



NFT Marketplace

Vidhi Vesmaker¹, Jaya Sinha², Ashwini Ware³

^{1,2,3}Students, Department of Information Technology, Atharva College of Engineering, Mumbai, India

ABSTRACT -

Non Fungible Tokens (NFTs) are digital files that are used to represent issues like artwork, collectibles, and goods found within the game. These are often maintained electronically on a digital ledger and regularly swapped and hooked in with virtual currencies and blockchain. Goerli is a testnet for Ethereum, which means it's not a production network but rather a network for testing purposes. This makes it a good option for testing NFT marketplaces before launching them on the Ethereum mainnet. To create an NFT marketplace with Goerli, you'll need to have some programming skills and a good understanding of the Ethereum blockchain and its related technologies, such as smart contracts and the ERC-721 and ERC-1155 token standards.

Keywords—Blockchain, NFTs, Ethereum, Goerli, Smart contracts

I. INTRODUCTION

Assume you have one dollar and intend to exchange it with a friend. After the swap, you will still have one dollar of the same worth, and your friend will also have one dollar of the same value. This is because a dollar and money in general are fungible goods, like shares of a corporation; regardless of whose stock exchange you buy a share of IBM from, the market determines its value.

NFT (Non-Fungible Token) marketplace is a platform that allows creators and collectors to buy, sell, and trade unique digital assets using blockchain technology. There are several reasons why there is a need for an NFT marketplace, creating an NFT marketplace is a complex process that requires significant technical knowledge and resources. It's also important to consider legal and regulatory requirements related to NFTs and cryptocurrency transactions in your jurisdiction

II. LITERATURE SURVEY

Paper detail

Publisher Name	Abstract	Authors	Publish-Date
22nd (ACIT)	NFTs can provide an instant proof of authenticity and provenance, thus eliminating the problem of counterfeiting	Narmeen Bawany	26-01-2022
Scientific Reports	Overview of some key aspects of it by looking at the market history of 6.1 million NFT trades across six main NFT categories including art, games and collectibles.	Nadini, M., Alessandretti, L., Di Giacinto	22 -10-2021
Springer	NFTs challenge established marketing understanding of digital ownership, uniqueness, and value; authenticity, status, and sharing; and branding and distribution.	Hofstetter, R., de Bellis, E., Brandes	29-07-2022

International Research Journal of Engineering and Technology (IRJET)	Since Blockchain is a relatively newer technology, resources are less and quite difficult to find the perfect one which makes it even more difficult to build a complex NFT Marketplace.	Yash Mhatre, Devansh Dixit[2], Ritesh Salunkhe, Dr. Sanjay Sharma	10-10-2021
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III. BACKEND WORK

We've built a platform for every independent creator especially for artists to generate an NFT token through minting (for this, you should own a wallet for crypto like Metamask only), and as a buyer or a collector, you can view the whole gallery and buy ownership over NFT artworks you've chosen. It is used to represent digital and real-world items such as artwork and real estate, allowing these assets to be traded with a slight possibility of fraud.

- **GENERATION OF WEB TECHNOLOGY**

Web 3.0, also known as the semantic web, is an evolving concept that aims to create a more intelligent and intuitive web experience. It will enable users to interact with the web in a more natural way and provide a more personalized experience.

Web 3.0 significance.

1. Open - Content platforms will be built using open-source software.
2. Zero Trust will be used by everyone, and network security will extend to the edge.
3. Distributed - Interaction between devices, users, and services will be available without the consent of a centralized authority.

- **DECENTRALIZED APPLICATION**

Decentralization is the process of transferring power, control, or decision-making from a central authority to a distributed network of individuals or nodes.

a. Increased Security: Decentralization can increase the security of a system by distributing control and reducing the risk of a single point of failure. In a centralized system, a single point of failure can lead to a complete system failure.

b. Improved Transparency: Decentralization can increase transparency by providing access to information and records that are stored on a distributed network. This allows for greater accountability and trust in the system as there is no central authority that controls the information.

c. Enhanced Efficiency: Decentralization can increase efficiency by removing intermediaries and reducing transaction costs. This can be particularly beneficial in industries such as finance, where intermediaries can add significant costs to transactions.

d. Empowerment of Individuals: Decentralization can empower individuals by giving them more control over their data, assets, and resources. This can help to promote greater individual sovereignty and reduce the influence of centralized authorities.

