Assignment 3

CSCI6313 - Introduction to Blockchain

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B00880866
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Table of Content

Source Code

Contract :

```
// SPDX-License-Identifier: MIT

pragma solidity ^0.8.9;

contract AgreementContract {
    struct Agreement_B00880866 {
        string ipfsHashCode;
        string buyerSig;
        string sellerSig;
        address notary;
        address seller;
        address buyer;
        string isApprovedBySeller;
        string isApprovedByBuyer;
        string isCancelledBySeller;
        string isCancelledByBuyer;
    }
    Agreement_B00880866 agreement_866;

    function createAgreement(string memory message) public {
        agreement_866 = Agreement_B00880866({
            ipfsHashCode: message,
            buyerSig: "",
            sellerSig: "",
            notary: msg.sender,
            seller: msg.sender,
            buyer: msg.sender,
            isApprovedBySeller: "PENDING",
            isApprovedByBuyer: "PENDING",
            isCancelledBySeller: "PENDING",
            isCancelledByBuyer: "PENDING"
        });
```

```
}

function retriveIPFSHashCode() public view returns (string memory) {
    return agreement_866.ipfsHashCode;
}

function retriveNotary() public view returns (address) {
    return agreement_866.notary;
}

function retriveSeller() public view returns (address) {
    return agreement_866.seller;
}

function retriveBuyer() public view returns (address) {
    return agreement_866.buyer;
}

function retriveBuyerSign() public view returns (string memory) {
    return agreement_866.buyerSig;
}

function retriveSellerSign() public view returns (string memory) {
    return agreement_866.sellerSig;
}

function retriveStatus() public view returns (string memory) {
    return
        string(
            abi.encodePacked(
                agreement_866.isApprovedByBuyer,
                ",",
                agreement_866.isApprovedBySeller,
                ",",
                agreement_866.isCancelledByBuyer,
                ",",
                agreement_866.isCancelledBySeller
            )
        );
}

function compareStrings(string memory a, string memory b)
    private
```

```
        pure
        returns (bool)
    {
        return (keccak256(abi.encodePacked((a))) ==
            keccak256(abi.encodePacked((b))));
    }

    function approvedAgreement(string memory senderType, string memory sig)
        public
    {
        if (compareStrings(senderType, "SELLER")) {
            agreement_866.seller = msg.sender;
            agreement_866.isApprovedBySeller = "TRUE";
            agreement_866.sellerSig = sig;
        } else {
            agreement_866.buyer = msg.sender;
            agreement_866.isApprovedByBuyer = "TRUE";
            agreement_866.buyerSig = sig;
        }
    }

    function rejectAgreement(string memory senderType) public {
        if (compareStrings(senderType, "SELLER")) {
            agreement_866.seller = msg.sender;
            agreement_866.isCancelledBySeller = "TRUE";
        } else {
            agreement_866.buyer = msg.sender;
            agreement_866.isCancelledByBuyer = "TRUE";
        }
    }
}
```

Web :

