

# TCP File Transfer

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November 2024

## 1 Introduction

This is a document for Practical 1 in Distributed Systems. The practical focus is on transferring files over TCP/IP in CLI, based on the provided chat system. The system includes one server, one client, and a socket.

## 2 Protocol Design

The file transfer protocol defines how the client and server interact to send and receive files over the network.

### 2.1 Connection Initiation

- Server starts and listens for a client connection.
- Client initiates a connection request.
- Server acknowledges the connection.

### 2.2 File Request and Transfer

#### 1. Client Request

The client sends a file request to the server specifying the filename.

#### 2. Server Response

If the file exists, the server reads the file and sends its contents in chunks.

If the file does not exist, the server sends an error message to the client.

### 2.3 Connection Termination

1. The server notifies the client of the successful transfer.
2. Both the client and server close their respective sockets, freeing resources.

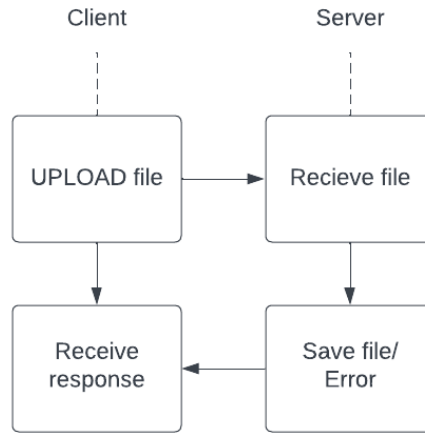


Figure 1: Protocol Design

### 3 System Organization

#### 3.1 Server

- Listens for incoming connections.
- Handles client requests.
- Sends file data or error messages.

#### 3.2 Client

- Initiates a connection to the server.
- Requests files by specifying filenames.
- Receives and saves file data locally.

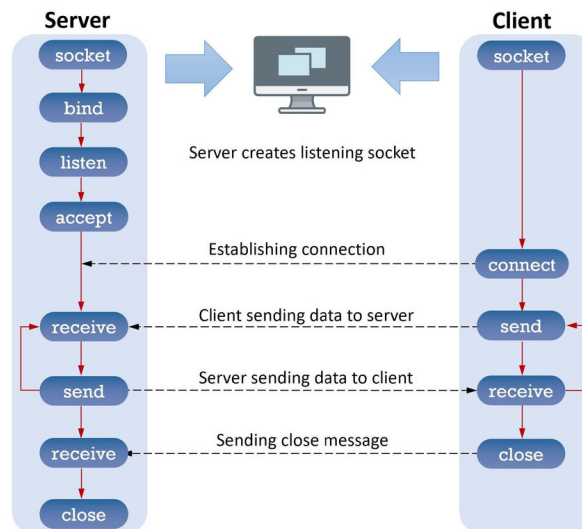


Figure 2: System Organization