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NFT mint, buy and sell Web Application

[1]Piyush Shitole, [2]Aditya Bansode, [3]Yash Prasad, [4]Aparna Meshram, [5]Prof. Payal Nikam

Department of Computer Engineering, Dhole Patil College of Engineering, Wagholi, Pune- 412207, India

Abstract : NFTs, or non-fungible tokens, are a way to symbolise any special, expensive, or digital things with blockchain-managed ownership. As the art market is expanding quickly beneath the surface of Blockchain platforms, which use digital currency for trading, NFTs may represent the industry's future. With the introduction of NFTs, artists and producers now have a new platform on which to display their works or collections. Additionally, a revolution is enabling artists to produce and profit from their work while giving collectors complete transparency into the provenance and authenticity of their purchases. This study seeks to advance research based on the NFT ecosystem and the worldwide NFT market.

Index Terms –Blockchain, Decentralised application, Smart contract, .

I. INTRODUCTION

The term "non-fungible tokens" (NFT) refers to digital assets that are a representation of tangible or intangible works of art or intellectual property, such as music, computer games, digital artwork, animated gifs, and video clips. Being "nonfungible" in an NFT refers to the fact that each token is a distinct entity that represents a single particular thing and cannot be exchanged for another token. These tokens are made up of media (music, video, and images) with digital information that can be valued in terms of cryptocurrency. The NFTs are a component of the Ethereum blockchain in particular, but they differ from Ethereum coins in that they cannot be exchanged for other assets of a similar kind.

Growing technological development and its expansion come with higher security issues, especially those related to authenticity. The uniqueness and non-fungibility of NFTs greatly reduce, if not entirely eliminate, the problem of authenticity and counterfeits by incorporating a digital owner signature into each token, making it simple to identify the owner of an asset. Additionally, it deals with the issue of customers being tricked into purchasing fake goods, like tickets or artwork. Customers may quickly track down the proprietors of the products for sale, assuring a valid transaction. Additionally, because NFTs lack exclusive ownership, they are providing new opportunities for artistic businesses that previously found it difficult to establish online markets in an era of internet-based businesses.

With the help of CryptoPunks in October 2017, NFTs started to acquire popularity among the general public, but they really took off after Mike Winkelmann achieved the greatest art sale in history by selling his creations for close to USD 70 million.The auction attracted a lot of attention to NFTs, whose growth has been trending up ever since it started receiving a lot of attention from artists and art fans.NFTs were previously only known to a small segment of the blockchain community, but as of July 2021, they had a market all to itself with sales of up to USD 1.2 billion.

II. PROBLEM STATEMENT

The difficulty in estimating the NFT's price is the main issue facing the market for NFTs. Now, the cost of any NFT will be determined by a variety of factors, including its originality, scarcity among buyers, and more.

III. OBJECTIVES

Blockchain aims to enable the recording and distribution of digital information without its editing. In contrast to Superrare, Foundation, and Rareible, all the above products will be one-of-a-kind digital collectibles in the form of NFTs that people may buy, sell, and mint on the

website or marketplace we plan to build. Users can deal with one another directly and in an untrustworthy manner because to the platform's decentralised, peer-to-peer exchange.

IV. LITERATURE REVIEW

"Fungible" refers to something that can be replaced with a similar or equal item. The term "fungible assets" refers to items like merchandise, common stock shares, and currency notes. To illustrate non-fungibility, Saffan [4] gives the example of a car whose loan may only be repaid by the vehicle's owner. The NFT system is effective in representing both digital and analogue goods thanks to features like public verifiability, transparency in connected activities, availability, failure resistance, non-alterable nature, atomic nature, and tradability. This encourages the NFT industry and associated markets to have a good chance of becoming a cutting-edge technology in numerous industries..

The authors of NFT are the owners of the copyright on their digital creations, according to Saffan [4], and purchasing NFT does not provide the purchaser free access to the original asset. He goes on to say that the owner must verify that they have the required private key in order to transfer NFTs and that they are sending the NFTs to the correct address(es) using a valid digital signature. The original hex hash value of the originator is essentially what is being claimed by someone who claims ownership of NFT-based intellectual property rights. In order for NFT systems' monopolistic tendencies to function, NFT marketplaces must nevertheless recognise that NFTs serve as a proxy for their scarcity.

Buki [6] summarises the findings of the authors of [7] through Figure 1 and identified 13 weaknesses in the NFTMs as security, confidentiality, and user experience problems. Future solutions to these issues may include cutting-edge technology like zero-knowledge proofs (ZKP), which are already being studied, Wajiha [8] and coauthors note.

