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Blockchain Project Phase 2

**Approved By:** Baibhav Thapa

## **Title: OrganLedger**

### **Issues Addressed:**

- Transparency in Organ Transplants: Blockchain will allow us to put vital organ / surgery details on the blockchain which provides an immutable ledger, hence the name of our application, OrganLedger. This will offer transparency into the organ transplant process. This will also reduce fraud and make the process more secure and efficient, making organ transplants faster for critical patients.
- Financial Support: Our Blockchain-Based donation system will offer hospitals to receive money through the blockchain for recipients who cannot meet the financial requirement.

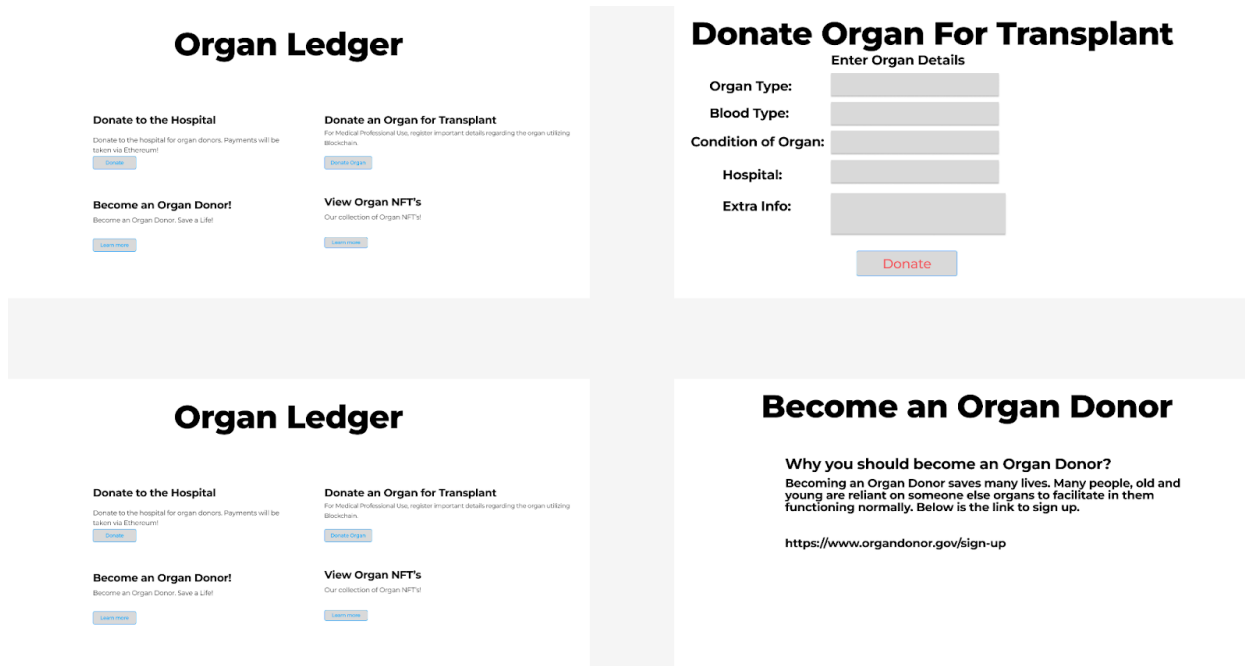
### **Abstract:**

- The issue of organ donation is a vital humanitarian problem in modern society. Over 20,000 donations occur in a year, but there are shortages across the world and a not very transparent method of conducting these transplants. Our usage of the blockchain, will allow for transparency in these transplants and eliminate the potential for data tampering and fraud. By doing so, it ensures that the data of the donor and recipient stays secure and readily available throughout the whole process. Specifically, we will integrate aspects such as organ donor commitments, donor availability, and surgeries into the OrganLedger through blockchain.

