CS446/646 Computer Communications and Networks
Homework 2 (Programming)
Due date: 2/20/2018, 12:30PM (submission of source codes by email to duc.tran@umb.edu).

Write two programs, FTPClient (to run on the client side) and FTPServer (to run on the server side), to implement a simple file transfer application.

To run the server, need to provide the port number as input argument and a number representing the maximum number of simultaneous clients it can support

FTP Server <port_number> <num_clients_max>

e.g., "FTPServer 1234 5"

After this, the server will be running at the given port and no more than 5 clients can connect to the server in parallel.

To run the client,

FTPClient <IP_address_of_server> <port_number_of_server>

e.g., "*FTPClient 221.223.192.12 1234*"

Once connected, the client can send the following commands to the server:

download <file_name>
- This is to download a given file from the server. This file will be downloaded to the local directory at the client. If the file is not found, the client needs to display an error message "File Not Found" on the local screen.

upload <file_name>
- This is to upload a given file to the server. This file will be stored at the local directory at the server. If the file is not found, the client needs to display an error message "File Not Found" on the local screen.

list
- This is to show a listing of the files in the current directory at the server

cd <directory_name>
- If *directory_name* = ".." : this is to change the current directory at the server to its parent directory
- If *directory_name* is some directory name, the current directory will be set to this name
- If the name is invalid, an error message is shown on the client's screen "Wrong Directory"

close
- This is to close the connection.

Make sure that the server interacts with each client in a separate thread and does not allow more than the given max number of simultaneous clients. The user interface design is up to your creativity.