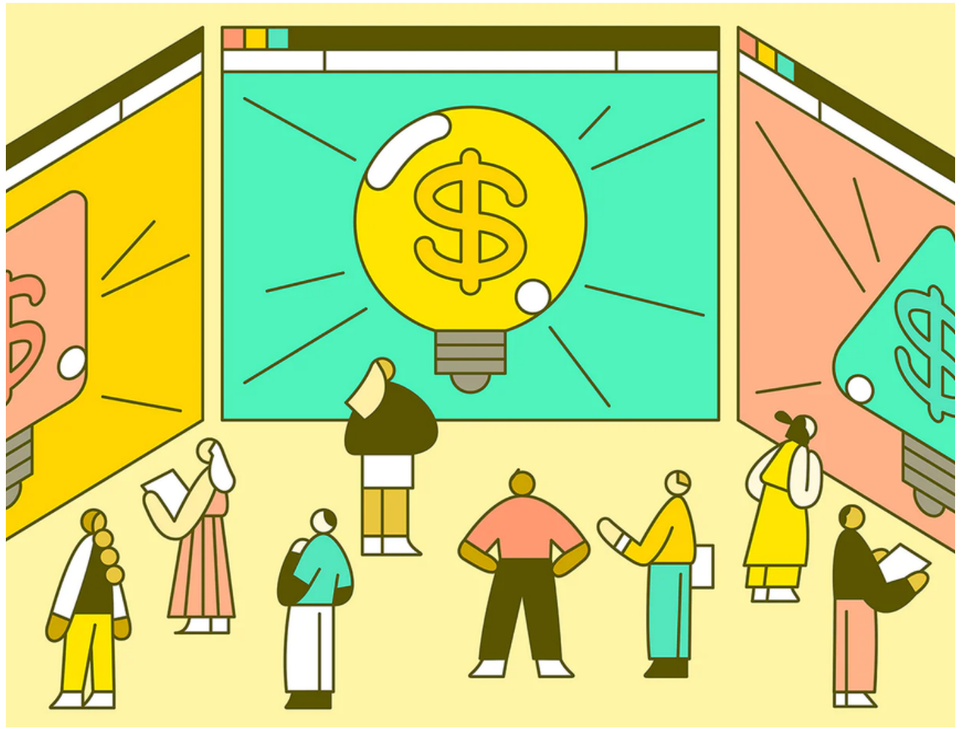
Smart Fund



1602-20-737-152 A. Pranesh

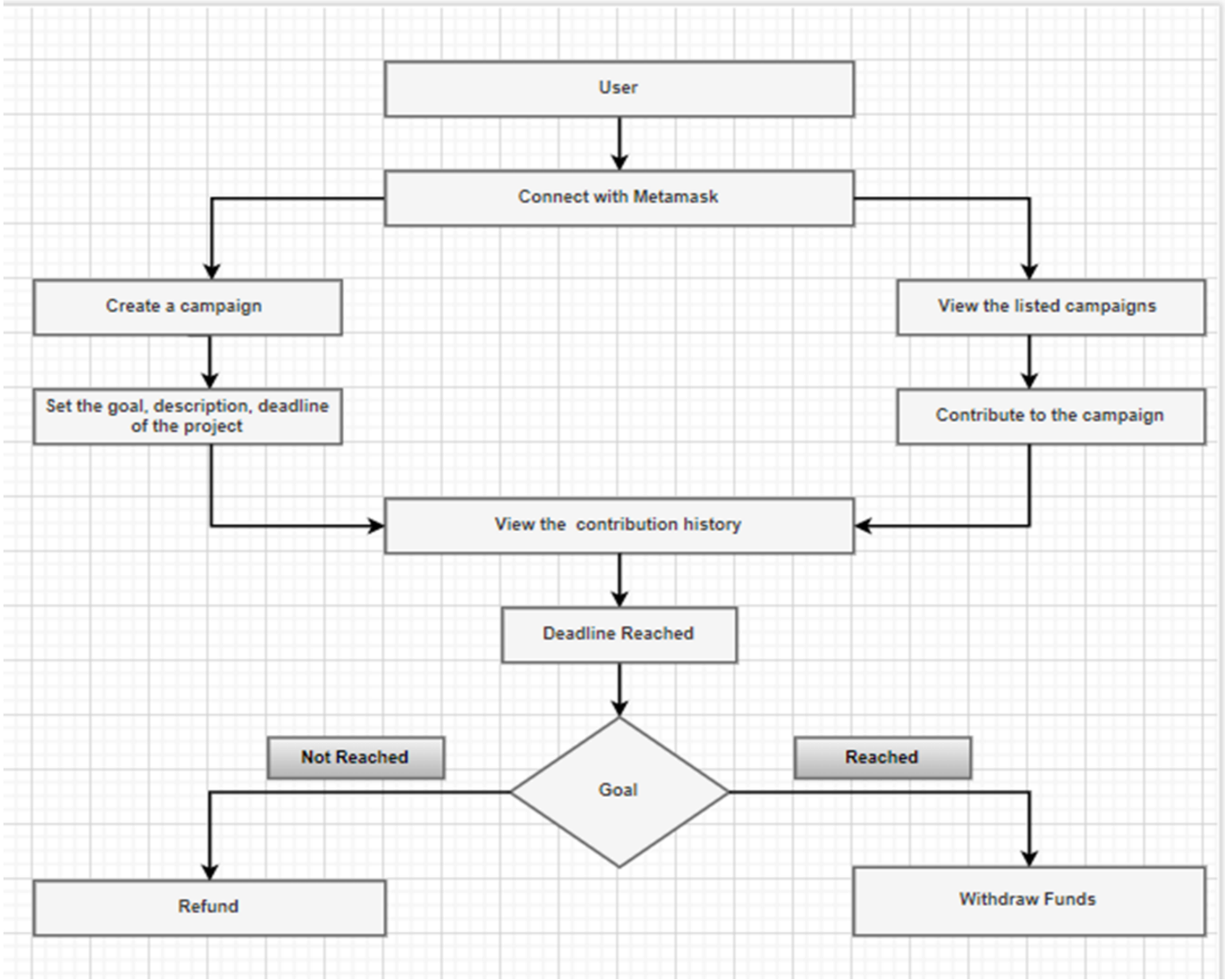
1602-20-737-159 P. Sai Srinath

Guide Haseeba Yaseen

Problem Statement

The problem is that traditional crowdfunding platforms face issues related to trust, high fees, and delays in distributing funds. These problems can hinder the effectiveness of crowdfunding campaigns. Additionally, the cost and legal considerations of implementing blockchain and smart contract technology pose challenges. In essence, the problem is to find a way to use blockchain and smart contracts to improve trust, reduce fees, and expedite fund distribution in crowdfunding, while addressing cost and legal constraints.

Architecture



Proposed Approach

- "SmartFund" aims to enhance transparency and trust in crowdfunding, countering the prevalent issue of fraud associated with this funding method.
- Recognizing the centralization in web-based applications, our proposal introduces "SmartFund" as a Decentralized Application powered by Ethereum Blockchain.
- This decentralized model ensures that all data related to campaigns, contributions, withdrawals, and funds resides on a visible and decentralized Blockchain Network.
- Funds and transactions are stored at every node on the blockchain, preventing centralized storage and reducing the risk of misuse.
- "SmartFund" addresses key concerns such as security, transparency, and anti-fraud measures, facilitating global contributions.
- The decentralized model not only boosts security but also fosters a trustworthy environment for individuals to contribute to a variety of causes.

Module Desciption

1.User Management :

- Manages user actions like registration, secure login, and profile management.
- Ensures secure user authentication and protects user data during interactions.

2.Campaign Management :

- Allows project creators to create, edit, and delete crowdfunding campaigns.
- Manages campaign logic through smart contracts written in Solidity, ensuring transparency.

