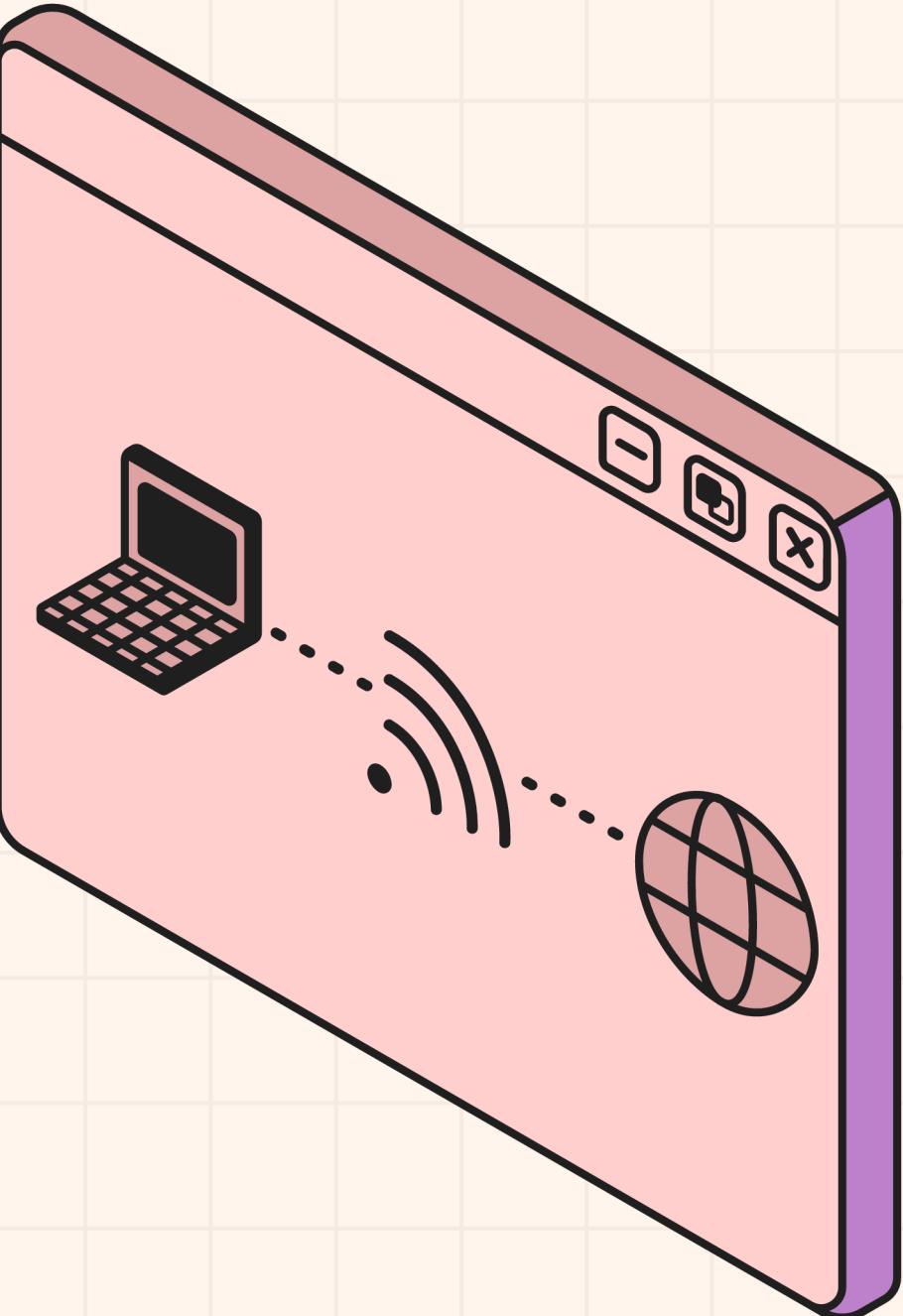
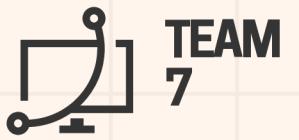


FILE SHARING SYSTEM

A file-sharing system implemented in C++ allows users to upload, download, and manage files across a network using client-server architecture. It typically involves socket programming for communication, with protocols for secure and efficient data transfer.





