Case Study 3 - Network-Based Pattern Searching

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This project is a network application where client submits a filename and a word to be searched within the file . After processing the request and looking for the word, the server prints the lines that include the word and their corresponding line numbers. The application uses multi-threading to handle multiple client requests concurrently.

Project Structure -

~ search.py - The module containing the Search class to handle file reading, cleaning, and searching.
~ client.py -The client script that establishes a connection with the server and sends the search request.
~ server.py - The server script that listens for client connections, processes requests, and returns search results.

Requirements

1.System should have Python 3.8 or higher
2.A text file to be used for searching (e.g., note.txt).
3.No additional libraries are required (Standard Python libraries: socket, json, re).

How to run :

1.Extract the ZIP File:
Unzip the project files to a directory on your system.

2.Navigate to the Project Folder:
bash code - cd path/to/unzipped/project

3.Start the Server:
Open a terminal and run the following command:
bash code - python server.py
The server will start and listen for incoming client connections.

4.Run the Client:
Open another terminal and execute:
bash code - python client.py

- Enter filename (or leave it blank for default note.txt)
- Enter word to be searched

The client will display the search results or an error message if applicable.

Example Usage

Client Input:

Enter the filename (Or leave it as default): note.txt
Enter the word to search: land

Client Output:
Search Results:
Line 1: This is my land
Line 3: The landscape is beautiful

Server Console Log:
Server is running at port 127.0.0.1:8080
Server Connected to at (’127.0.0.1’, 61124)