3.Contribution and Funding :

- Empowers users to confidently contribute funds, select payment methods, and access contribution history.
- Utilizes smart contracts for secure and transparent fund management on the blockchain.
-

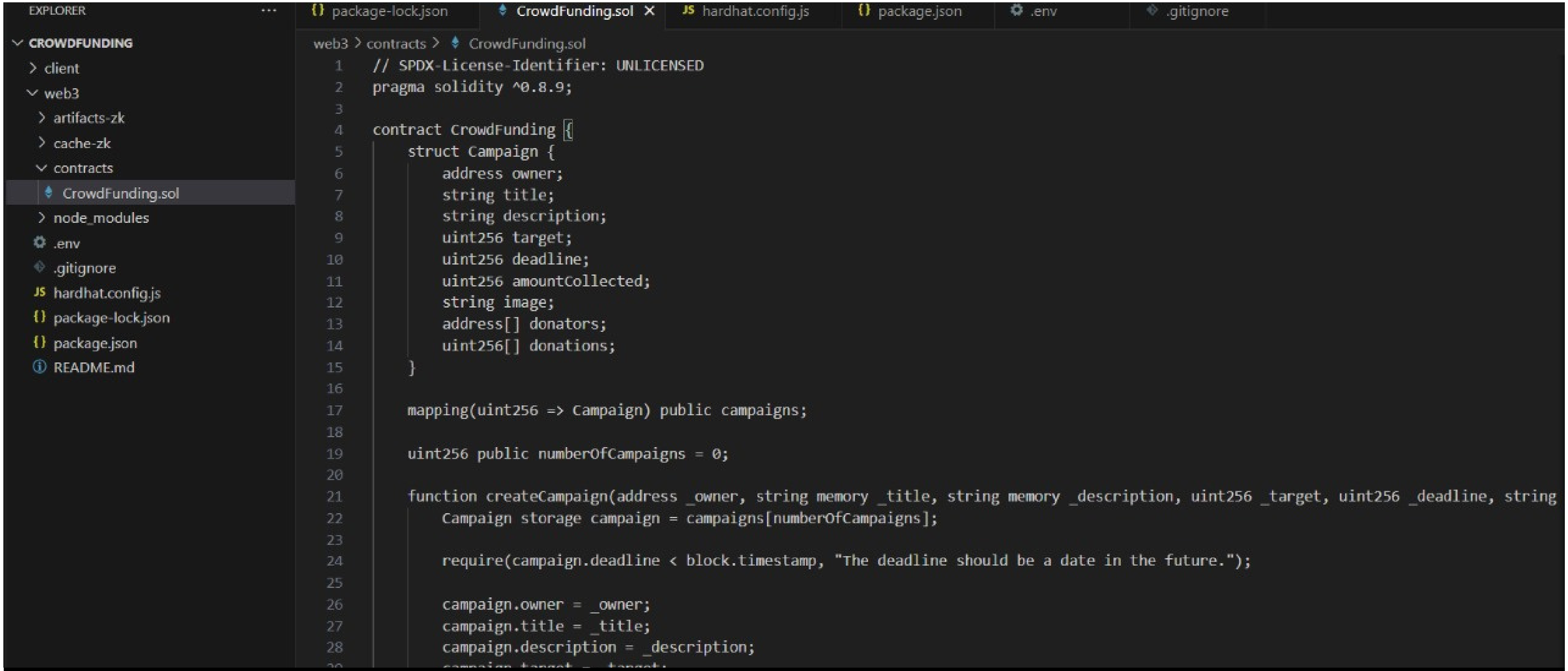
Module Desciption

4.Blockchain Integration :

