Project 2 Documentation

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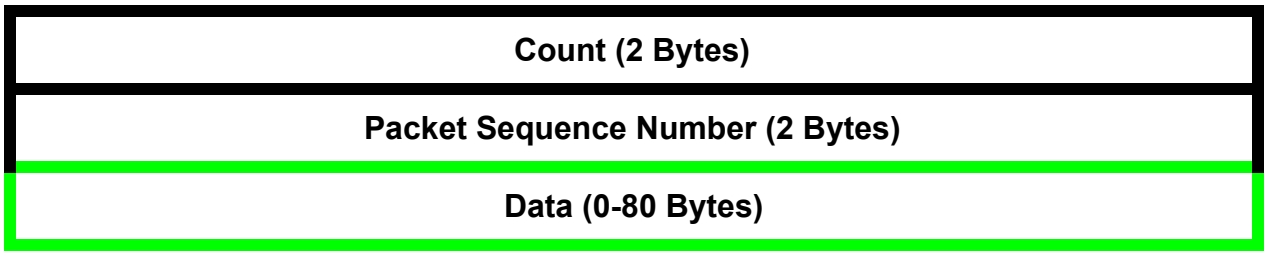
Sender Data Packet:

The sender data packet is the packet that is sent from the sender to the receiver. The packet contains a header of size 4 bytes and a data payload that varies in size from 0 to 80 bytes. The only time when a data payload has 0 bytes is also when the count is 0 when sending an End of Transmission packet. The count and packet sequence number fields are 2 byte integers whereas the data field is a character array (string) of varying length. We chose for the packet to take the form of a character array (string).



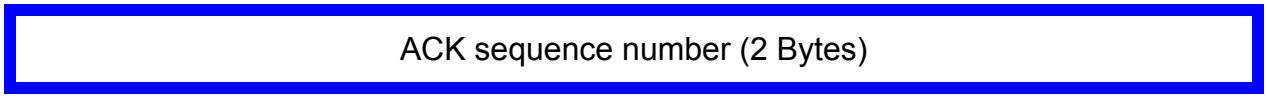
count: Specifies the length of the data payload as an integer number.

packet sequence number: Either 0 or 1, specifies the packet's sequence number that the sender has sent.

data: The character array of data of the line of text that the sender has pulled and is sending to the receiver.

ACK Response:

The ACK response is the information sent from the receiver to the sender to acknowledge that the corresponding packet has been received successfully. The only thing sent is the 2 byte integer sequence number that takes on 0 or 1 for the respective data packet.



ACK sequence number: Either 0 or 1, is the acknowledgment that is sent to the sender from the receiver that the data packet corresponding to that sequence number has been received successfully.

Functions:

int SimulateLoss():
This function generates a random number between 0 and 1. Returns 0 when the random number is less than the packet loss rate defined by the user, meaning the packet is dropped. Returns 1 when the random number is greater than or equal to the data loss rate meaning the packet is successfully accepted.

int SimulateACKLoss():
This function generates a random number between 0 and 1. Returns 0 when the random number is less than the ACK loss rate defined by the user, meaning the ACK response is dropped. Returns 1 when the random number is greater than or equal to the ACK loss rate meaning the ACK was successfully sent.