Pavel [9] implies that NFT listing and sale prices will rise when bidding becomes simpler due to bidding bots or changes in UX design. An upsurge in NFT prices could not only be ascribed to increases in the "value" of NFTs but also to advancements in marketplace design. Hence topnotch marketplace development is crucial to expect exponential growth in the NFT ecosystem.

TABLE I. TOP NFT MARKETPLACES

Market	Traders	Volumes
OpenSea	46,067	$ 73.45m
Axie Infinity	40,429	$ 19.44m
CryptoPunks	12	$ 2.45m
AtomicMarket	7103	$ 1.03m
PancakeSwap	1342	$ 783.74k

* Statistics up to October 2021[3]

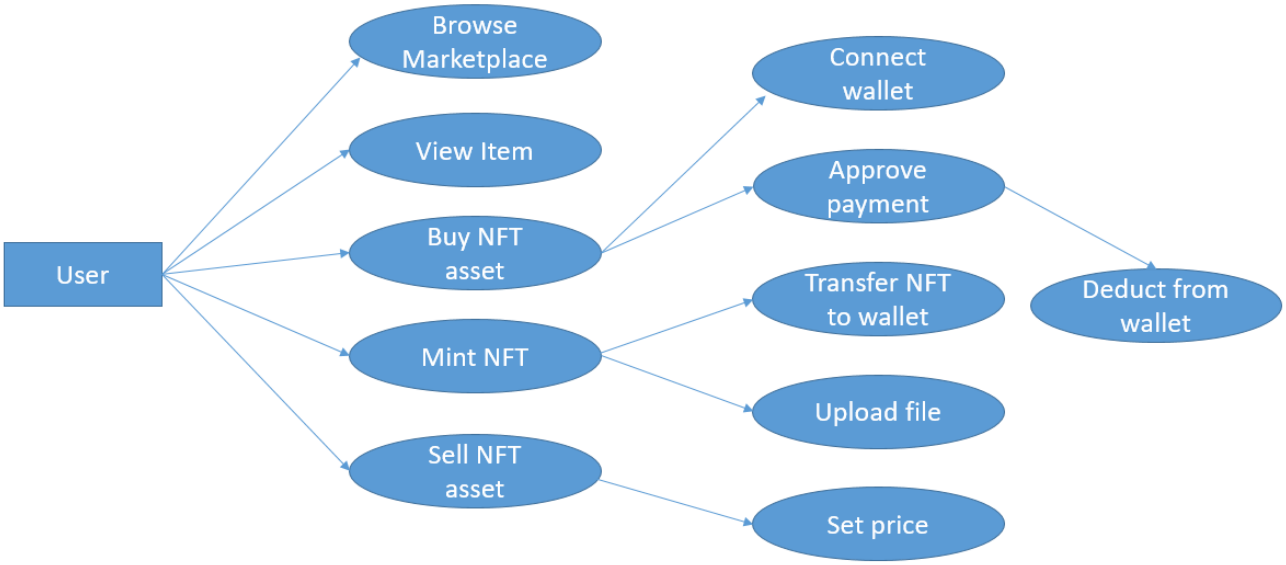
NFT marketplaces like Nifty Gateway and OpenSea recorded the highest trading volumes in the first quarter of 2021, indicating a significant increase in interest in NFTs in 2021. Table II is a list of the most expensive NFTs.

Digital art is any creative work that lives on a virtual or digital platform and includes things like music, movies, paintings, and other media. Similar to its cousin, tangible art, it can be purchased by art fans and collectors as well as sold by artists.It could, however, also be stolen or faked.Each work of art may be distinguished thanks to the usage of NFTs, which associate a special hash with each one. The digital tokens might contain the signatures of the creators of creative works, enhancing the legitimacy of the content that is produced.

V. SYSTEM ARCHITECTURE

5.1. System Overview

Fig.1.Overview of the Proposed Architecture



As shown in Fig.1, the proposed system consists of four entities like a user and payment gateway connected to the admin of the system. Each of the above entities of the system has its significance. The specific roles and functionalities of each are discussed below:

1. User

a. Create a new account to login into the system.

b. Enter the NFT information as per his/her needs.

c. Make payment to buy NFT's .

2. Payment

a. Getting all information about the NFT transaction.

b. User gets connected to wallet.

c. Payment gets approved.

d. Amount gets deducted from the wallet

5.2 Workflow Setup

The workflow of the application was organized as shown in Figure 2.

