



Knight Foundation School of Computing and Information Sciences

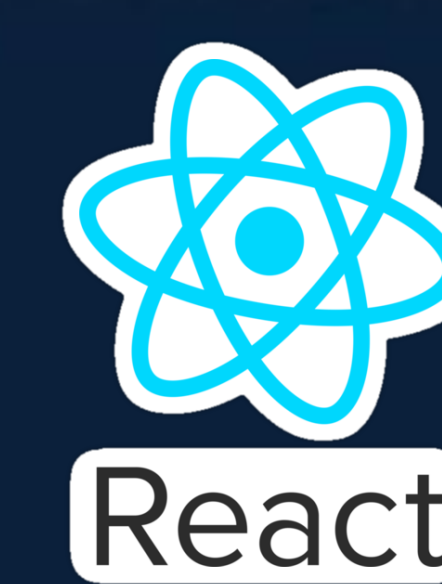
Fall 2022 Senior Design Project

P2P Drive

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Go Fiber



Tailwindcss



IPFS

PROBLEM

P2P is a web application designed to connect the user to a decentralized file sharing system using IPFS (The Inter-Planetary File System)

Our goal is to provide a quick and reliable decentralized file sharing system that is not only functional but user friendly

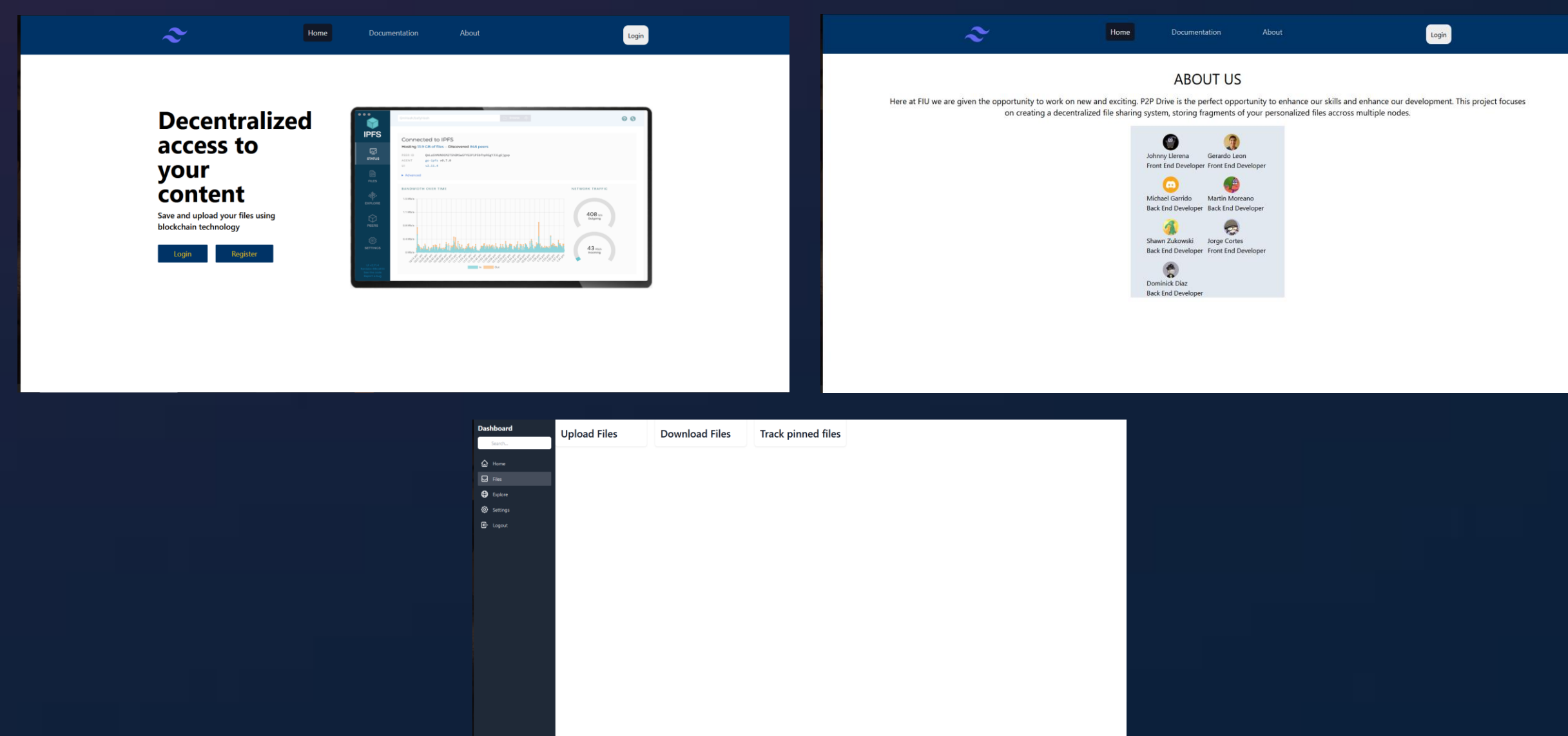
CURRENT SYSTEM

The P2P web application currently allows users to register an account using MongoDB as our database to provide the user with file pinning services thus keeping track of their data. Our API allows users to reconnect to previously connected nodes to prevent data loss.

