Computer Networks

JACKFRUIT Problem

MULTI-THREADED CHATROOM WITH FILE TRANSFER

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Project Components

Server

- Accepts connections using accept()

- Stores client file descriptors in a global array

- Launches a **new thread per client**

- Reads client messages and **broadcasts** them to all others

- Cleans up on client disconnect

Client

- Connects to the server via IP:port (e.g., `127.0.0.1:3000`)

- Starts a thread to **receive messages** from the server

- Main thread **sends input** from user to the server

Makefile

- Builds both `server` and `client` using `gcc -pthread`

- Supports a `clean` target to remove binaries

CN JA...

- client1
  - .vscode
  - client
  - client.c
  - Makefile
  - sample.txt
- client2
  - .vscode
  - client
  - client.c
  - Makefile
  - sample.txt
- server
  - .vscode
  - Makefile
  - server
  - server.c

Output :-

1) SERVER

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

deezathxrv@keshav-MacBook-Air server % ./server 8000
=== WELCOME TO THE CHATROOM ===
keshav has joined
ketan has joined
keshav: hello
□
```

2) Client 1

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

deezathxrv@keshav-MacBook-Air client1 % ./client 8000
Please enter your name: keshav
=== WELCOME TO THE CHATROOM ===
> ketan has joined
> hello
> /sendto ketan sample.txt
[+] File "sample.txt" sent to ketan
> □
```

3) Client 2

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

deezathxrv@keshav-MacBook-Air client2 % ./client 8000
Please enter your name: ketan
=== WELCOME TO THE CHATROOM ===
> keshav: hello
> [+] File "sample.txt" received successfully
> □
```