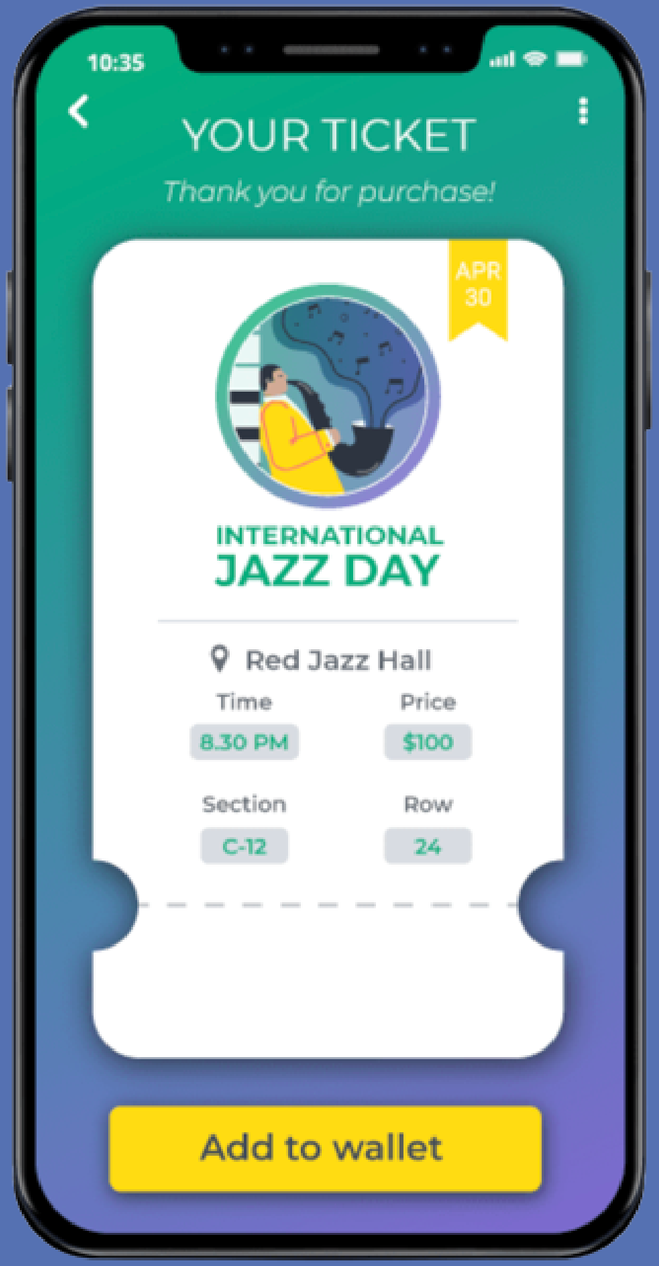
TkTblock

Blockchain Digital Ticketing

Fintech Bootcamp
Team 2



Content

Our Team

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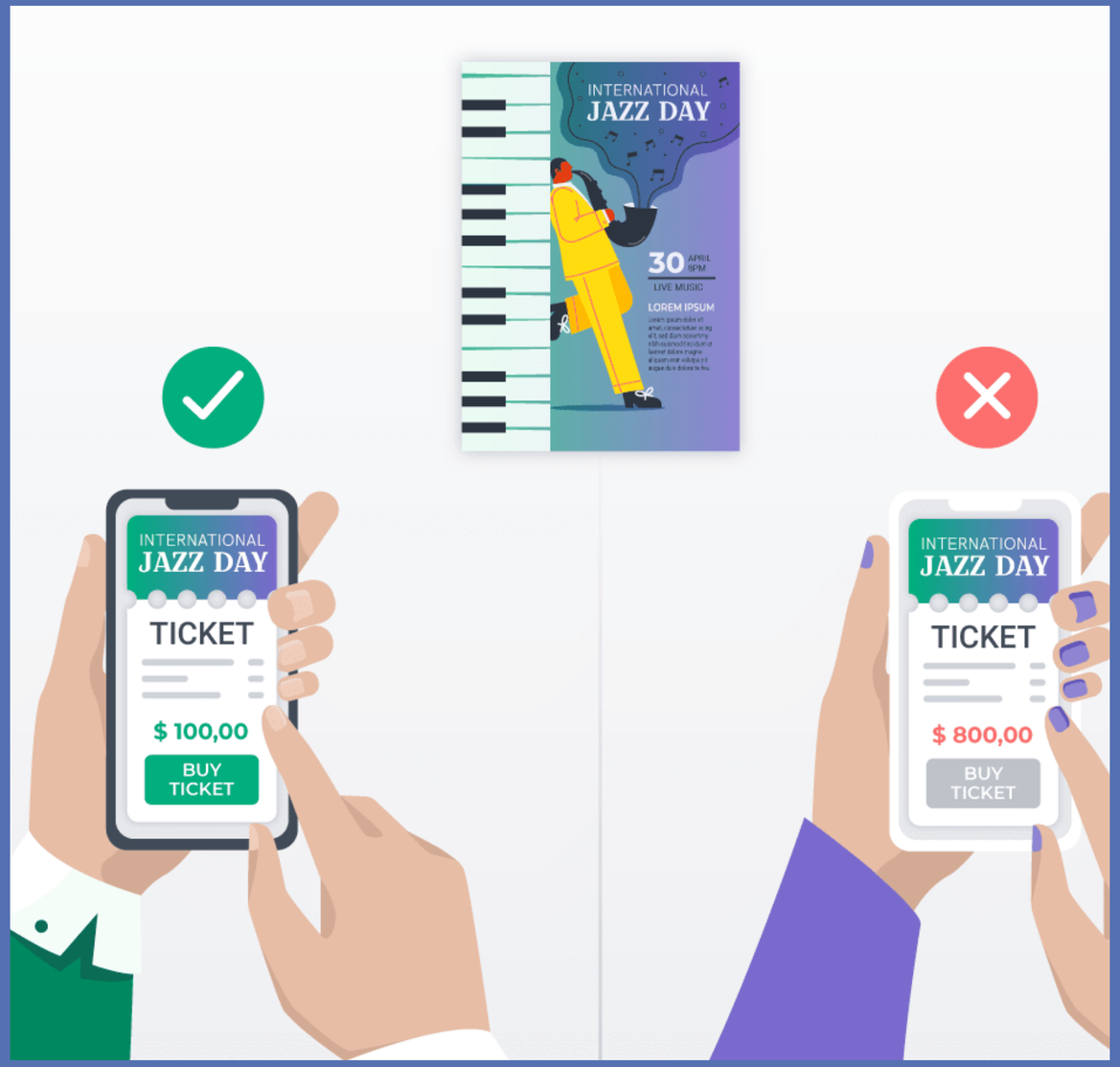
Problem

Fans, event organizers, and ticket vendors are facing many issues in the events and ticketing market.

- **Fees** - Higher commissions and convenience fees from the providers
- **Lack of choice** - Few controlling majority of the market share and setting rules for artist, venues, customers and promotions.
- **Freedom to Customers** - Fans lack access to buying tickets, as they are unethically sold-out online in a matter of seconds.
- **Fraud** - Lost revenue from tickets being resold by secondary sites and scalpers and fake tickets

"We have a monopoly that covers an entire supply chain." - Diana Moss, president of the American Antitrust Institute.



Solution

TKTblock has the potential to resolve many pressing issues currently facing the event industry and offers a faster way to create traceable and transferable tickets.

Benefits

- **Grant control** back to the customers and artist
- Use of **decentralized,** highly available systems
- **Transparency** on event details and ticket supply
- Verification of **authenticity** of tickets to minimize fraud
- Minimal commission **fees**
- Easy **transferability** by the people
- Ability to use multiple **digital wallets**
- **Promote** ticket sales using multiple channels
- **Flexible commissions** agreed by artists, event spaces and agents
- **Promotes competition** in the industry

Entities

Multiple parties are involved in event related activities

Contract Owner

- Setup the smart contract
- Initiates the event with details
- Setup the **commission** shares between Artist, Event space and contract Owner
- **Free ticket give aways** (airdrop)
- **Event change**s are made
- Event promotions

Artist

- Specifies the event agenda
- Requests the **commission shares**
- Organizes the event
- **Performs** the event
- Promotes the event

