

## Computer Networks Lab Assignment – FTP Server and FTP Client

In this assignment you need to design a FTP client and a FTP server.

The client will have the following features:

1. When a client is started, it will ask for a username and password. It will then connect to the FTP server and send the username and password.
2. The connection will be established if the FTP server detects this client as a valid user.
3. Now the client will give the following options to the user.
  - Press 1 to send a file: After pressing 1, a filename must be entered and this file will be saved on the FTP server's current directory.
  - Press 2 to receive a file: After pressing 2, a filename must be entered which will be retrieved from the FTP server's current directory.
  - Press 3 to exit: the client will close the connection with server and terminate.
  - Press 4 to Show list: The client will show the list of files that are available on the server.

The server will have the following features:

1. A list of valid username-password pairs to validate incoming connections.
2. The server will be multithreaded. So it can handle parallel connections. Multiple clients can send or receive files from FTP server at the same time.
- \*\* Make your own message formats to identify the control messages like:
  - a) A "SEND" message will initiate a file transfer from client to server.
  - b) A "RECEIVE" message will initiate a file transfer from server to client.
  - c) A "LIST" message will get the file list from the server.
- Handle some special cases like "file not found on server" etc.