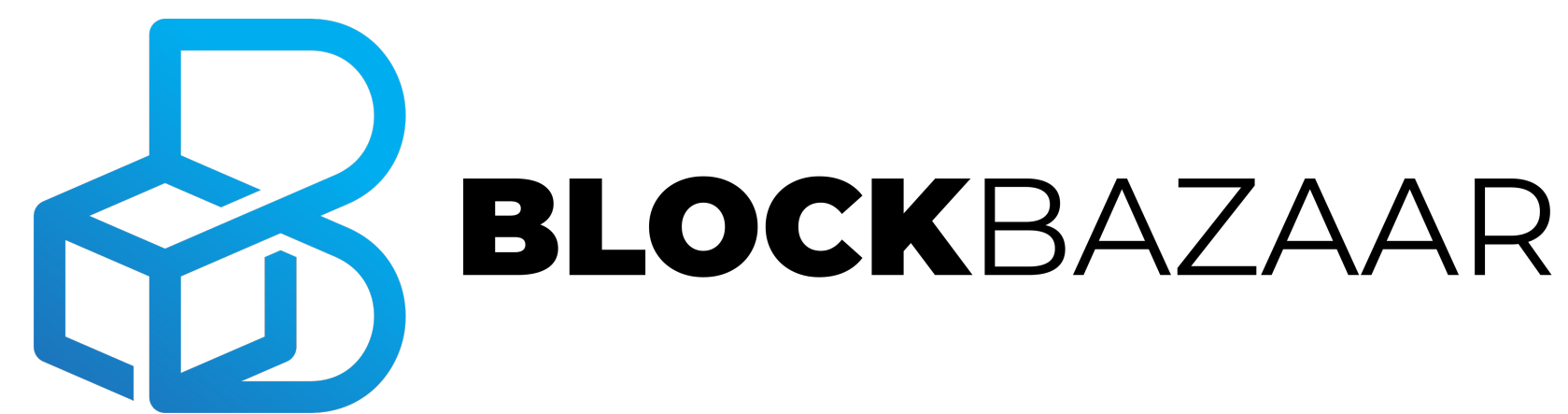