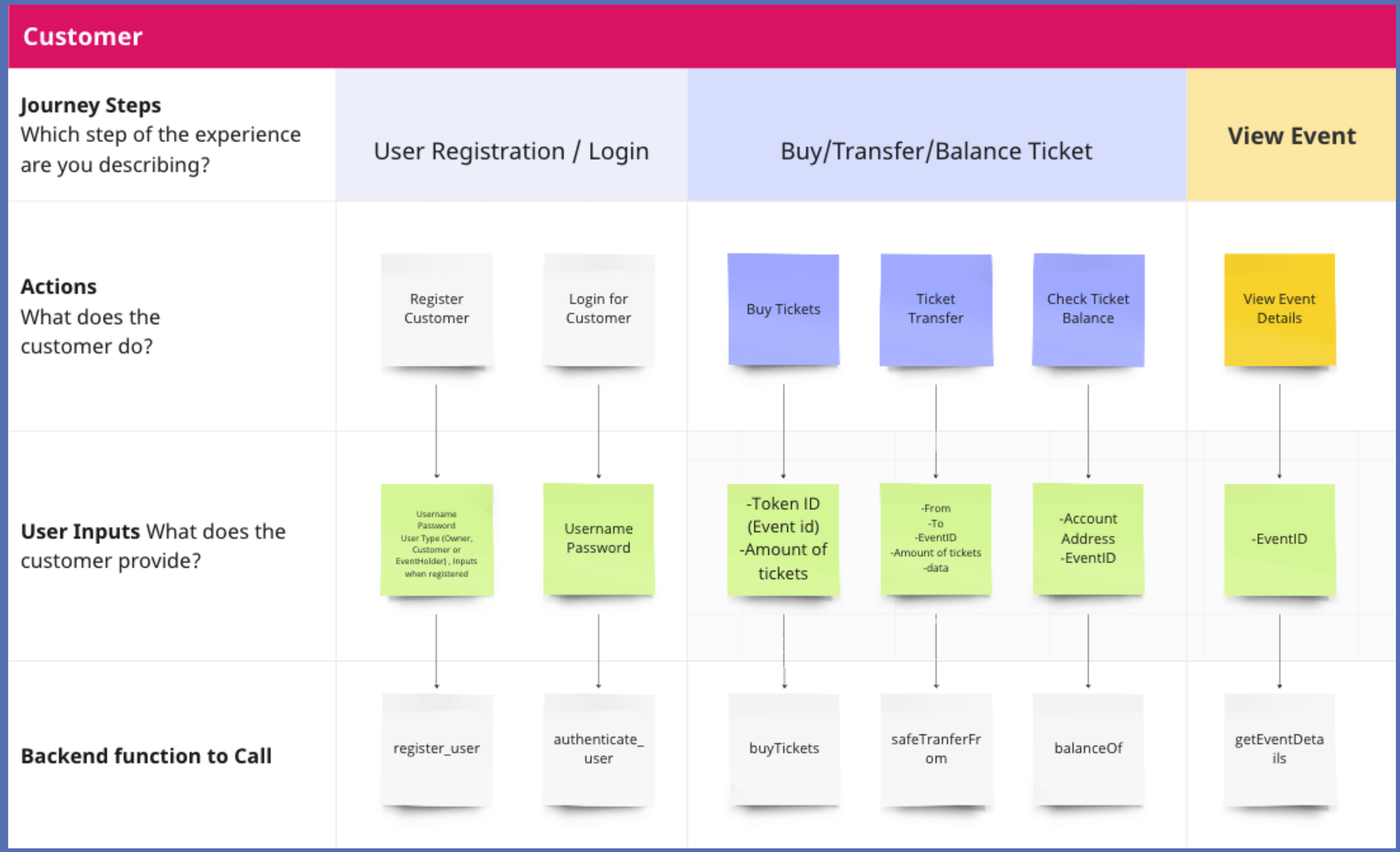
EventSpace

- Provides seating capacity
- **Admits** the fans
- Checks ticket balances
- **Verifies ticket authenticity**
- Requests the commission shares
- Promotes the event

