

# DIAMOND ZONE



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Diamond Zone is a digital platform designed to serve as a secure, professional network for diamond merchants.

It functions as a centralized system where merchants can connect, manage their diamond inventory, and initiate secure borrowing agreements **all in one place.**

# Motivation

## **Manual and error-prone processes**

Diamond borrowing is currently managed through handwritten delivery notes or paper invoices, leading to human errors, lost documents, and inefficient tracking.

## **Inventory Management Challenges**

Managing diamond inventory manually delays real-time updates, increases errors, and complicates transaction reconciliation.

## **Centralized Service Platform**

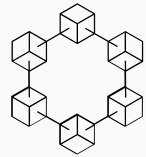
Creating a unified platform that brings together all essential tools and services diamond merchants need for their daily operations.

# Key Objectives Of Our Solution



## **Eliminate Paperwork**

Digitizing the borrowing and lending process. Replace physical delivery notes with secure, trackable digital transactions



## **Boost Transparency & traceability**

Use blockchain to ensure transparent, tamper-proof transaction records, so every inventory move can be verified and trusted by all parties.



## **Make Advanced Tech Accessible**

Create an intuitive platform for all merchants, regardless of tech skills, making powerful tools easy to use and understand.



## **Streamline Inventory Management**

Offer real-time tracking tools for easy inventory updates and analysis, helping merchants manage stock efficiently and reduce mistakes.



## **Minimize Fraud & Disputes**

Automate enforcement with smart contracts and secure data to reduce disputes and fraud, building trust between merchants and customers.

# Key Users of Diamond Zone

## **Diamond merchants**

Independent traders who manage their own inventory and conduct direct transactions with other merchants

## **Diamond trading companies**

Businesses with multiple employees managing shared inventory and formalizing contracts across teams

## **Members of diamond exchanges**

Verified professionals operating within local or international diamond exchanges, seeking a trusted digital environment



# Main Features of the Platform

## User Registration

Merchants create profiles with company details, license numbers, and digital wallet addresses, verified through a KYC process to ensure secure access.

## Diamond Inventory Management

Add and update diamond details such as weight, shape, color, certification, cost, and supplier information, supported by an analytics dashboard for inventory insights.

## Borrowing Requests

Merchants can browse others' inventories, request to borrow diamonds with specified terms, and receive notifications for approvals or negotiations.

