Python P2P fileshare simulator

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CHAPTER

ONE

MAIN MODULE

main.**broadcast_presence**()

Broadcast presence and local files on the network.

main.**command_line**()

Interactive command line for user input to manage the P2P file sharing. This function provides a simple command line interface for users to list files, view peers, request files, or exit the application.

main.**download_chunk**(*filename*, *chunk_num*, *owners*, *temp_dir*, *download_success*)

Try to download a single chunk from any available owner.

main.**download_file**(*filename*)

Download a file chunk-by-chunk from multiple peers, assuming they have all chunks.

main.**get_my_files**()

Get a list of available files and their total number of chunks and their full SHA-256 hash.

main.**handle_client**(*conn*, *addr*)

Handle incoming file or chunk requests from peers.

main.**list_files**()

List all available files across all peers, based on their hash, excluding own files (by hash).

main.**listen_for_peers**()

Listen for incoming peer discovery messages and update peer file lists.

main.**serve_files**()

Serve files to peers that request them. This function listens for incoming TCP connections on a specified port, accepts file requests, and sends the requested files in chunks. It runs in a separate thread to allow concurrent file serving.

main.**sha256sum**(*path*)

Calculate the SHA-256 checksum of a file. This function reads a file in chunks and computes its SHA-256 hash. It is used to verify file integrity after download.

CHAPTER

TWO

CSCI651_FP

2.1 conf module

command to generate documentation:

sphinx-apidoc -f -o ./source ../ make make latexpdf

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