**How to verify the program:**

Run server first by the command.

*python server.py*

And then start the client by running,

*python client.py <IPv6address of server> <PORT NUMBER OF SERVER> <filename>*

In the server program, IPv6address of server is hardcoded as “fe80::1062:a9ff:fe09:c216”.

The server port number is hardcoded as 12345. So, these values should be given in the command to run the client.

Initiate file transfer from one client. Permission request will come on server side to enter y or n. On entering n, the file transfer will be rejected. On entering y, it will ask for a new filename at server side. Give this new filename. File transfer starts from client 1.

Meanwhile, Initiate file transfer from another client. Permission request will come on the server side for client 2 while the file transfer from client 1 is already happening. Accept from the server side like before and by pressing enter, the default file name would be given. File transfer starts from client 2 as well. Receiving of both files happen simultaneously, which shows the concurrent nature of the server.

When both the files from the 2 clients are successfully sent, server notifies by printing “All pieces received”. “File received successfully” on server side. There will also confirmation on client side saying, “File sent successfully”.

The server simultaneously accepts 5 file transfers from clients by making use of 5 threads. It also queues 5 more file transfers. At a time only maximum of 5 files can be transferred. Once any one of the threads is done executing, the next file in queue comes in to be transferred. Queue works in FIFO manner.

I have verified the program by initiating big file transfers from 5 clients simultaneously and initiated file transfers from 5 more clients. It was observed that the first 5 file transfers happened simultaneously while the other 5 was in the queue. Once any of the file transfers were complete, the ones in the queue started transferring in FIFO manner.

The received files at the server were verified with original file using ‘diff’ command and they were seen to be same.

**Arsha Aboo**