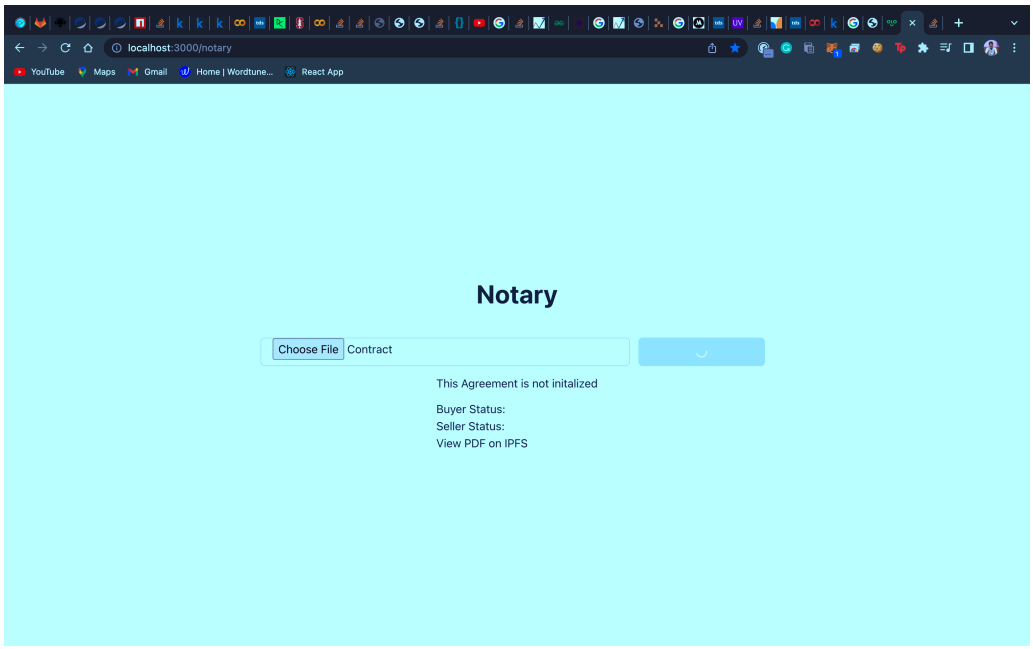
```
import { ChakraProvider, theme } from "@chakra-ui/react";
import { BrowserRouter, Routes, Route } from "react-router-dom";
import Buyer from "./pages/Buyer";
import Home from "./pages/Home";
import Notary from "./pages/Notary";
import Seller from "./pages/Seller";

const App = () => {
  return (
    <ChakraProvider theme={theme}>
      <BrowserRouter>
        <Routes>
          <Route path="/" element={<Home />} />
          <Route path="/notary" element={<Notary />} />
          <Route path="/seller" element={<Seller />} />
          <Route path="/buyer" element={<Buyer />} />
        </Routes>
      </BrowserRouter>
    </ChakraProvider>
  );
};
```

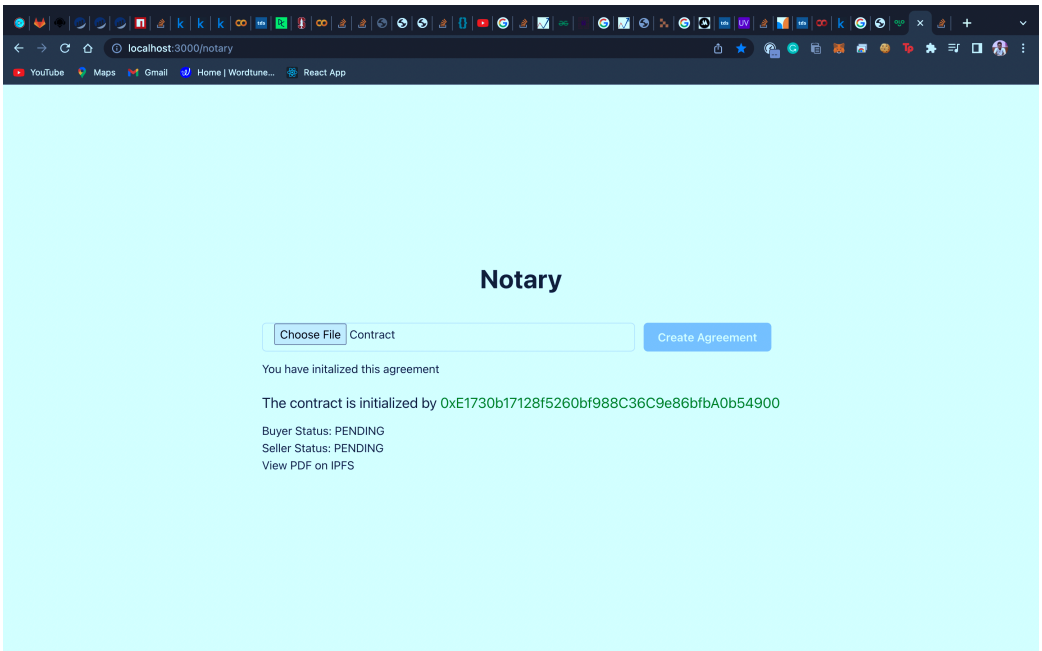
```
Flex w="100vw" h="100vh" justify="center" align="center" flexDir="column">
      <Heading>Buyer</Heading>
      <Flex w="50%" mt="10" justify="space-evenly" align="center">
        {agreement.hashCode ? (
          <Link href={`https://ipfs.io/ipfs/${agreement.hashCode}`}>
            View PDF on IPFS
          </Link>
        ) : (
          <span />
        )}
        <Button
          mx="3"
          px="10"
```