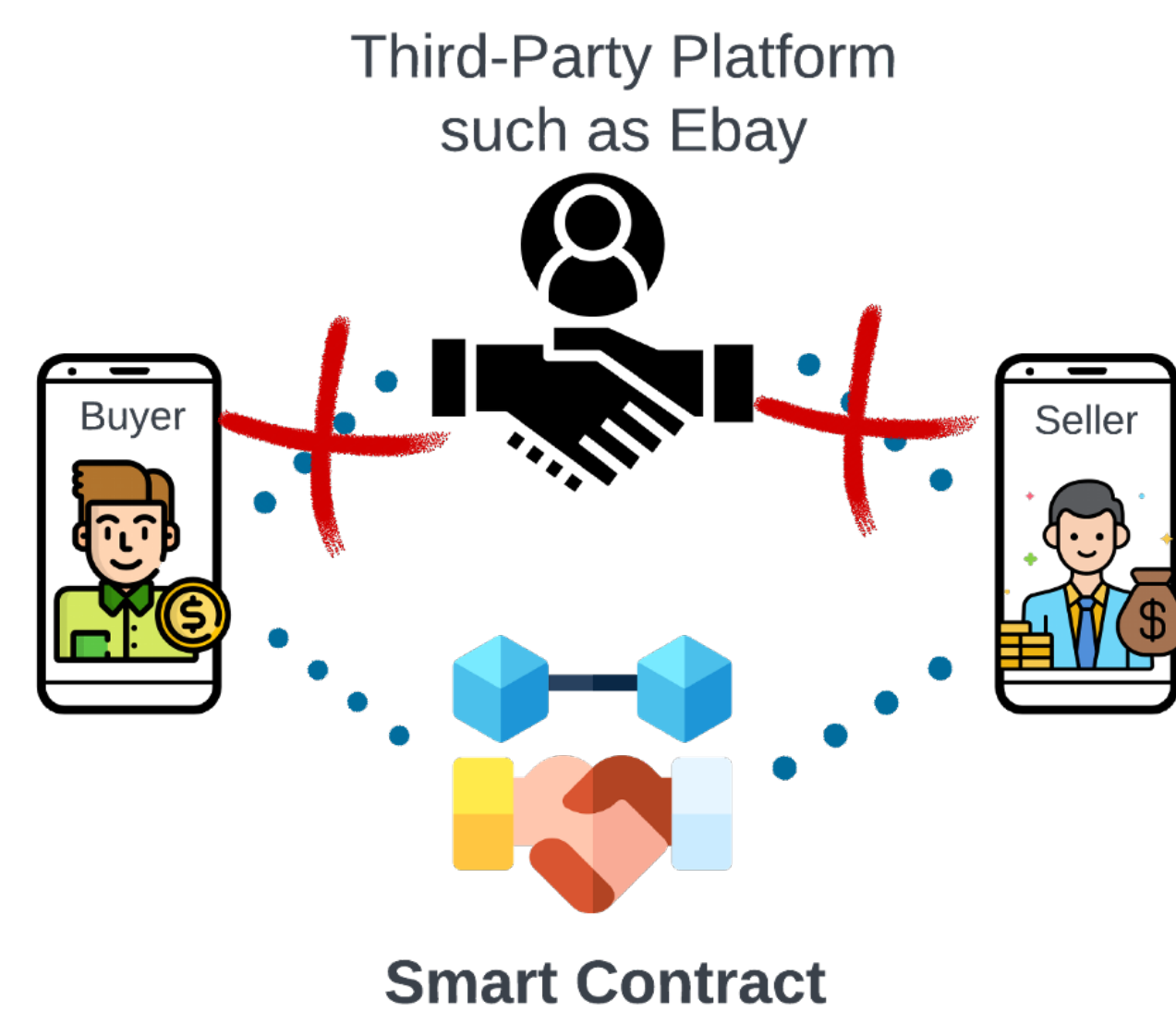


