



P2P Drive

Spring 2023 Senior Design Project

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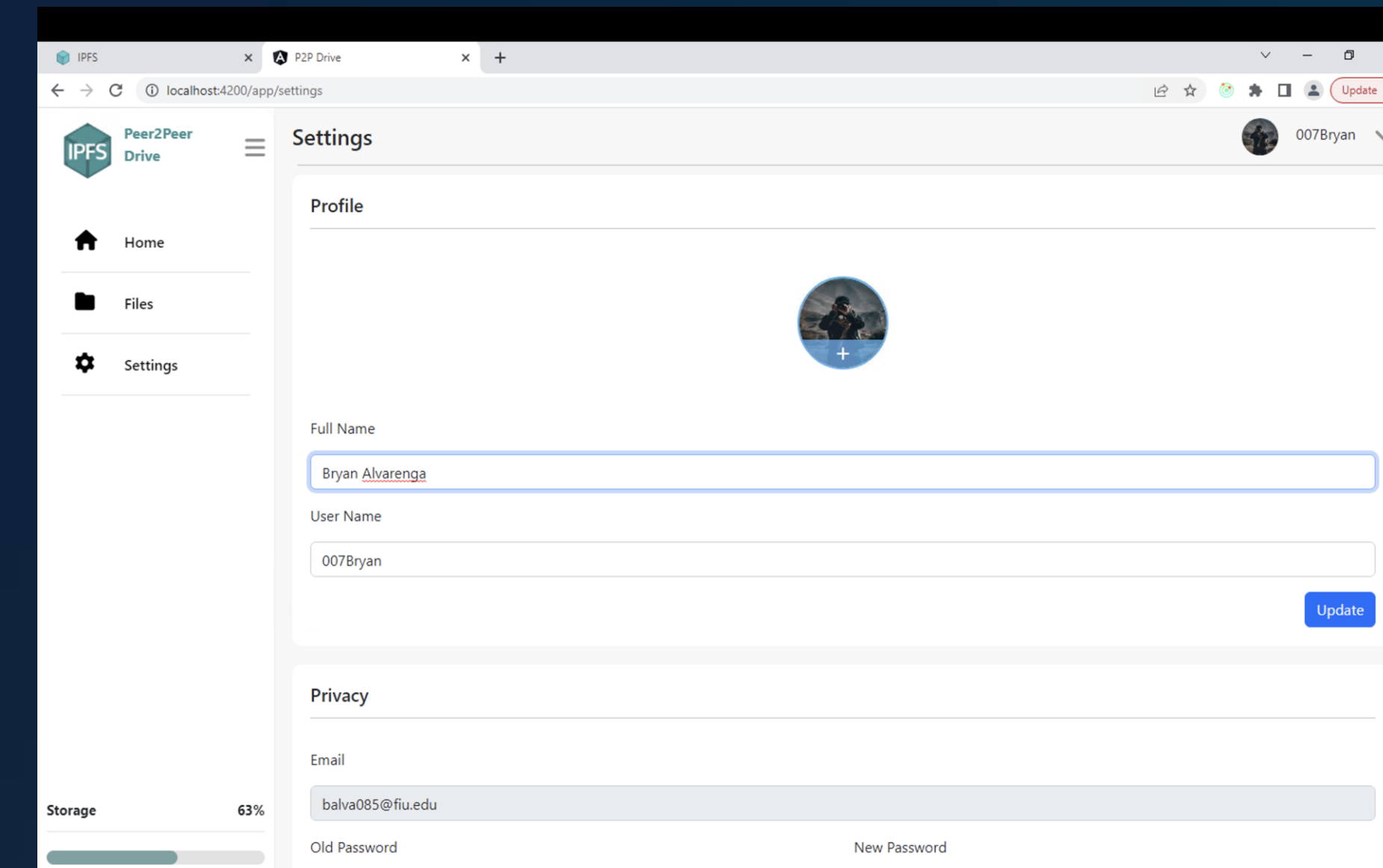
