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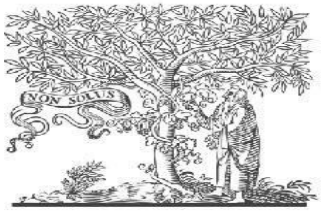

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TRUST FUND DECENTRALIZED APPLICATION

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Abstract

After the COVID-19 pandemic hit throughout the globe, the financial system of most nations was given tampered with. Since then, online engagement is at its top and people determined social media as a brand new weapon to invest in and promote their enterprises and skills. This led to the advancement of a capability idea of investment, referred to as crowdfunding.

All the traditional crowdfunding systems are not much secure and reliable. In order to protect the funds from being misused and the platform from getting hacked, we should implement the solution using Blockchain.

The use of blockchain technology in crowdfunding has several advantages, including transparency, security, and lower transaction costs. Since blockchain transactions are recorded in a public ledger, all stakeholders can access and verify the transactions, ensuring transparency. Additionally, the use of smart contracts ensures that funds are automatically distributed based on pre-determined rules, reducing the risk of fraud or misuse of funds.

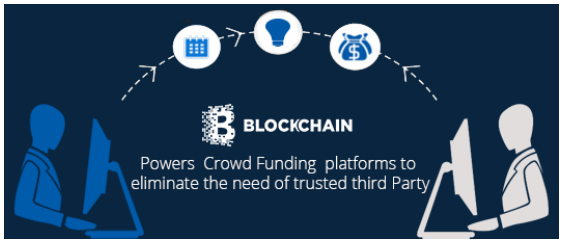
Keywords: Crowdfunding, Cryptocurrency, Blockchain,Dapp, Ethereum, Smart Contracts, Metamask, Web3.

Introduction

Introducing our revolutionary crowdfunding platform, built on the latest blockchain technology. Our platform provides a decentralized, secure, and transparent environment for entrepreneurs and startups to raise funds from a global community of investors without the need for intermediaries.

Our platform allows entrepreneurs to issue digital tokens or coins to investors, which can be used to access their services or products or traded on cryptocurrency exchanges. With the use of smart contracts, our platform ensures that all transactions are secure, automated, and transparent, providing an efficient and

cost-effective alternative to traditional fundraising methods.



We take the security of our platform seriously, and our advanced blockchain technology ensures that all transactions are immutable and tamper-proof, reducing the risk of fraud and scams. Additionally, our platform provides a level of transparency that is unparalleled, allowing investors to track their investments and monitor the progress of the projects they have funded.

With our blockchain crowdfunding platform, entrepreneurs and startups can access a global pool of investors, raise funds quickly and efficiently, and bring their innovative ideas to life.

LITERATURE SURVEY

Here is a brief literature survey on crowdfunding using blockchain:

"Blockchain for Crowdfunding: Decentralized Applications (DApps)" by Jia-JhenSyu et al. (2018): This paper explores the potential of blockchain technology for crowdfunding, highlighting the benefits of decentralization, transparency, and security. The authors discuss the technical aspects of using blockchain for crowdfunding and provide a framework for developing blockchain-based crowdfunding platforms.

"Crowdfunding on the Blockchain: A Case Study of Crowd Genie" by Wan Nurhayati et al. (2020): This paper presents a case study of Crowd Genie, a Singapore-based peer-to-peer lending platform that uses blockchain technology for crowdfunding. The authors examine the benefits and challenges of using blockchain for crowdfunding and discuss the potential for future applications.

"Blockchain and Crowdfunding: A Comprehensive Review" by Arif Sari et al. (2021): This paper provides a comprehensive review of the existing literature on blockchain and crowdfunding. The authors analyze the benefits and limitations of using blockchain for crowdfunding and identify areas for further research.

"Blockchain Crowdfunding Platforms: A Comparative Study" by Sergio Oliveira et al. (2019): This paper compares different blockchain-based crowdfunding platforms, including Giveth, Colony, and BitGive. The authors evaluate the technical features and usability of each platform and discuss the potential for blockchain technology to revolutionize crowdfunding.

"Blockchain and Crowdfunding: A Perfect Match?" by Nicholas Marques et al. (2019): This paper examines the potential of blockchain technology to improve the crowdfunding process, particularly in terms of transparency and security. The authors analyze the benefits and challenges of using blockchain for crowdfunding and discuss the potential for future applications.

