

NFTiecollective.io(NFT Marketplace)

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Problem

Cryptocurrencies have become increasingly popular throughout the last decade and have shown some promising features. Once particular use case that is still in its infancy stage is an NFT. An NFT (Non-Fungible Token, is a unique digital copy of something that is stored on a blockchain. Although something like an image may be copied, the actual data of that image would be stored on a blockchain which would show the original owner. Because this technology is relatively new, it may be difficult to understand NFT marketplaces and the transaction cost of creating an NFT can be very expensive.

Our proposed solution is the NFTies Marketplace. The Marketplace will be designed to assist new and returning users throughout the minting process while offering reduced minting fees.

Current System

The current system was imported from the previous semester. This includes a barebones structure for the front end and some Solidity code that tied into minting an NFT. Just like the last semester, our group was split into three different teams, backend, frontend, and crypto. I was working on the crypto aspect of this project.

Our system for crypto had two separate smart contracts that would mint to a test network using either ERC721 or ERC1155. The reasoning for choosing two smart contracts was to offer the user an alternative to ERC721 which can sometimes be very expensive to use. These two contracts were left unfinished with room to improve upon the minting.

Requirements

What we accomplished:

I began this project by continuing to read on solidity documentation. As I became more confident, I developed a smart contract which would parse the information of the user and use it to create an NFT stored on a blockchain network. This network hosted the Solidity code, and the NFT data. The user would just sign in with their MetaMask account, and from there, the contract would know what data belongs to the user.

System design:

Front-End: React.js, CSS, HTML, Javascript

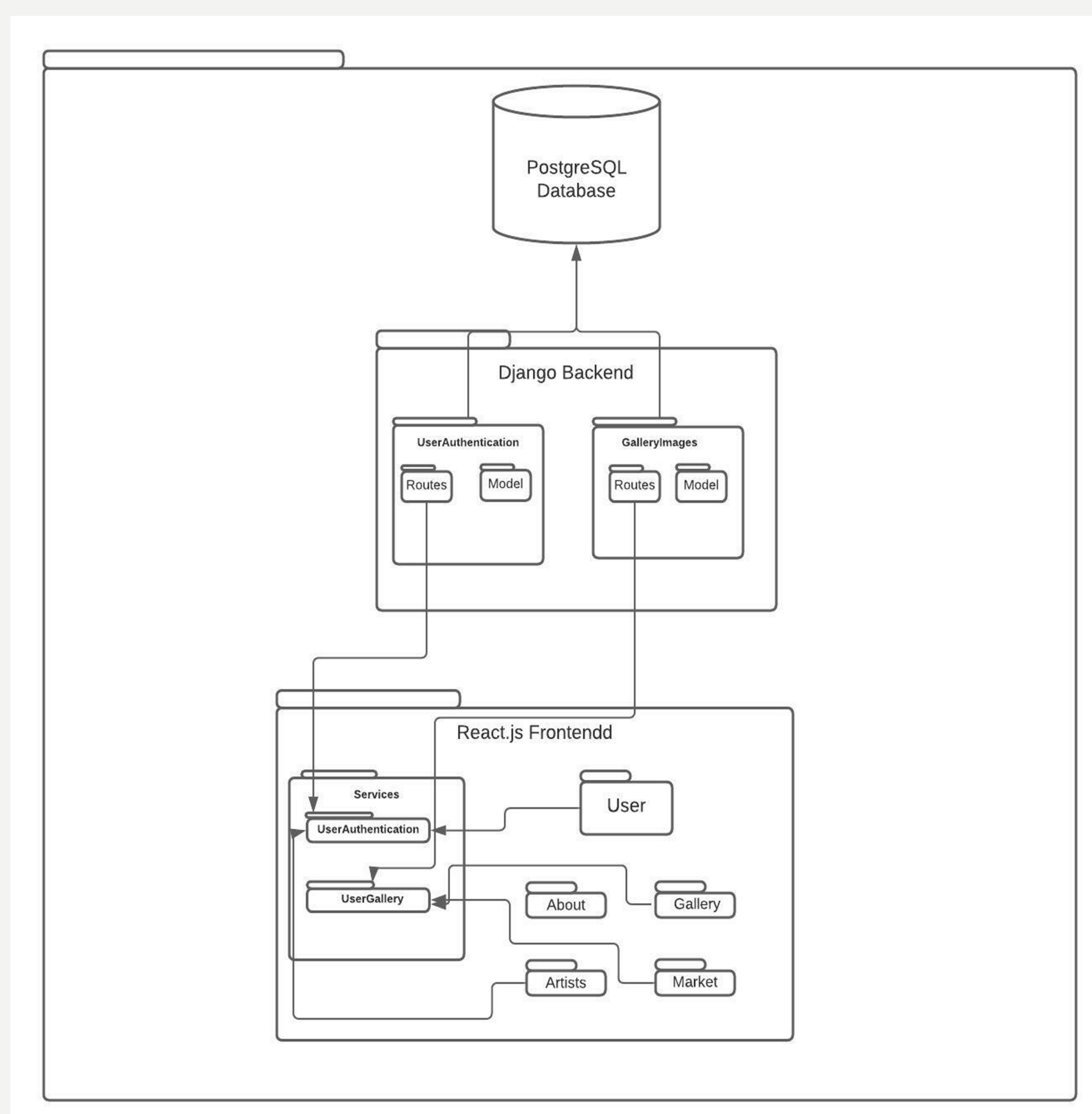
Back-End: Python, Django

Database: PostgreSQL/PostgreSQL

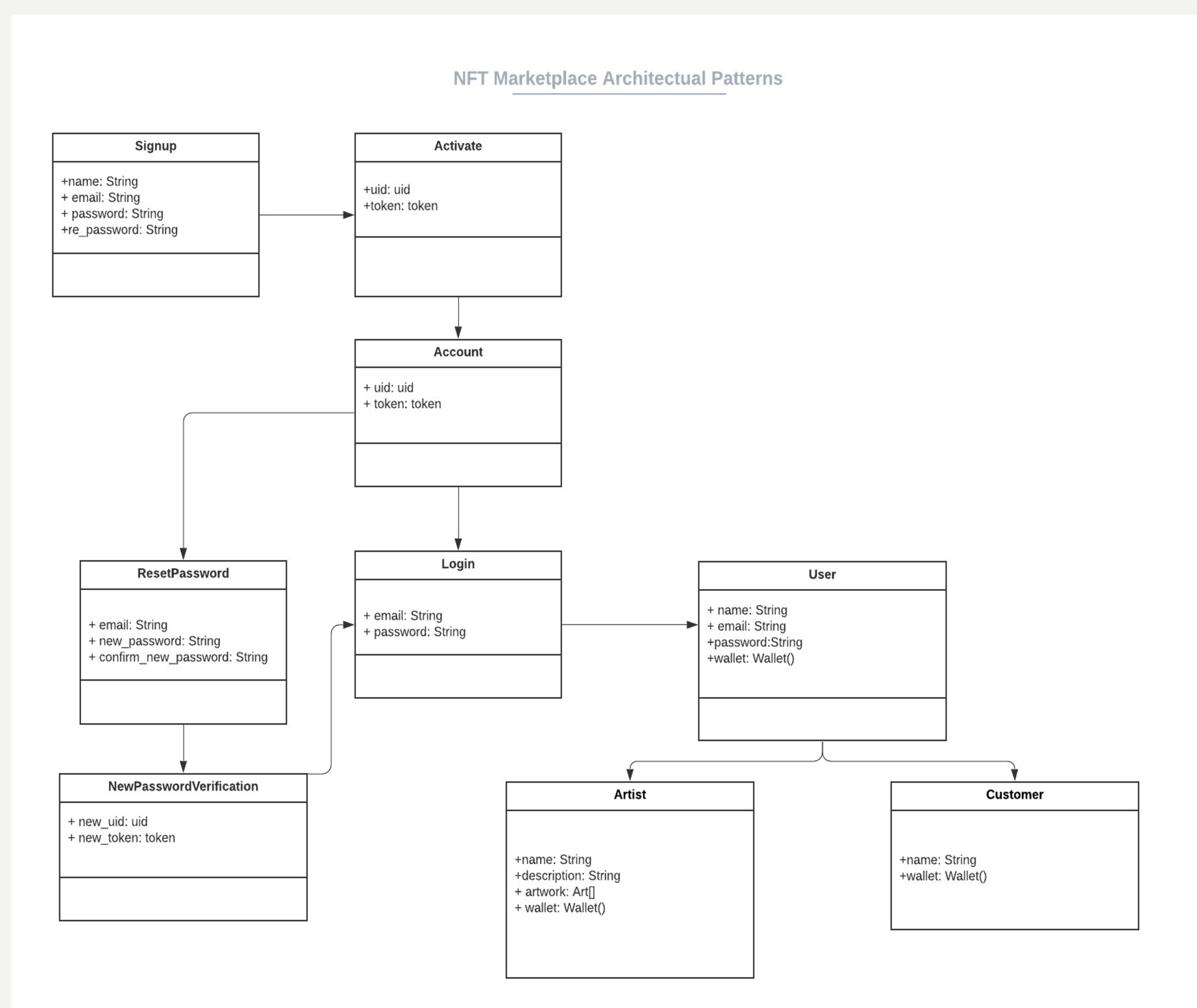
Terminal

Crypto: Ethereum, solidity based smart contracts, Etherscan Transactions

System Design



Object Design



Implementation

Backend: Implemented using JavaScript

Frontend: JavaScript

Database: The Database which we decided to use was PostgreSQL.