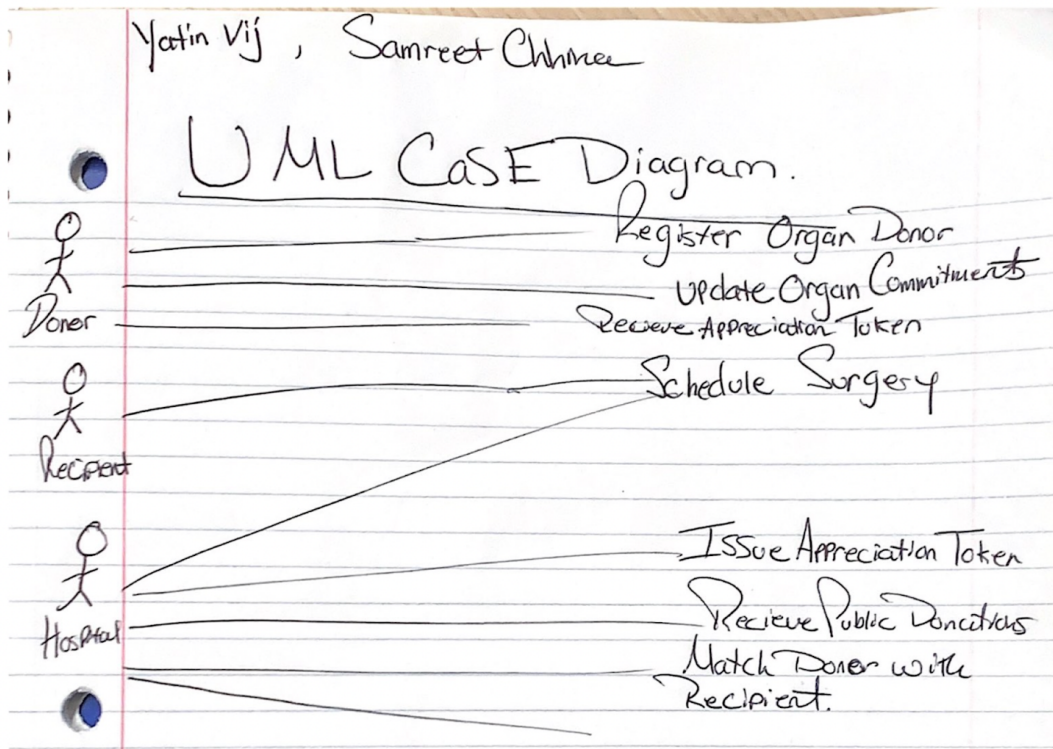
### **Digital Asset & Token:**

- ERC 1155 - Using the combination of both ERC-20 & ERC-721. The usage of ERC-1155 is the most preferred token since it allows flexibility for two tokens by only using one token. The digital assets for this application will be the organ availability, number of organ donors, organ commitments, and transplant surgeries. The Fungible Token utilizing ERC-20 will be public donations to OrganLedger for money to provide to the needy recipients, and the Non-Fungible Token utilizing ERC-721 will be used by putting important organ information on the blockchain, to show the immutable nature of the blockchain. Once the transplant surgery is successfully completed, a token / certificate will be given back to the donor as an appreciation token, which will be the ERC1155 implementation