Problem Identification

Humans constantly were insecure about the risks crowdfunding platforms come with. The most not unusual troubles they face are maximum of the campaigns around the world aren't regulated and some of the group investment campaigns grew to become out to be a fraud. Except for the completion of some projects became extensively not on time. To solve the above-listed issues, we got here up with the answer as our challenge. A Crowdfunding platform that allows donation over cryptocurrency. Crowd fundraising includes lots of transactions, therefore it's vital to deal with and file them legally. A smart contract is used as a result, which is a transaction protocol that routinely incorporates, manages, and statistics transaction movements on behalf of the undertaking's builders and buyers in line with the contract. which includes all projects and the alternative that manages transactions for each project. The primary additives of any crowdfunding are the undertaking supervisor, funder, providers, smart contract, spending request, and balloting mechanism.

Methodology

This research paper explains the importance of blockchain over centralized systems which are vulnerable. We collected all the crowdfunding scams that happened in the centralized system as which funds are stolen and being misused by third parties. Hence we came up with a solution by using blockchain technology. Since it is known for its security, efficiency, and decentralization, it is proposed that deploying a crowdfunding application using blockchain methodology is a good idea compared to a normal application. We will be using smart contracts to automate transactions and funds will be directly sent to the user.

Blockchain uses methodologies such as:

Peer to Peer: Peer-to-peer (P2P) is a type of network architecture where nodes in the network communicate directly with each other without the need for a central authority or intermediary. Blockchain technology is a type of P2P network architecture where nodes in the network validate and record transactions without the need for a central authority.

Consensus Protocol: Consensus protocol is a set of rules or algorithms that enable nodes in a distributed network to agree on the state of the network, even in the presence of faulty or malicious nodes. In blockchain technology, consensus protocols are used to ensure that all nodes in the network have a consistent view of the blockchain.

Prerequisites

There are a few requirements to take into account before creating a crowdfunding application using blockchain:

Solidity: One should have a basic understanding of the Programming language "solidity" which is used to write a smart contract on Ethereum Blockchain. It is the best language to

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create Decentralized Applications(Dapps) on Ethereum Blockchain.

Blockchain: Blockchain is a digital ledger technology that provides a secure and decentralized way of storing and sharing information. It is based on a network of computers that work together to validate and record transactions. One of the key benefits of blockchain is its decentralization, which means that no central authority controls the network, and transactions are validated by a consensus mechanism that involves multiple participants. This creates greater transparency and accountability in transactions, making it a reliable and trustworthy way of storing and sharing information. Blockchain also provides security through the use of cryptographic algorithms that ensure that data is protected against tampering and unauthorized access.

Metamask: MetaMask serves as a bridge between the user's browser and the Ethereum network, providing a secure way to manage digital assets and interact with dApps. It allows users to store and manage cryptocurrencies, such as Ether (ETH), and other ERC-20 tokens, and also allows users to connect to dApps and sign transactions without leaving their browsers.

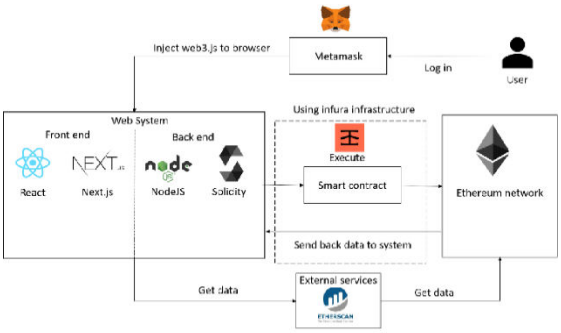
User Interface: One must have basic web development skills to create a user friendly interface to interact with the application. Using web3 libraries to interact with the blockchain is mandatory.

Regional Regulations: Awareness of legal and regulatory considerations, such as compliance with security laws, anti-money laundering regulations, and Know Your Customer requirements based on their country and region.

Implementation

To implement a crowdfunding application using blockchain, the first step is to choose the appropriate blockchain platform and we are using Ethereum blockchain which is famous for its Dapps. Secondly, write a smart contract that specifies every parameter of a Funding project such as Title, Amount to be raised, and Deadline inside the .sol file and, then deploy it onto the Ethereum blockchain. Smart contracts are self-executing programs that run on the Ethereum blockchain and can be used to automate the crowdfunding process.

The Next step in implementation is to develop a user-friendly interface to interact with the web3 decentralized application using web3 libraries. We are implementing a native react application with an intuitive interface.