Overview

BlockBazaar is an online marketplace that facilitates secure purchasing and delivery of physical goods in a trustless and decentralized manner via smart contract technology.



Introduction



Problem:

Current online marketplaces like eBay:

- Require users' private information
- Take a cut of sellers' profits
- Are centralized with single points of failure

Solution: BlockBazaar

- Uses blockchain technology
 - Immutable and decentralized**
- Uses smart contracts that only require negligible gas fees (cost paid to Ethereum network to execute)
 - Cheap and fair**
- Uses double deposit escrow system
 - Secure and trustless**
- Has user-friendly front-end application that links to smart contract code
 - Efficient and convenient**

What is Blockchain and Ethereum?

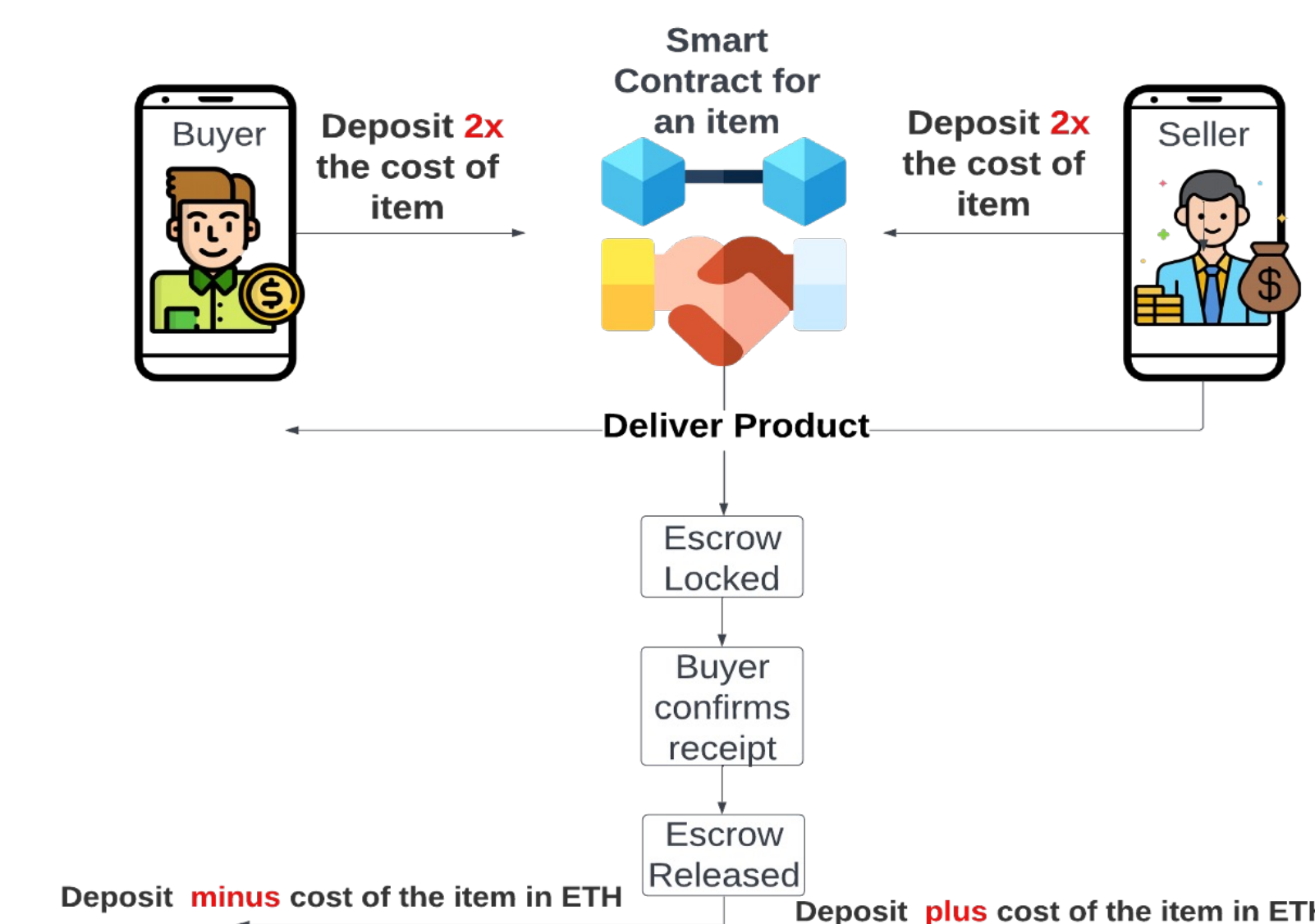
What is Blockchain?

- A digital technology for securely storing and sharing data across a network of computers
- A digital ledger that tracks all transactions and activities on the network
- Decentralized, meaning transactions don't rely on a central authority
- Uses complex algorithms and cryptographic techniques that make transactions tamper-proof, thus being ideal for e-commerce

What is Ethereum and Smart Contracts?

- Ethereum is a digital platform that uses blockchain technology
- Ethereum creates and runs smart contracts which are self-executing contracts with terms directly written into lines of code
- In our case, smart contracts will address the issue of trust between unknown buyers and sellers in a digital marketplace, eliminating third parties as mediators

Methods (Double Deposit Escrow)

