colnculcate

Blockchain Web 3.0 App with Next.js | Sanity.io | thirdweb SDK.

Developers

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Content:

Title of the Project

The title of the project : “**coInculcate**” is inspired from the words, “coin” and “inculcate”. The reference being that its an idea to contain currency cryptographically and also to build your own tokens.
This project however focuses on the soft fork of the Ethereum blockchain and then adds on the features of token creation and then asset databases etc.

Introduction

Blockchain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat the system.
A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant’s ledger. The decentralised database managed by multiple participants is known as Distributed Ledger Technology (DLT).
In this project we are using the same technology and building features on top of that. This project aims at building a dApp which will make the transactional technology even more secure and robust.
Decentralized applications—also known as "dApps" or "dapps"—are digital applications that run on a blockchain network of computers instead of relying on a single computer. Because dApps are decentralized, they are free from the control and interference of a single authority. Benefits of dApps include the safeguarding of user privacy, the lack of censorship, and the flexibility of development.

Aim & Objectives

This DAPP (Decentralised App) is based on the concept of Coinbase, an American publicly traded company that operates a cryptocurrency exchange platform. The project aims at using Blockchain technology i.e. Web 3.0 to help people transact, exchange, and trade cryptocurrency with real-time portfolio updation. This also enables the user to mint their own tokens using the Third Web SDK.

It is safe and secure as it uses web 3.0 authentication using the MetaMask Wallet which enables us to protect our services from malicious use.

The DAPP uses Sanity IO as a database to store the freshly minted tokens and the info about them. This portal can also be used to send and receive cryptos securely all over the world using our platform with minimal gas fees.

The DAPP also acts as a platform to see the various market values of the different renowned cryptocurrencies as per local currency rates and act as an exchange portal between them. The DAPP is deployed on a public url and can be used by anyone to mint crypto coins using Metamask wallet.

It can also list the various NFTs you are holding in your own wallet, having a future prospect of turning into a marketplace where NFTs can be minted and sold.

The DAPP features a custom default token that can be used to exchange and earn rewards. It also has a learn and earn section which features a list of videos and articles that help users to understand the market and invest wisely.

The DAPP also features an invite feature where you can invite your friends over to the platform and that provides you with a custom token of our platform.

Issues with already built technology

The issues that we are targeting to cater to are as follows:

- ❖ Slow Cross Border Payments

- ➢ Solution: Introduces faster and transparent payment gateways

❖ Accountability issues in traditional contracts

- ➢ Smart Contracts being introduced by Blockchain 2.0 offer transparency, and faster settlements

❖ Mismanagement in the Organisations

- ➢ Protecting and storing patient data with full transparency and security

❖ Slow Sytems and public sectors

- ➢ Provides a faster and decentralized approach towards the problem.

Figure: Issues that our Approach is catering to

Problem Statements

➔ Lack of ways for the people without banks to have their foot on the financial market?

➔ Lack of Cross-border payments and money remittance.

- ➔ The unsecured nature of conventional methods when it comes to user-end cyber attacks.
- ➔ Lack of ways to have ownership over a digital document.
- ➔ Lack of a universal ledger that can trace the origination of a particular token.

Solution Provided

Benefits of blockchain

Blockchain for business employs an open, unchangeable ledger that only members with authorization can view. Members of the network have control over what data each organization or member may view and what actions each member may take. Because business partners don't have to trust one another, blockchain is frequently referred to as a "trustless" network rather than because they don't have to.

This confidence is based on the increased security, increased transparency, and immediate traceability of blockchain technology. Beyond issues of trust, blockchain offers additional commercial advantages, such as cost savings via accelerated speed, efficiency, and automation. Blockchain dramatically lowers overhead and transaction costs by minimizing paperwork and errors, as well as the requirement for intermediaries or third parties to validate transactions.

What needs to change: Operations often waste effort on duplicate record keeping and third-party validations. Record-keeping systems can be vulnerable to fraud and cyberattacks. Limited transparency can slow data verification. And with the arrival of IoT, transaction volumes have exploded. All of this slows business drains the bottom line — and means we need a better way. Enter blockchain.

