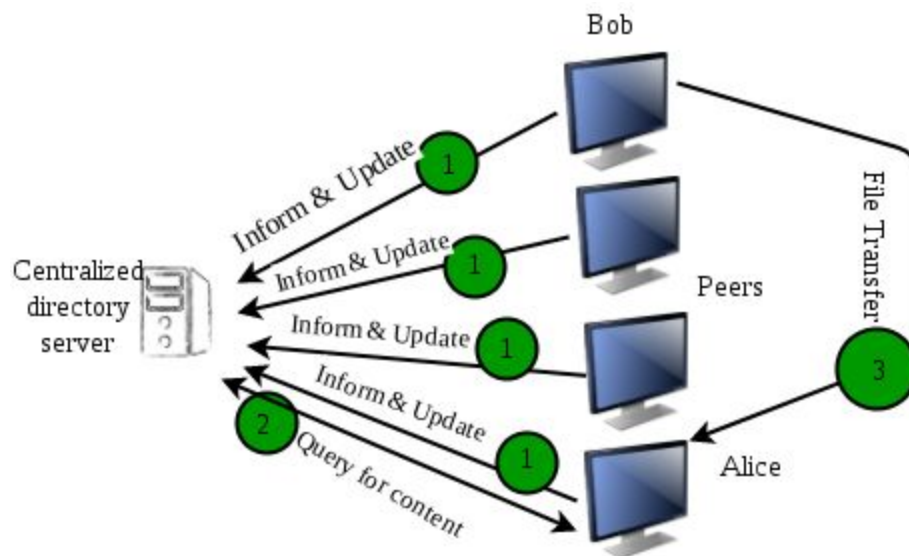


Peer to Peer

This program is an implementation of peer to peer file sharing using an index server. This document briefly explains the functioning of program, for further explanation see the comments mentioned in the code and try to understand the code. Feel free to contact me in case of doubt. The system is analogous to the concepts used by napster. As shown is the diagram below[1].



P2P paradigm with a centralised directory

There are two files

- 1) TCP client - for each client in the network.
- 2) TCP server- a centralized index server that keeps a track of each node in the network.

TCP client-

inet_addr()- this function is used to get the IP address of client. Please make change in `os.system("ifconfig wlp9s0 | grep 'inet addr' > ip.txt")`, according to interface in your local network.

list_files()- this function creates a list of files present in folder shared. This list will be shared with all the client in the network(so that they can know all files present in the network), and other clients can download these files from your system.

client_thread(), server_thread()- these function are running in parallel, handling the file transfer between two clients. Acting as client to receive file and server to send file.

main(network_ip)- this function can be understood looking at code and reading comments.

TCP server-

Script is creating a index server, this script is working in synchronization with clients. You will be able to get it if client is clear.

References-

<https://www.geeksforgeeks.org/p2ppeer-to-peer-file-sharing/>