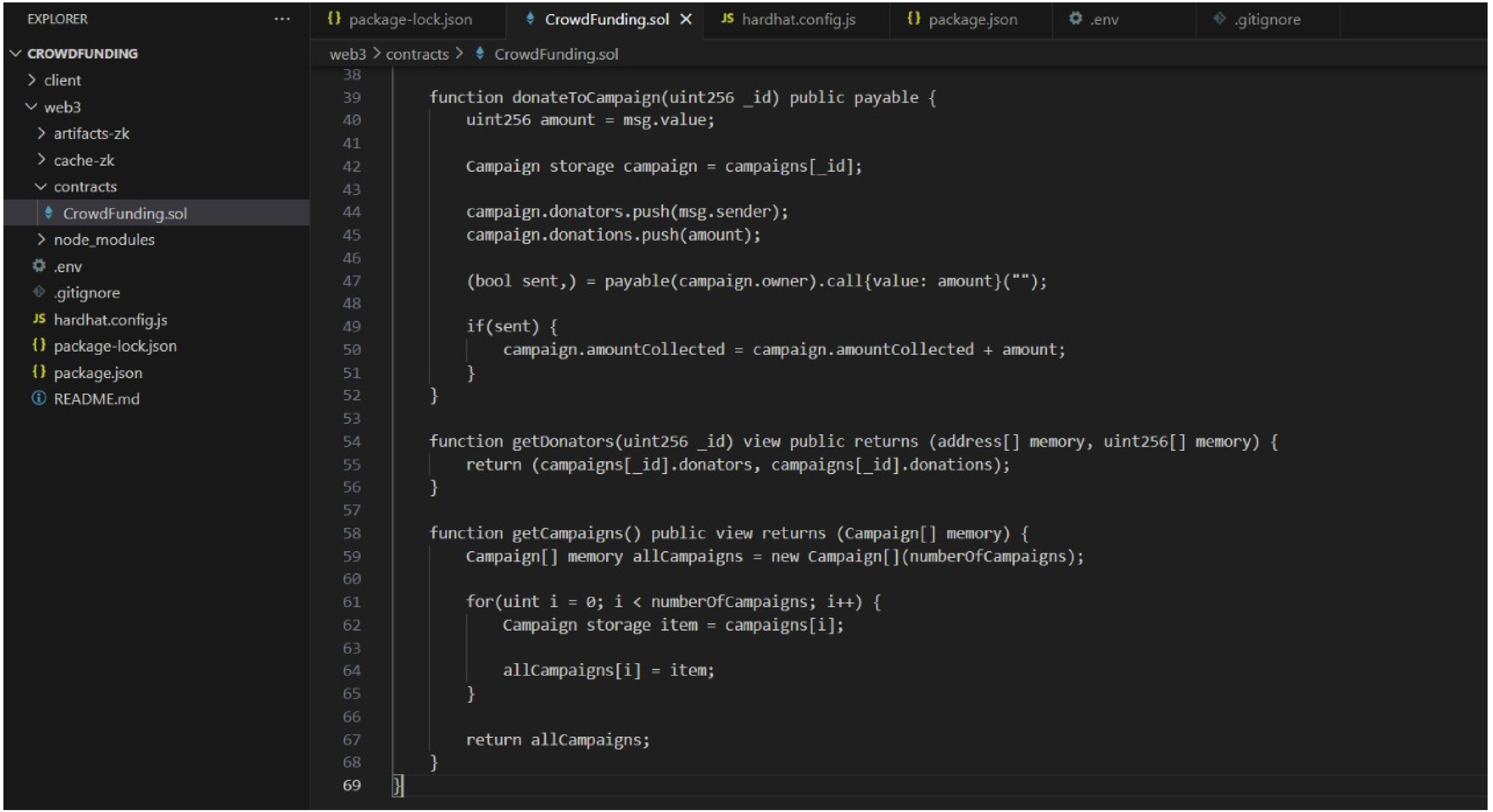
- Connects users' wallets to the platform, confirming transactions on the blockchain.
- Verifies smart contracts and monitors blockchain activities for transparency and security.

5.Application Module:

- Represents the core user journey, enabling users to discover, engage, and contribute tocampaigns.
- Focuses on user-centric design and community-building features.



