

# Shariah-Compliant Commodity Trading Platform



Revolutionising Commodity Murabahah Trading: Empowering Islamic Finance with Digital Innovation

## Webmob Software Solutions



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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

Our platform revolutionises commodity Murabahah trading in the Islamic finance sector by providing a seamless and transparent digital solution for banks and their customers. Designed to adhere strictly to Shariah principles, our platform leverages cutting-edge technology to facilitate efficient and compliant commodity transactions. With a user-friendly interface, customers can easily onboard and access their client portal from any device. The platform streamlines the trading process, allowing users to select commodities and execute real-time transactions.

Additionally, robust reporting features and an audit trail ensure transparency and accountability at every step of the trading process. By utilising blockchain technology, we guarantee the authenticity and availability of commodities, eliminating uncertainties and enhancing trust among the parties involved. Our platform enhances efficiency and transparency and expands market access, empowering more participants to engage in Sharia-compliant commodity trading.



#### Business Needs

- Simplifying trading processes for Islamic financial institutions and clients.
- Ensuring adherence to Shariah principles in all transactions.
- Building trust and accountability with a transparent platform.
- Increasing market access for diverse participants.
- Improving operational efficiency and reducing burdens.

#### Our Solution

- Provide a user-friendly digital commodity trading platform.
- Implement a Shariah-compliant framework for transactions.
- Enable real-time trading from any portable device.
- Authenticate commodities using blockchain technology.
- Offer robust reporting and audit trail features.

#### Benefits

- Enhance trust through real-time transparency.
- Certify Shariah compliance for certainty in processes.
- Streamline trading for accessibility and efficiency.
- Boost market liquidity with immediate monetisation.
- Provides robust financing solutions using agro-based products as commodities.



## Case Study

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## Solution

### Simplified Trading Processes

We've developed a user-friendly digital trading platform that simplifies commodity Murabahah transactions for Islamic financial institutions and their clients. This platform replaces manual, cumbersome processes with an intuitive interface, making it easier for users to engage in commodity trading.

### Shariah-Compliant Framework

Our platform incorporates a Shariah-compliant framework, ensuring that all transactions adhere strictly to Islamic finance principles. By implementing this framework, we provide users with assurance that their transactions are conducted in accordance with Shariah guidelines.

### Real-Time Trading Accessibility

We've enabled real-time commodity trading accessible from any internet-connected device. This means that users can execute transactions swiftly and efficiently without being tied to a specific location or time zone.

### Blockchain Authentication for Commodities

We've integrated blockchain technology to authenticate commodities to enhance transparency and trust. This ensures that the traded commodities are genuine and available, addressing concerns about authenticity and availability in the market.

### Robust Reporting and Audit Trail Features

Our platform offers robust reporting and audit trail features, providing users with a clear record of all transactions. This transparency enhances accountability and fosters trust among all parties involved in commodity trading.



## Technology

### Frontend: Angular

Angular powered our platform's user interface, providing dynamic and responsive web applications for seamless user experiences.

### Back-end: Node.js, Express

Node.js and Express.js formed the core of our server-side architecture, enabling scalable and high-performance server applications.

### Database: MongoDB

MongoDB was our flexible and scalable database solution, offering schema flexibility and support for diverse data needs.

### Hosting Server: AWS EC2 Instance

We utilised AWS EC2 instances to host and deploy our platform, ensuring scalability, reliability, and security in the cloud.



## Challenges

Before our platform was implemented, several challenges plagued the Islamic finance sector's traditional commodity Murabahah trading process. Manual processes were prevalent, leading to inefficiencies and delays in transaction execution. The lack of transparency in traditional trading methods resulted in uncertainty regarding commodity availability, pricing, and transaction details, eroding trust among stakeholders. Limited market access restricted participation, hindering opportunities for growth and diversification.

Furthermore, ensuring compliance with Shariah principles was challenging due to manual record-keeping and reporting processes, increasing the risk of errors and inconsistencies. Operational inefficiencies, such as errors and delays, added to administrative burdens and reduced profitability. Overall, these challenges underscored the need for a digital platform to streamline processes, enhance transparency, ensure compliance, and facilitate market access for a broader range of participants in the Islamic finance sector.

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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 platform's expected behaviour 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, prioritising 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 re-ran 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 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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### Development Phase

- 01 **Requirement Gathering**  
Requirements were gathered through meetings and discussions to understand the platform'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 platform testing, 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 its 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

Our team adhered to an Agile methodology during this project, 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.

Name	Price	24h %	7d %	Market Cap	Volume	Market Cap	Volume
Bitcoin BTC Buy	\$46,869.65	-0.69%	+3.52%	\$881,308,384,824	\$24,345,278,988	\$24,345,278,988	\$24,345,278,988
Ethereum ETH Buy	\$3,942.38	-1.88%	+3.02%	\$484,676,847,345	\$10,278,445,396	\$10,278,445,396	\$10,278,445,396
Binance Coin BNB Buy	\$532.75	-0.48%	+4.52%	\$88,477,265,359	\$2,843,540,271	\$2,843,540,271	\$2,843,540,271
Tether USDT Buy	\$1.00	-0.02%	-0.02%	\$78,295,398,867	\$7,537,779,915	\$7,537,779,915	\$7,537,779,915
Solana SOL Buy	\$179.52	-1.16%	-4.41%	\$54,888,968,547	\$1,897,844,127	\$1,897,844,127	\$1,897,844,127
Cardano ADA	\$1.26	-0.86%	+1.81%	\$42,945,588,462	\$1,084,848,478	\$1,084,848,478	\$1,084,848,478
USD Coin USDC Buy	\$1.00	-0.07%	-0.08%	\$41,945,807,072	\$1,077,462,796	\$1,077,462,796	\$1,077,462,796

Additionally, we employed project management tools such as Trello 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 delivering a high-quality solution that effectively met the client's needs.

### Timeline

- 01 Total months: **6 months**
- 02 No. of Resources: **7 Resources**
- 03 Experience of Resources: **2 Frontend - 4 years**  
**2 Backend - 4 years**  
**2 QA- 4 years**  
**1 Project Manager - 7 Years**