CS349/449

Recitation # 1
September 23, 2004

Project 1

- Instant Messaging Client and Server
  - Similar to AIM, IRC
- Purpose
  - to become familiar with client/server socket programming

Server

- create a server socket

- listen for connection requests

- on accept( ), spawn a new thread with connection socket

- now each thread is responsible for handling the communication between server and the client that initiated the connection

Client

- Connect to server IP address on port <x>

- Login with username and password

- Send messages to server (and server passes messages to other clients)

- Publishes messages received from server

Client Commands

- The following are entered by the user in the chat client
  - /login <username> <password>
  - /who
  - /logout
  - /knock <username>
  - /msg <message>

Client Commands

- /accept

- /deny

- /endprivate

Protocol Commands

- Take the general form
  - COMMAND\n
  - TAGNAME: value\n
  - TAGNAME: value\n
  - \n
- Commands are case sensitive (all caps)!

Protocol Commands

- CONNECT

- OK

- ERROR

- SENDALL

- PUBLISH

- WHO

Protocol Commands

- ULIST

- BYE

- TALKTO

- TALKREQ

- TALKRESP

- SEND

Protocol Command Tags

- UID

- PASSWD

- SEQ

- ERRMSG

- MSG

- PORT

- IP

User Database

- Simple text file kept on server machine

- Each line of the form "username:password"

- Passwords are stored in plaint text and sent across the network "in the clear"

  - Don't use passwords you use in real life!
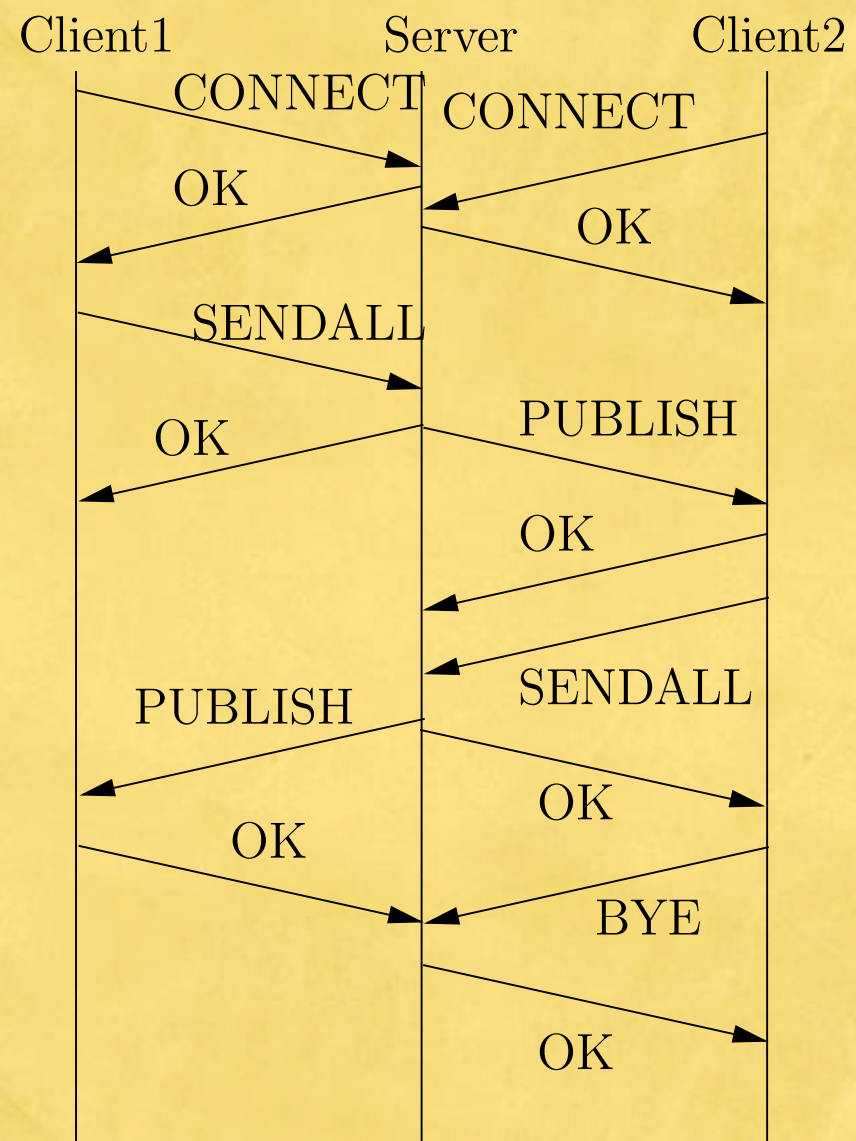
- A note about threads and shared variables

