COS30049-COMPUTING TECHNOLOGY INNOVATION PROJECT

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Project Background and Introduction:

A Smart Contract Audit System is a critical component in the development and deployment of smart contracts on blockchain platforms. Contrary to conventional trading systems, which frequently rely on middlemen, this cutting-edge platform uses blockchain technology and smart contracts to do away with them. This not only simplifies the trading process but also takes care of some of the major problems that traditional systems have had for a long time.

This system's capacity to cut transaction costs and prevent delays is one of its main benefits. Intermediaries can create hurdles and bottlenecks in traditional trading arrangements, resulting in annoying delays and higher costs. The Smart Contract Audit System offers cost reduction by identifying and rectifying potential issues in smart contract code before deployment. In traditional systems, the cost of addressing security breaches or vulnerabilities after deployment can be substantial. By proactively addressing these concerns through audits, the system minimizes the financial risks associated with flawed smart contracts. Smart contracts automate trade execution, ensuring that transactions take place quickly and without any problems and improving the user experience as a whole.

In the age of digital assets, security is of paramount importance, especially when dealing with smart contracts. Traditional systems have centralized structures that are susceptible to fraud and security lapses. A Smart Contract Audit System plays a crucial role in addressing these security concerns. Just like in the case of decentralized trading systems, smart contract audits also rely on the decentralization and cryptographic encryption inherent in blockchain technology. When smart contracts are audited, experts review the code for vulnerabilities and potential security risks. The decentralized nature of blockchain ensures that the audit process itself is secure and transparent. The components of decentralization and cryptographic encryption in a Smart Contract Audit System help protect smart contracts and transactions from hacking and other security risks. By identifying and rectifying vulnerabilities during the audit process, the system ensures that smart contracts are robust and resistant to potential attacks. Users and developers can engage in smart contract development and execution with confidence when they know that an audit has been conducted. This trust is essential for the broader adoption of smart contracts. A well-audited smart contract is less likely to have security issues,

which, in turn, reduces the risk of financial losses or disputes. In summary, a Smart Contract Audit System is a crucial component of the blockchain ecosystem that enhances the security of smart contracts. It leverages the decentralization and cryptographic features of blockchain technology to identify and address security vulnerabilities, protect against hacking, and instill trust in users, making smart contracts a more secure and reliable tool for various applications.

Project Requirement List and Description:

Core Functions :

Viewing Digital Assets: Users can go through and view the digital assets that are offered for trading. The database has been stored with asset information, which is displayed in the website. The digital products will be displayed throughout the website.

Database Storage: All relevant information about listed digital assets is stored securely in the database, ensuring accuracy and consistency.

Search and Filter Functionality: The search and filter functionality will help users to discover specific assets based on their preferences and criteria. All products can be found using the search option.

Smart Contract : The trading process will be done using smart contracts that act as escrow. These contracts will hold the assets securely until a trade is completed or cancelled, ensuring trust and security.

Transaction History: Users will have access to a transaction history that displays their past trades, promoting transparency and allowing users to track their past trading activities or transactions.

Understanding of System Requirements:

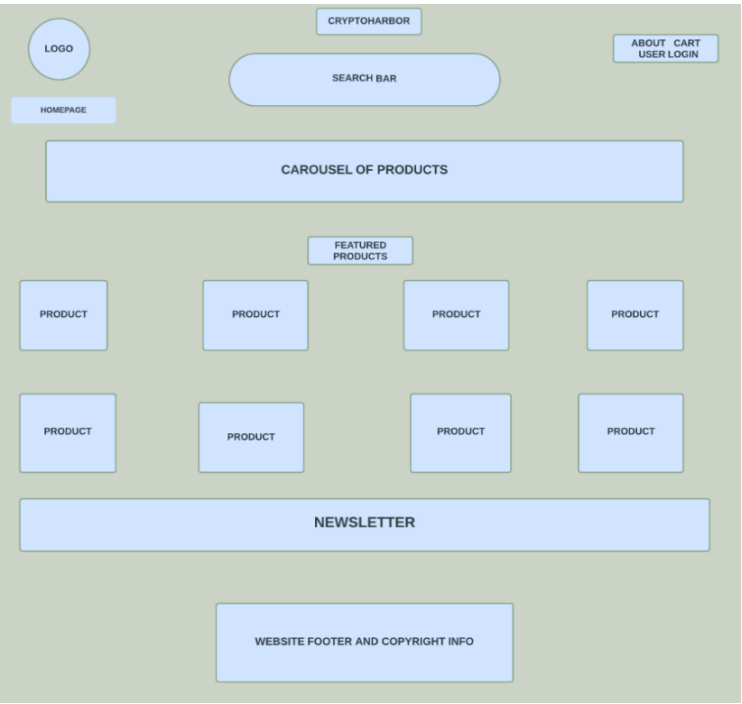
Our team has thoroughly understood the core functional requirements of the Smart Contract Audit System. These requirements form the foundation of the system's design and development.

