

NFT Marketplace

Enabling DeFi in NFT Marketplace with Endorsement feature



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About WEBMOB

Webmob has emerged as a service delivery pioneer in this dynamic fintech industry, serving a legion of laurelled clients in Europe and the Middle East. With AI/ML-powered, Cloud-native, and Blockchain in our stack, Webmob provides cutting-edge solutions to fulfill the customer's advanced and disruptive requirements.

Particularly for the FINTECH industry, Webmob offers unparalleled robust solutions in Trade Finance, Money Market, Fiduciary, Commercial Real Estate Loan Tokenization, and NFT Marketplaces on top Blockchains.

Webmob is, as of today, weaponed with a fully-equipped R&D lab, aka WikiDLT.com, and consulting certified professionals, especially to explore new possibilities for innovative Blockchain implementation.

Overview

In the rapidly evolving non-fungible token (NFT) landscape, our platform stands out by revolutionizing the market with the introduction of Endorsements, a breakthrough feature that seamlessly blends DeFi principles and NFT trading. Masu. Beyond traditional features such as minting and auctions, Endorsements provides users with the ability to stake their crypto assets against NFTs and earn countless rewards beyond just trading.

This innovative integration enables investors to earn passive income, increase the utility of their assets, and build a sustainable ecosystem.

This is where NFTs go beyond being mere collectibles. Through endorsements, users can participate in a dynamic relationship with their assets, expanding their investment possibilities and reshaping the NFT investment landscape itself.

By integrating the world of NFTs with decentralized finance (DeFi), our platform not only provides a new dimension to asset ownership, but also fosters a community-driven approach to value creation. With Endorsement, we aim to redefine the way individuals interact with digital assets and provide unparalleled opportunities for growth and engagement within the NFT ecosystem



Business Needs

- See the growing demand for NFTs as an investment vehicle.
- We will enhance the practicality of NFTs beyond collectibility.
- Integrate DeFi principles to meet evolving market needs.
- Enables generation of passive income through asset staking.
- Fostering a dynamic and sustainable NFT market.

Our Solution

- Easy UI/UX with seamless navigation
- Securing smart contracts
- Backed by blockchain
- DeFi-enabled approval
- Fully decentralized

Benefits

- Maximize profits in the NFT bull market
- Decentralized reward distribution
- Comprehensive investment opportunities

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Solution

Easy UI/UX with Seamless Navigation:

Navigate effortlessly through our user-friendly web application interface, where all your options—collected, created, endorsed, bids, offers, activities, and saved NFTs—are conveniently accessible from the home page. Enjoy streamlined navigation across multiple tabs for a seamless browsing experience.

Enhanced Smart Contract Protection:

Rest assured with our secure and robust smart contracts safeguarding your collections and transactions. Our smart contracts efficiently manage fund dispersal, reducing user dependencies and ensuring a secure transaction environment.

Blockchain Backing for Security:

Benefit from the trust and security of the Binance chain, one of the most reputable blockchain networks globally. Our platform is built upon this trusted blockchain infrastructure, providing unparalleled security and reliability for your transactions.

DeFi Integration for Investment Opportunities:

Embark on a unique NFT marketplace journey with our DeFi feature, empowering you to invest and earn returns on NFT sales and auctions through endorsements. Maximize your investment potential and capitalize on lucrative opportunities within the NFT market.

Complete decentralization:

The platform aims to eliminate any dependencies on the users and provide complete decentralization. The beneficiaries do not have to depend on the NFT seller or owner for their rewards. The smart contracts automatically assign all the rewards to the beneficiaries which can be obtained at any time.



Technology

- **Next.js:** Powers the frontend interface of the web application, ensuring dynamic user experiences with server-side rendering for enhanced performance and SEO optimization.
- **Redux:** Implemented for state management within the React application, facilitating efficient data flow and manipulation.
- **Web3.js:** Integrated to interact with the Binance Smart Chain and smart contracts, enabling seamless communication between the frontend and blockchain.
- **Node.js:** Leveraged for backend development to handle server-side logic, API integration, and data processing.
- **Express.js:** Utilized as the web application framework for Node.js, providing robust routing and middleware functionalities.
- **MongoDB:** Employed as the database management system to store user data, NFT metadata, transaction records, and other relevant information.
- **Solidity:** Used for developing smart contracts on the Binance Smart Chain, defining the rules and logic governing NFT creation, ownership, trading, and endorsement.
- **Binance Smart Chain:** Chosen as the underlying blockchain network for its scalability, low transaction fees, and compatibility with Ethereum Virtual Machine (EVM) standards.