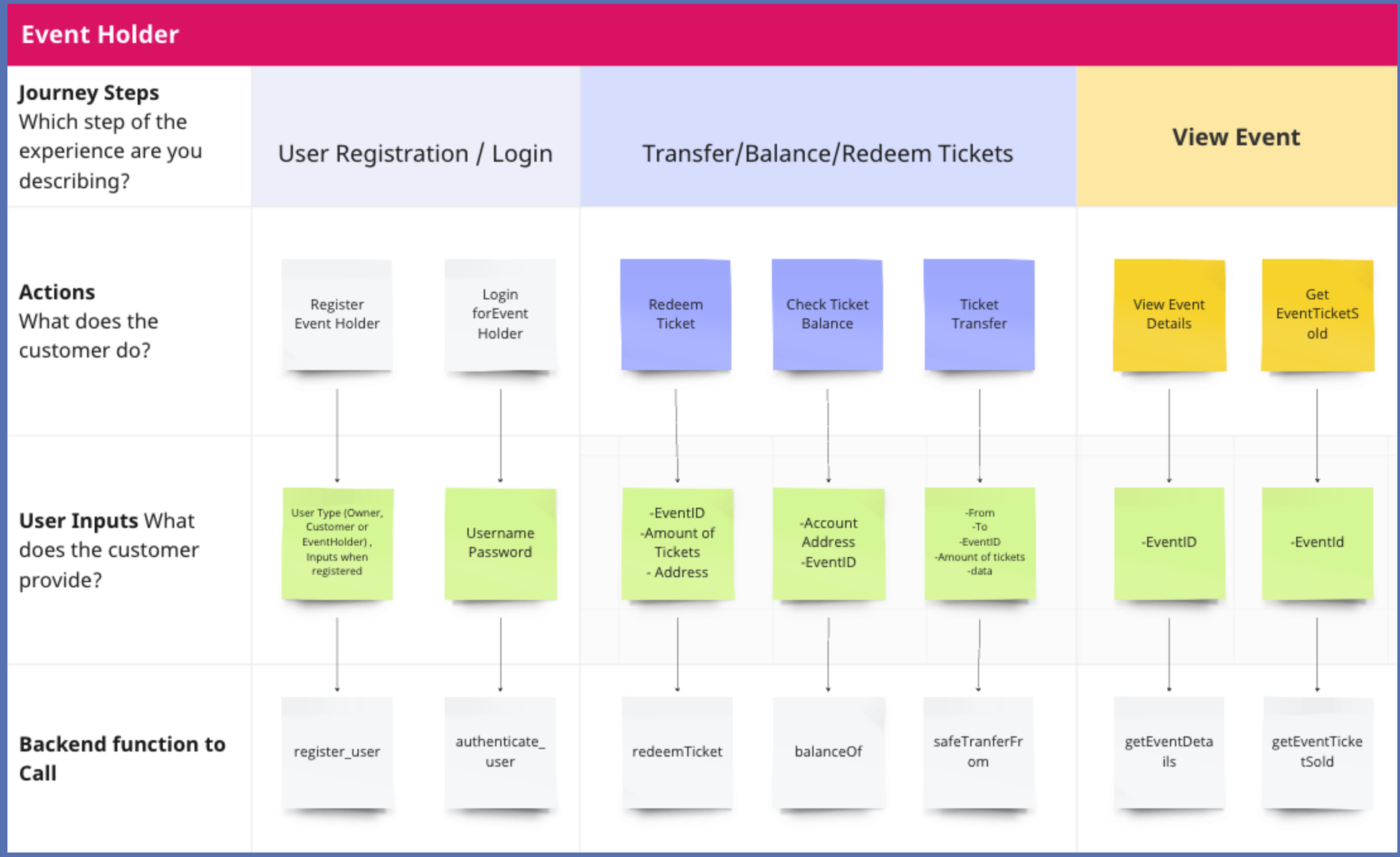
Customer

- **Buy tickets**
- Check balances
- **Transfer tickets**
- Check event details

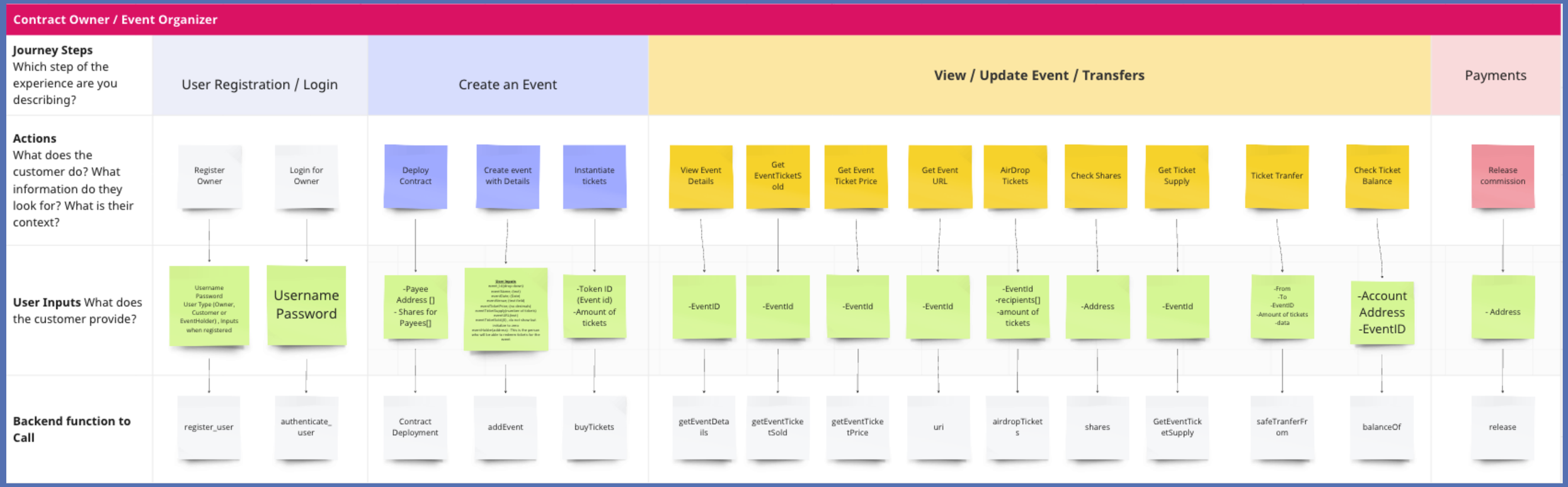
User Journey - Customer



User Journey - EventHolder



User Journey - EventOwner/Organizer



Tools & Technologies

CONTRACT TYPE

ERC721	ERC 1115
Non-Fungible	Mix of **Fungible and Non-Fungible**
Require creation of a smart contract for each new token.	Single smart contract can be used to mint either fungible/Non-fungible tokens
Only allows a single operation for each transaction, it is expensive and time-consuming	Multiple operations in a single transaction, therefore **cost effective**
Single transactions	Bulk minting and safe transfers
Static metadata about tokens	Multiple URIs can be linked to tokens

Tools & Technologies

OPENZEPPLIN

- OpenZepplin contracts

```
