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Partner did not perform their part. Here is TCP completed. I prefer not to be penalized in this situation. Sent an email to the professor

# TCP Server

A screenshot of a computer

Description automatically generated

Necessary modules (socket, os, sys).

A screenshot of a computer screen

Description automatically generated

send\_success\_response: Sends a success response to the client.

send\_error\_response: Sends an error response with a specific error code (opcode).

A screen shot of a computer

Description automatically generated

A loop continuously listens for client requests.

Parses the first byte of the client's message to determine the operation type (opcode) and filename length.

Depending on the opcode, it calls different handlers (handle\_get, handle\_put, handle\_change, handle\_summary, handle\_help).

Handles exceptions and client disconnections.

A screenshot of a computer program

Description automatically generated

handle\_get: Sends a requested file to the client.

handle\_put: Receives a file from the client and saves it.

handle\_change: Renames a file on the server.

handle\_summary: Generates and sends a summary of a file's contents.

handle\_help: Sends a list of available commands to the client.

A black rectangular object with white lines

Description automatically generated

Initializes the server socket and binds it to the specified IP address and port.

Listens for incoming client connections and handles them using handle\_client\_request.

# TCP Client

A screenshot of a computer

Description automatically generated

Socket and os are necessary modules

A grey background with white text

Description automatically generated

send\_file: Sends a file to the server.

receive\_file: Receives a file from the server

A screenshot of a computer program

Description automatically generated

file\_exists\_in\_cwd: Checks if a file exists in the current working directory.

send\_help\_request: Sends a request for help information.

send\_get\_request: Sends a request to get a file from the server.

send\_change\_request: Sends a request to change the name of a file on the server.

send\_summary\_request: Sends a request for a summary of a file's contents.

handle\_change\_response: Handles the server's response to a file name change request.

A black background with white lines and letters

Description automatically generated

Initializes the client socket and connects to the server.

Provides a command-line interface for the user to input commands (put, get, change, summary, help, bye).

Processes user commands and calls the appropriate functions to send requests to the server.

Receives responses from the server based on the requests sent.

Continues in a loop until the user enters the bye command to disconnect.

Wireshark  
1. What is the sequence number of the TCP SYN segment that is used to initiate the TCP connection between the client and server? What is in the segment that identifies as a SYN segment?