Challenges

One of the primary challenges facing traditional NFT marketplaces is their inability to keep pace with the rapid evolution within the blockchain space, particularly in the realm of DeFi (Decentralized Finance). While these platforms typically offer basic functionalities like buying, selling, and auctioning NFTs, they often fall short of meeting the growing technological expectations of users. As blockchain technology continues to advance, users are increasingly seeking more sophisticated features and opportunities for value creation from their NFT investments. This poses a significant challenge for NFT marketplaces to innovate and differentiate themselves amidst the changing landscape.

Additionally, there's a growing demand for platforms that can offer more than just static NFT ownership, with users looking for ways to actively engage and participate in the market beyond simple transactions. As such, the challenge lies in redefining the traditional NFT marketplace paradigm to meet the dynamic needs of users and leverage the potential of DeFi integration to unlock new opportunities for value generation and participation in the market.



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QA Process

Our QA process involves a systematic approach encompassing various stages to thoroughly assess the platform's functionality, security, and user experience.

01 Test Planning:

We defined the scope of testing, identified objectives, allocated resources, and developed a comprehensive test plan outlining our approach, timelines, and deliverables.

02 Requirement Analysis:

We reviewed the requirements documentation to understand the expected behavior of the platform and ensured our team accurately captured all functional and non-functional requirements.

03 Test Environment Setup:

We established testing environments mirroring the production environment, installed the necessary software, configured databases, and ensured the availability of test data representing various marketplace scenarios.

04 Test Case Design:

We developed detailed test scenarios and cases covering functional workflows, boundary conditions, error handling, and exception scenarios, prioritizing based on criticality and risk.

05 Functional Testing:

We executed test cases to verify the functionality of different modules and features, including various workflows, integration with external systems, and compliance with regulatory standards.

06 User Interface Testing:

We evaluated the user interface for usability, accessibility, and responsiveness, ensuring consistency in design elements, layouts, and navigation across different screens.

07 Security Testing:

We performed security assessments, testing authentication and authorisation mechanisms, data encryption, and secure communication protocols, and conducted penetration testing to assess resilience to security breaches.



08 Regression Testing:

We reran previously executed test cases to ensure new changes did not introduce any regressions, automating regression test cases where feasible and validating backward compatibility.

09 Integration Testing:

We tested data exchange mechanisms and validated data consistency and integrity across integrated systems, including file uploads, API calls, and message queues.

10 Documentation and Reporting:

We maintained a detailed documentation of test cases, results, and defects, generated test reports summarising test coverage and provided stakeholders with regular updates on testing progress and identified issues.

11 User Acceptance Testing (UAT):

We collaborated with end-users and stakeholders to conduct UAT, obtaining feedback on the platform's functionality, usability, and performance, ensuring alignment with user expectations.

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Security Testing of the Trade Finance Platform:

1. API Testing:

Objective: Evaluate the functionality, reliability, security, and performance of APIs used in the platform.

Tools:

- **Postman:** Automated testing tool for API automation testing, enabling comprehensive testing of API endpoints and payloads.
- **SoapUI:** Another automated testing tool suitable for API testing, providing features for functional testing, load testing, and security testing.

2. Penetration Testing (PenTesting):

Objective: Identify and exploit vulnerabilities in the platform to assess its security posture.

Tools:

- **Burp Suite:** A comprehensive toolkit for web application security testing, including manual and automated vulnerability scanning, request interception, and exploitation of security flaws.
- **Metasploit:** A penetration testing framework offering various exploits and payloads for testing network and application security.

3. Patch Testing:

Objective: Verify the effectiveness of security patches applied to the platform.

