

**NFT** Vision  
Hack

# NFT Vision Hack

Vision\_Chain

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# Introduction

We are a team of Full Stack Software Developers and Blockchain enthusiasts.

We want to collaboratively apply our knowledge and experiences to take the ticketing industry to a new level with the inclusion of application of one of the fastest growing technologies in the world, i.e. blockchain.

Our Team Members:

Lakshit Madaan: Full-Stack Blockchain Developer & Blockchain Content Strategist

Gandharva Vohra: Blockchain enthusiast & Data Scientist

Aryan Choudhary: Frontend Developer

## Track of choice

The tracks chosen by our team for our participation in the competition are as follows:

Gaming & NFT's(Track 4):

We have used IPFS & NFT.Storage in our project for storing the meta-data of the nft which is name, photo & description/category of the nft.

By using IPFS large amounts of data can be stored and shared more efficiently on the blockchain with the help of cryptographic hashes. IPFS helps in fetching data by its content instead of its location ,thus, helping in accessing and storing of huge amounts of ticketing data relatively faster.

Also, once user data is uploaded on NFT.Storage, an IPFS hash of the data is generated, known as a CID. Using CIDs to reference NFT data prevents problems like fragile links and rug pulls. Hence, it meets the requirements of the Gaming and NFTs track.

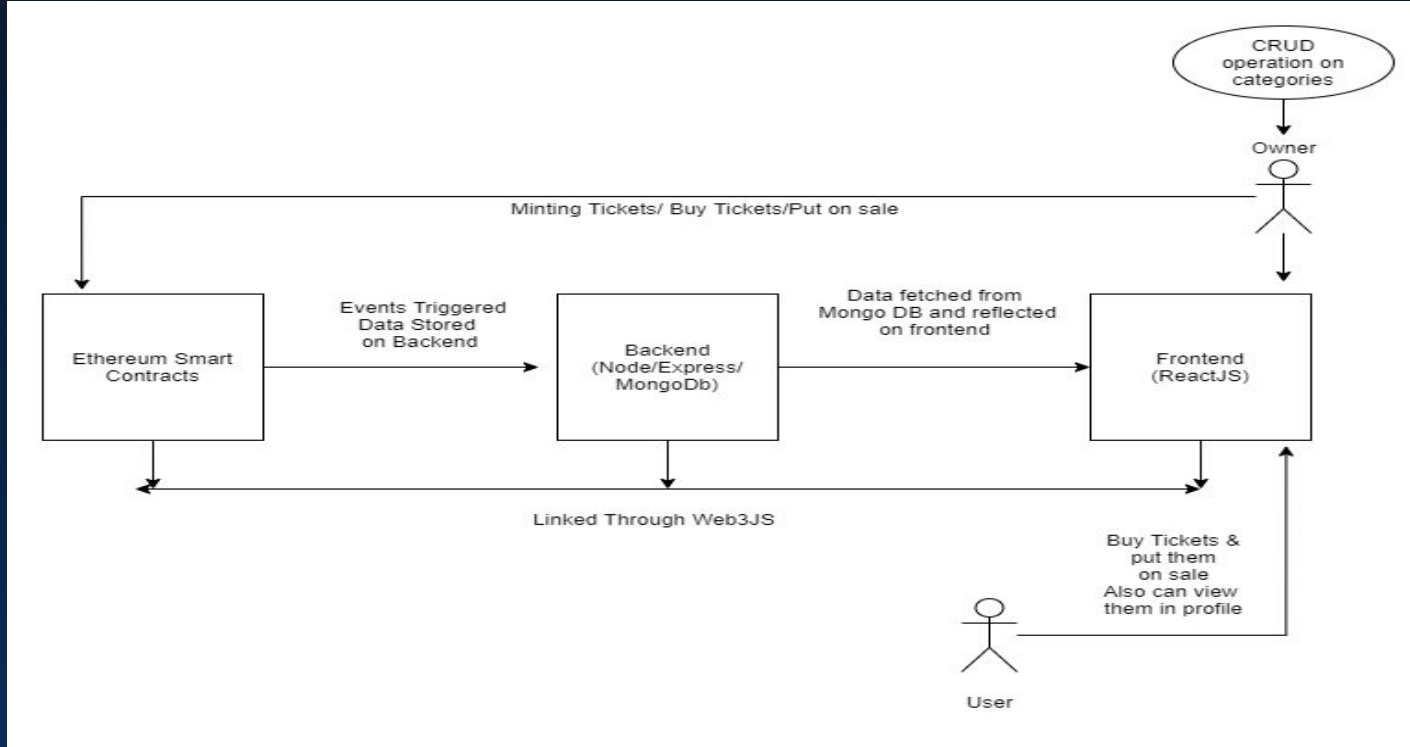
# Project

Remember old school tickets which we use to collect? Each ticket was unique. But, nowadays Tickets do not have the memory part, which people wanted to keep with them when they move or travel. NFTs nowadays have come into the picture to make tickets more functional and memorable.

You may lose a paper-based ticket; they may get wet and ruined. Also, it's hard to travel with a paper-based ticket as it may get lost. Moreover, organizers do not get enough security with paper-based tickets as they can be quickly faked. QR codes looked like a good answer for organizers but not that effective for guests purchasing them.