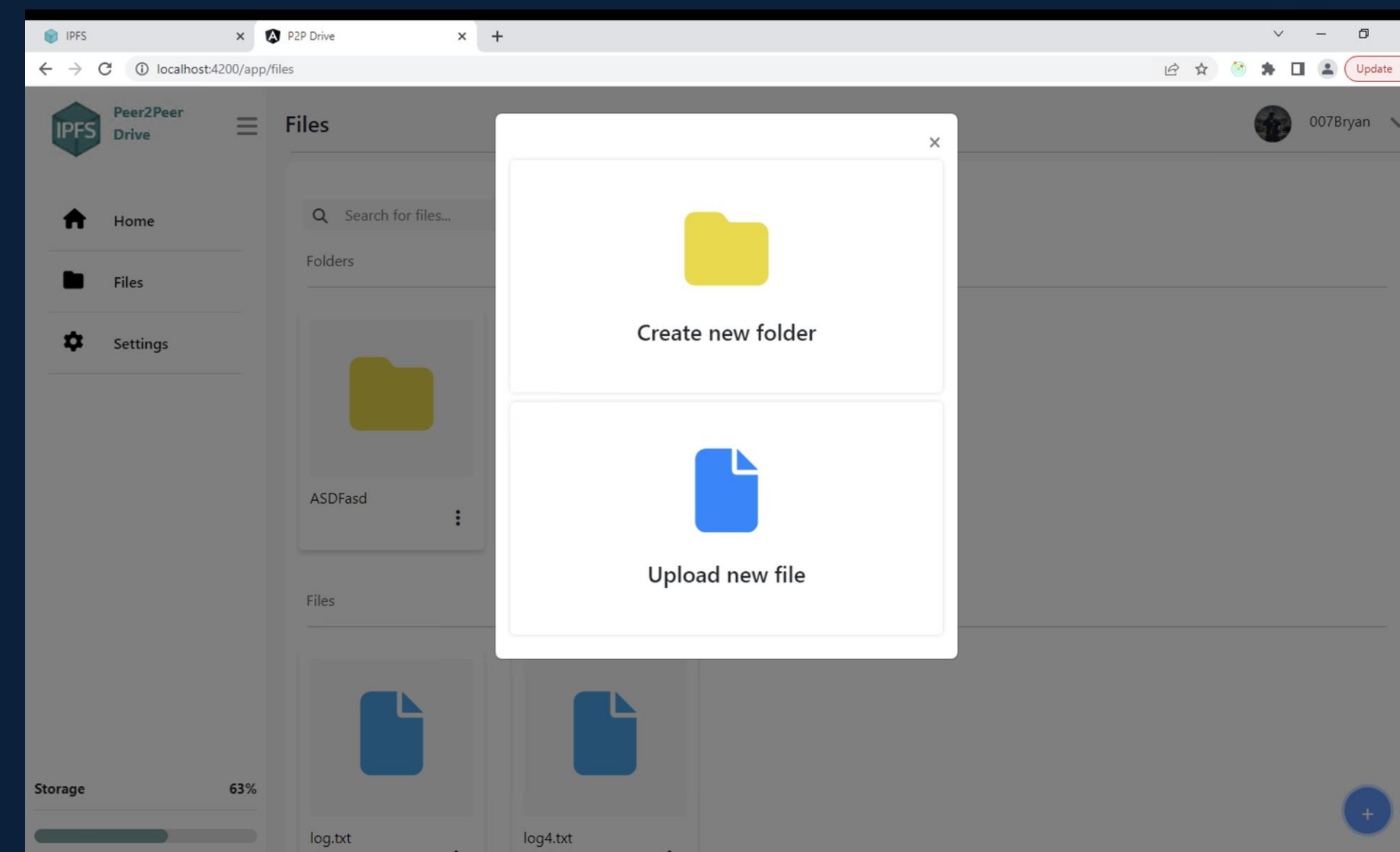
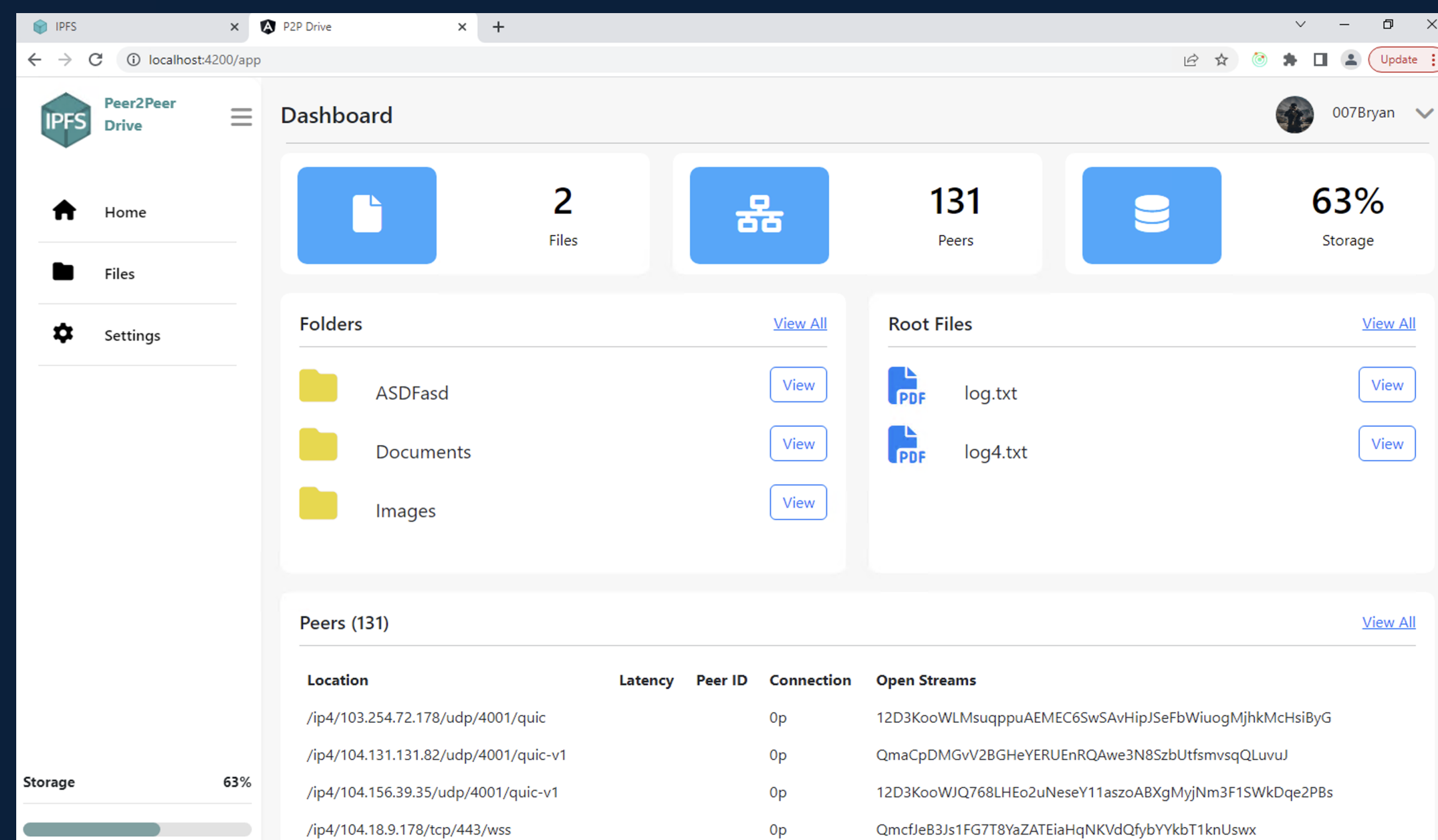
Current System

