MyChat Design Document

MyChat Behavior and Scenarios

* Forming the connection
  + Sender will send a chat request to receiver with random ISN (initial sequence number)
    - Receiver will reply with ACK or FIN
  + If sender receives FIN, display message saying receiver does not want to chat
  + If request times out (no response), display message informing user of the time out
  + If sender receives ACK, connection is formed and both sides have the same ISN
* Once connection is formed (connection can be terminated at any time with a FIN)
  + Both sender and receiver have the same abilities
  + Sender will send messages and store the messages in the sliding window
    - Receiver will respond with an ACK and an updated ISN
  + Sender will use updated ISN and decide to update the sliding window or resend the messages
* Terminating the connection, when either sender sends FIN
  + Replies with ACK to make sure of broken connection and the connection will be broke
* Heartbeat- show that other is still logged in
  + LOG message every 10 seconds while logged in if no message is sent

MyChat Message Format

150 character limit per message. Each character uses 8 bits according to ACSCII, so 2048 bits will be used for the payload at most.

| 13-bit message size | 3 bit message type | 16 bit checksum | variable length payload |

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| Message type | Meaning |
| 000 | Normal Message |
| 001 | ACK |
| 100 | FIN |
| 010 | REQ |
| 011 | LOG |