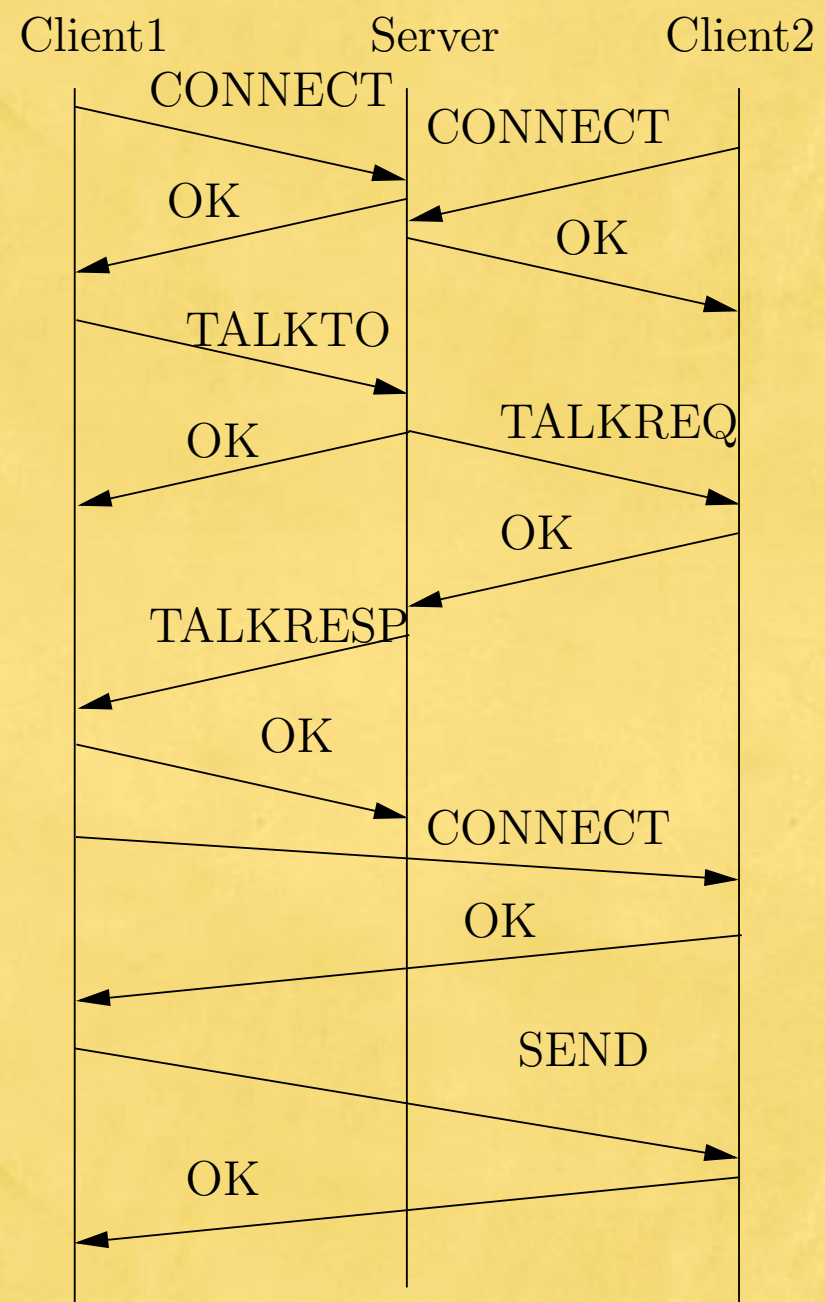Figure 1: Example of Client Server communications

Figure 2: Example of Peer communications

Details

- Assignment specifications will be available online tomorrow (September 24th) afternoon

- Project due date is October 15th

  - This is three weeks from tomorrow

- A 1-2 page writeup will be due along with code and makefiles

  - plaintext documents only!

More Details

- A test server will be provided to test your clients and compare the functionality of your servers (soon, but TBA)

- Java vs. C/C++

- NO late submissions (sorry guys)

Demo