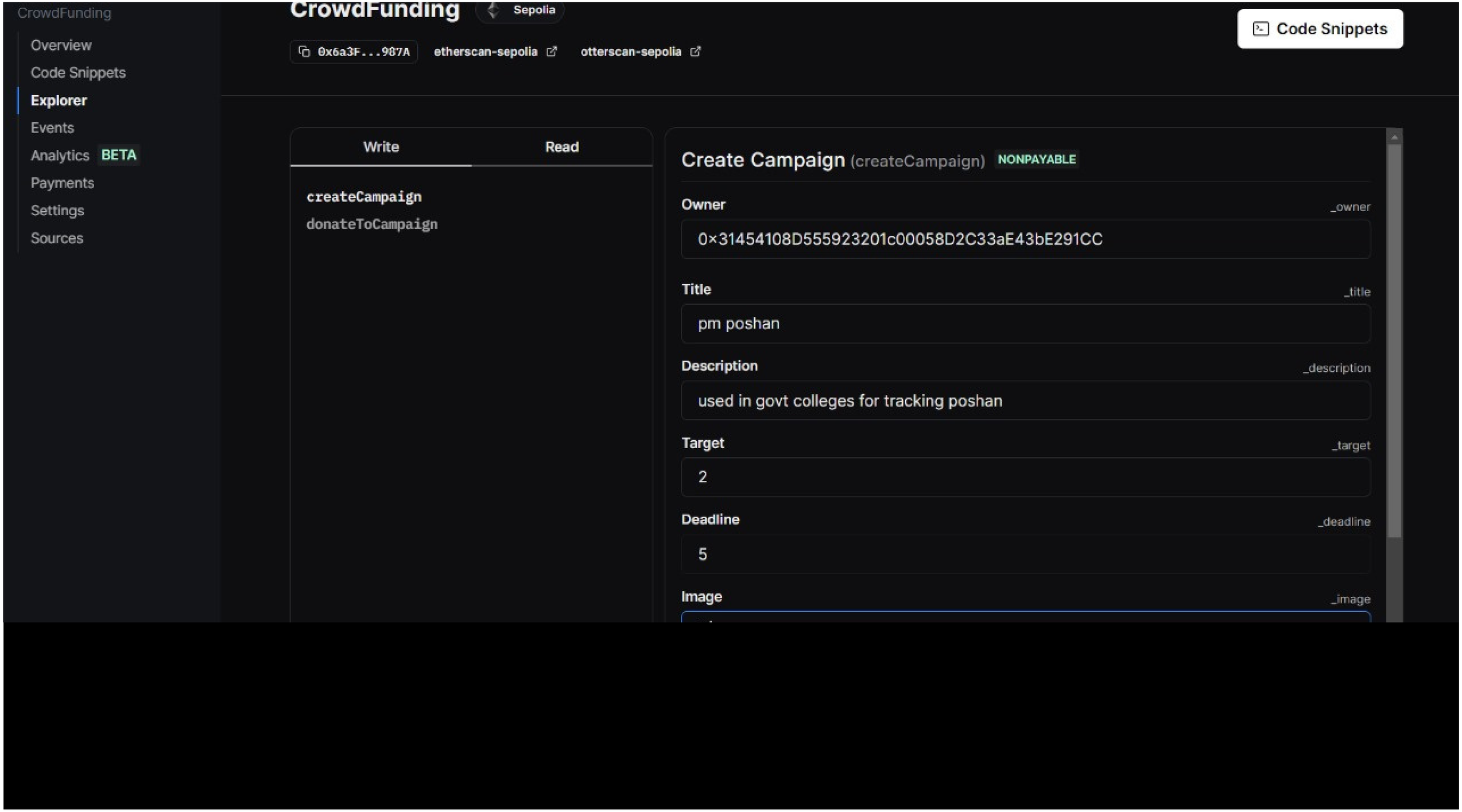
Implementation

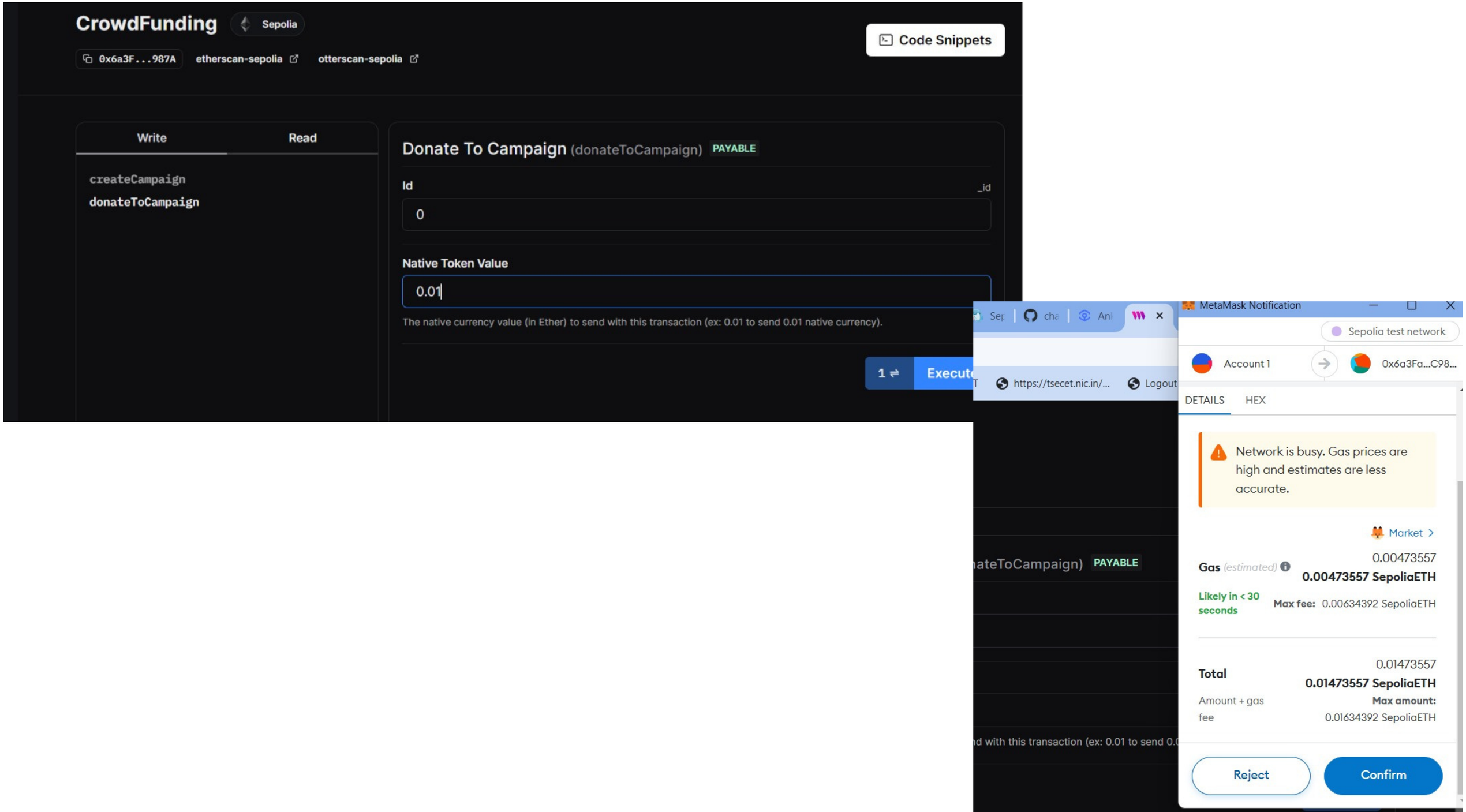

EXPLORER
CROWDFUNDING
client
web3
artifacts-zk
cache-zk
contracts
CrowdFunding.sol
node_modules
.env
.gitignore
hardhat.config.js
package-lock.json
package.json
README.md
package-lock.json
CrowdFunding.sol
hardhat.config.js
package.json
.env
.gitignore
web3 > contracts > CrowdFunding.sol
38
39 function donateToCampaign(uint256 _id) public payable {
40 uint256 amount = msg.value;
41
42 Campaign storage campaign = campaigns[_id];
43
44 campaign.donators.push(msg.sender);
45 campaign.donations.push(amount);
46
47 (bool sent,) = payable(campaign.owner).call{value: amount}("");
48
49 if(sent) {
50 campaign.amountCollected = campaign.amountCollected + amount;
51 }
52 }
53
54 function getDonators(uint256 _id) view public returns (address[] memory, uint256[] memory) {
55 return (campaigns[_id].donators, campaigns[_id].donations);
56 }
57
58 function getCampaigns() public view returns (Campaign[] memory) {
59 Campaign[] memory allCampaigns = new Campaign[](numberOfCampaigns);
60
61 for(uint i = 0; i < numberOfCampaigns; i++) {
62 Campaign storage item = campaigns[i];
63
64 allCampaigns[i] = item;
65 }
66
67 return allCampaigns;
68 }
69 }

Output

```
∴ Waiting for a response from the dashboard

Successfully linked your account to this device
✓ Detected project type: hardhat
⠋ Compiling project...
✓ Compilation successful
✓ Processing contract: "CrowdFunding"
✓ Upload successful
✓ Open this link to deploy your contracts: https://thirdweb.com/contracts/deploy/Qm
PS C:\Users\saisr\OneDrive\Desktop\crowdfunding\web3>
```