Crypto: Used Solidity, MetaMask, goerli test network, and JavaScript web3 libraries

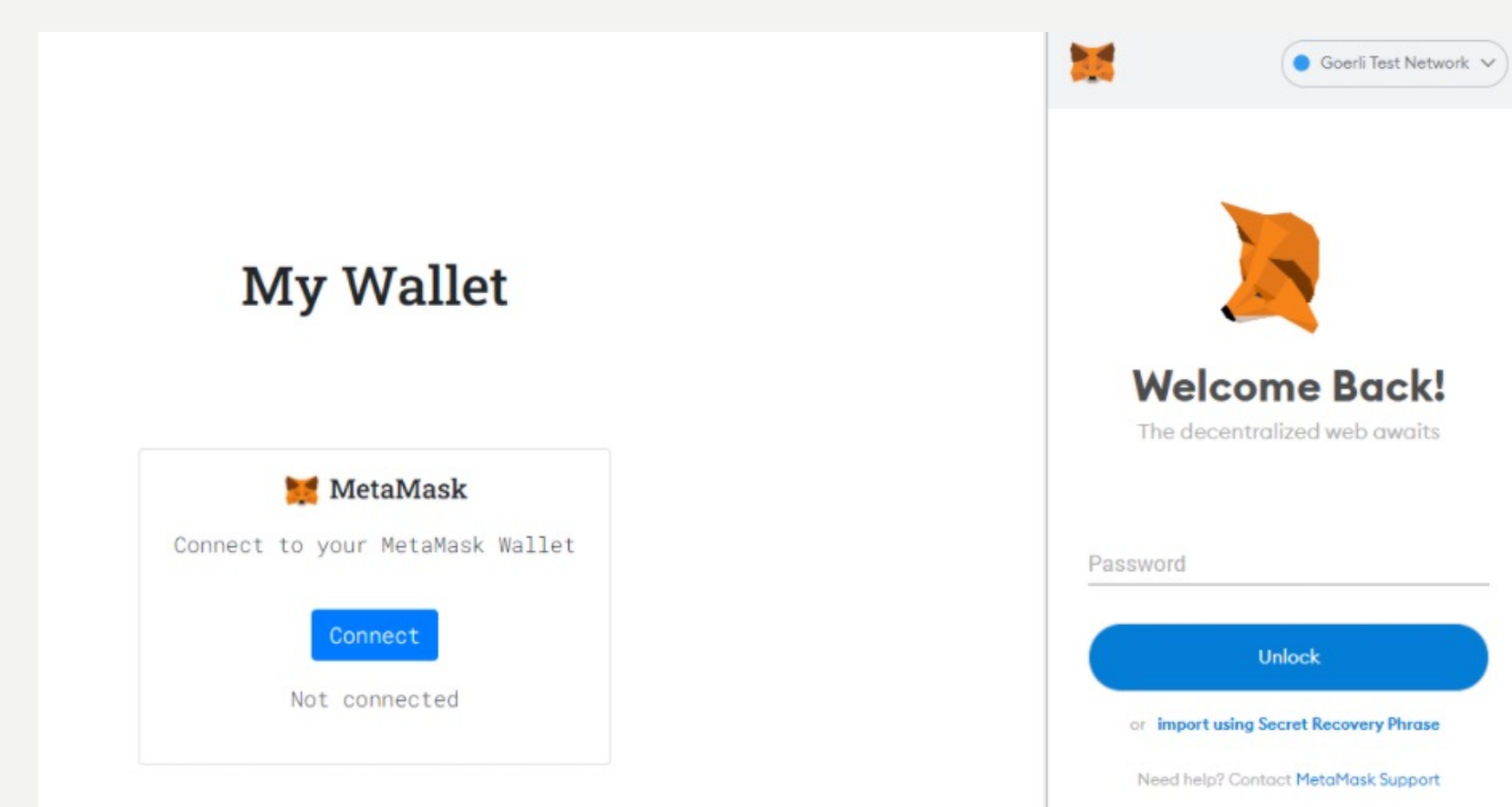
Verification

To verify that everything was working. My team had used the Goerli test network for gas transactions and development when testing the solidity code base, we created. The PO was informed infrequently, however, he was kept up to date on the progress that had been made throughout the semester as our team completed each user story.