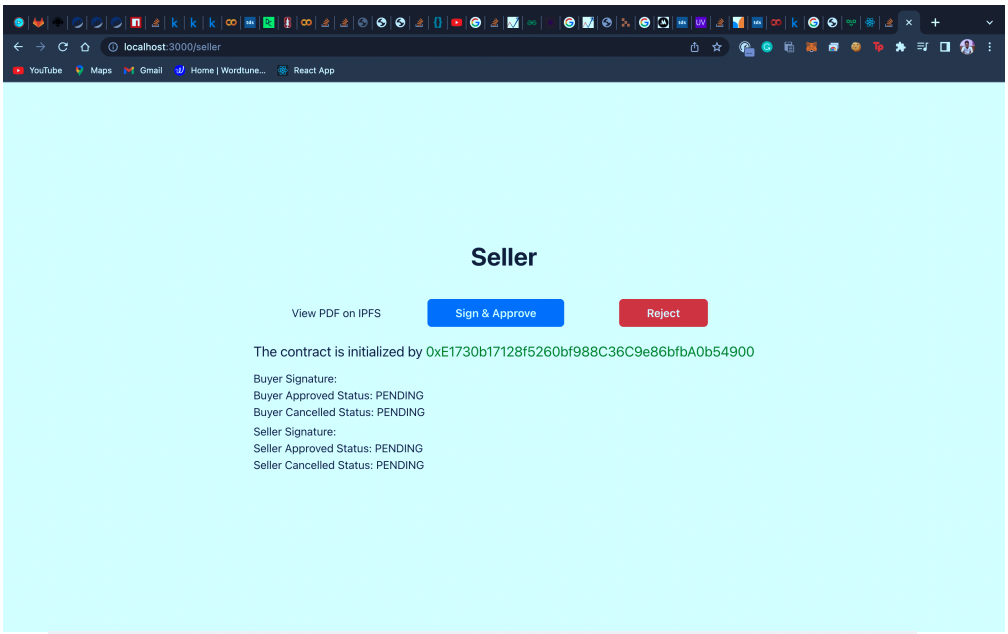
```
          colorScheme="blue"
          onClick={ApproveAgreement}
          isLoading={isLoading}
          isDisabled={isLoading || status.isApprovedByBuyer === "TRUE"}
        >
          Sign & Approve
        </Button>
        <Button
          mx="3"
          px="10"
          colorScheme="red"
          onClick={DeclineAgreement}
          isLoading={isLoading}
          isDisabled={isLoading || status.isCancelledByBuyer === "TRUE"}
        >
          Reject
        </Button>
      </Flex>
      <Flex flexDir="column">
        {agreement.notary && (
          <Text mt="5" fontSize="xl">
            The contract is initialized by{" "}
            <span style={{ color: "green" }}>{agreement.notary}</span>
          </Text>
        )}
        <List mt="3">
          <ListItem>Buyer Signature: {agreement.retriveBuyerSign}</ListItem>
          <ListItem>Buyer Approved Status: {status.isApprovedByBuyer}</
ListItem>
          <ListItem>
            Buyer Cancelled Status: {status.isCancelledByBuyer}
          </ListItem>
          <ListItem mt="1">
            Seller Signature: {agreement.retriveSellerSign}
          </ListItem>
          <ListItem>
            Seller Approved Status: {status.isApprovedBySeller}
          </ListItem>
          <ListItem>
            Seller Cancelled Status: {status.isCancelledBySeller}
          </ListItem>
        </List>
      </Flex>
```

