

CS158A - Computer Networks

Project 1: File Server and Client

Due Date: February 19, 2008 (6PM)

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The goal of this programming assignment is to learn creating applications based on client-server paradigm. The specifications for the server and the client are as follows:

Server The server program should start on a port specified as a command-line argument and listen for connections from clients. When a connection from a client is established, server should read a string from the client. This string will be the name of the file that the client is interested in. Server should check in the file directory, specified as a command line argument, to see if the requested file exists. If a file exists, server should respond to the client with a string “SUCCESS” followed by the contents of the file. If no file exists with the requested name, then the server should respond with the following failure message string—“NO SUCH FILE EXISTS”.

Server should support the following arguments:

- -p <portNumber>: The port number at which server will listen
- -d <dirName>: Directory name where files will be located

So, one should be able to start a server listening on port number 5678 and serving files in directory “./testDir” as follows:

```
$> ./server -p 5678 -d ./testDir
```

Client The client program should take three command-line arguments denoting a server’s name and server’s port number that it will connect to, and a string denoting the name of the file it will request from the server. If the client obtains the file successfully, it should create a file with name specified above in the local directory and write the contents into that file.

The client program should support the following three arguments:

- -s <servername>: Name of the machine where server is located. If you are running server and client on a same host, you can specify “localhost” as the server name.
- -p <serverport>: Port number where server is running
- -f <fileNameToRequest>: Name of the file to download

Important Notes

- All programming should be done in C on Unix platforms using Berkeley sockets.
- Please submit two .c files: server.c and client.c. Email them to the instructor by 6PM on the due date.
- You can start with the code given in Chap. 1.4 of the text book and build on top of it.
- Start early.