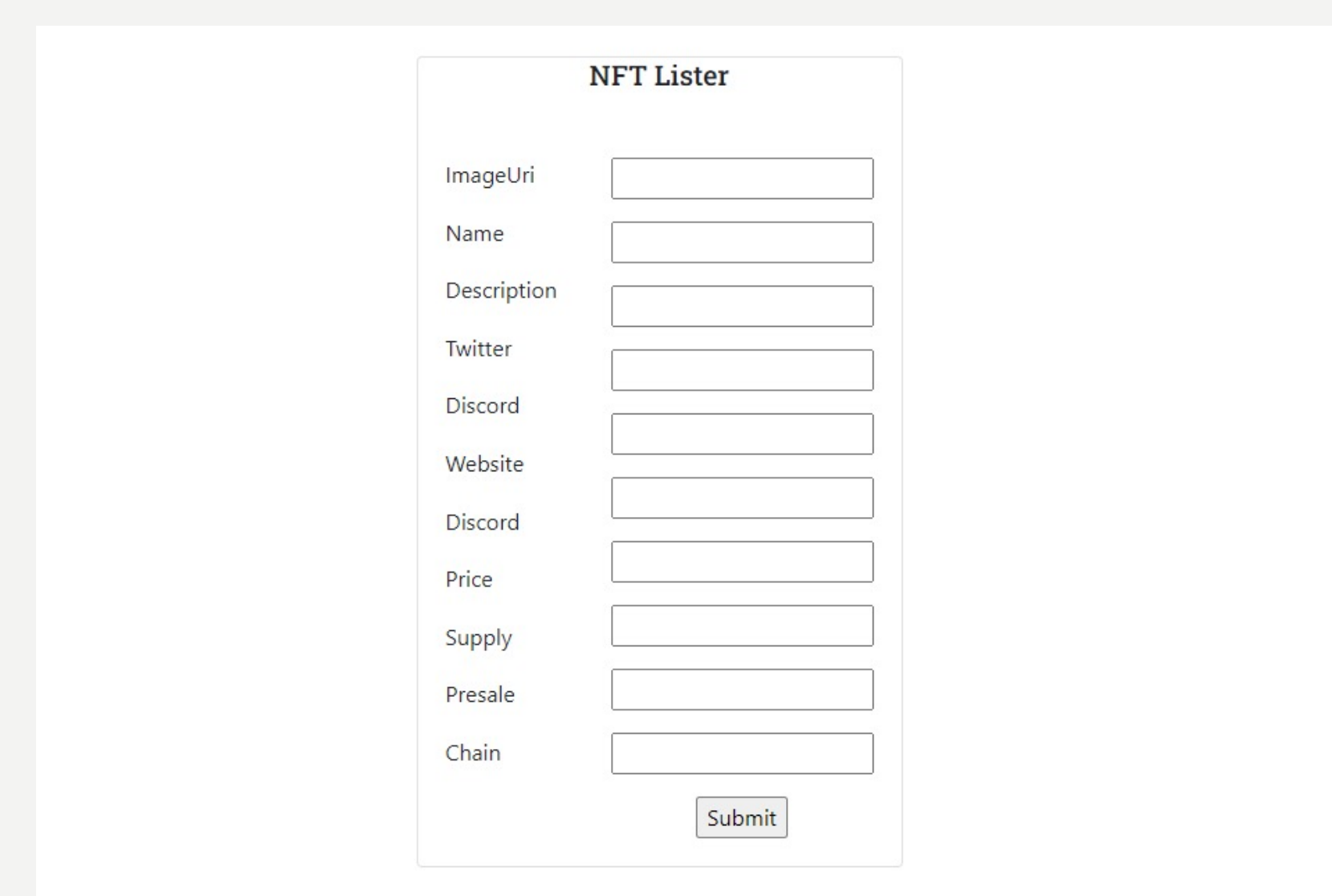
Summary

Much progress has been made this semester. I began the semester by familiarizing myself with the solidity library and documentation. The work that has been completed includes an updated user interface, MetaMask integration, and live code that has been uploaded to the Goerli blockchain. There are some features that will need to be improved upon next semester such as uploading the solidity code onto a real blockchain and tweaking aspects of the frontend. Future teams will have to improve the ease of listing an NFT, offer alternative wallets, and include a search page for each individual NFT listing. There is still work to do, however, a substantial amount of work has been completed this semester.

Screenshots



Displays user interface when connecting MetaMask wallet. The Wallet can also be used to verify account ownership



UI when listing an NFT on the Blockchain. This form mints an NFT on the blockchain and asks the user for relevant information such as pricing.

Acknowledgement

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