Project Design

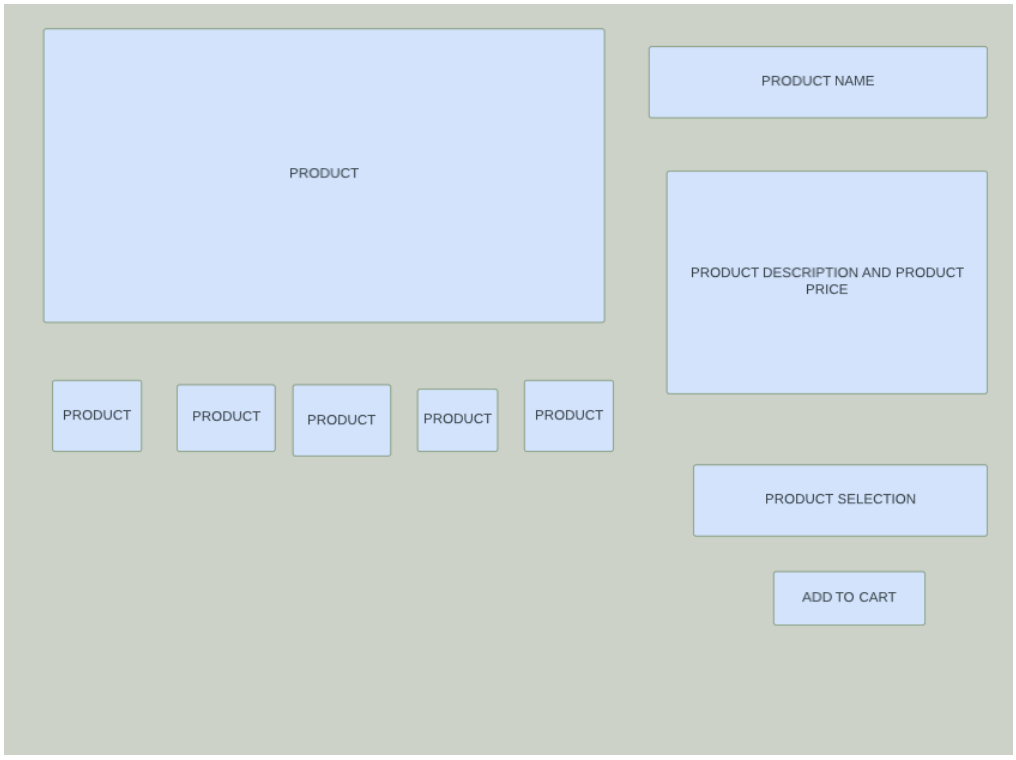
Front-end Prototype:

To create a user-friendly interface, our team has prepared a front-end prototype. The prototype showcases the layout, navigation, and overall look and feel of the trading platform. Some drafts are given below :