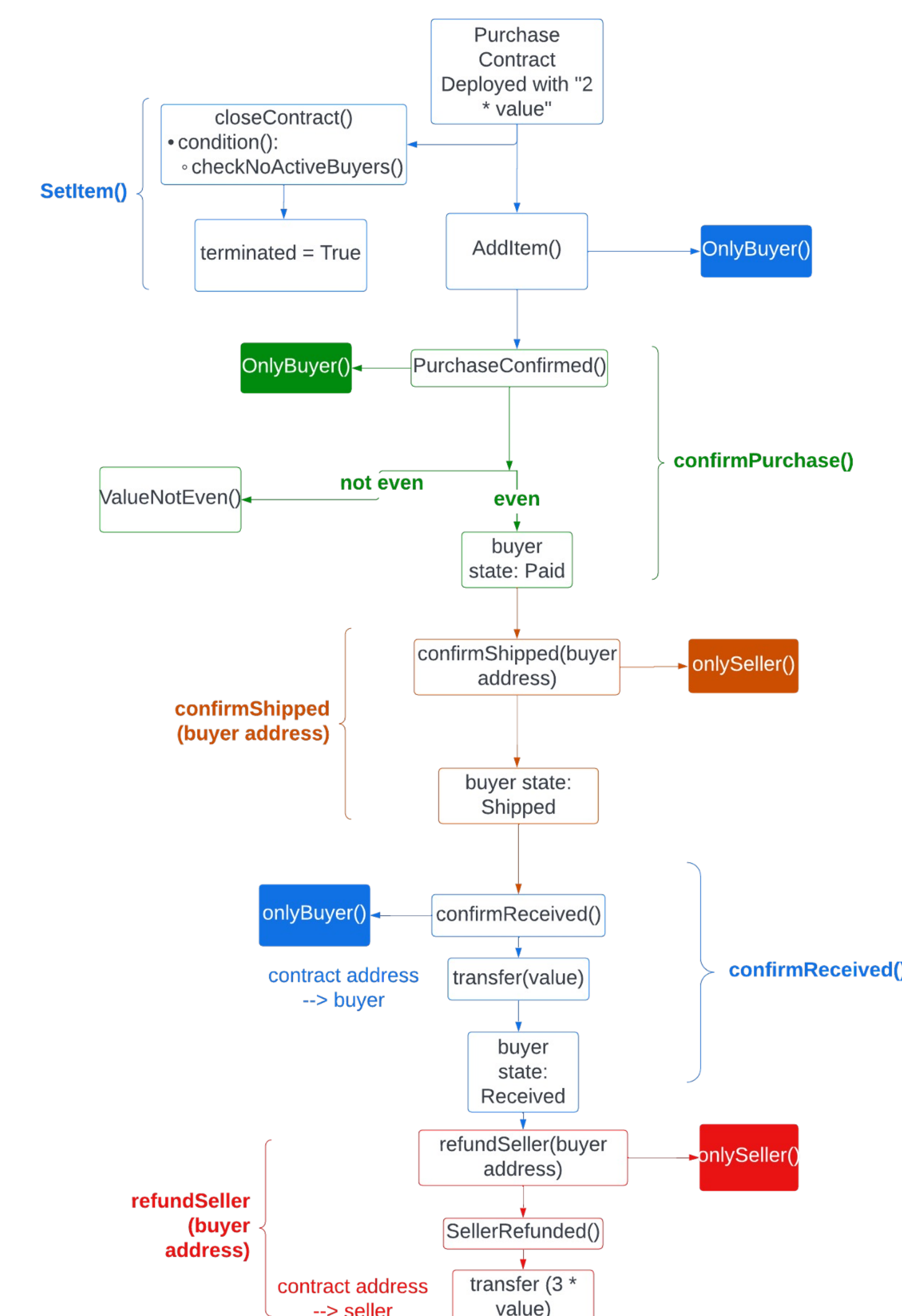


- Buyers and sellers each deposit twice the amount of the item in ETH (Ethereum cryptocurrency) into the contract as escrow
- Escrow is locked until the buyer confirms they have received the item
- Buyers and sellers are refunded their escrow

Results (Backend)

Basic transaction flow:

- Deploy contract (Seller)
- SetItem (Seller)
- confirmPurchased (Buyer)
- confirmShipped (Seller)
- confirmReceived (Buyer)
- refundSeller (Seller)