import "@openzeppelin/contracts/token/ERC1155/ERC1155.sol";
import "@openzeppelin/contracts/access/Ownable.sol";
import "@openzeppelin/contracts/token/ERC1155/extensions/ERC1155Supply.sol";
import "@openzeppelin/contracts/utils/Strings.sol";
import "@openzeppelin/contracts/security/Pausable.sol";
import "@openzeppelin/contracts/finance/PaymentSplitter.sol";
```

- Data Structures - Structs & Mapping and Variables

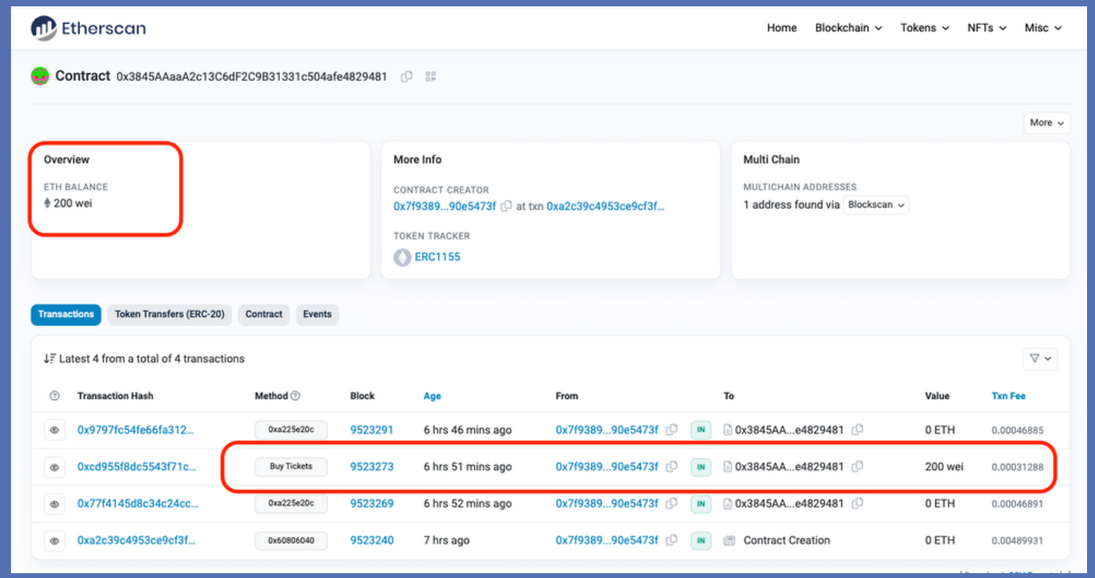
```
// Create a struct to hold the event information
struct Event {
    uint128 _event_Id;
    string _eventName;
    string _eventDate;
    string _eventVenue;
    uint128 _eventTicketPrice;
    uint128 _eventTicketSupply;
    string _eventURL;
    uint128 _eventTicketSold;
    address _eventHolder;
}

// Create a mapping of events with the identifiers
mapping(uint => Event) public events;
```