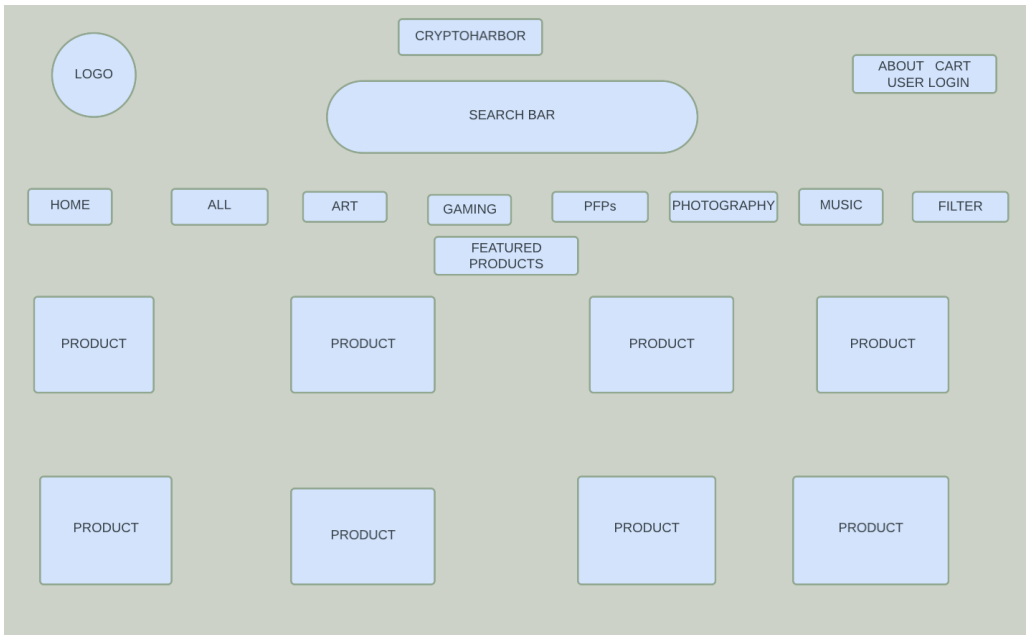
Homepage



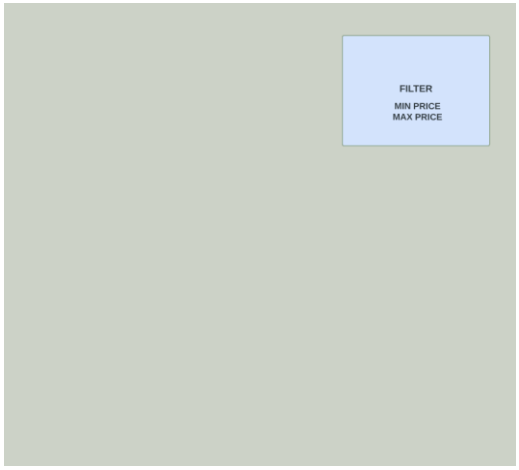
Product Page



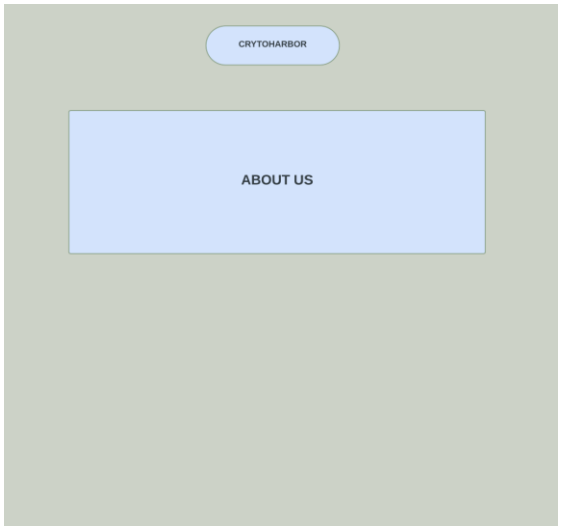
Products



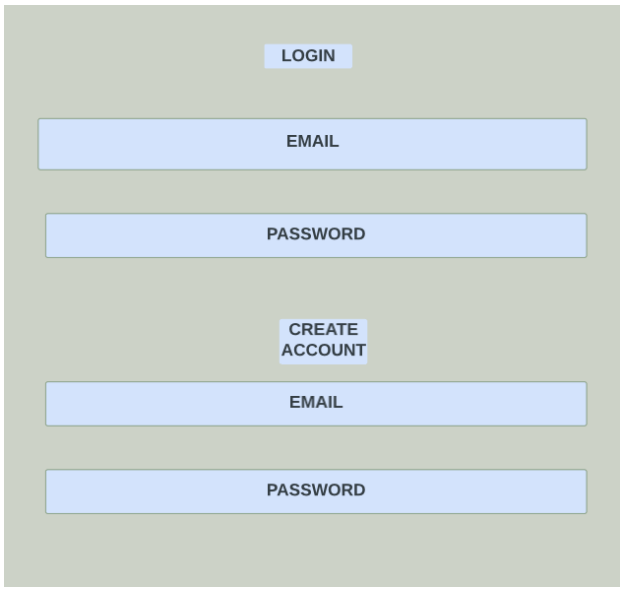
Filter option



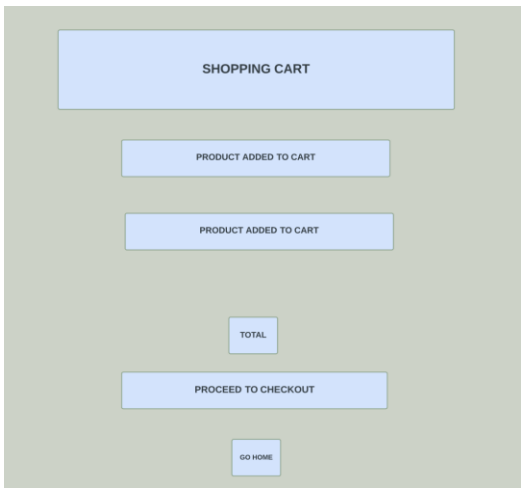
About Page

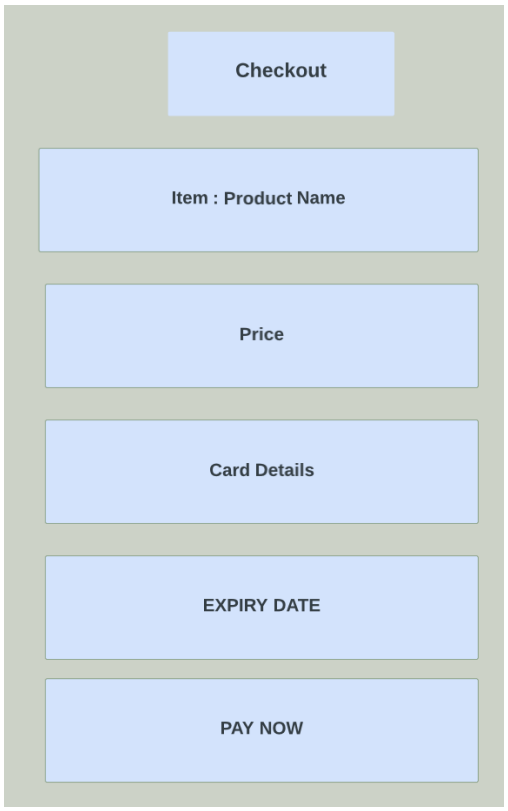


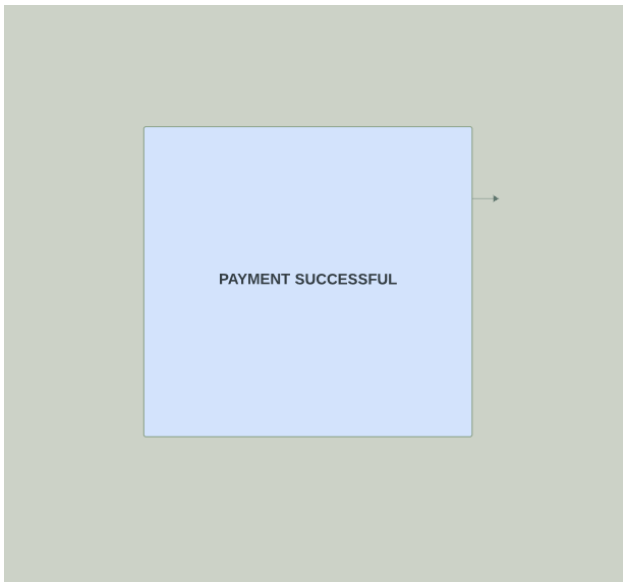
Login page