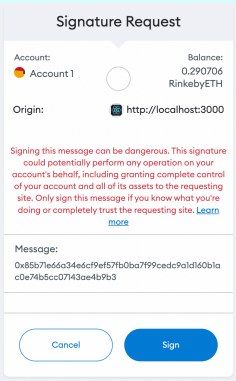
```
  </Flex>
);
```

Screenshots






localhost:3000/seller
YouTube
Maps
Gmail
Home | Wordtune...
React App
Seller
View PDF on IPFS
Sign & Approve
Reject
The contract is initialized by 0xE1730b17128f5260bf988C36C9e86bfbA0b54900
Buyer Signature:
Buyer Approved Status: PENDING
Buyer Cancelled Status: PENDING
Seller Signature:
Seller Approved Status: PENDING
Seller Cancelled Status: PENDING


Signature Request
Account:
Account 1
Balance:
0.290706
RinkebyETH
Origin:
http://localhost:3000
Signing this message can be dangerous. This signature could potentially perform any operation on your account's behalf, including granting complete control of your account and all of its assets to the requesting site. Only sign this message if you know what you're doing or completely trust the requesting site. Learn more
Message:
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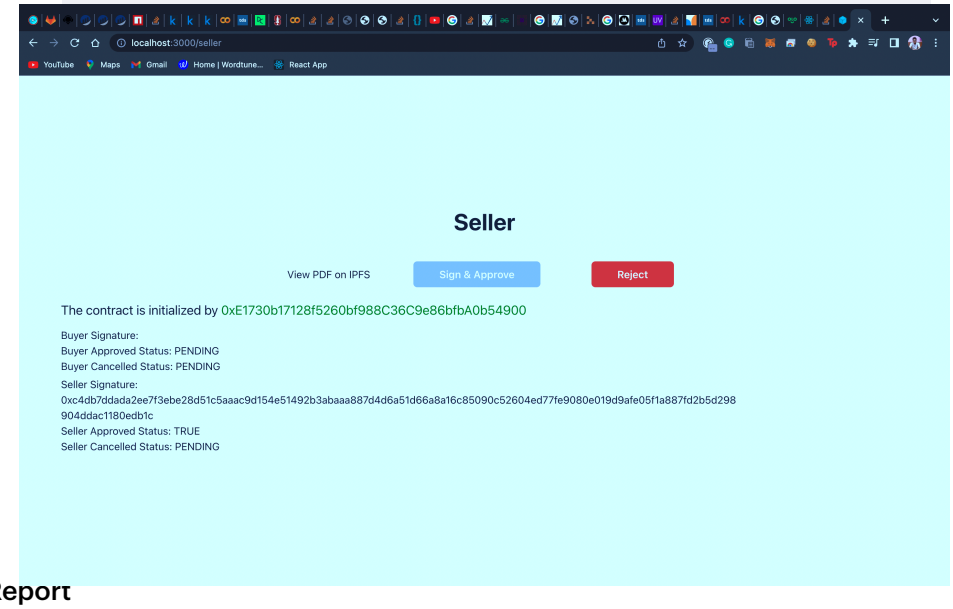
Cancel
Sign