Data is often stored on servers that are controlled by a single entity or group. This can come with some challenges and drawbacks. For instance, the cost of maintaining and purchasing expensive hardware required for storage can be significant. Additionally, there can be concerns around the redundancy and loss of data in case of server failure or downtime. Security is also a concern, as centralized data is susceptible to hacking and cyber attacks. Finally, the ability of a server to handle increased traffic and scale up can be limited, which may impact overall performance.

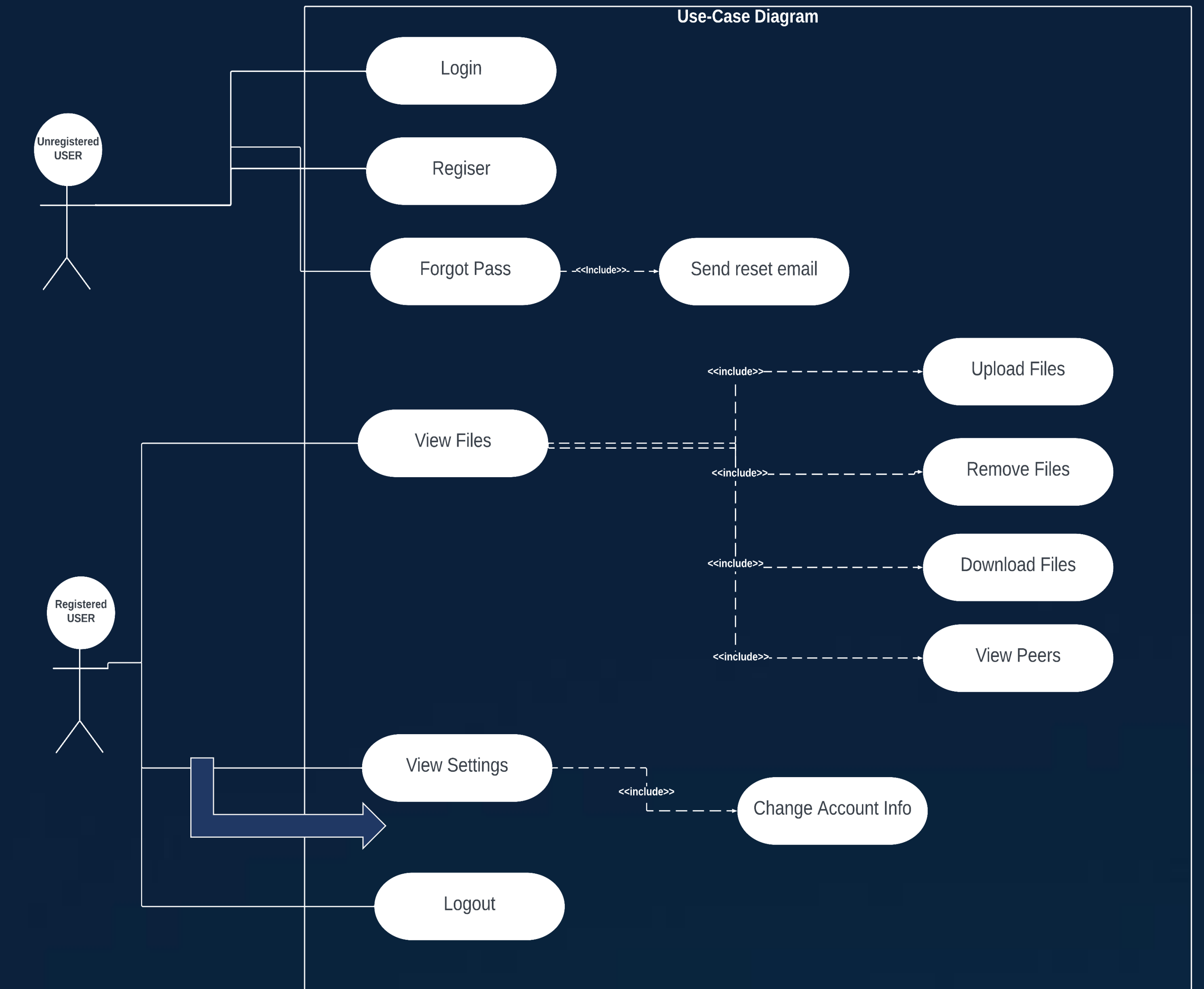
Validation/Verification

- ❖ **Functional testing:** This involved testing the various functionalities of the system to ensure that they work as expected. This includes testing the registration and login process, directory creation, and file upload and download.
- ❖ **Performance testing:** This will involve testing the performance of the system under various load conditions to ensure that it can handle increased traffic and usage.
- ❖ **Integration testing:** This will involve testing the integration between different components of the system, such as the front-end, back-end, and IPFS network.
- ❖ **User acceptance testing:** This will involve testing the system with real users to ensure that it meets user needs and expectations

Screenshots



Use Case Diagram



Summary

This new system uses Web3 technology to improve how we store data. It uses a network called IPFS to store data in a way that costs less money. If some parts of the network stop working, your data will still be safe because it's stored in many different places. The system is also more secure because it uses a special way of organizing data and the IPFS network is spread out, so it's harder to break into. It can hold a lot of data because the network can grow bigger as more people use it. Overall, this system is a smart way to use Web3 to make data storage better and cheaper.

Problem

This file system deals with a few problems in standard data storage methods.

First, it attempts to cut storage costs by employing the decentralized IPFS network for a cheaper option. Second, it handles redundancy and data loss in centralized systems by dispersing data in the IPFS network, maintaining some availability even with node issues.

Third, it tries to increase security by merging IPFS's decentralized aspect with server-side pinning and user-based directories, providing a modestly secure storage platform.

Sequence Diagram



Engineering
& Computing

ACKNOWLEDGEMENT

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