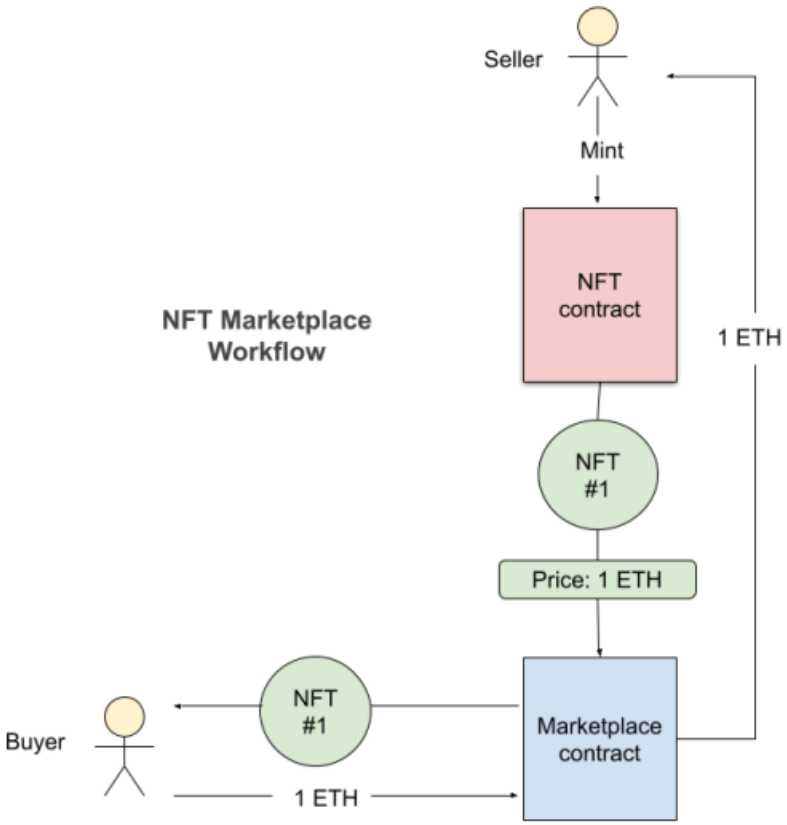


Fig. 2 RareBuy Workflow

VI. System Requirement

Software Requirements

1.Operating System : Windows 7 and above

2.Frontend : HTML, CSS, Javascript, ReactJS

3.Backend: Motoko

4.IDE: VS Code

Hardware Requirements

1 1. Processor : Intel Core I3 or Higher

2. RAM : 4 GB

3. Hard Disk : 512 GB min

VII. Proposed Outcome

- User can mint the NFT's.
- User can wishlist NFT's.
- Can set the price of NFT's.
- Can display NFT's on marketplace.
- Can sell NFT's according to price.
- Amount will be credited after successfully selling of NFT's.