CrowdFunding
Overview
Code Snippets
Explorer
Events
Analytics BETA
Payments
Settings
Sources
CrowdFunding
Sepolia
0x6a3F...987A
etherscan-sepolia
otterscan-sepolia
Code Snippets
Write
Read
createCampaign
donateToCampaign
Create Campaign (createCampaign) NONPAYABLE
Owner
_owner
0×31454108D555923201c00058D2C33aE43bE291CC
Title
_title
pm poshan
Description
_description
used in govt colleges for tracking poshan
Target
_target
2
Deadline
_deadline
5
Image
_image


CrowdFunding
Sepolia
0x6a3F...987A
etherscan-sepolia
otterscan-sepolia
Code Snippets
Write
Read
createCampaign
donateToCampaign
Donate To Campaign (donateToCampaign) PAYABLE
Id
_id
0
Native Token Value
0.01
The native currency value (in Ether) to send with this transaction (ex: 0.01 to send 0.01 native currency).
1 ⇌
Execute
https://tsecet.nic.in/...
Logout
MetaMask Notification
Sepolia test network
Account 1
0x6a3Fa...C98...
DETAILS
HEX
Network is busy. Gas prices are high and estimates are less accurate.
Market
Gas (estimated)
0.00473557
0.00473557 SepoliaETH
Likely in < 30 seconds
Max fee: 0.00634392 SepoliaETH
Total
0.01473557
0.01473557 SepoliaETH
Amount + gas fee
Max amount:
0.01634392 SepoliaETH
Reject
Confirm

Scope limitations

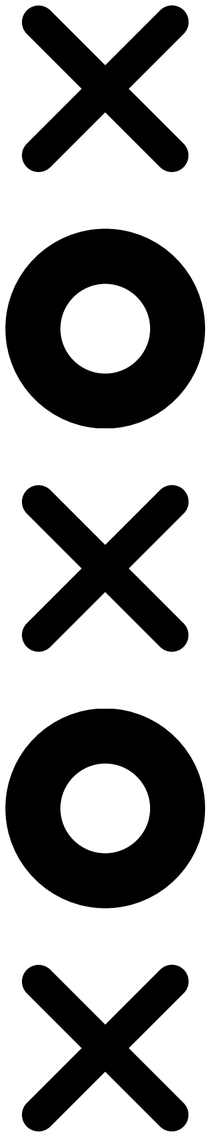
1.Dependency on Third-party Services: Integration with external services like Metamask, WalletConnect, or Thirdweb introduces dependencies. Changes or disruptions in these services could impact the functionality of the platform.
2.User Learning Curve:
Users unfamiliar with blockchain technology may face a learning curve, potentially affecting the platform's accessibility for a broader audience.
3.Scalability Challenges:
The scalability of the system may be a concern during periods of high user activity or increased transaction volume.
4.Community Trust Building:
Building trust within the user community, especially in the context of financial contributions, may take time. Establishing a transparent and reliable reputation is crucial for sustained success.

Conclusion

- *The "SmartFund: Crowdfunding Empowered by Blockchain" project is now live, fully functional, and successfully addresses issues of transparency and fraud found in traditional crowdfunding.*
- *By leveraging blockchain technology, the platform achieves transparency, security, and decentralization, eliminating concerns about fraud.*
- *This project has covered the weak points of general crowdfunding platforms to provide transparency to the process of crowdfunding and build trust among people, so that they may contribute their wealth to good causes without fear of fraud.*
- *It has filled the gaps in conventional crowdfunding, fostering trust among contributors.*
- *“SmartFund” is positioned to reshape crowdfunding, playing a pivotal role in how funds are raised and investments are made.*

References

Blockchain & Smart Contracts: References:
Learning Solidity Language: References:
web3.js - Ethereum JavaScript API: References:
How data is stored in Ethereum Blockchain: References:
Metamask Ethereum Wallet : References:
Gebert et al., “Application Of Blockchain Technology In Crowdfunding”, 2017, New European.
Cumming et al, “Crowdfunding from Fraudfunding”, Max Planck Institute for Innovation & Competition Research Paper No. 16-09. Available at SSRN: References:.
Yadav, Nikhil, and V. Sarasvathi. "Venturing crowdfunding using smart contracts in blockchain." 2020 Third International Conference on Smart Systems and Inventive Technology (ICSSIT). IEEE, 2020.



Thank You