

# Protocol for TW-Mailer Project

## 1. Client and Server Architecture

- **Server:**
  - Listens on **PORT 6543** for TCP connections.
  - Handles commands: SEND, LIST, READ, DEL.
  - Stores emails in text files under mails/<username>/.
- **Client:**
  - Connects to the server and sends user requests.
  - Supports commands for sending, listing, reading, and deleting emails.
  - Validates input (username length, subject size).

## 2. Used Technologies

- **Language:** C++
- **Networking:** TCP sockets (sys/socket.h, arpa/inet.h)
- **File Handling:** <fstream>, <filesystem> for email storage.
- **Command-Line Interface:** User input/output.

## 3. Development Strategy

- Implement core features and input validation.
- Test commands and error handling.
- Suggested improvements: multi-threading for concurrent clients, better error messages, and user authentication.

## 3. Needed Adaptations

- Add multi-threading for handling multiple clients.
- Improve error messages for clarity.
- Implement user authentication for secure access.
- Optimize storage management for scalability.