MILESTONE FUND

Milestone-Based Crowdfunding Platform

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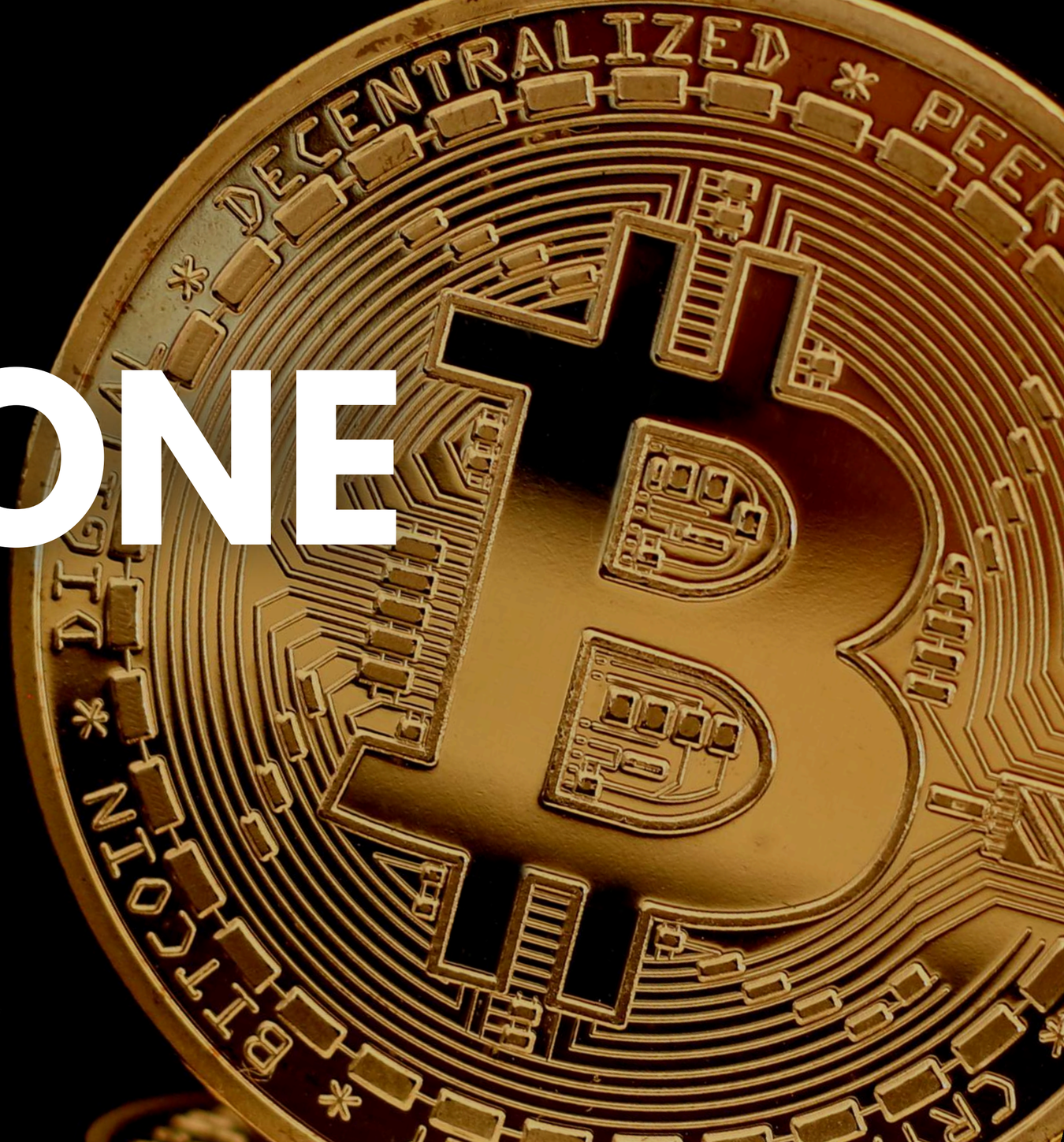
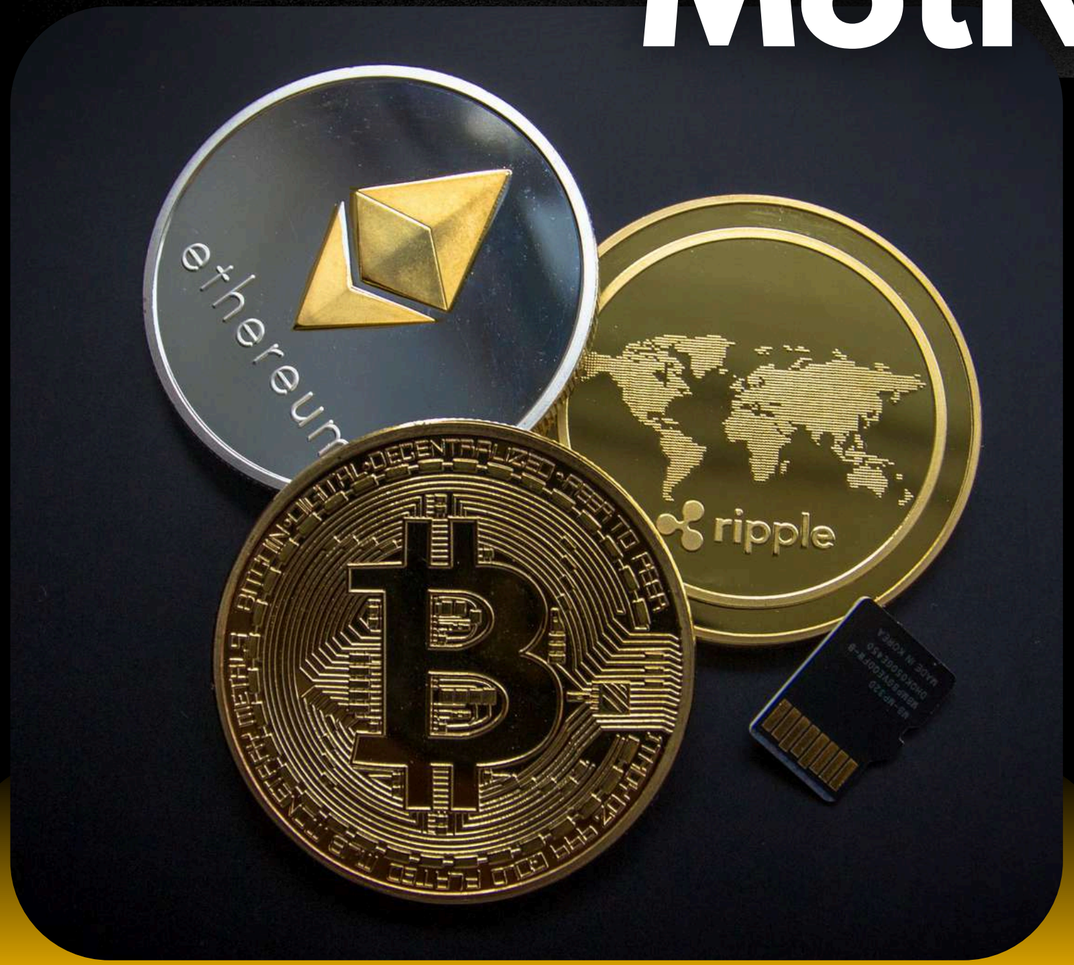