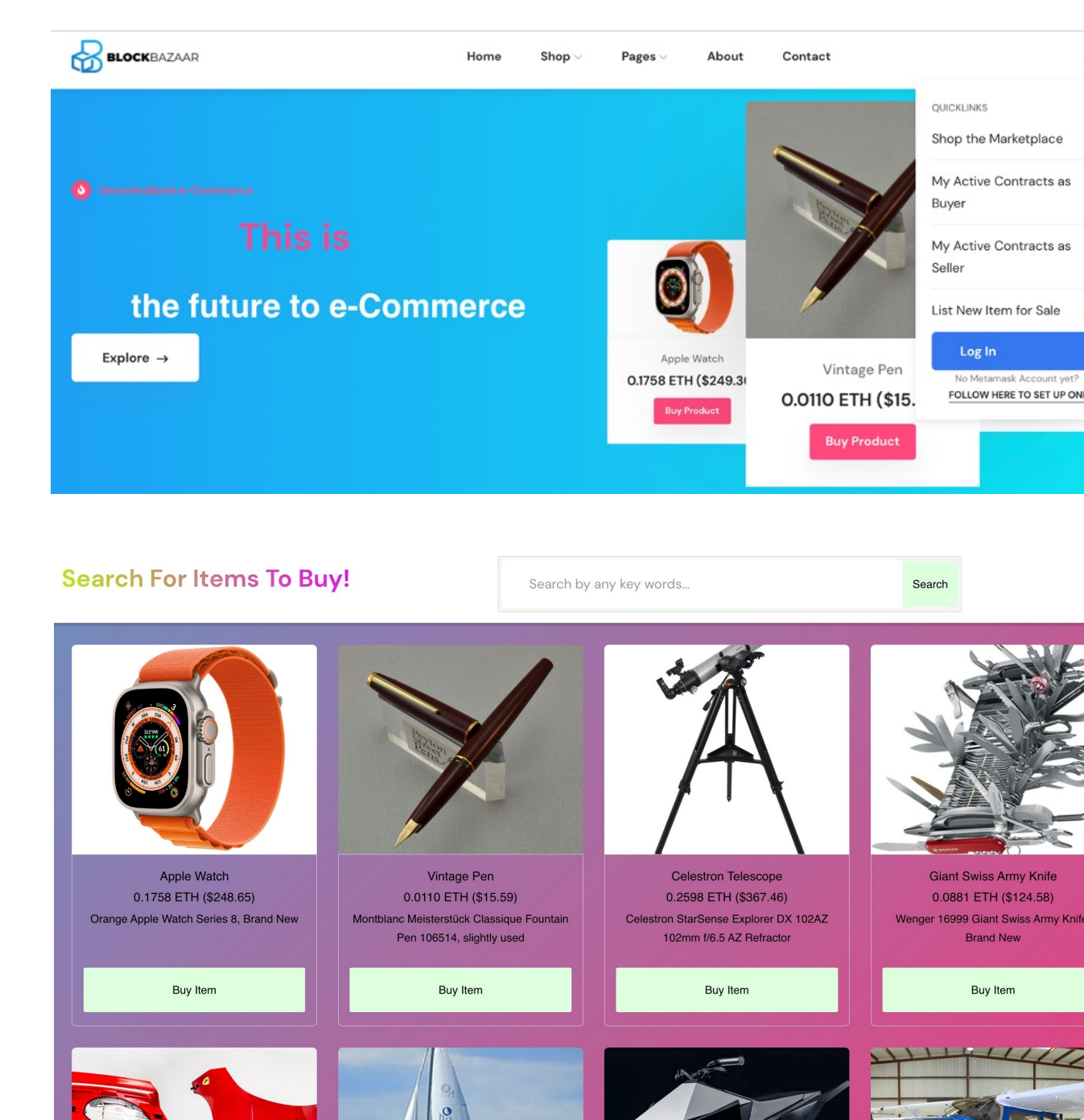


Results (Front-end)