However, with use of Non-Fungible Tokens (NFTs), an application of the blockchain technology, the ticketing industry could be revolutionised. Ticket Marketplace is a web ticketing application with decentralisation, transparency and secure as its features. As a result the process becomes more accessible and leads to a significant reduction in black market practises.

# Our Solution



# Our Solution

- Given is the project architecture of our model in previous slide. We are using:
- Ethereum smart contracts for building business logic on the Blockchain Also making necessary functions such as buying, put on sale, minting of tickets. The contracts are deployed on Matic network for faster transactions & achieving less gas fees.
- Backend server which is acting as a medium between frontend and smart contracts, we are using socket events to listen to the events generated by smart contracts and storing some off chain data on MongoDB. Some API's are also made for integrating with frontend
- Frontend which is the UI part, it is integrated with smart contracts using web3js library & calling some backend API for fetching off chain data. While minting tickets meta data of the Nft's are stored on IPFS & NFT.Storage.
- Users can interact with the smart contracts from frontend. Also the owner of the contract which is the admin also can perform CRUD Operation on event categories part.

# Technology & Tech Stack

## Front end

- ReactJS: It is a front end library which is used for building dynamic web applications.
- Web3JS: It is a library which is used for integrating smart contracts with front end libraries.

## Back end

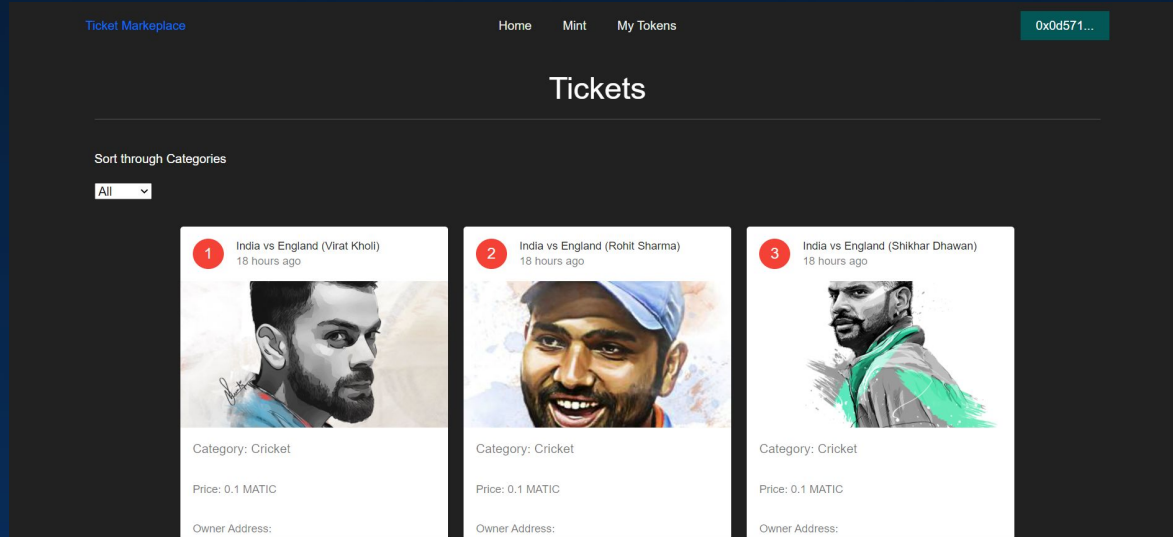
- NodeJS/ExpressJS: Used to create servers and listen to socket events for storing the data off chain on MongoDB.
- MongoDB: It is a database for storing and accessing large amounts of data with ease.