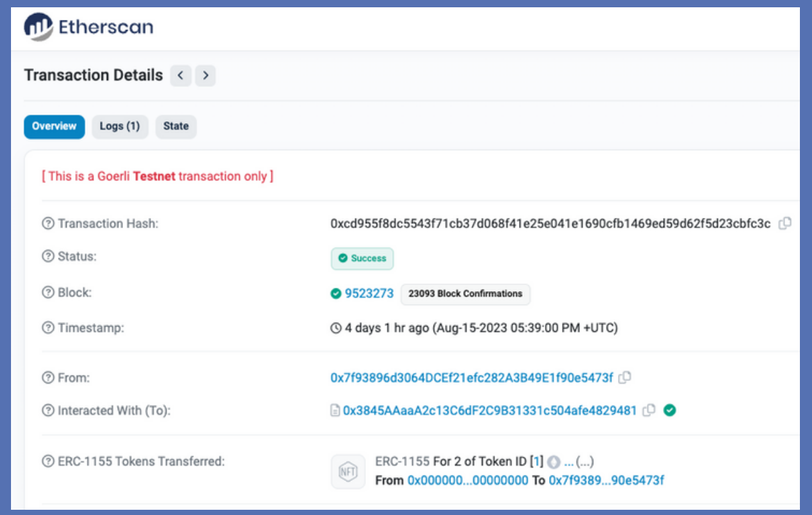
Tools & Technologies

TESTNET INTEGRATIONS

GoreliEth integration



GoreliEth integration



Tools & Technologies

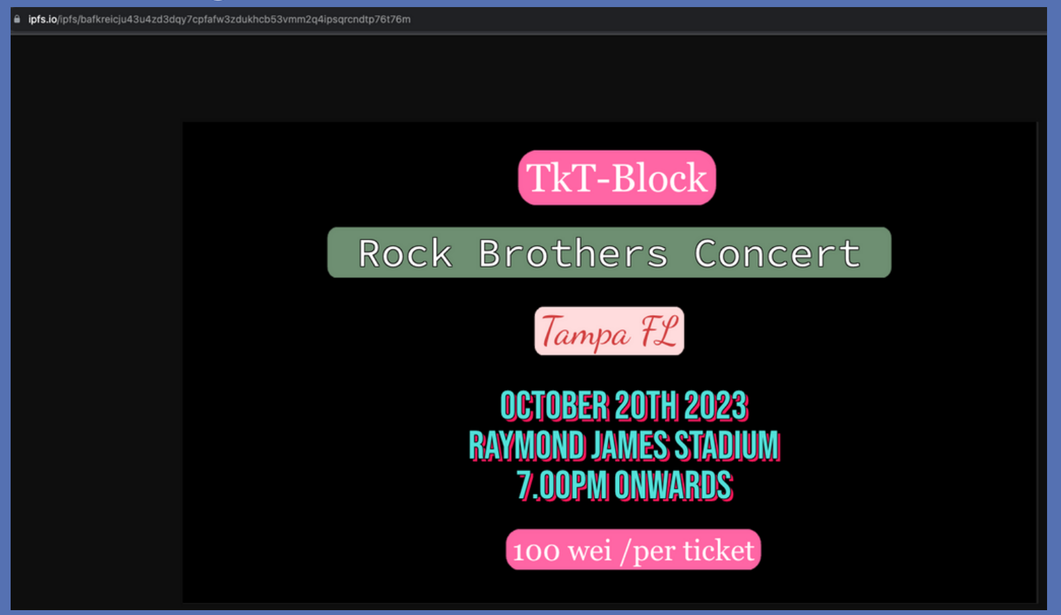
IPFS INTEGRATIONS

IPFS Image Metadata

ipfs.io/ipfs/bafybeidlf22wc73c75gdqnl26wvjzhykwglx5djiyjdgqplclrnxxlbk3m/1.json


```
{
    "name": "Rock Brothers Concert",
    "description": "Rock Brothers Concert, Tampa FL, October 2023",
    "image": "https://ipfs.io/ipfs/bafkreicju43u4zd3dqy7cpfafw3zdukhcb53vmm2q4ipsqrcndtp76t76m"
}
```