TEAM DETAILS

TEAM LEADER: ADITYA CHOWDHURY (22CS8064)

TEAM DETAILS:

SIVA SANKARA VARAPRASAD(22CS8061)

RISHAV DAS(22CS8062)

DUVVUSAISAHIL(22CS8063)

KALIVARAPUMANOJ(22CS8065)

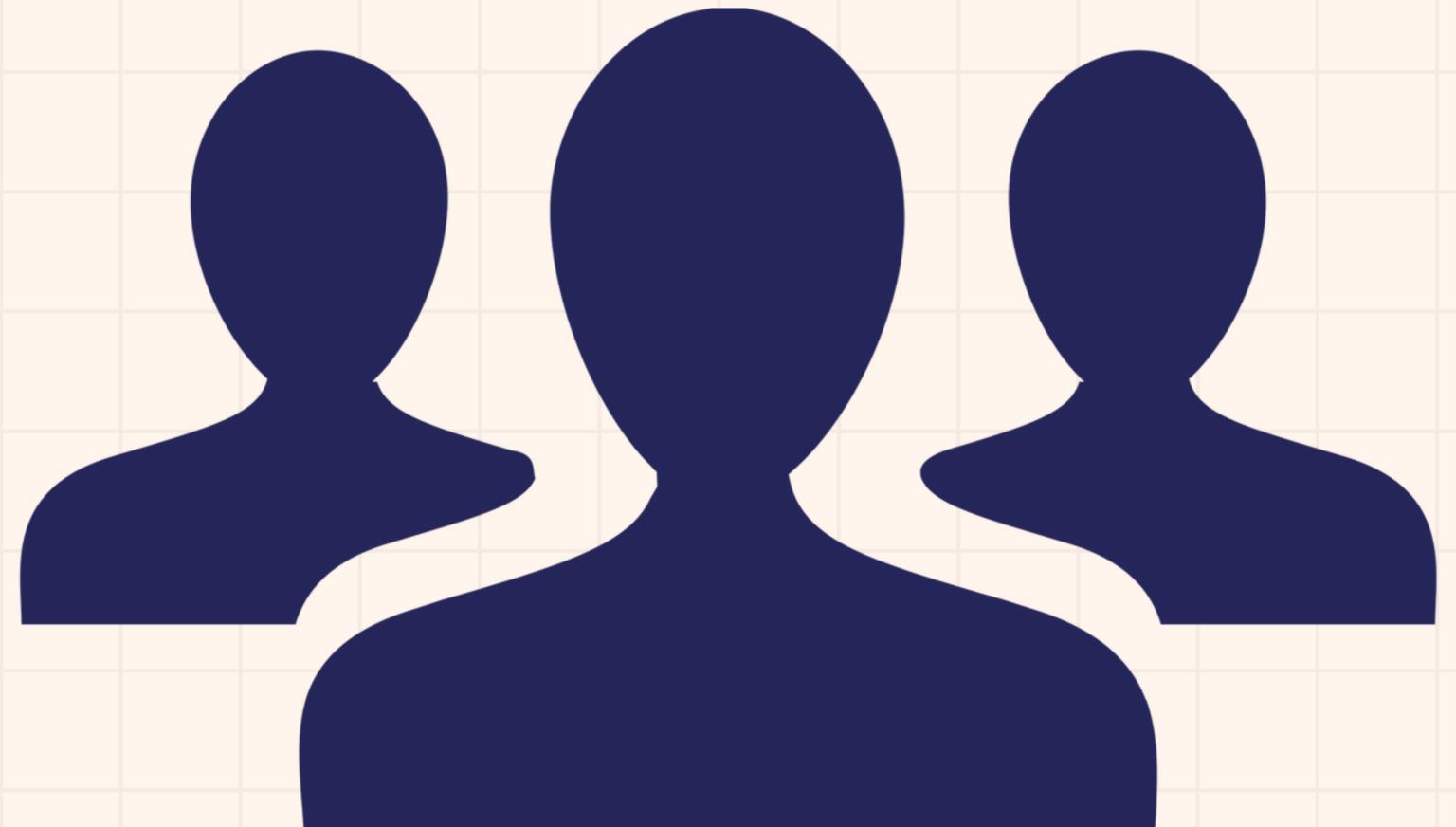
PARIMI MANOHAR (22CS8066)