localhost:3000/seller
YouTube
Maps
Gmail
Home | Wordtune...
React App
Seller
View PDF on IPFS
Sign & Approve
Reject
The contract is initialized by 0xE1730b17128f5260bf988C36C9e86bfbA0b54900
Buyer Signature:
Buyer Approved Status: PENDING
Buyer Cancelled Status: PENDING
Seller Signature:
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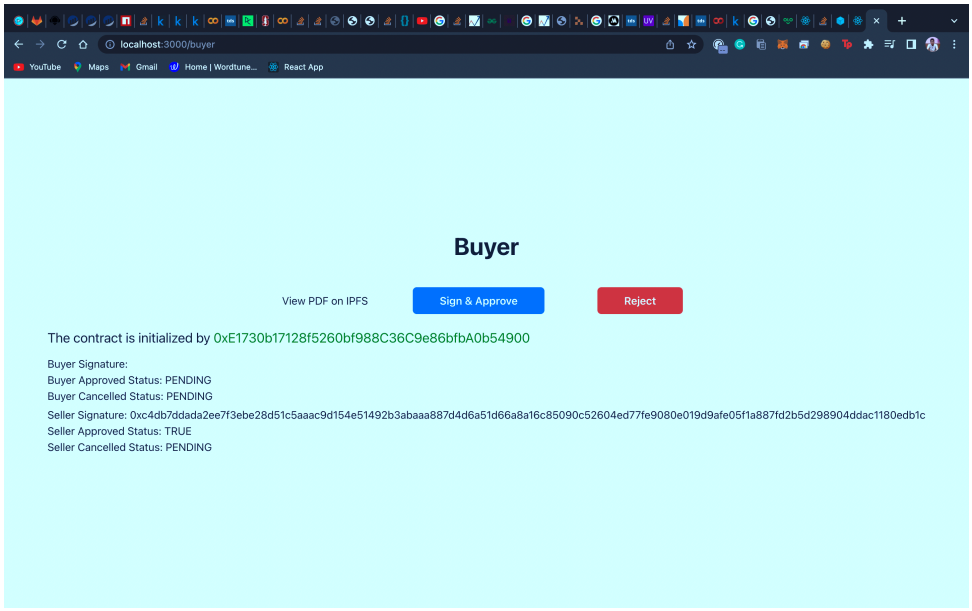
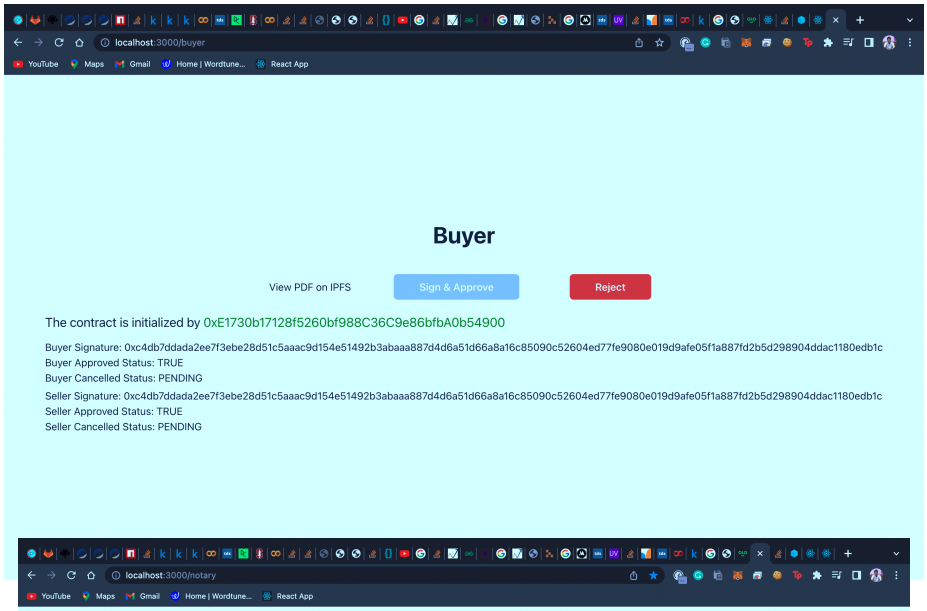
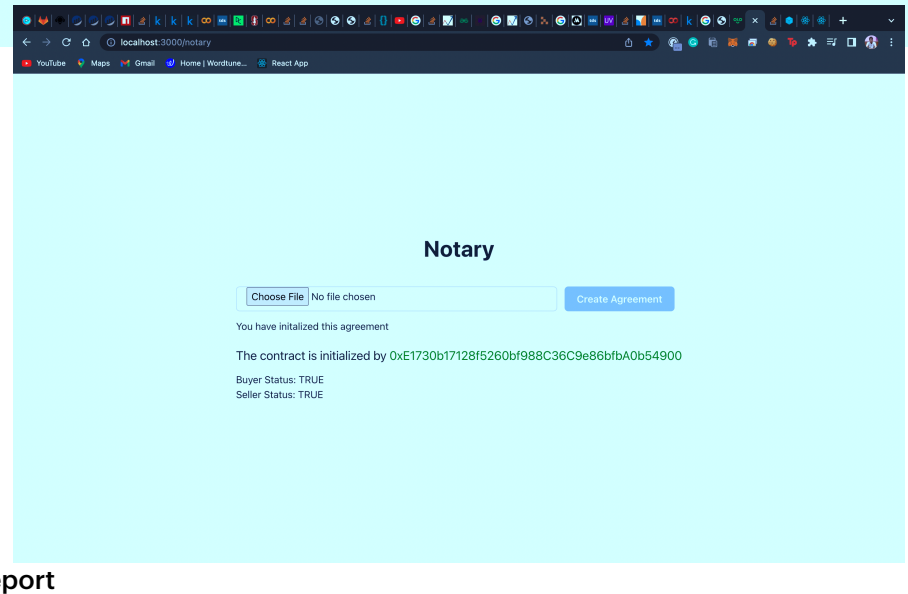
Seller Approved Status: TRUE
Seller Cancelled Status: PENDING


