

Computer Networks, Spring 2026

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Lab 7: TCP File Transfer

This lab builds upon your previous socket programming knowledge to implement a simple file-request protocol. *This lab is to be done individually or in a team of two.*

1 Implementing the GET Protocol

Create a server that holds a set of files and a client that can request them.

1. Modify your server so that it waits for a command from the client.
2. The client should send the command `GET <filename>`.
3. If the server has the file, it should send the file content to the client.
4. If the file is not found, the server should send an error message: `File not found`.

2 Handling Large Files

1. Test your implementation with a large file (e.g., an image or a PDF).
2. Since `recv()` and `send()` may not transfer the entire file in one call, implement a loop to continue sending/receiving until the entire file is transferred.
3. Use `diff` or `md5sum` to verify that the file received by the client is identical to the one on the server.

3 Advanced: Directory Listing

1. [Extra Credit] Add a `LIST` command where the server sends a list of all files available for download to the client.

4 Evaluation

- Implemented the `GET` protocol. TA: _____
- Correctly handles file not found scenario. TA: _____
- Successfully transferred a large file and verified integrity. TA: _____