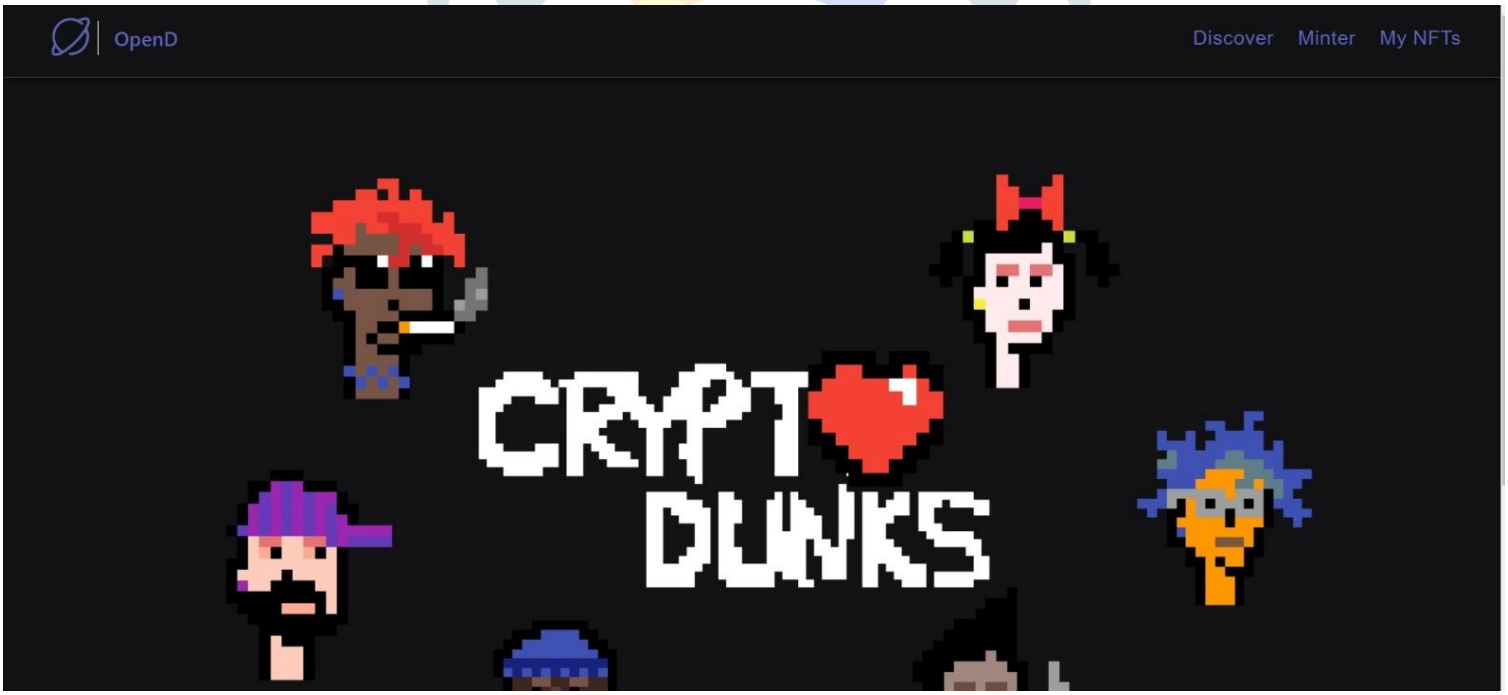


Fig. OpenD Home Page

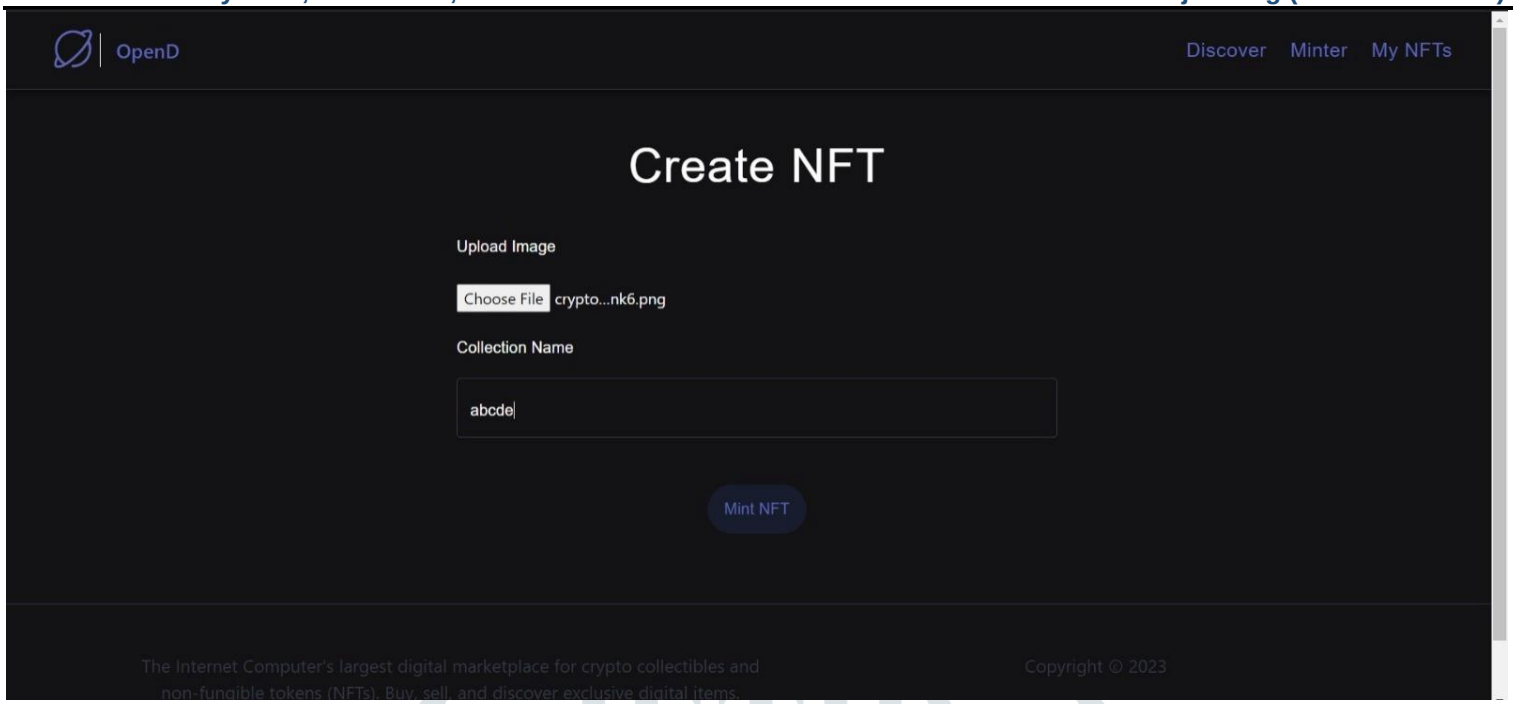


Fig.Create NFT Form

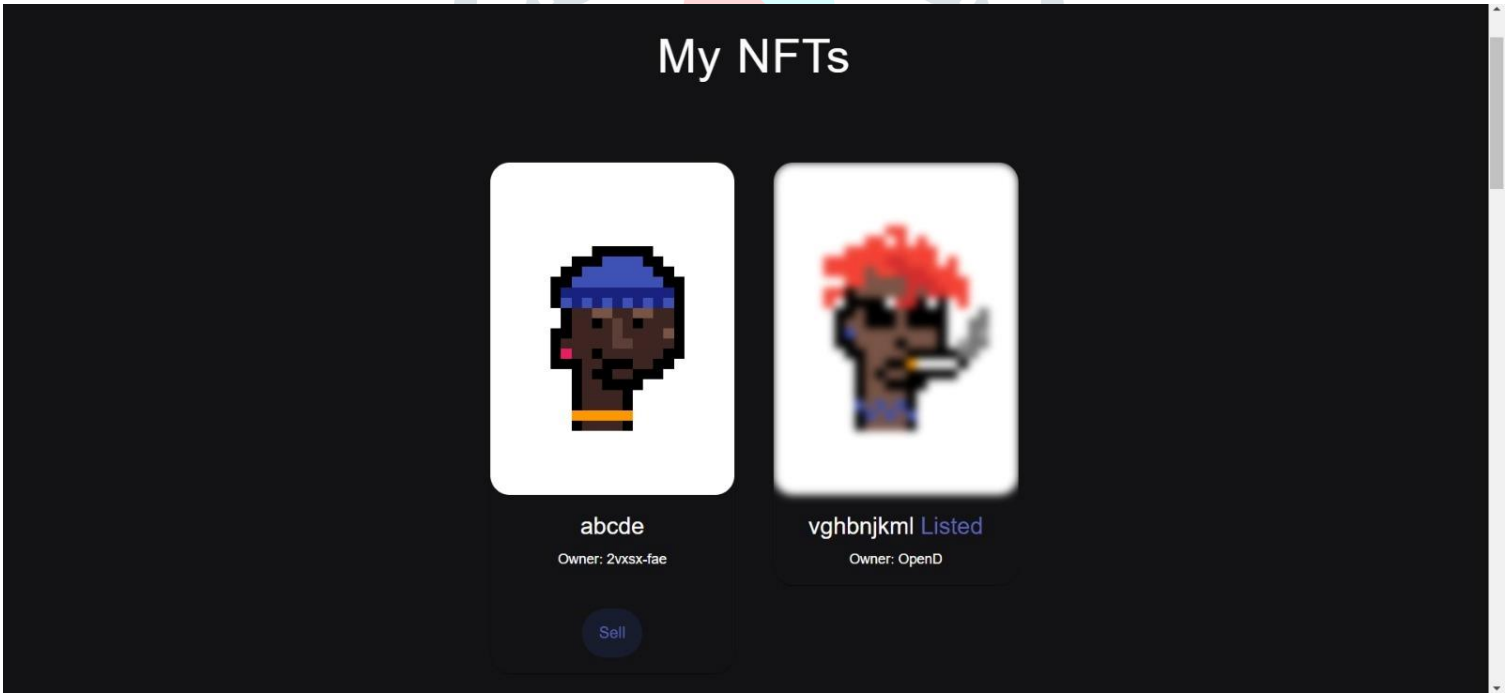


Fig. MyListing NFT's

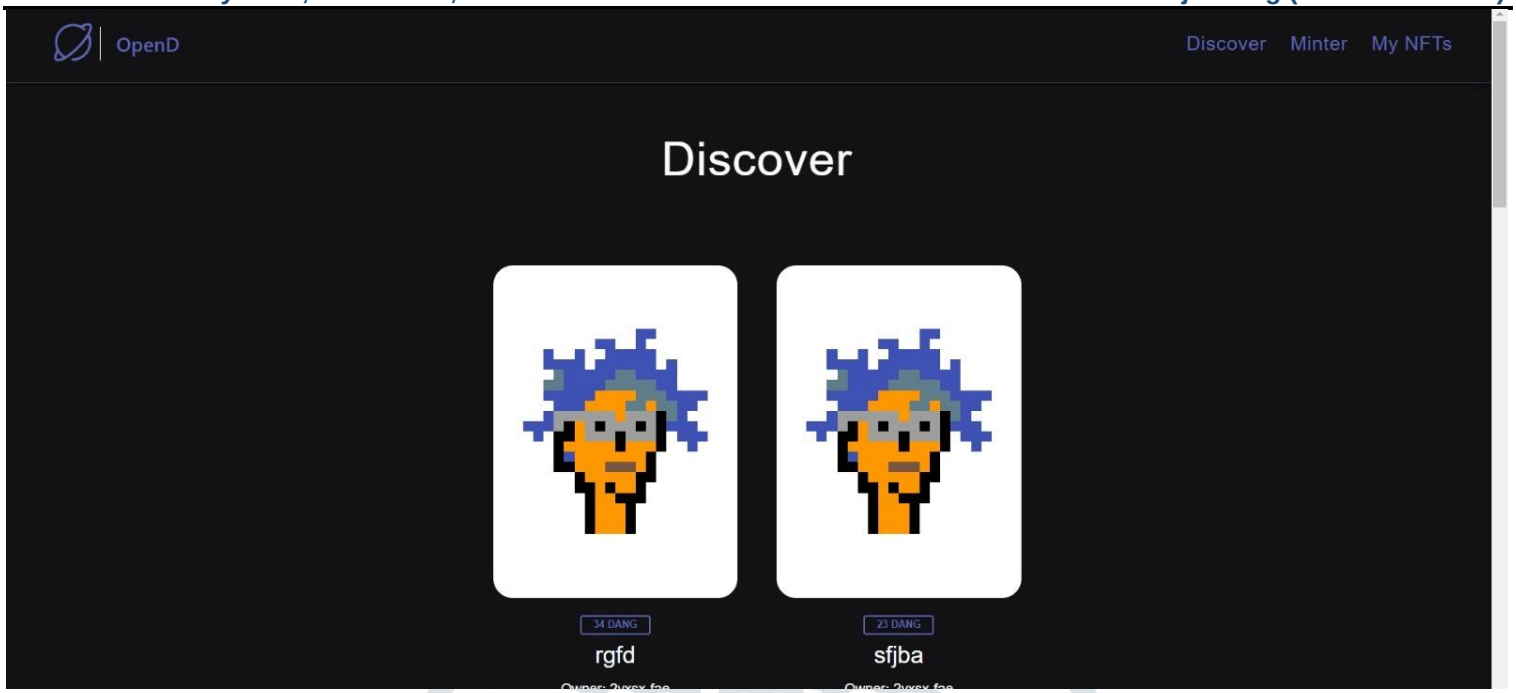


Fig.Collection to Buy NFTs

VII. CONCLUSION

In conclusion, the development of an online marketplace for purchasing, trading, and minting NFTs can offer digital artists and collectors a creative and accessible platform to engage with the expanding NFT industry. The website's characteristics, including as user-friendly interfaces, safe payment methods, and adaptable smart contracts, can facilitate the seamless trade of special digital assets while lowering risks for both buyers and sellers. The capacity to mint NFTs directly on the platform can help artists sell their works and achieve notoriety in the community of digital artists. To be clear, there are dangers involved with investing in NFTs because the NFT business is very young and fast developing.

IX.FUTURE SCOPE

NFTs have mainly been used to represent digital artwork and collectibles, but they have the ability to represent other assets as well, such real estate, virtual real estate, or even carbon credits. It's feasible that additional asset classes will surface in the NFT market as the technology behind NFTs develops further.

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