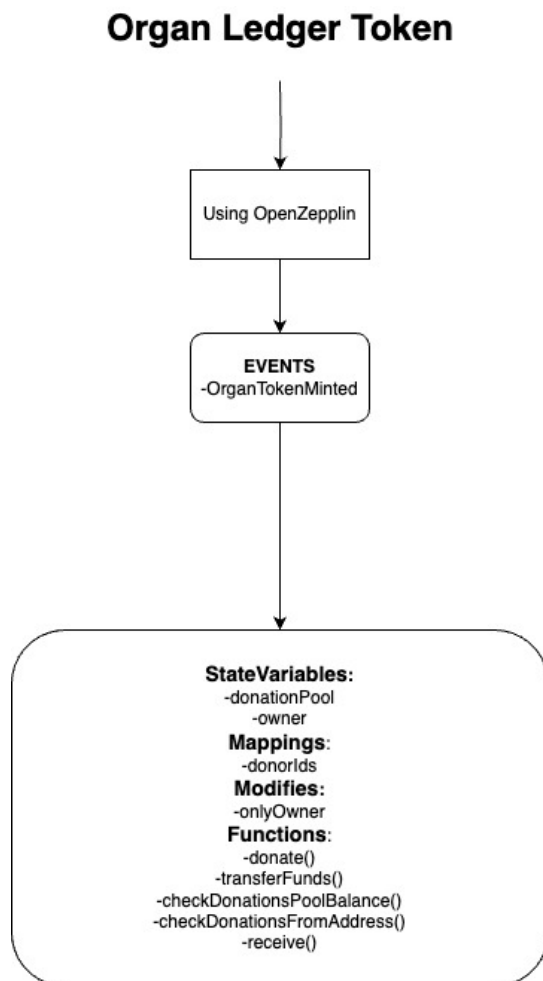
# UI WIREFRAME



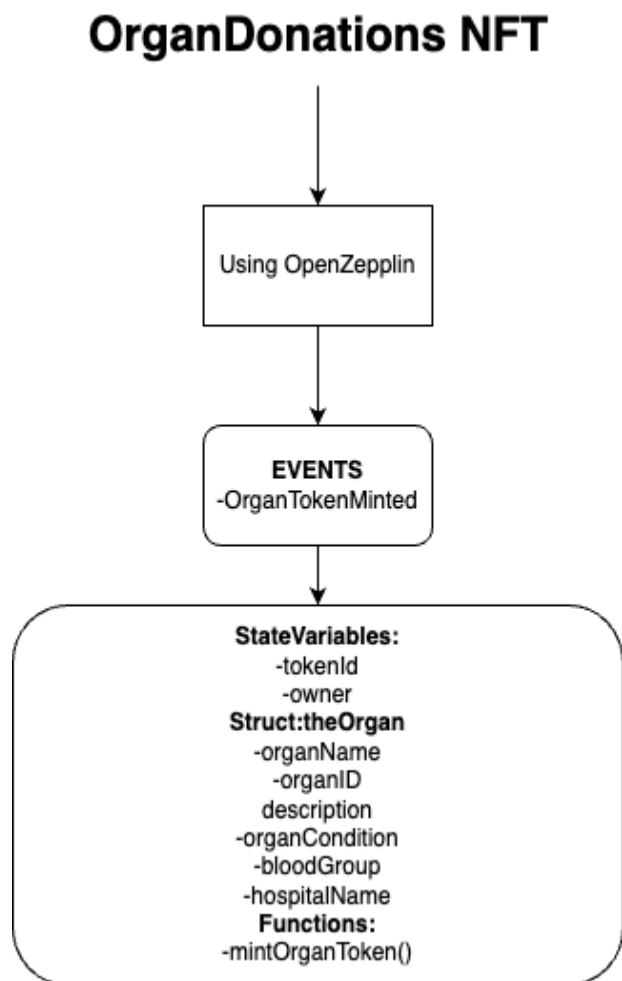
# UML CASE DIAGRAM

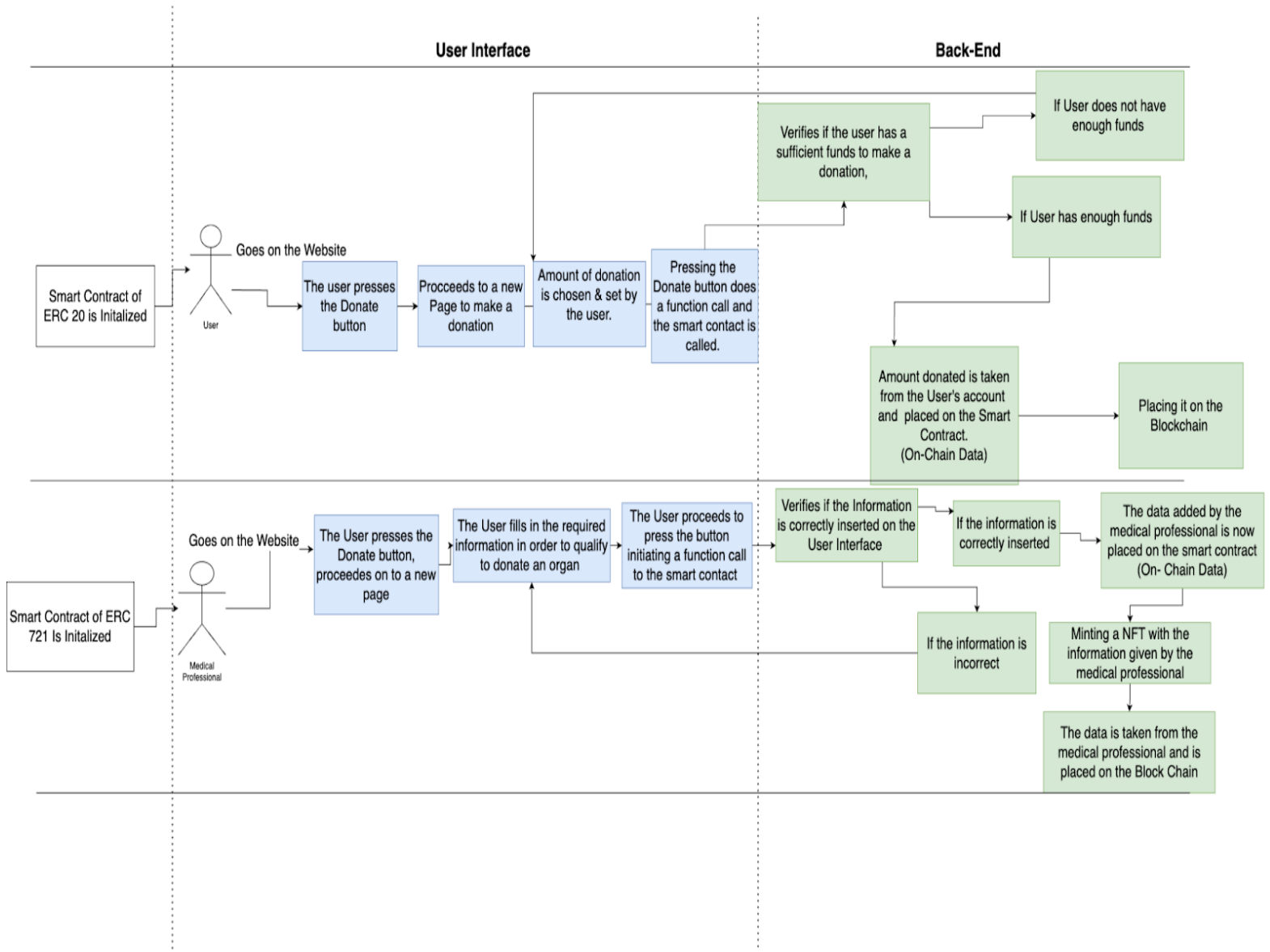


## ERC- 721 Contract Diagram With Event



## ERC - 20 Contract Diagram with Events





## References:

<https://eips.ethereum.org/EIPS/eip-1155>

<https://ethereum.org/en/developers/docs/standards/tokens/erc-20/>

<https://eips.ethereum.org/EIPS/eip-721>

<https://www.openzeppelin.com/contracts>