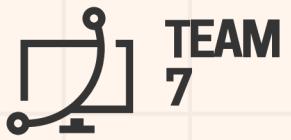
PRIYANKA TAMANG (22CS8067)

SUDHI SUNDAR DUTTA (22CS8068)

ARCHITA DAS(22CS8069)

SAYAN PAUL(22CS8070)





WHAT WE IMPLEMENTED

Client-Server Communication:

Establishes TCP connections using control and data sockets for command and file transfers.

File Upload and Download:

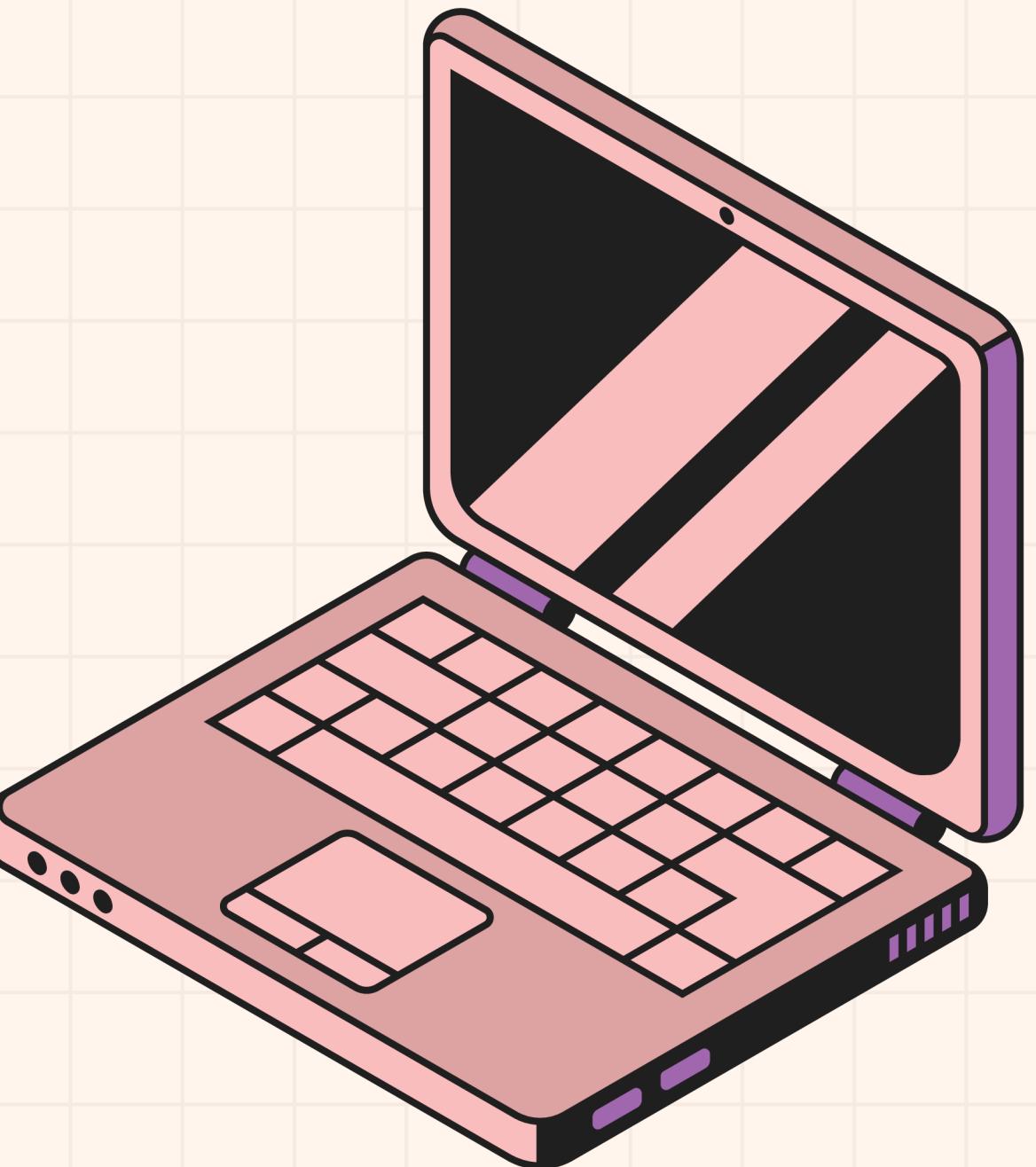
Supports sending and receiving files between client and server.