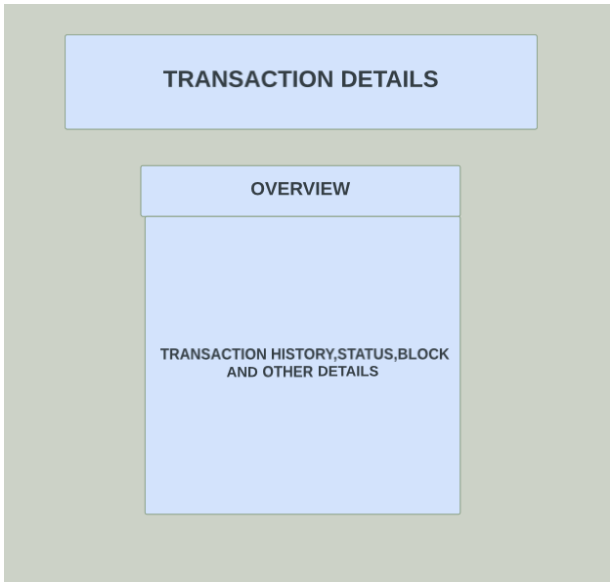
Shopping cart



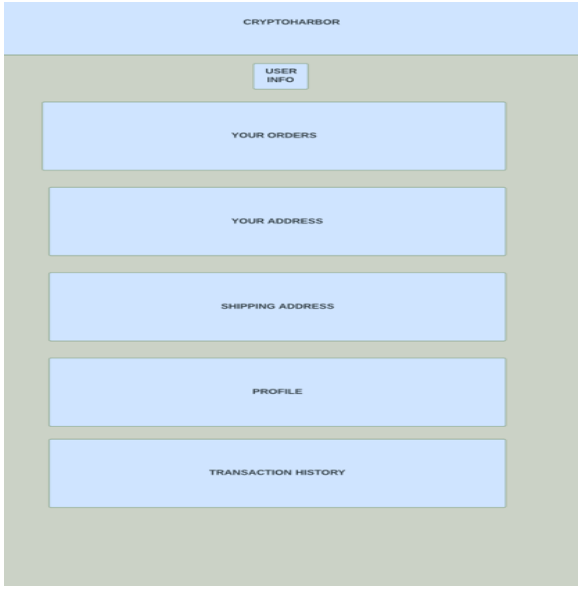

Checkout
Item : Product Name
Price
Card Details
EXPIRY DATE
PAY NOW


PAYMENT SUCCESSFUL

Transaction History :



User Info



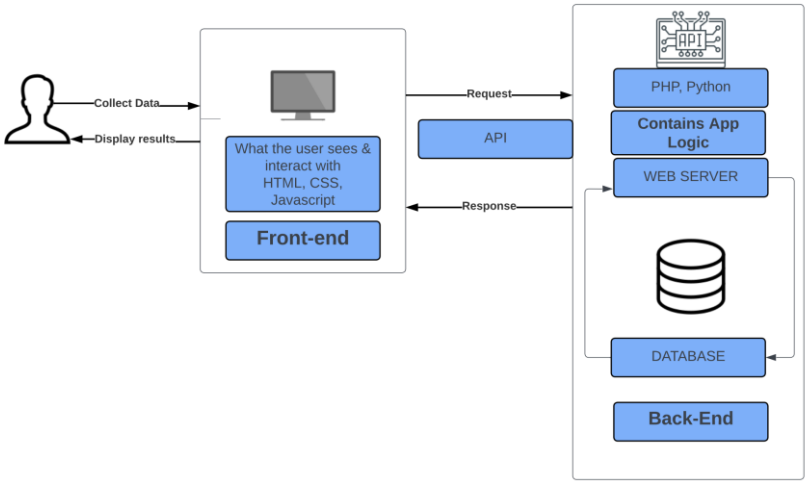
System Architecture Design:

The system architecture comprises the following components:

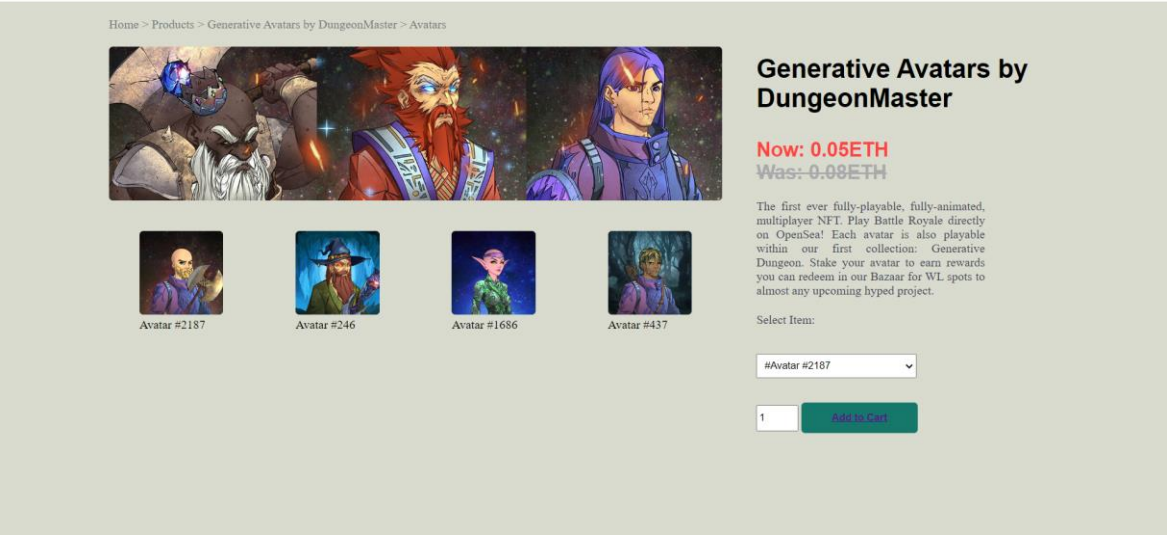
User Interface : This is the front-end component that users interact with. It provides access to trading features, asset listings, search and filter options, and transaction history.

Database: The database stores information about digital assets, user accounts, and transaction history. It ensures data integrity and accessibility.

Smart Contracts: Smart contracts are deployed on the blockchain and manage the escrow process. They ensure assets are held securely during trades and facilitate trade completion or cancellation.



Website Interface :



Featured Products

Summer Collection New Morden Design

Hero

Dimension X

★★★★★

0.05ETH

ON

ON1 Force

★★★★★

0.05ETH

DungeonMaster

Generative Avatars

★★★★★

0.05ETH

Wreck League

Majestics

★★★★★

0.05ETH

CryptoHarbor

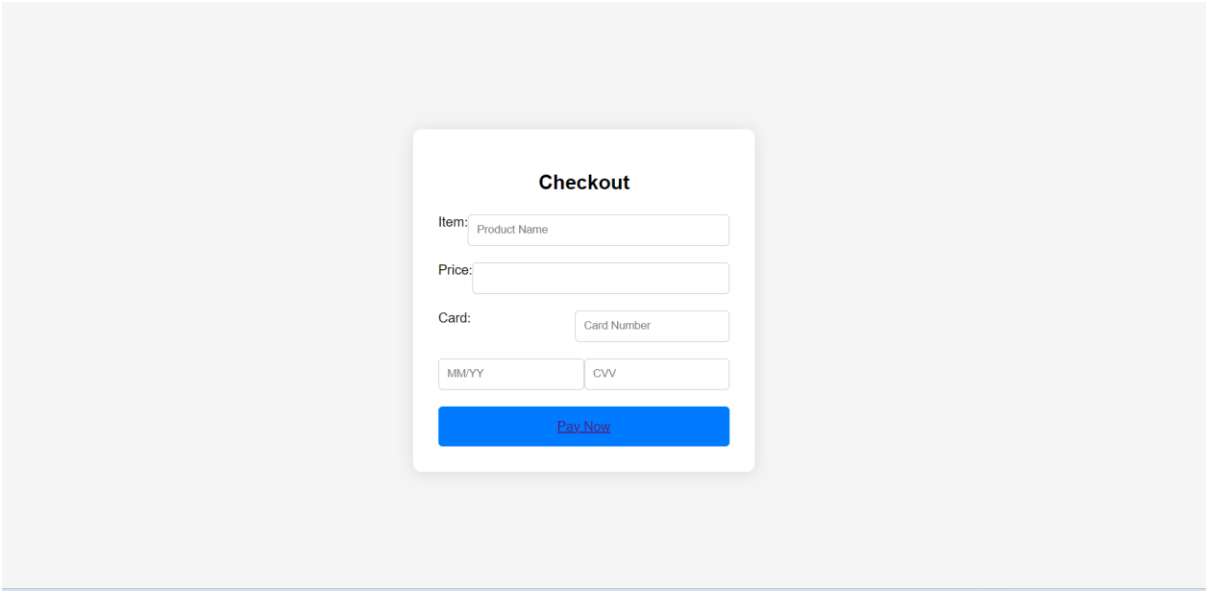
Secure and user-friendly platform for peer-to-peer trading.

About Us

This platform is dedicated to providing a seamless and trustless trading experience for users within the blockchain ecosystem.

Show Less

This platform has been developed by a talented team of students aiming to revolutionize the digital asset trading experience. It ensures seamless, trustless, and transparent transactions for all users. By utilizing the power of blockchain technology and smart contracts, our system provides a next-gen trading platform that places user's security and ease of use at the forefront.