IV. Technical requirements

- **Blockchain Integration:**

NFTs are built on blockchain technology, so the first technical requirement is to integrate the marketplace with a blockchain network like Ethereum, Binance Smart Chain, or Solana. This will involve developing smart contracts to manage the creation, sale, and transfer of NFTs.

- **User Authentication and Security:**

User authentication and security are critical components of any online marketplace. Additionally, users should be able to create and manage their own secure wallets to hold their NFTs.

- **User Interface and Experience:**

The user interface and experience should be intuitive, user-friendly, and visually appealing. Users should be able to easily browse, search, and filter NFTs based on different criteria. The platform should also have features that allow users to track their transactions, view their NFT holdings, and manage their wallets.

- **Payment Processing:**

Payment processing is another critical component of an NFT marketplace. The platform should integrate with popular payment gateways like Stripe, PayPal, or Coinbase to allow for seamless payment processing.

- **Scalability and Performance:**

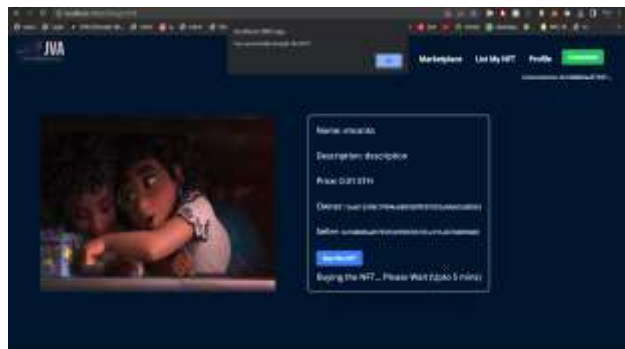
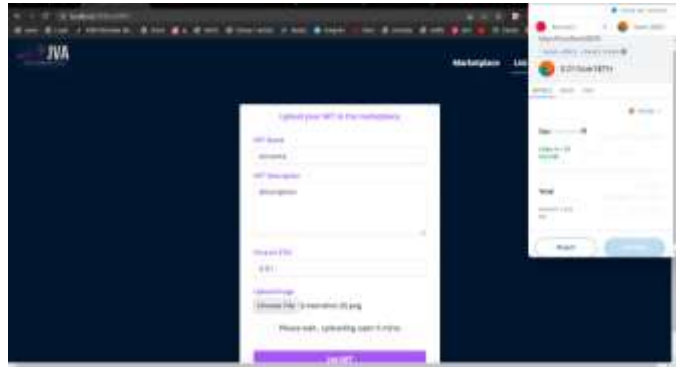
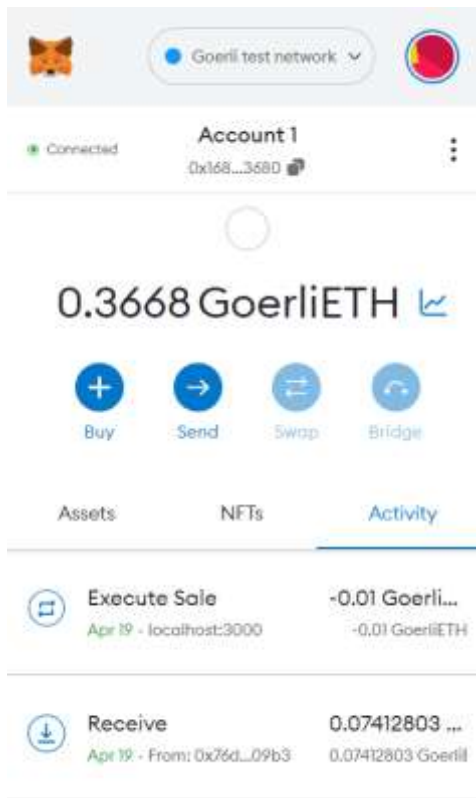
An NFT marketplace should be designed to handle large volumes of traffic and transactions. The platform should be scalable, with the ability to handle an increasing number of users and transactions without affecting performance.