Enhanced security

Blockchain technology has the potential to fundamentally alter how your sensitive and important data is perceived. Blockchain reduces fraud and unlawful behaviour by creating a record that cannot be changed and is encrypted end-to-end. By employing permissions to restrict access and anonymizing personal data, privacy issues can also be solved on the blockchain. In order to prevent hackers from accessing data, information is kept across a network of computers rather than on a single server.

Greater transparency

Without blockchain, every company needs to maintain a different database. Blockchain uses a distributed ledger, which ensures that transactions and data are recorded consistently across all locations. Full transparency is provided since every network user with permissions can see the same data at once. All transactions are time- and date-stamped records with immutability. Members may access the whole transaction history thanks to this, which almost eliminates the possibility of fraud.

Instant traceability

Blockchain establishes an audit trail that records an asset's origins at each stage of its travel. This helps to give the proof in industries where customers are concerned about environmental or human rights issues surrounding a product, or in industries plagued by fraud and counterfeiting. Blockchain makes it feasible to directly communicate provenance information to customers. Data on traceability can reveal weak points in any supply chain, such as those where goods may be stored on a loading dock while being transported.

Increased efficiency and speed

Traditional paper-intensive procedures take a long time, are subject to human mistake, and frequently call for third-party mediation. Transactions can be

finished more quickly and effectively by automating these operations with blockchain. The blockchain may hold documentation and transaction information together, doing away with the necessity for paper exchange. Clearing and settlement can happen considerably more quickly because there is no need to reconcile various ledgers.

Automation

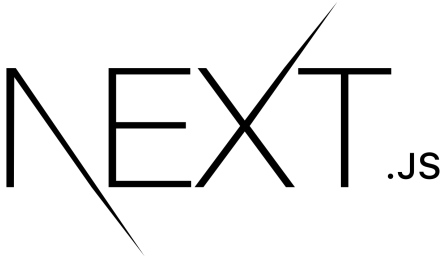
With "smart contracts," transactions can even be automated, enhancing your productivity and accelerating the procedure even further. The subsequent stage in a transaction or process is automatically initiated after pre-specified requirements are satisfied. Smart contracts lessen the need for human intervention and rely less on outside parties to confirm that a contract's provisions have been adhered to. When a consumer files a claim for insurance, for instance, the claim may be immediately settled and paid once the customer has submitted all required evidence.

Technologies in use

What we used and why we used:

We have used Next.js to build the front-end of the DAPP that's available for public use and user interaction. We've used MetaMask wallet to provide a virtual wallet for cryptocurrency minting and exchange. We used GROQ standards to fetch and store data using Sanity.Io CMS for secure and efficient data storage. The use of Web 3 SDK enabled us to create a secure transaction forum for cryptocurrency exchange.

Let's have a look at a few of the technologies in detail:



A React framework called Next.js makes it possible to generate static websites and render content on the server. React is a JavaScript library that is typically used to create web applications that are JavaScript-rendered in the client's browser. However, developers are aware of a number of issues with this approach, including the inability to support users who do not have access to JavaScript or who have disabled it, potential security concerns, noticeably longer page loads, and negative effects on the site's overall search engine optimization. By enabling some or all of the website to be rendered on the server before being delivered to the client, frameworks like Next.js get around these issues.

Next.js is one of the most popular frameworks for React. It is one of several recommended "toolchains" available when starting a new app, all of which provide a layer of abstraction to aid in common tasks. Next.js requires Node.js and can be initialized using Node Package Manager.

thirdweb is a development framework that allows you to build web3 functionality into your applications.

They provide workflows to speed up your development, including:

- Contracts you can use to build the foundation of your web3 functionality.
- SDKs to create applications that interact with the blockchain in your favorite languages.
- Dashboards to manage your contract settings, team permissions, revenue streams, and analytics.

Sanity.io is the platform for structured content.

You can also use the open-source single page application Sanity Studio to quickly set up an editing environment that you can customize.

Sanity.io has a real-time datastore for structured content, and supporting APIs for assets, user management, and more.

Sanity Studio is a user interface for managing content. It's an open-source React Single Page Application that you can customize and host wherever you want.

There are also SDKs, libraries, and tools that let you query your content and integrate it with websites, services, and other applications; wherever you need content.