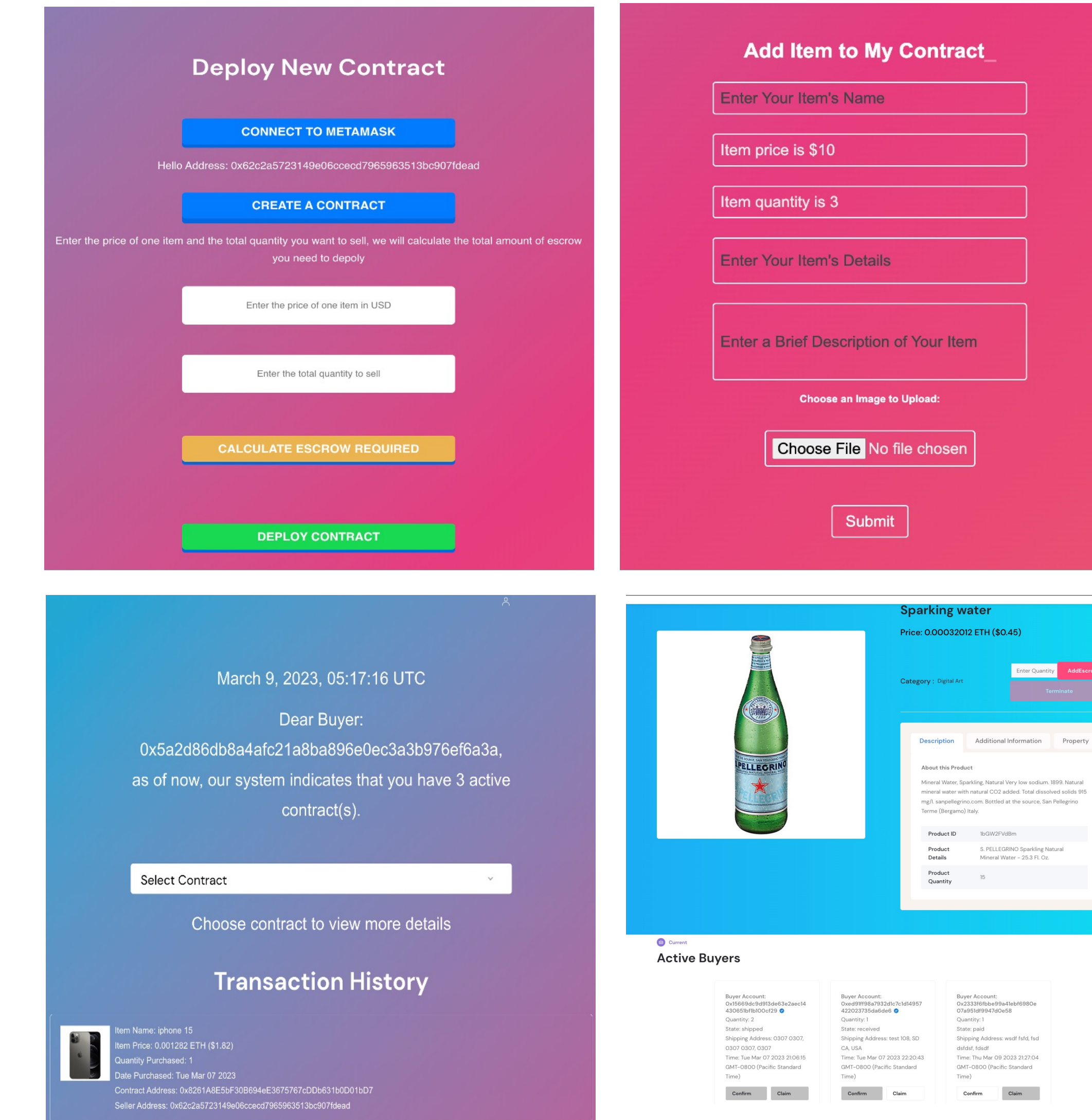
Developed with node.js and express.js



Check it out online : <http://blockbazaar.net/>



Results (Front-end) Cont.



Conclusion

- With BlockBazaar, peer-to-peer e-commerce is **decentralized, secure, transparent, trustless** and **cost-effective**
- Decentralization has the potential to eliminate the need for third-party mediation in not only centralized marketplaces but also in other industries such as such as insurance and more

Future Work

- Become a fully web3 application by using IPFS instead of our own database via Parse
- Integrate product ratings, reviews, and recommender systems to the platform
- Optimize the value required for the escrow deposit (rather than 2x), depending on the transaction details and patterns learned from analysis in order to incentivize more users
- Integrate shipping tracker system to prevent funds from being locked in contracts when items are lost in transit

Acknowledgements

We would like to thank our mentor Sheffield, Professor Rampure and TAs for all the advice along the way.