V. NFT PROPERTIES

Non-fungible tokens, are unique digital assets that are stored on a blockchain network. Each NFT has its own set of properties that make it distinct and valuable.

- **Authenticity:** NFTs are unique digital assets that can be verified and authenticated through blockchain technology. NFT marketplaces provide a platform for creators to authenticate and sell their unique digital assets, ensuring that buyers are getting the real thing.
- **Ownership:** NFTs are designed to represent ownership of a unique digital asset. NFT marketplaces provide a platform for creators to sell and transfer ownership of their digital assets to buyers.
- **Liquidity:** NFT marketplaces provide a liquid market for buyers and sellers to exchange unique digital assets. This makes it easier for creators to monetize their digital creations and for buyers to acquire rare and valuable digital assets.
- **Accessibility:** NFT marketplaces provide a platform for creators and collectors from all over the world to connect and transact. This makes it easier for creators to reach a wider audience and for buyers to access unique digital assets that they may not have been able to find otherwise.

VI. USER INTERFACE



VII. CONCLUSIONS AND FUTURE WORK

Non-Fungible Token is a fast developing technology in the blockchain industry. In this article, we examine cutting-edge NFT systems that could change the market for digital or virtual assets. When we first discussed NFT, we discussed how assets are created and then uploaded to the marketplace. Moreover, how ownership functions in the case of NFTs. Then we discussed the technical aspects, including how the NFT is distributed on the blockchain and how smart contracts will facilitate secure transactions. The reason why the NFT concept is so popular in the market is then revealed. similar to the reason why many artists are turning to the NFT rather than offline art sales. Next, we covered tokenization. Then we talked about tokenization, which is the major component that lets the NFT stand out from the crowd. Finally, we supplied some NFT market sales data. We believe that this paper will provide a description of what NFT is and how it can assist new gen artists in proving their work.

VIII. REFERENCES

- (1) <https://www.blockchain-council.org/nft/nft-marketplace/#:~:text=Non%2DFungible%20Token%20or%20NFT,as%20a%20public%20Blockchain%20platform.>
- (2) <https://goerli-faucet.pk910.de/>
- (3) <https://opensea.io/>
- (4) <https://betterprogramming.pub/creating-an-nft-marketplace-solidity-2323abca6346>
- (5) <https://trufflesuite.com/guides/nft-marketplace/>
- (6) <https://www.youtube.com/watch?v=y6JfVdcJh1k>
- (7) <https://docs.alchemy.com/docs/how-to-build-an-nft-marketplace-from-scratch>
- (8) https://www.google.com/aclk?sa=l&ai=DChcSEwiP17XQ6b_-AhXHgksFHfUrCu8YABABGgJzZg&sig=AOD64_1HIsFpe4uQ0NgeiEEaow6qoq-TuQ&q&adurl&ved=2ahUKEwjr07DQ6b_-AhUxT2wGHfEVAQUQ0Qx6BAgIEAE
- (9) <https://hedera.com/learning/smart-contracts/nft-smart-contract>
- (10) <https://www.geeksforgeeks.org/what-is-goerli-testnet/>
- (11) https://www.google.com/aclk?sa=l&ai=DChcSEwj1i5iF6r_-AhUfkmYCHWoFAwMYABAAGgJzbQ&sig=AOD64_3munTrmfV9X_H4BRZTxr3T3WzCMg&q&adurl&ved=2ahUKEwiewJKF6r_-AhVrwjgGHb8KAbMQ0Qx6BAgGEAE