Process:

- Testing patches on a sandbox or staging environment ensures they do not introduce regressions or new vulnerabilities.
- Automated and manually tested critical functionalities affected by the patch to ensure they operated as expected.

4. Third-Party Testing:

Objective: Gain independent verification and validation of the platform's security measures.

Process:

- Engaging external security firms or independent security researchers to conduct thorough security assessments, including penetration testing, code review, and vulnerability scanning.
- Utilising bug bounty programs to incentivise external security researchers to discover and responsibly disclose security vulnerabilities in the platform.

5. Source Code Testing:

Objective: Evaluate the security of the platform's source



code to identify and remediate vulnerabilities and ensure robust protection against potential threats.

Process:

- The source code testing process for the platform begins with configuring and integrating tools like SonarQube and Checkmarx into the development environment.

Tools:

- **SonarQube:** Analyzes the platform's source code for bugs, vulnerabilities, and code smells, providing insights into code quality and security.
- **Checkmarx:** A static application security testing (SAST) tool that identifies security vulnerabilities in the source code, helping developers remediate potential issues before deployment.

6. Network Testing

Objective: The primary objective of network testing is to assess the security and resilience of the platform's network infrastructure, ensuring protection against potential threats and vulnerabilities.

Process:

- Network testing begins by examining the network infrastructure's configuration and setup to identify any potential weaknesses or misconfigurations.
- Comprehensive scans are conducted using specialised tools to analyse server ports, configurations, versions, and subdomains within the network.

Tools:

- **Nessus:** A powerful scanning tool utilised for comprehensive network scans, providing detailed insights into potential security risks and vulnerabilities within the network infrastructure.
- **Nmap:** Another widely used scanning tool that enables thorough examination of network configurations and identifies potential security loopholes and weaknesses.

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Webmob Software Solutions

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Development Phase

- 01 **Requirement Gathering**
Requirements were gathered through meetings and discussions to understand the marketplace's functional and non-functional aspects.
- 02 **System Design**
Based on the gathered requirements, system architecture and design were finalised. It included defining the database schema, application modules, and integrations with external systems.
- 03 **Coding**
Our developers wrote code according to the design specifications using programming languages & frameworks suitable for the platform's requirements.
- 04 **Quality Assurance**
Our QA engineers conducted comprehensive testing of the platform, including source code, functional, security, and performance testing that helped us identify & resolve any defects or issues.
- 05 **Review & Integration**
The platform has undergone thorough code reviews to ensure the platform's stability and performance. Our team addressed any feedback or issues identified during testing and made necessary integrations.



Deployment Phase

- 01 **Preparation**
The necessary infrastructure and environments were set up, including development, staging and production.
- 02 **Deployment Planning:**
We have created a pitch-perfect deployment plan outlining the steps and procedures for deploying the platform to the production environment.
- 03 **Release Management:**
Our team deployed the platform to the product environment following the deployment plan. It involved deploying code, configuring servers, and ensuring all dependencies were met.
- 04 **Monitoring and Optimisation**
After deployment, our team continuously monitored the platform for performance, security & stability. We promptly addressed any issues or anomalies and made necessary changes.
- 05 **Post-Deployment Review**
We conducted a post-deployment review to assess the deployment process's success and gather user feedback. Additionally, our team documented any lessons learned for future deployments.



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Project Methodology

During this project, our team adhered to an Agile methodology, fostering efficient and iterative development. We structured our workflow around sprints, each lasting two weeks, allowing us to focus on specific features and functionalities. Regular feedback sessions with the client, occurring after every sprint, were integral to our process. It ensured our work aligned with the client's evolving requirements and expectations.

Additionally, we employed project management tools such as Trello and Jira to streamline collaboration and task management, facilitating transparent communication and real-time progress tracking. These practices enabled us to maintain a dynamic and responsive development approach, ultimately leading to the successful delivery of a high-quality solution that effectively met the client's needs.



Timeline

- 01 Total months: 3 months
- 02 No. of Resources: 3 Resources
- 03 Experience of Resources: **Frontend: 4 Years**
Backend: 5.5 Years
Blockchain: 1.5 Years