localhost:3000/buyer
YouTube
Maps
Gmail
Home | Wordtune...
React App
Buyer
View PDF on IPFS
Sign & Approve
Reject
The contract is initialized by 0xE1730b17128f5260bf988C36C9e86bfbA0b54900
Buyer Signature:
Buyer Approved Status: PENDING
Buyer Cancelled Status: PENDING
Seller Signature: 0xc4db7ddada2ee7f3ebe28d51c5aaac9d154e51492b3abaaa887d4d6a51d66a8a16c85090c52604ed77fe9080e019d9afe05f1a887fd2b5d298904ddac1180edb1c
Seller Approved Status: TRUE
Seller Cancelled Status: PENDING


localhost:3000/buyer
YouTube
Maps
Gmail
Home | Wordtune...
React App
Buyer
View PDF on IPFS
Sign & Approve
Reject
The contract is initialized by 0xE1730b17128f5260bf988C36C9e86bfbA0b54900
Buyer Signature: 0xc4db7ddada2ee7f3ebe28d51c5aaac9d154e51492b3abaaa887d4d6a51d66a8a16c85090c52604ed77fe9080e019d9afe05f1a887fd2b5d298904ddac1180edb1c
Buyer Approved Status: TRUE
Buyer Cancelled Status: PENDING
Seller Signature: 0xc4db7ddada2ee7f3ebe28d51c5aaac9d154e51492b3abaaa887d4d6a51d66a8a16c85090c52604ed77fe9080e019d9afe05f1a887fd2b5d298904ddac1180edb1c
Seller Approved Status: TRUE
Seller Cancelled Status: PENDING


localhost:3000/notary
YouTube
Maps
Gmail
Home | Wordtune...
React App
Notary
Choose File
No file chosen
Create Agreement
You have initalized this agreement
The contract is initialized by 0xE1730b17128f5260bf988C36C9e86bfbA0b54900
Buyer Status: TRUE
Seller Status: TRUE