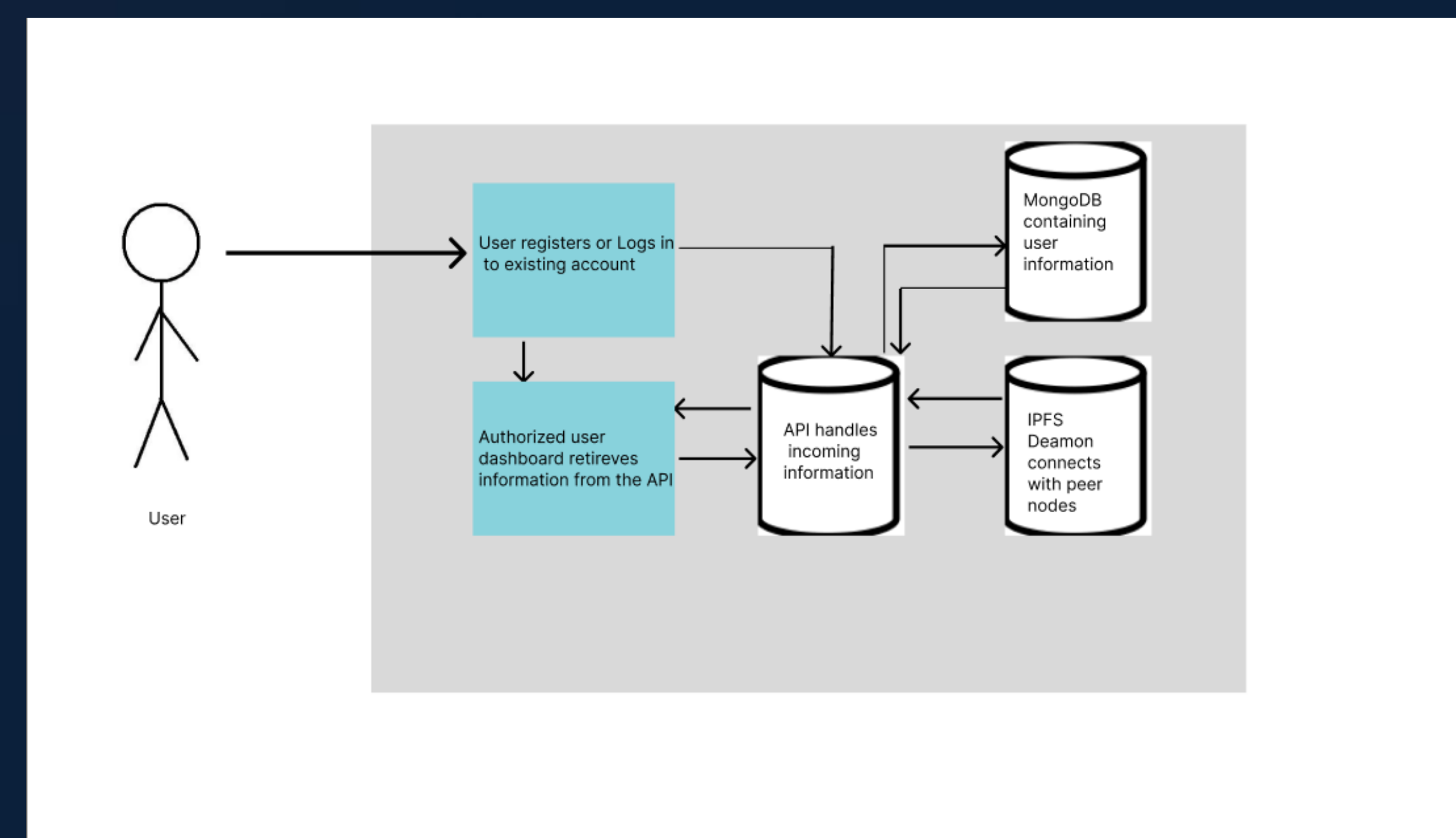
REQUIREMENTS

- Design responsively for mobile devices
- Design foundation for IPFS connection
- Tracked File upload and download
- User Profiles to store file information
- Front-end development for complete functionality
- Back-end development for secure connection to IPFS services

SYSTEM DESIGN



OBJECT DESIGN



IMPLEMENTATION

- Securely encrypted user credentials and information
- MongoDB used for storing user data
- API containing routes and models connecting to our database and daemon designed in Golang Fiber
- Web application designed in React.js with TailwindCSS
- Swagger UI to document our API
- Forms and Axios used to transfer data to and from web application

VERIFICATION

A combination use of Postman and trial/error use of web application to verify API's supplied to us by IPFS using their CLI API

SUMMARY

- Built peer-to-peer IPFS drive from the ground up using provided IPFS resources
- Added encryption to user information
- Designed reactive and functional for user interface

REFERENCES

- <https://ipfs.io/>
- <https://docs.ipfs.tech/>
- <https://github.com/mmoreano/P2P-Drive/tree/main>
- <https://docs.ipfs.tech/reference/kubo/rpc/>
- <https://proto.school/tutorials>
- https://github.com/PenguinAmbush/P2P_Drive_Web/main

ACKNOWLEDGEMENT

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