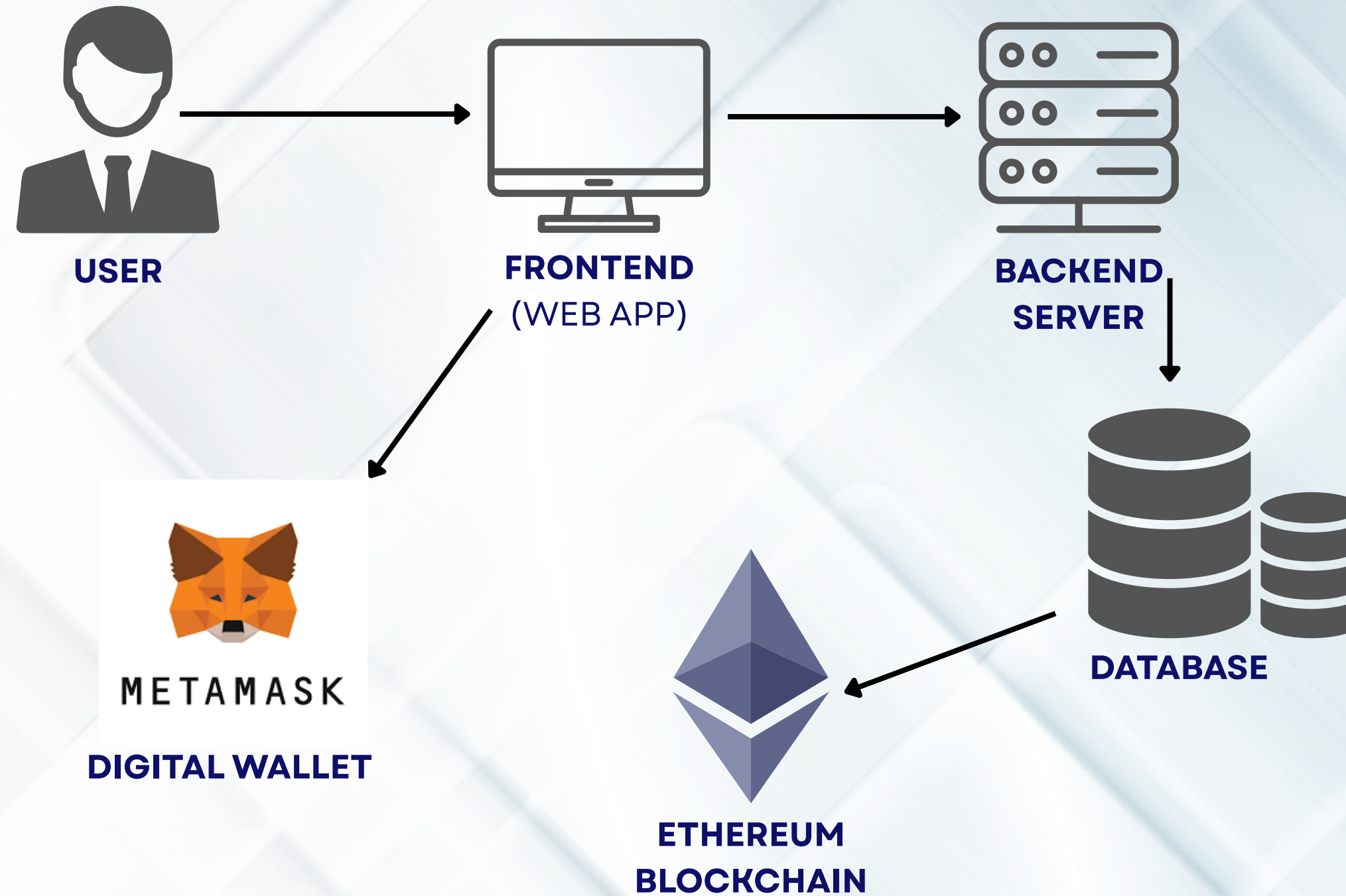
## Smart Contracts

Automatically generated contracts enforce transaction terms, track diamond status, and ensure secure, transparent agreements without manual intervention.

## Documentation and Monitoring

All transactions are securely recorded on the blockchain, enabling traceability, and timely reminders for key actions like returns or payments.

# Architecture



# Technologies Used in the Diamond Zone Project

## Frontend

React.js  
JavaScript  
CSS

## Backend and API logic

Node.js  
Express.js

## Database

MongoDB

## Blockchain Integration

Ethereum – Blockchain platform used for deploying smart contracts

Solidity – Programming language for writing smart contracts on Ethereum

MetaMask – Digital wallet for signing and managing blockchain transactions



# User Flow: Borrowing Diamonds



## Request Borrowing

Merchant A selects a diamond from his inventory and submits a borrowing request to merchant with diamond details and proposed period.



## Approve or Negotiate

Merchant B reviews the request and can approve, deny, or negotiate terms directly through the platform.



## Sign Smart Contract

Both merchants digitally sign a smart contract that records the agreement on Ethereum blockchain, ensuring security and immutability.



## Complete & Track

Diamond status updates to "Borrowed." Merchants track agreement status with reminders for return or extension. Contract finalizes on return or sale.



Diamond Zone

localhost:5173/signup

Join Diamond Zone

Create your merchant account to start trading diamonds

Account

Business

Address

Email Address \*

Enter your email

Password \*

Create a password (min. 6 characters)

Confirm Password \*

Confirm your password

Next: Business Info

Already have an account? [Sign in here](#)

# Status



Blockchain integration with Ethereum (development phase)

Ganache setup for local testing

Smart contract development (Solidity)

Interactive UI prototype demonstration

Wallet integration system (MetaMask/Web3)

# Next steps



**QR Code Integration** - in future development, the platform will allow one merchant to generate a QR code representing a contract proposal. The second merchant will be able to scan the QR code, view contract details and approve or reject.

**Marketplace Development** - Build a secure internal marketplace for listing diamonds and allow merchants to post, search, and filter available diamonds.

**Migration to Quorum** - Migration to Quorum for cost-free operation. Ethereum charges gas fees for every transaction. For a trading platform with frequent transactions, this could cost hundreds or thousands of dollars monthly. Quorum eliminates all transaction fees.

# Questions?



**Thank You!**