

## ECE 456 – Computer Networks

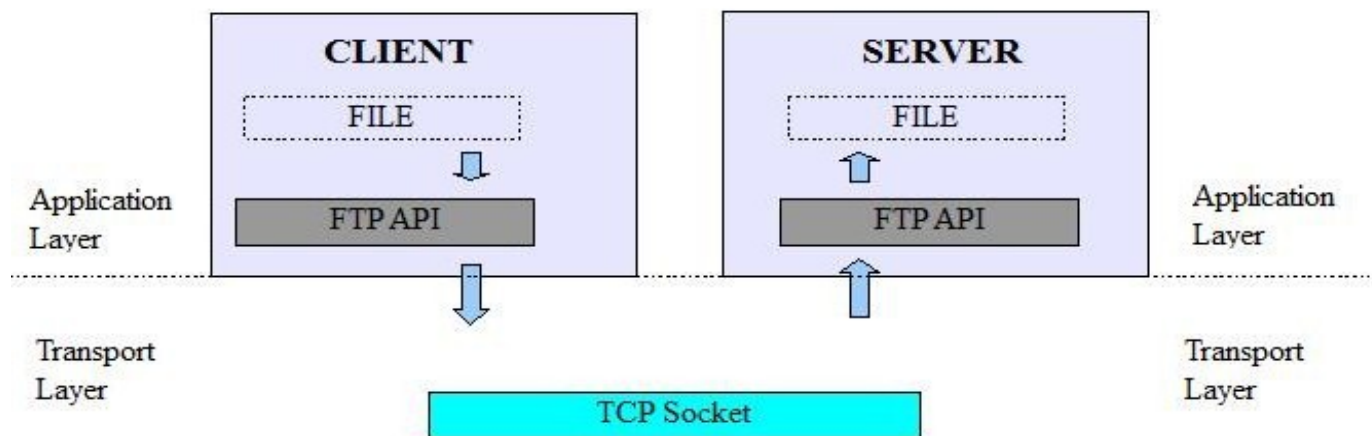
### *Programming Assignment # 5 : Simple FTP*

#### **Aim**

The goal of this assignment is to understand the concepts of socket programming using TCP. Your task would be to create a client module and a server module where the client module is capable of sending a file to the server.

#### **Description**

Socket is a communication method between a client program and a server program in a network. It is defined as "the endpoint in a connection." Sockets are created and used with a set of programming requests or "function calls" sometimes called the sockets application programming interface (APIs).



**Figure 1**

As seen from the Figure 1, you need to create a simple socket to interact between the client and the server. Accept input filename from the user at the client, send the file to the server in chunks. The server accepts these chunks and dumps it into the output file.

#### **Procedure**

You need to implement 2 programs (or modules), the client and the server

**Client:**

1. Accept the server IP address and the filename from the user.
2. Read 'X' bytes of data
3. Send the 'X' bytes of data read to the server
4. Repeat 2 through 4 until end of file.

**Server**

1. Request user permission for file transfer
2. Accept the file name (where the data transferred would be dumped) from the user

*(If you implement a mechanism wherein the filename is also transferred, you would get extra credits)*

3. Keep receiving until the last chunk and close on completion.

**Suggestions**

Keep the chunk size 'X' constant at 1024 bytes. It may be possible to transfer a very large file at one go, but transferring in chunks helps in scalability.

**Useful Links**

*Network Programming [C]* : <http://beej.us/guide/bgnet/output/html/singlepage/bgnet.html>

*Network Programming [Java]* : <http://www.ashishmyles.com/tutorials/tcpchat/>

*Network Programming [Perl]* : [http://www.tutorialspoint.com/perl/perl\\_socket.htm](http://www.tutorialspoint.com/perl/perl_socket.htm)

**NOTES**

- You should work individually. Each individual is responsible for the entire assignment, and should be able to demonstrate and explain the different aspects of the program.

- **Submit your code in Canvas.**
- Include readme.txt file with instructions for compilation.