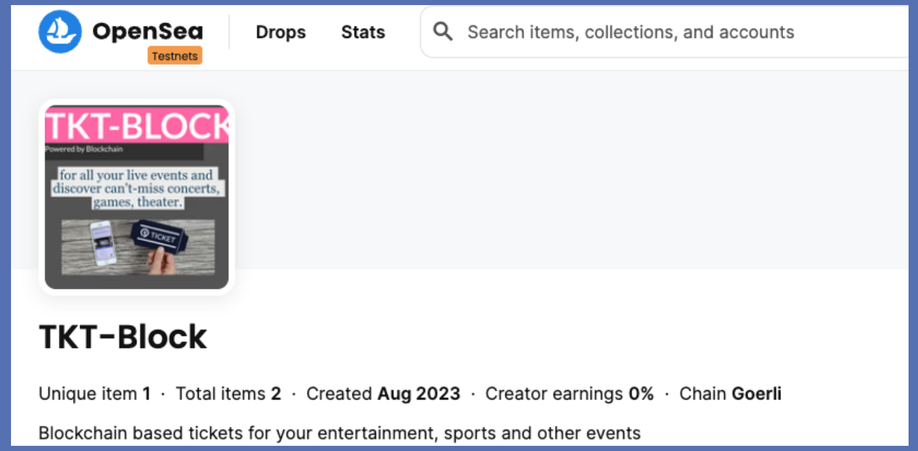

IPFS Image URLs



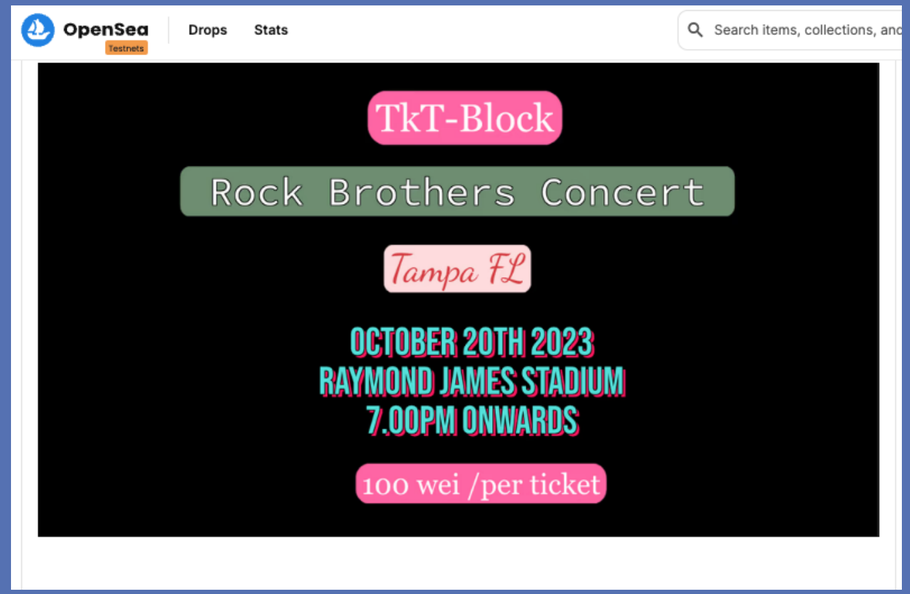
Tools & Technologies

OPENSEA INTEGRATIONS

Open Sea integration



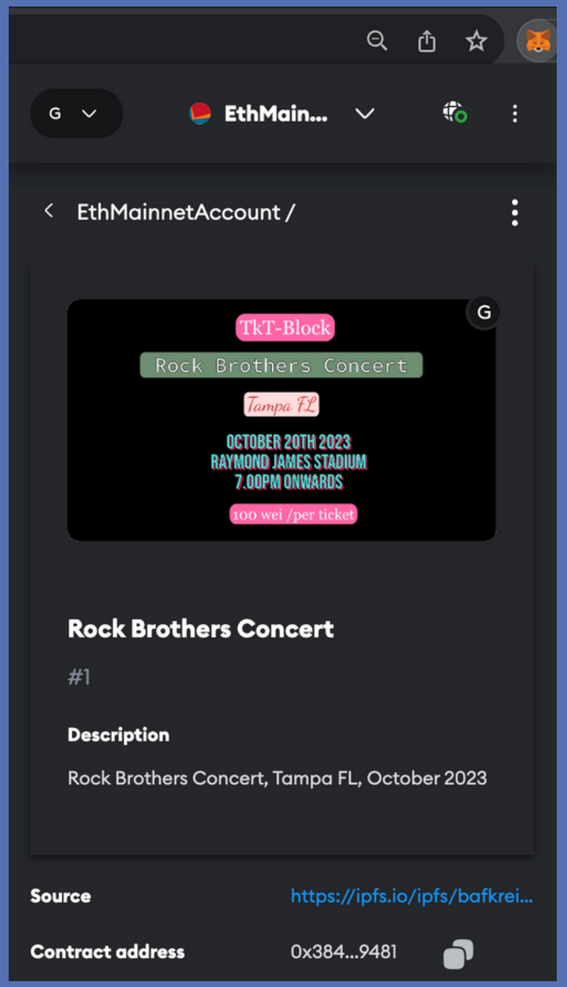
Open Sea Token



Tools & Technologies

METAMASK INTEGRATION

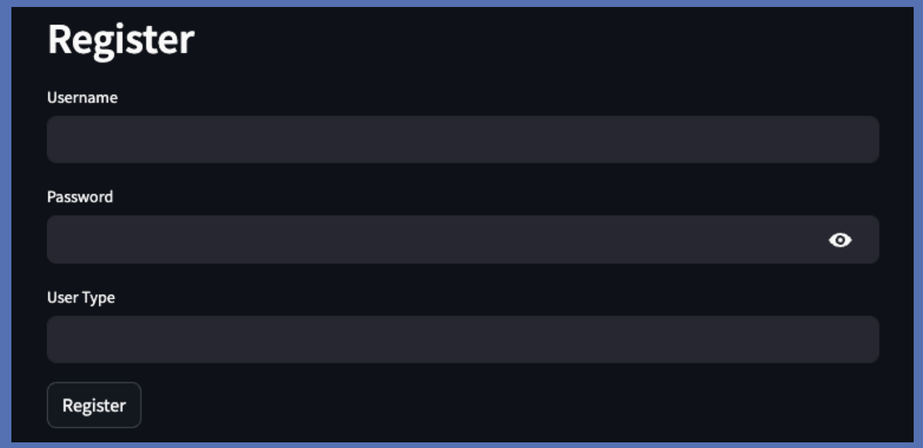
NFT Imports into Wallet



Tools & Technologies

STREAMLIT INTEGRATION

- Streamlit User Registration with Roles



- Streamlit Authentication

Lessons Learned and Next Steps

Challenges faced

- ERC 1155 token does not let you add specific info for copies of the token which limited us adding seat info
- Contract size limitation (24,000 bytes) made us optimize the contract
- Getting testnet ether was limited to per day quotas for Goreli testnet, which limited the testing ability
- Some testnets don't integrate with solutions like OpenSea

Future Improvements

- Ability to add barcodes to tickets
- Ability for Artist to interact with the smart contract
- Ability to include seat assignments to contracts
- Integration with a mobile application / Wallet
- Ability to transfer tickets and get funds from the transfer

Demo

Thank You!

Presentation Order and assignments

Total 12 mins

Intro - Entities (1-6) - AlGhalia (2 mins)
Journey (7-9) - Joe (3 mins)
Technologies and Integration (10-15) - (2 min) Mario
Lessons Learned and Next Steps (17) - (1 min) Naf
Demo (18) - Luis (4 mins)