

# Practical Work 1: TCP File transfer

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I failed to modify provided chat system but I succeed in transferring file with TCP.

## File transfer system

Files: `ft_client.txt`, `ft_server.txt`

## Protocol

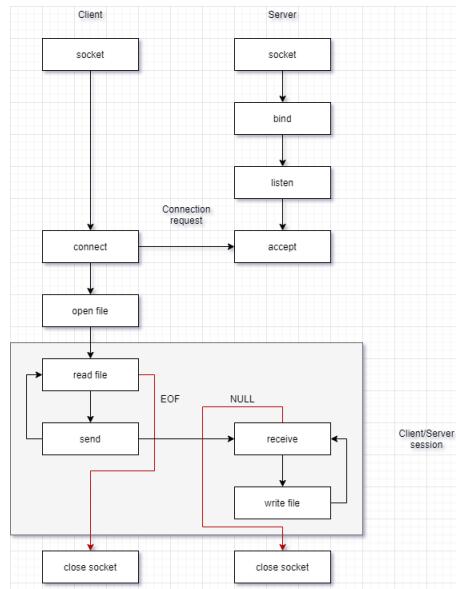
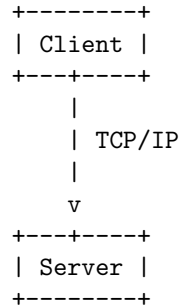


Figure 1: Protocol

## System



The server only listen to one client. The client send data as chunks to the server. After receiving a chunk, the server writes to a file. After finishing writing the file, the server closes itself.

## Implementation

In `ft_client.c`, the function to send file is implemented as followed

```
void send_file(FILE *fp, int sockfd)
{
    char data[SIZE] = {0};

    while(fgets(data, SIZE, fp) != NULL)
    {
        if (send(sockfd, data, sizeof(data), 0) == -1)
        {
            perror("Error in sending file.");
            exit(1);
        }
        bzero(data, SIZE);
    }
}
```

In `ft_server.c`, the function to write file is implemented as followed

```
void write_file(int sockfd)
{
    int n;
    FILE *fp;
    char *filename = "recv_guid_lists.txt";
    char buffer[SIZE];

    fp = fopen(filename, "w");
    while (1)
    {
```

```
    n = recv(sockfd, buffer, SIZE, 0);
    if (n <= 0)
    {
        break;
        return; // End the function before writing null to the file
    }
    fprintf(fp, "%s", buffer);
    bzero(buffer, SIZE);
}
}
```