

## The Team:

Client side: Matthew and Ugonna

Server side: Amanda and Justin

## The Protocol:

TCP headers will contain the following:

- Source IP
- Destination IP
- Sequence #
  - Acknowledgment # (if applicable)

Connections will be made via 3-way handshake

Data will be sent by sliding window

Connections will be closed via 3-way handshakes (to prevent erroneously open connections)

We will use python for the implementation

## The project:

We are making a simple chat relay.

Clients connect to the server, and send a message. The server copies these messages to each client connected.

## Small example:

```
def slidingWindow(transmit, send, windowSize, maxFrames):
    windows = toWindows(send, windowSize) # cut the data into frames
    lastACK = -1 # last acked frame, set to -1 since frame 0 is not acked
    current = 0 # current frame sending
    # define two threads to run simultaneously

    # Thread 1
    while current < len(windows) and current != lastACK:
        # while we still have frames to send
        # and until the final ack is recieved
        startTime = time.time() # get the time at which we started sending
        cAck = lastACK # set a temporary ack check var

        while current < lastACK + maxFrames:
            # send the next maxFrames frames
            currentWindow = windows[current]
            transmit.send(currentWindow)
            current = current + 1

        while time.time() < startTime + x and cAck == lastACK:
            # wait x seconds (timeout) or wait until lastACK is updated
            time.sleep(0.001)

    # Thread 2
    # listen for acks
    # if the ack recieved is greater than 1 above the lastACK
    # set current back to lastACK
    # else set lastACK to the ack recieved
```



Epstein  
didn't kill  
himself