

CSE 3761 Project 1 (10pts)

In this project the student will write a client and a server capable of performing a simple file transfer from the client to the server. You may NOT use any code that you find on the internet, nor any code your friends shared with you. The only code you may use is code you wrote yourself, or code that the instructor shared with you. Failure to follow these rules will result in potential academic misconduct.

The project MUST be written in “C” and must run on the university linux systems.

The client and the server will make use of TCP STREAM (connection oriented) sockets.

The server must be called ftps (source code is ftps.c) and the client will be called ftpc (source code ftpc.c)

The project must contain a makefile that allows for “make clean” as well as making the executables.

The server will take 1 parameter, the portnumber it is listening on.

The client will take 2 parameters, the ip address of the server, and the portnumber of the server

The **client** will loop, asking the user for the name of a file to transfer to the server.

With each filename, the client will

- Send the size of the name of the file to be saved
- Send the name of the file to be saved
- Send the filesize to the server (files will be less than 1GB in size)
- Send all the bytes (less than 1000 bytes at a time) to the server
- Wait for an ACK from the server that tells the client how many total bytes the server received.

When the file name “DONE” is entered, the client will exit the loop and close the socket

The **server** will wait for an incoming connection from a client. Once the connection is established, it will loop doing the following:

- receive the size of the filename to be received
- receive the name of the file to be received
- received the filesize (in bytes)
- loop receiving all the bytes for that file and writing them to disk
- once all the bytes have been received it will send the totalbytes received back to the server
- It will continue to wait for that client to send data
- If the connection is closed by client (meaning read() returned 0) the server will close the connected socket and go back to wait for another client to connect