Transaction Details

Overview

Transaction Hash: 0x4966b9770eb4ab583da0d26b1c5041bda0cba72192fc7b4cd0a4cc06b1eeb80b
Status: Success
Block: 18040140 (2 Block Confirmations)
Timestamp: 20 secs ago (Sep-01-2023 07:13:59 AM +UTC) | Confirmed within 6 secs
Transaction Action: Transfer 0.09410348151801372 Ether To 0x353170...20eB7dfE
From: 0x27899ffaCe558bdE9F284Ba5C8c91ec79EE60FD6
To: 0x35317039367D6b9246441927B0645C9920eB7dfE

More Details: Show more

crazy deals

buy 1 get 1 free

The best classic dress is on sale at coro

Learn More

spring/summer

upcomming season

The best classic dress is on sale at cara

Collection

SEASONAL SALE

Winter Collection 50% Off

NEW FOOTWEAR COLLECTION

Spring/Summer 2022

T-SHIRTS

New Trendy Prints

Repaire Services

Up to 70% Off - All Art & Gaming Products

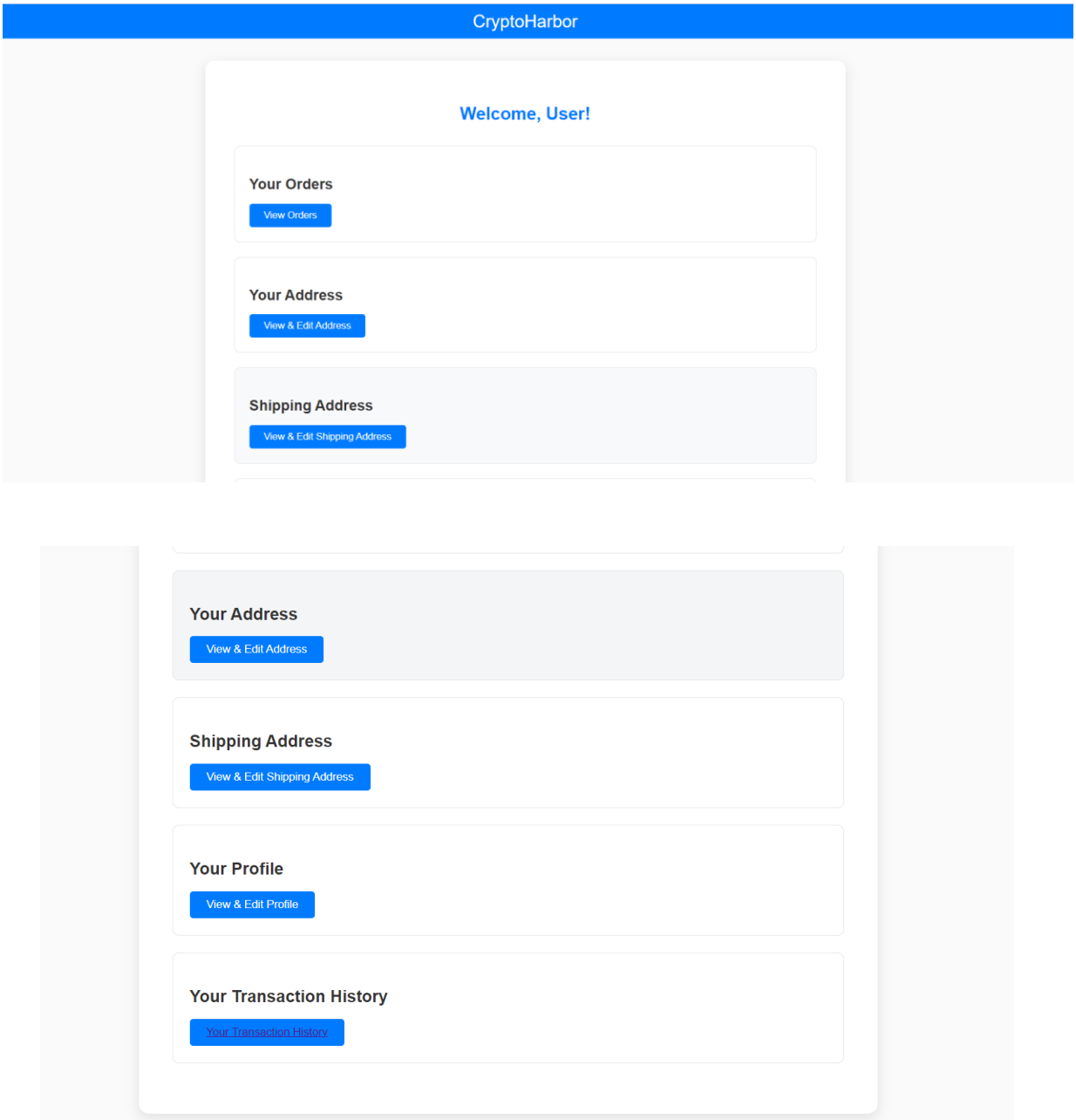
Explore More

New Collection

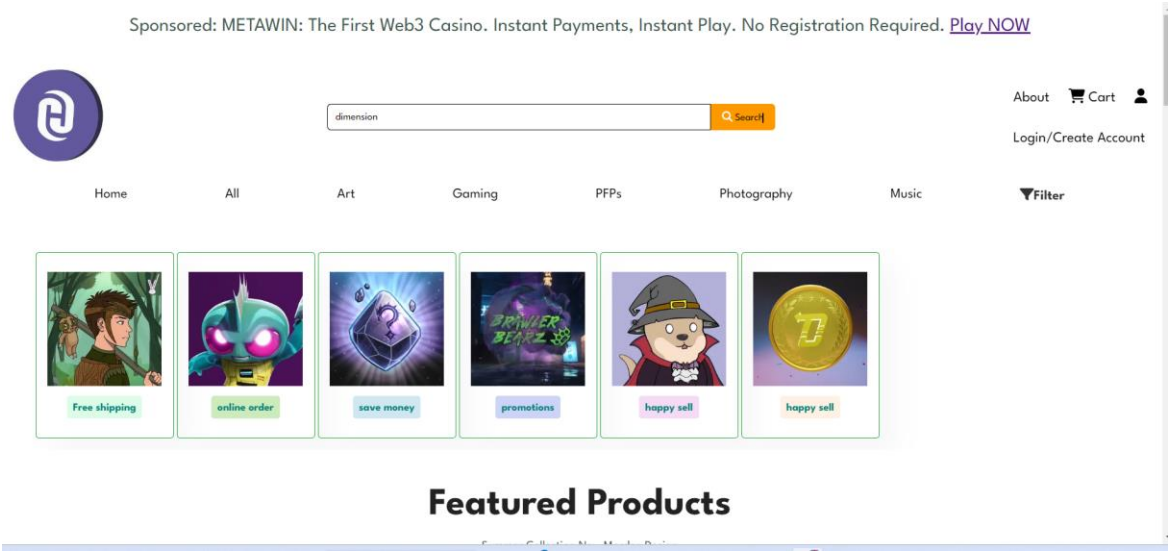
Summer Collection New Morden Design

Enhancements :

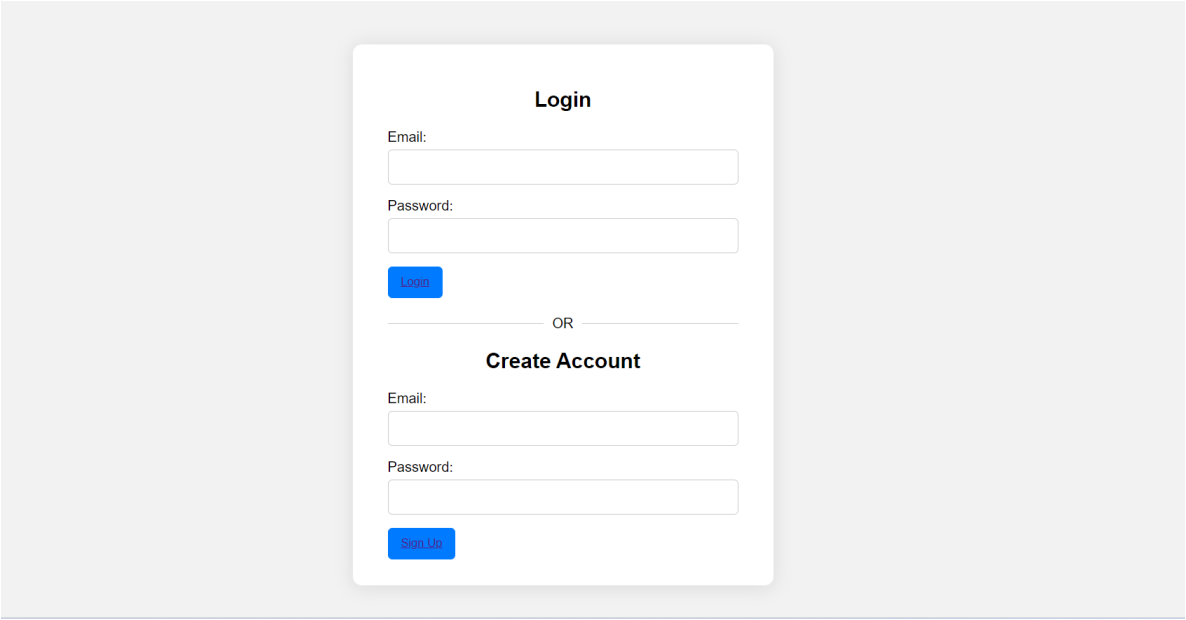
Dashboard: A user-friendly dashboard has been added to the website, which offers the users a centralized and easily accessible hub for important information and features.



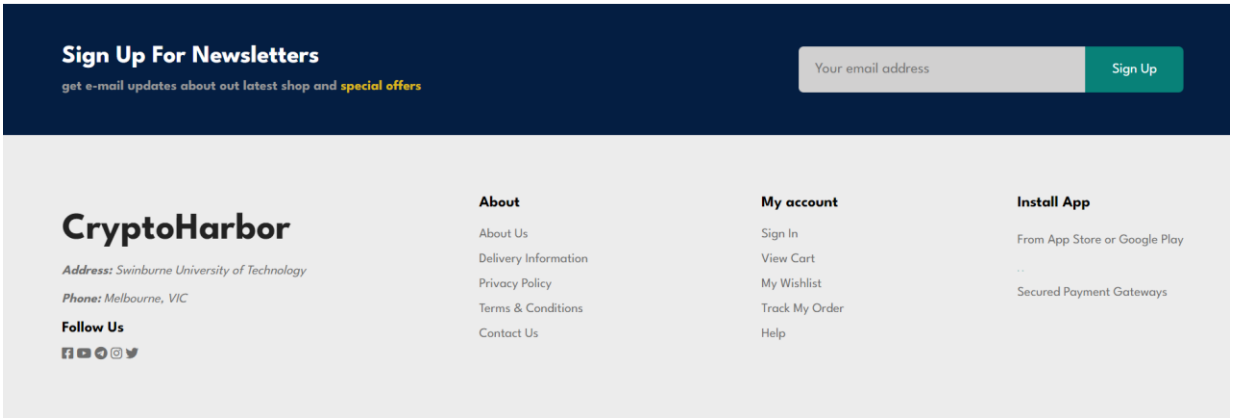
Carousel: The website now features a dynamic carousel, which provides an engaging and visually appealing way to showcase key content, promotions, or highlights to users.



