Zhao Weng(304946606) , Honglin Zhen(304947026)
Project 2 Report

Implementation description
header format:
       FLAG type with possible values REQ, ACK, DATA, FIN
       int seqNum (Sequence number)
       int dataSize (Data size)
messages:
       char data[DATASIZE];

Server will resend the packet with timeout 1 second, which is also the timeout value.

Implementation Descriptions
Header format
In the header format, we designed the packet type, Req will be used to first request for data. ACK will be used to indicate receiving packet. Data will be used to send data packet, and FIN will be used to implement FIN-ACK at the end of the client-server communication

Messages
Data size will be set to the default, and message part will be composed by the content of the packet

Timeouts
We chose to use function "select" to implement timeout mechanism. After default timeout value, server will resend the packet not yet acknowledged.

Window-based protocols
User is capable of setting the window size. At each time, server can allow window size packets on the flight.

Difficulties
We are facing problems when trying to construct the connection using UDP. We are not sure which API to use initially. Later, we found that sendto and recfrom appropriate to handle the communication.

In addition, we are having trouble using command line to simulate data loss and data corruption. So we resort to random number generator in C to generate random value to simulate data loss and data corruption in the source code.

In addition, we are having trouble using timeout mechanism to implement Go-Back-N protocol. Later, we found that select function suitable to implement the timeout mechanism, and when time runs out, the packet with current sequence number will be resent.