

Net-centric Programming

Lab: P2P

I. Objective:

- Develop a distributed file sharing system where users can share files with each other over a network without the need for a centralized server.

II. Requirements:

1. UDP Broadcast for Peer Discovery: When a user wants to share a file, they can use UDP broadcast to announce the availability of the file to other users on the local network. The broadcast message can contain information such as the filename, file size, and the IP address of the sharing user (you can make this simple by making the user to broadcast info periodically)
2. Peer-to-Peer File Transfer: When a user wants to download a file, they can send a request to the sharing user using UDP unicast. The sharing user can then initiate a direct TCP connection to transfer the file.
3. Distributed File Catalog: Each user can maintain a local catalog of files shared by other users on the network. This catalog can be updated dynamically as new files are shared or removed.
4. Search Functionality: Users can search for specific files in the distributed file catalog by sending a UDP broadcast message with the search query. Other users can respond with the matching files they have available.

The end.