## Smart Contracts

- Smart contracts are used for building logics on blockchain.
- In this project, we have used Ethereum smart contracts as well as OpenZeppelin library for building the NFT smart contracts.

# Solution Snippets

Homepage: Here we can see different nft tickets are being showcased and we can also sort through different categories of events.





# 1. Browse all categories

- We can browse through different categories

Sort through Categories

All

The screenshot displays three ticket listings for cricket matches. Each listing includes a numbered red circle (1, 2, 3), the match name, the seller's name, the category, the price (0.1 MATIC), and the owner's address. A 'View Ticket' button and a 'Buy' button are visible at the bottom of each listing.

Match	Seller	Category	Price	Owner Address
India vs England (Virat Kohli)	18 hours ago	Cricket	0.1 MATIC	0xd0571a1f569b645eeca8ed0470e0223ca6bcbcb
India vs England (Rohit Sharma)	18 hours ago	Cricket	0.1 MATIC	0xd0571a1f569b645eeca8ed0470e0223ca6bcbcb
India vs England (Shikhar Dhawan)	18 hours ago	Cricket	0.1 MATIC	0x722eb1eeed5294c4b124072ad5f0b0807bd181247

# 2. View and Buy Tickets

- User can view the ticket and can see all the details of the ticket. Also they can purchase them

The screenshot shows a detailed view of a ticket for an India vs England match. It features a QR code, the category (Cricket), the price (0.1 MATIC), and the owner's address. A 'View Ticket' button and a 'Buy' button are visible at the bottom.

Category: Cricket  
 Price: 0.1 MATIC  
 Owner Address: 0xd0571a1f569b645eeca8ed0470e0223ca6bcbcb

### 3. Mint tickets as an NFT(Backend)

- Owner of the contract can mint tickets by filling this from

The screenshot shows the 'Mint Ticket' form in the NFT Marketplace. The form includes the following fields and elements:

- Upload File:** A dashed box for uploading a file, with supported formats listed as PNG, JPG, GIF, MP4 and a 'CHOOSE FILE' button.
- Title:** A text input field.
- Event Category:** A dropdown menu with 'Please Select' and a 'Select Event' error message.
- Price:** A text input field.
- Service Fee 10%:** A note at the bottom left.
- MINT Button:** A green button at the bottom right.