After the development of the interface, users can create campaigns, donate to existing campaigns/projects, edit ,and

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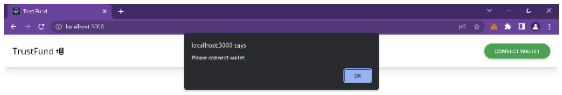
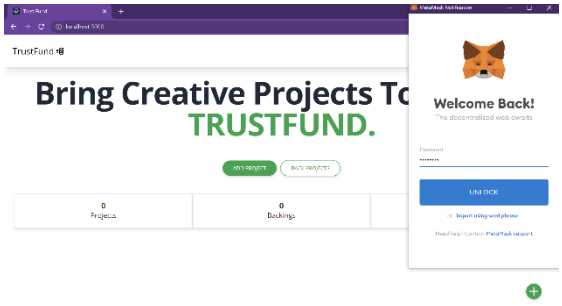
even delete their campaigns. If the project got the defined funds within the deadline the payout will be automatically transferred to the campaign creator.

Result

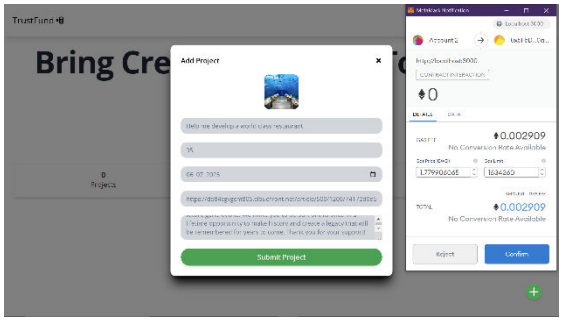
Home page**:**



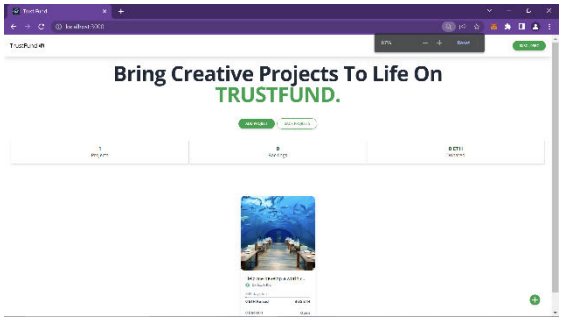
Connecting Metamask:



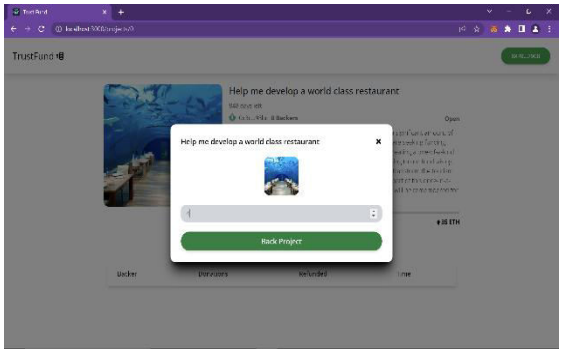
Creating a campaign:



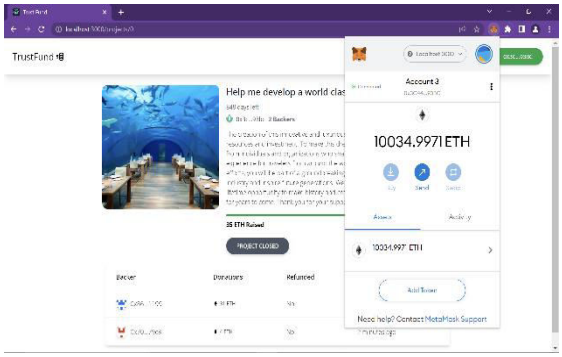
Dashboard:



Donating to the campaign:



Funds distribution:



Limitations

Low adoption: One of the biggest issues is that blockchain technology has only received a limited amount of adoption, which means that not everyone is aware of how to use meta mask and interact with web3 decentralized applications.

Regulatory issues: It may be difficult to verify compliance with legal and regulatory standards because blockchain-based funding systems are not subject to any governmental control. As many countries oppose the innovation of blockchain, we might face some regulatory issues.

High transaction fees: Transactions on the Ethereum blockchain are subject to fees, which can be significant. This can be a barrier to entry for smaller projects or investors who cannot afford the fees.

Future scope

Several potential future developments could address the limitations of crowdfunding using the Ethereum blockchain:

Deploying on multiple chains: Since it's only available on the Ethereum chain. We can deploy this application to other L1 chains such as polygon, Aptos, near, etc.

Using L2 solutions: The application we now deployed uses layer 1 which results in a high transaction fees. This can be overcome by using Layer2 solutions such as Optimism, arbitral, base ,etc.

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