

# Multi - Chat Presentation

# TOC

RFC Review (see slide 3 - 6)

Software Implementation

App Demo



# RFC Review - Client

- 1 TCP socket connection to server per client, no P2P connections allowed
- Client message types:

CHAT - with text or file payload (both in binary), could be public or private

QUERY - get a list of active session id, use session id to contact another client privately

FETCH - retrieve a shared file from server with file id

NICKNAME - set a nickname for oneself, display to others

BYE - notify server of quitting, result in connection close



# RFC Review - Server

- 1 session per TCP socket connection
- Not recommended for large file sharing
- Server message types:

Relay Message - generated only from client CHAT message with text payload, forward to one destination client if private, broadcast to all available clients if public

Response Message - notify the source client about the status of message handling (e.g. OK, ERROR), carry payload of file binary for FETCH message, text payload for QUERY, NICKNAME, or CHAT message



# RFC Review - Message Format

- Resembles HTTP message format

Header Field Name #1 (text)	Separator (1 blank space)	Header Field Value (text)
Header Field Name #2 (text)	Separator (1 blank space)	Header Field Value (text)
Empty Line		
Payload (binary)		



# RFC Review - Session

- Stateful Sessions on Server

Server session manages client-related properties (e.g. nickname set by client, session Id), which enables stateful communication to client.

- Stateless Client

Client is unaware of the session properties and does not keep track of them either.



# Software Implementation - Modules

- Core (core-1.0-RELEASE.jar)

Implements all network functionalities of chatroom

Chat room SDK for *multi-chat messaging protocol* based app

- Demo (demo-1.0-RELEASE.jar)

Depends on Core module

Implements GUI of chatroom client (no GUI for server)



# Software Implementation - Dependencies

- String Operations (concatenate strings, check for empty string)  
Apache Commons Lang 3.0
- File Operations (convert byte array to file, file to byte array, get file name extension)  
Apache Commons IO 2.6
- UTF-8 Encoding/Decoding  
Apache Commons Codec 1.9



# Software Implementation - Required Envs

- Runtime  
Oracle JRE 1.8
- SDLC Management  
Gradle 4.0 (latest)
- Version Control System  
Git (GitHub)



# Software Implementation - Build & Run

- Build Artifact

```
gradle build
```

- Start Chat Room Server on localhost

```
java -cp demo-1.0-RELEASE.jar edu.gwu.cs6431.multichat.demo.server.DemoServer
```

- Start Chat Room Client

```
java -jar demo-1.0-RELEASE.jar
```



Show Time

Another Alice, Bob, & Trudy Story



Thanks for watching!