### 2. View or sell bought tokens/tickets

- From the account which we are logged in we can go view our tokens owned by the address

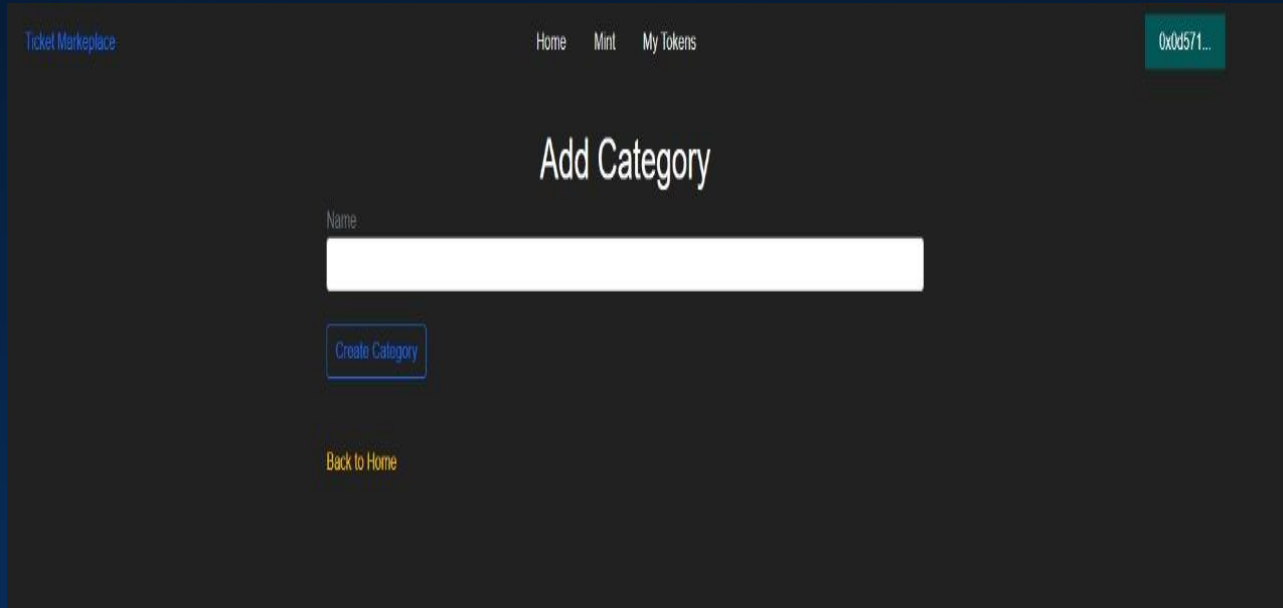
The screenshot shows the 'My Tokens' page in the NFT Marketplace. It displays three tokens owned by the user:

Token ID	Title	Category	Price	Status
1	India vs England (Virat Kohli)	Cricket	0.1 MATIC	View Ticket / On Sale
2	India vs England (Rohit Sharma)	Cricket	0.1 MATIC	View Ticket / On Sale
3	Martin Garrix Live Show	Music	0.2 MATIC	View Ticket / On Sale

Each token card includes a thumbnail image, a 'View Ticket' button, and an 'On Sale' button. The user's wallet address is visible at the bottom of each card.

## 5. Create new categories

- Admin can add categories



The screenshot shows a web interface for a 'Ticket Marketplace'. At the top left, it says 'Ticket Marketplace'. In the top center, there are navigation links: 'Home', 'Mint', and 'My Tokens'. In the top right, there is a user profile indicator showing '0xd571...'. The main heading is 'Add Category'. Below this is a form with a label 'Name' and a large white input field. Under the input field is a blue button labeled 'Create Category'. At the bottom of the form area, there is a link that says 'Back to Home'.

# Scalability

- Events will be divided into specific categories depending upon their genre or types and an Admin panel will be made which will perform CRUD operations on such categories.
- Improvement in UI/UX of the application will ease the process of operating the web app on mobile devices too. Thus, increasing the range and foothold of devices the application can be operated on.
- With the addition of QR Codes on each ticket, we can implement blockchain along with Internet Of Things(IOT) which could be highly useful in checking the legitimacy of each an every ticket at the entry point of each event.

Thank You

Code Repo:

<https://github.com/lakshitmadaan20/NFT-Ticket-Marketplace>

Working Demo Video: <https://vimeo.com/594080306>