the start index of the send window. • `nextSequenceNumber` (initial value 0) is the sequence number to be used for the next outgoing packet.
Response to a packet from the application layer	Give the packet sequence number `nextSequenceNumber` and send it. Save the packet in case it needs to be resent. Start the timer. Increment `nextSequenceNumber` and stop accepting input from the application layer.	Give the packet sequence number `nextSequenceNumber` and send it. Save the packet in case it needs to be resent. Start the timer. Increment `nextSequenceNumber` and stop accepting input from the application layer if the window is full.	Give the packet sequence number `nextSequenceNumber` and send it. Save the packet in case it needs to be resent. Start timer `nextSequenceNumber`. Increment `nextSequenceNumber` and stop accepting input from the application layer if the window is full.	Give the packet sequence number `nextSequenceNumber` and send it. Save the packet in case it needs to be resent. Start the timer. Increment `nextSequenceNumber` and stop accepting input from the application layer if the window is full.
Response to an acknowledgment with an expected sequence number	Advance the window to begin at the first unacknowledged packet. Accept data from the application layer.	Advance the window to begin at the first unacknowledged packet. Accept data from the application layer if the window has advanced.	Advance the window to begin at the first unacknowledged packet. Accept data from the application layer if the window has advanced.	Advance the window to begin at the first unacknowledged packet. Accept data from the application layer if the window has advanced.
Response to an acknowledgment with an unexpected sequence number	Ignore it. It is an acknowledgment of a resend due to a late acknowledgment.	Ignore it. It is an acknowledgment of a resend due to a late acknowledgment.	Ignore it. It is an acknowledgment of a resend due to a late acknowledgment.	Ignore it. It is an acknowledgment of a resend due to a late acknowledgment.
Response to a timer firing	Send the saved packet and restart the timer.	Send all unacknowledged saved packets and restart the timer.	Send the saved packet associated with the timer and restart the timer.	Send the first unacknowledged saved packet and restart the timer.