Report of MI2.01 Systems & Networks

Centralized Chat System

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April 8, 2018

1. Problem

Implementing a centralized chat system, similar to Internet Relay Chat (IRC). In such a system, client-to-client text messages must first be passed to a centralized server, then the server forwards the messages to the destination client.

In detail, the system should work with multiplexed, nonblocking TCP socket.

- **Sever side**

    - Listening on a specific port.

    - Receive data and forward data to another clients.

    - Server serves each new client with a separated fork().

    - Main process and the forked processes use pipe() as communication mechanism.

- **Client side:**

    - Takes the server hostname from STDIN or from program arguments.

    - Connects to the server.

    - Waits for input message from STDIN

    - Sends them as messages to server and prints incoming messages (from other clients, forwarded by the server) on the client?s terminal.

    - Client should separate a thread for input and a thread for networking

2. Deploy the program

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