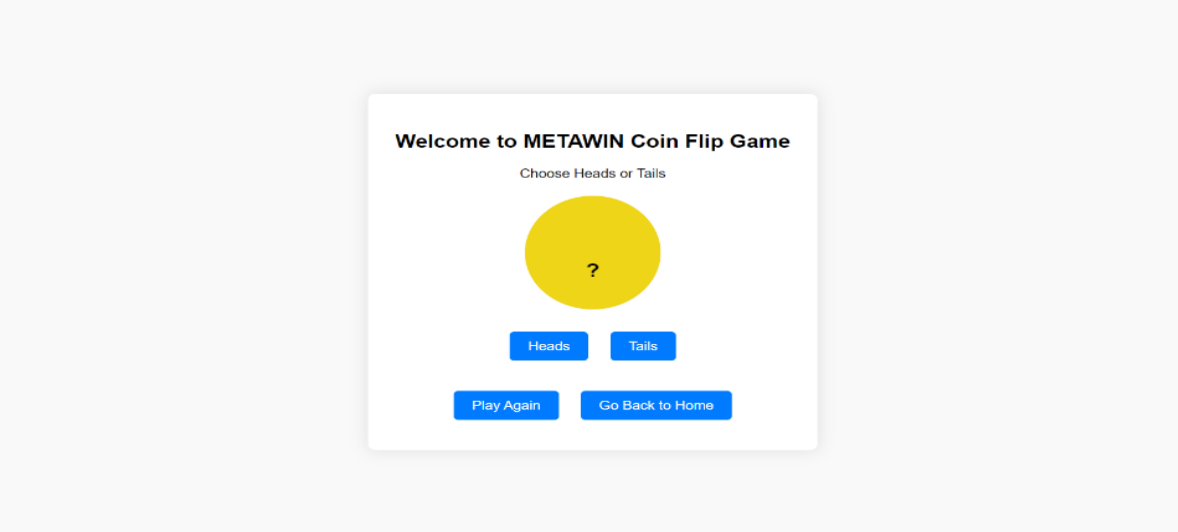
Login and Signup Page: Dedicated login and signup pages have been implemented, streamlining the user registration process and enhancing security measures for user access.



Newsletter Subscription: Users can now subscribe to newsletters directly from the website, ensuring they receive timely updates, news, and promotions, thereby fostering stronger user engagement and communication.



Games: The addition of interactive games to the website introduces an entertaining element, complementing the primary functions of the site and potentially increasing user engagement and time spent on the platform.



Proposed Enhancements:

While meeting the core functional requirements, our team proposes the following enhancements:

Advanced Search Filters: Implement more advanced search and filter options to provide users with greater flexibility in discovering assets.

Real-time Notifications: Integrate a notification system to inform users about trade updates, pending transactions, and completed trades.

User Ratings and Reviews: Allow users to rate and review their trading counterparts, enhancing trust and transparency within the platform.

In conclusion, our Smart Contract Audit System project aims to create a secure, user-friendly, and transparent platform for peer-to-peer trading of digital assets. By adhering to the project's core functional requirements and proposing thoughtful enhancements, we are committed to delivering a robust solution that empowers users within the blockchain ecosystem. Throughout the entire website the core functionalities were our primary objectives and then the following enhancements were done to the website.

References :

1. Berthelemy, J.-C. and Béguerie, V. (2016). Introduction. *Field Actions Science Reports. The journal of field actions*, [online] (Special Issue 15), pp.4–9. Available at: https://journals.openedition.org/factsreports/4124 [Accessed 3 Sep. 2023].
2. Westland, J. (2007). *The Project Management Life Cycle: A Complete Step-by-step Methodology for Initiating Planning Executing and Closing the Project*.

3. [online] *Google Books*. Kogan Page Publishers. Available at: https://books.google.com.au/books?hl=en&lr=&id=Jb03AAAAQBAJ&oi=fnd&pg=PP1&dq=Project+Requirement+List+and+Description&ots=66haMB6vcw&sig=V9X3Fww_f_wFYaO1pGxBmT2Yp3w&redir_esc=y#v=onepage&q=Project%20Requirement%20List%20and%20Description&f=false [Accessed 3 Sep. 2023].

4. Rodriguez-Calero, I.B., Coulentianos, M.J., Daly, S.R., Burridge, J. and Sienko, K.H. (2020). Prototyping strategies for stakeholder engagement during front-end design: Design practitioners' approaches in the medical device industry. *Design Studies*, 71, p.100977. doi:https://doi.org/10.1016/j.destud.2020.100977.