COMP 3203 Principles of Computer Networks

Fall 2015

Assignment: File transfer system (team of 3 or 4 students)

Due date: October 1, 2015

Learning objectives: Network programming, TCP or UDP sockets

Description: Develop a client-server file transfer system using the Socket API. The server is started on a specific port number (you can use either TCP or UPD) and listens for requests. The client is started with the IP address and port number of the server. It sends requests to the server. The server handles the requests and returns replies to the client. The client handles the replies.

Implement the following requests:

1. `ls` : print on the client window a listing of the contents of the current directory on the server machine.
2. `get remote-file`: retrieve the remote-file on the server and store it on the client machine. It is given the same name it has on the server machine.
3. `put file-name`: put and store the file from the client machine to the server machine. On the server, it is given the same name it has on the client machine.
4. `cd directory-name`: change the on the server ("`cd ..`" must work)
5. `mkdir directory-name`: create a new sub-directory named `directory-name`

You may work in C, C++, Java or Python on Android, iOS, Linux or Windows.

Your system must:

1. handle files of any type (including binary)
2. handle network byte ordering heterogeneity
3. close all resources granted by the OS
4. handle errors
5. be commented
6. run on two different machines (client machine & server machine). Virtual machines are OK.

Deliverable

Demo (to be scheduled with the instructor)