Command Execution and Status Codes:

Processes commands like `download` and `list`.

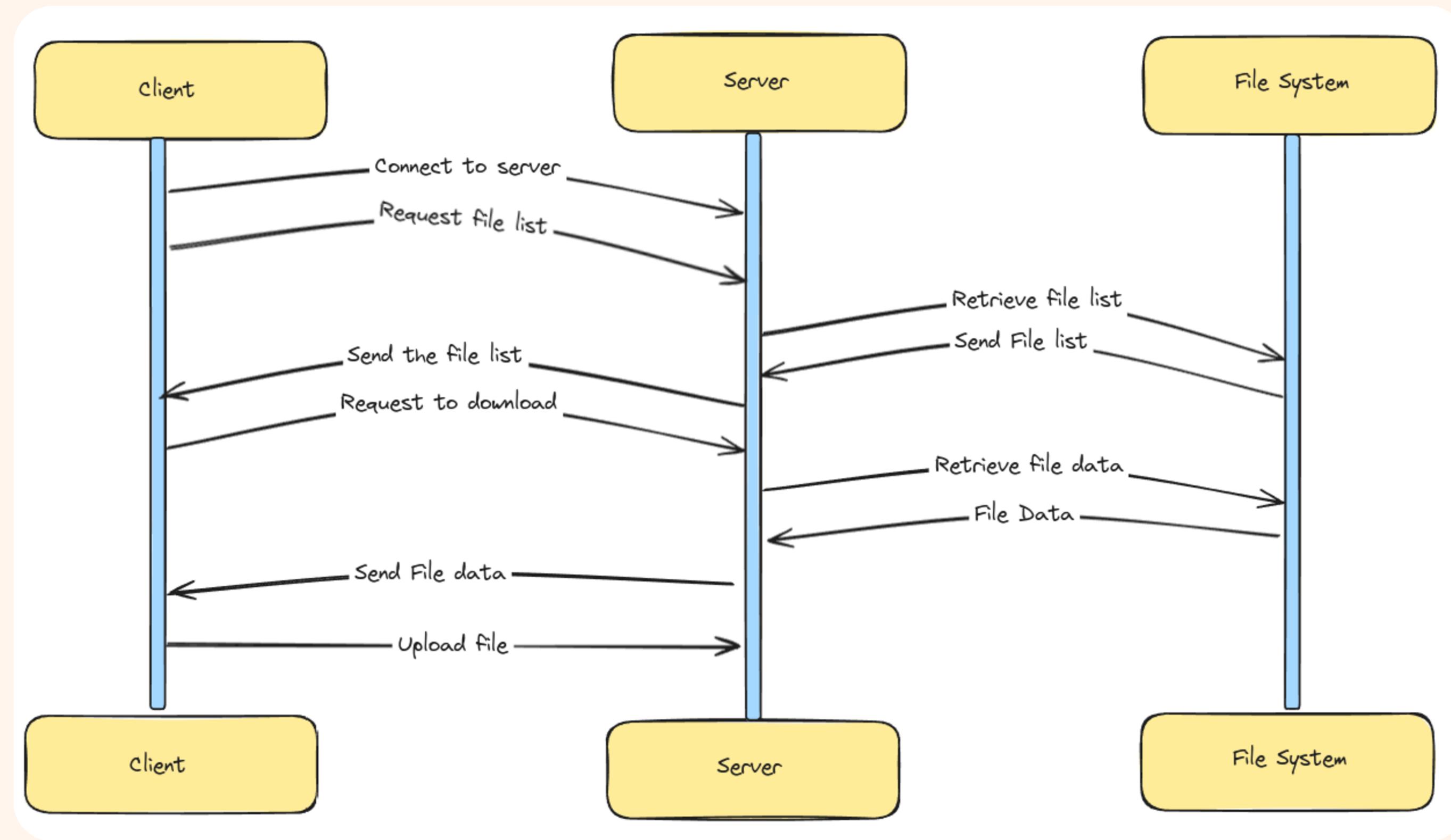
Multi Threading System

Connect to multiple clients at once





FLOW DIAGRAM



OS LEVEL FEATURES



SOCKET PROGRAMMING (NETWORKING)

Uses `socket()`, `connect()`, `bind()`, `listen()`, `accept()`, `recv()`, and `send()` for establishing TCP connections for client-server communication with a centralized server.



BIG FILE HANDLING

Utilizes `fopen()`, `fread()`, `fwrite()`, and `fclose()` to read from and write to files for file transfer between client and server. Uses multiple buffers to transfer the file in chunks



PROCESS AND THREADING CONTROL

Using multi thread implementation to handle more than one clients at a time

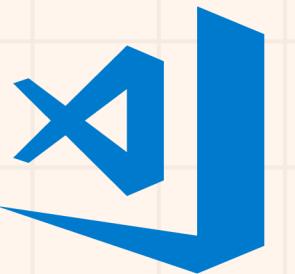


HASH FUNCTION

Implements a hash function to ensure deduplication. If identical files are uploaded, only one copy is stored on the server by hashing the file's bytestream.