Results & Future Prospects

Future Prospects:

- The Crypto Exchange Platform which is derived from Coinbase API.
- Minting of a new user token using the Platform
- Gifting crypto tokens to new users who register using the invite link.
- Gifting crypto to users who have invited people.
- Generate NFT art for you with minimal fees.
- Create customisable and unique NFTs and also provide trading functionality.
- Upload and Share documents with ease using Blockchain.

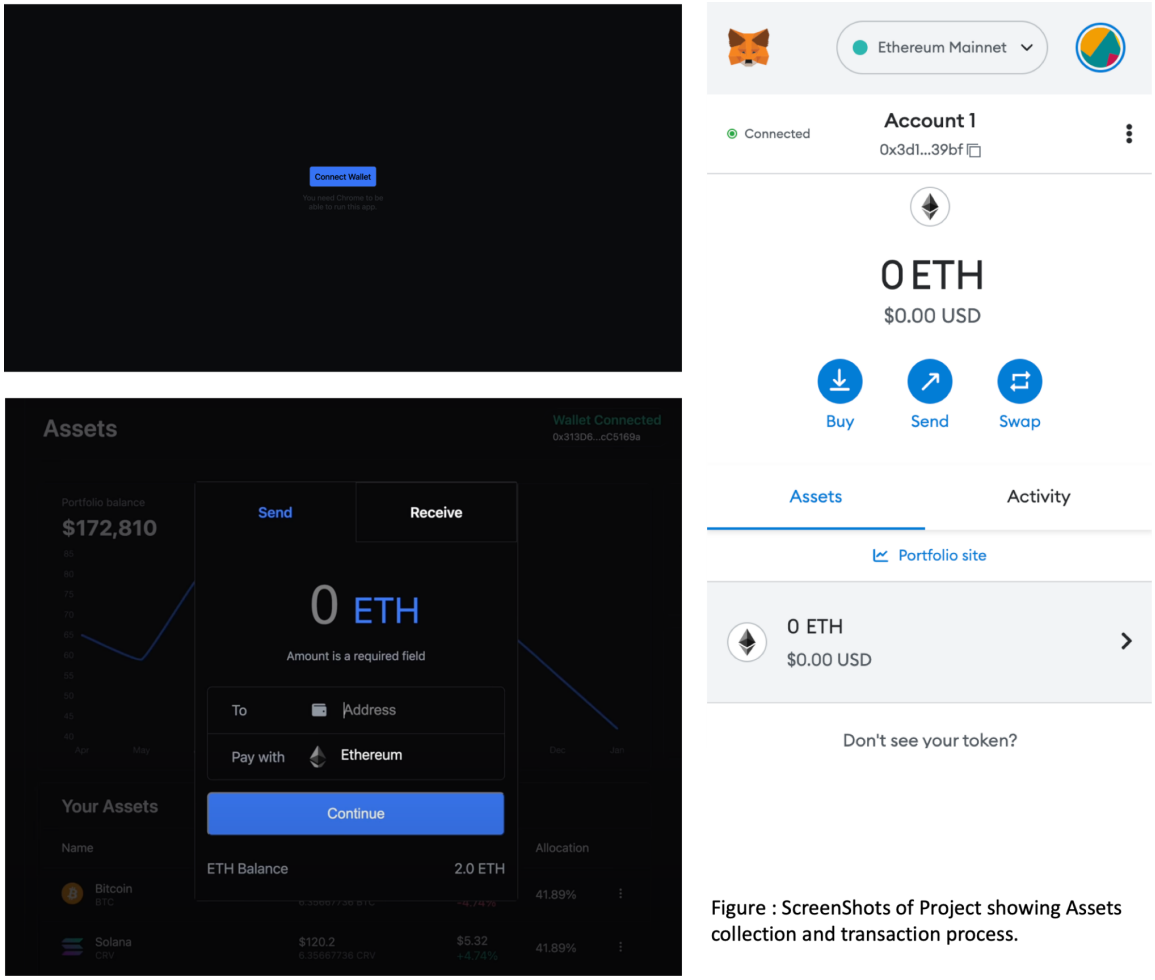


Figure : ScreenShots of Project showing Assets collection and transaction process.

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