Background and Motivation



Crowdfunding platforms are widely used to finance startups and creative projects.

However, most existing solutions rely on centralized services, which introduces risks related to trust, transparency, and misuse of funds.

This project was motivated by the need to explore how blockchain and smart contracts can improve the reliability and transparency of crowdfunding systems.

Problem Statement

Traditional crowdfunding platforms suffer from several key issues:

- Funds are controlled by a centralized authority
- Contributors cannot fully verify how funds are used
- Project creators receive the entire amount at once, regardless of progress

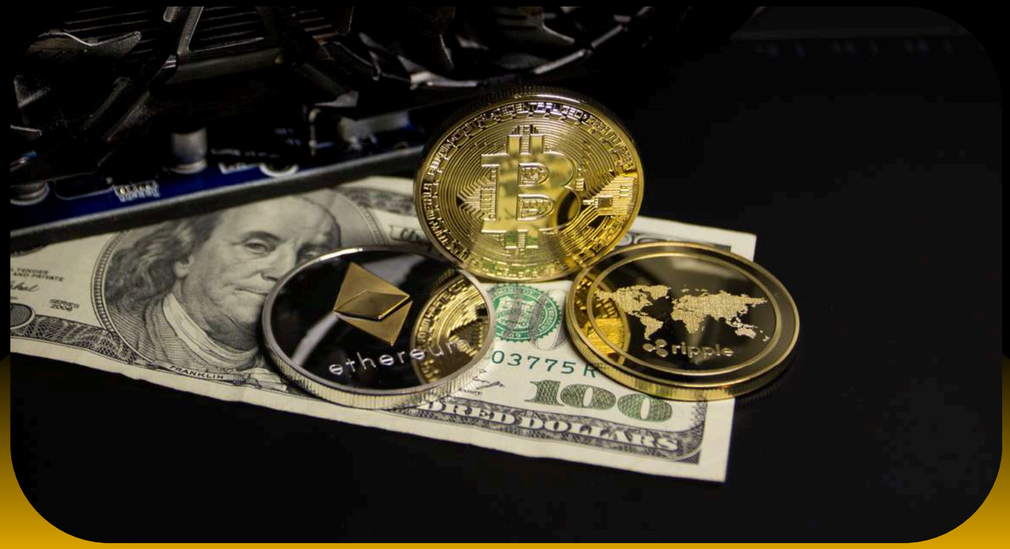
These limitations reduce trust between contributors and project owners.

Proposed Solution

The proposed solution is a decentralized crowdfunding platform where:

- All logic is enforced by smart contracts
- Funds are released gradually through milestones
- No central authority controls user funds

By using Ethereum smart contracts, the platform ensures transparency, immutability, and fairness for all participants.



Milestone-Based Crowdfunding Model

In this model, each crowdfunding campaign is divided into multiple milestones.
Funds are not released immediately but are unlocked step by step as milestones are completed.
This approach allows contributors to:

- Monitor project progress
- Reduce financial risk
- Increase confidence in the project's execution

Milestone validation is performed directly on the blockchain.

Smart Contract Architecture

Crowdfunding Contract

- Handles campaign creation
- Accepts ETH donations
- Manages milestone finalization

RewardToken Contract

- ERC-20 compliant token
- Used to reward contributors
- Minted automatically after milestones

Reward Token Mechanism

Contributors receive ERC-20 reward tokens after successful milestone completion.
These tokens represent proof of contribution and can be used for future extensions such as governance or utility features.
Token minting is restricted and can only be triggered by the Crowdfunding contract, which prevents unauthorized token creation.

Frontend Application

The frontend application provides a simple and intuitive interface for users to interact with the platform.
Key features include:

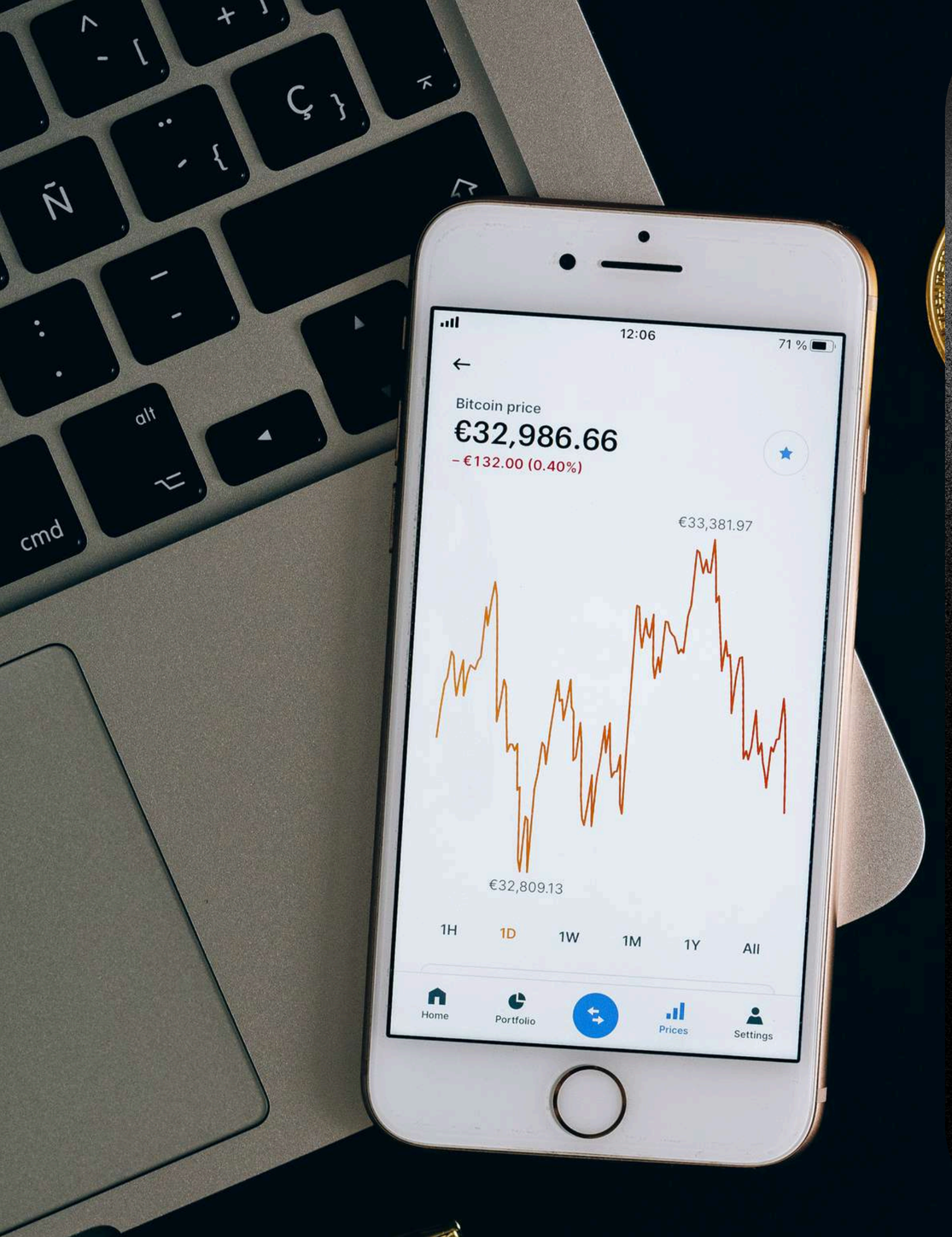
- Wallet connection via MetaMask
- Campaign creation and donation
- Milestone finalization
- Display of ETH and token balances

The frontend communicates with smart contracts using Ethers.js.

Investing in Currency

Deployment and Testing

The smart contracts were deployed on the Ethereum Sepolia testnet using Hardhat deployment scripts.
All interactions, including campaign creation and donations, were tested using test ETH.
Transactions can be verified through MetaMask and blockchain explorers, ensuring that all actions are publicly auditable.



Results and Achievements

The implemented system successfully demonstrates:

- Secure ETH donations
- Correct milestone-based fund release
- Automatic ERC-20 token distribution
- Full decentralization of core logic

All project requirements were fulfilled, and the platform operates as intended.

CONCLUSION

This project demonstrates how blockchain technology can be applied to real-world crowdfunding scenarios.

By combining smart contracts, milestones, and token-based incentives, the platform improves transparency, security, and trust.

The project confirms the effectiveness of decentralized applications in financial use cases.

Thank you for your attention.