WHAT WE USED



Visual Studio Code



FUTURE PROSPECTS

Password-based Authentication

Multiple Client Connections with ThreadPools on Server

Contribution Based Stoage Allocation For Clients

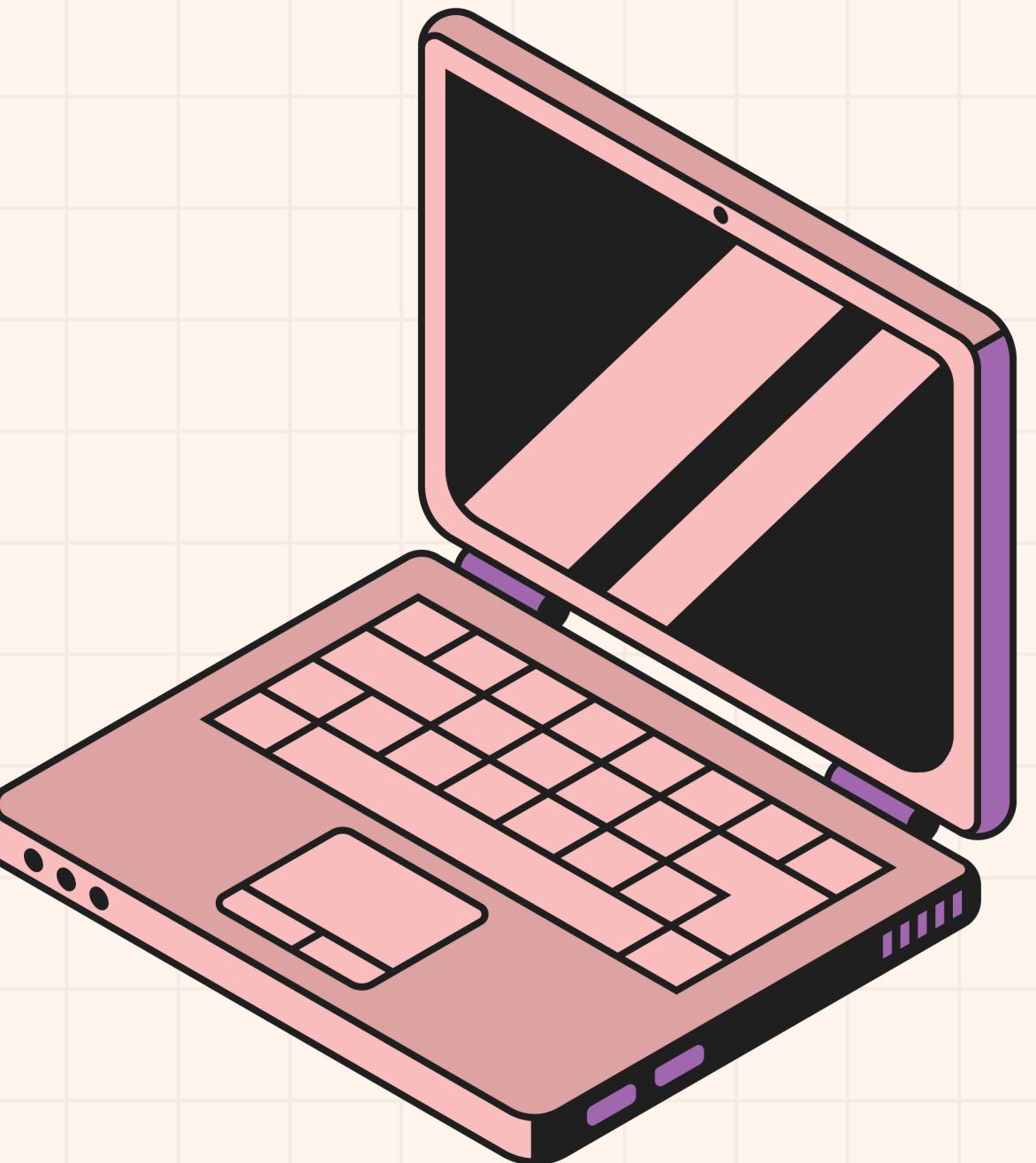
Pause and Retry Uploads On Failure

Chunk-based Uploads for Increased Transfer Speed

Hash Verification and Redundancy Prevention

Proper Metadata Handing and File Storage With Backup system

Ensuring same file does not get uploaded multiple times





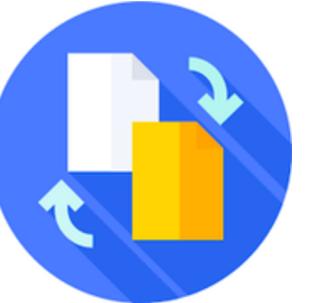
FILE SHARING SYSTEM

Link to our repository

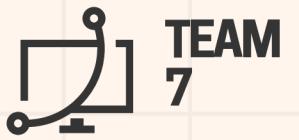
[sudhidutta7694/
File_Sharing_System_Gro...](#)

This is a centralized file sharing system made in C++

1 Contributor 0 Issues 0 Stars 0 Forks



GitHub



THANK YOU

