Crowdfunding Platform Using Blockchain Technology

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Abstract: Crowdfunding is a type of internet fundraising that developed as a method for people to donate a small amount of money to help inventive people support a business or raise funds for medical emergencies. Initially, blockchain was only used as the foundation for cryptocurrencies, but it has since expanded into a new emerging technology that is being used in a wide range of businesses. Most technologies around the world are likely to adopt blockchain as an efficient method of making internet transactions in the future. The issue with today's crowdfunding method is that third-party intermediaries and contributors have no control over the funds they donate. This work presents a blockchain-based crowdfunding network that can provide a private, secure, and decentralised crowdfunding path by using Ethereum smart contract. The major goal of is to allow contributors to effectively contribute to any campaign all over the world by using Ethereum and building smart contracts that give contributors control over their Ethereum spent , also allowing campaign creators and contributors to effectively make and reserve financing for the project or campaign. The aim is to solve these problems by applying Ethereum smart contracts to the crowdfunding site so that the contracts will be fully automatically executed so that frauds can be prevented and a healthy relationship is built between the fundraisers, platform and the contributors.

***Keywords*: Crowdfunding, Smart contract, Blockchain, Contributor, Ethereum, Cryptocurrency.**

I.INTRODUCTION

Crowdfunding has become one of the most popular methods of raising funds for any project, cause, or individual in need. With the launch of Covid, Crowdfunding activities have been increased all around the world, ranging from tiny campaigns to help individuals acquire oxygen and medical assistance to huge funds like PM Cares. Contributors, crowdfunding platforms, and project administrators were the primary players in the crowdfunding event. Kickstarter.com, Indiegogo.com, and Mystartr.com are some of the most popular crowdfunding platforms. The biggest advantage of crowdfunding is that it can quickly raise the funds required.

Blockchain is a decentralized, immutable database that makes it easier to track assets and record transactions in a corporate network. A tangible asset (a house, car, cash, or land) is different from an intangible asset (intellectual property, patents, copyrights, branding) .On a blockchain network, virtually anything of value may be recorded and traded, lowering risk and lowering costs for all parties involved. Information is the lifeblood of any business. The faster and more precise it is, the better. Because blockchain delivers immediate, shareable, and entirely transparent information recorded on an immutable ledger that can only be viewed by permissioned network users, it is excellent for conveying that information. Orders, payments, accounts, production, and much more can all be tracked on a blockchain network. Because members share a single version of the truth, you can see all the intricacies of a transaction from beginning to end, providing you more confidence and opening up new efficiencies and opportunities.

Smart contracts are first-class citizens on the Ethereum blockchain and are an important aspect of the Ethereum development process. Smart contracts are identical to real-world contracts. The only distinction is that they are both digital. A smart contract is, in fact, a computer programme that is kept on a blockchain. Smart contracts are self-executing bits of code that run when the parties' pre-defined conditions are met. Smart contracts enable anonymous parties to conduct secure and trusted transactions without the need for a central authority's approval. Solidity and Vyper are used to create ethereum smart contracts. MetaMask is a cryptocurrency wallet that works with the Ethereum

network through software. It allows users to use a browser extension or a mobile app to access their Ethereum wallet, which can subsequently be used to interact with decentralized applications. ConsenSys Software Inc., a blockchain software business specializing in Ethereum-based tools and infrastructure, is the creator of MetaMask. MetaMask allows users to securely connect to decentralized applications, save and manage account keys, broadcast transactions, send and receive Ethereum-based coins and tokens, and store and manage account keys using a suitable web browser or the mobile app's built-in browser.

II.PROPOSED SYSTEM

This system is aimed to overcome the above major shortcomings with current crowd funding platforms. Crowd fundraising involves a large number of transactions, it is necessary to manage and document them legally. As a result, a smart contract is utilized, which is a transaction protocol that automatically executes, controls, and documents transactions on behalf of project creators and investors in accordance with the agreement.

Any web-based application is a centralized application which means that everything done on the platform is controlled by a single company server. Decentralized application is offered based on the Ethereum Blockchain, in which all campaign information, contributions, withdrawal requests, and funds are stored on a blockchain network that is open to all. The concept is called "Distributed ledger technology."

The distributed ledger and its contents are available to all network participants. Here, the transaction uses PoS in which it is more fast and secure than existing PoW. It is energy efficient in which the nodes are not competing against each other to attach a new block to the blockchain, energy is saved. Also, no problem has to be solved (as in case of Proof-of-Work system) thus saving energy. Proof of stake cuts out the need for complex computations. So, it beats proof of work when it comes to energy efficiency.

A transactional record that cannot be changed. Transactions are recorded only once with this shared ledger, reducing the duplication of effort. After a transaction is recorded to the shared ledger, no participant can edit or tamper with it. If a mistake is found in a transaction record, a new transaction must be entered to correct the problem, and both transactions are then visible. This means that all nodes on the blockchain may see and store funds and transactions preventing data from being held on a single or centralized server.

As a result, safeguarding the funds from falling into the wrong hands and being misused is an elegant and practical solution to the situation at hand.

III.MODULE DESCRIPTION

Modules Description:

The system has been designed in the form of three modules namely Creating a Campaign, Contributing a Campaign and Withdrawal of Funds.

Creating a Campaign:

In a couple of minutes, anyone may start a campaign, much as in the real world or on other crowdfunding platforms. An Ethereum-based smart contract will keep track of the campaign data, ensuring that it cannot be tampered with. A few basic fields must be filled out in order to create a campaign.

The creator of the campaign must provide the campaign name and a few sentences describing it. The campaign creator must determine the minimum donation amount and the target amount required for the campaign. The campaign creator is required to submit the image URL. It is preferable to produce a campaign-related graphic. The contributor cannot contribute less than the minimum contribution amount once it has been set. The most crucial point is that the campaign creator must connect their ethereum wallet before starting a campaign. If they do not have an ethereum wallet or have not connected their ethereum wallet through metamask, they will not be able to build a campaign.

Contributing a Campaign:

Users can share campaigns they have made, and anyone can contribute to them after they have been created. When a contributor clicks on a campaign from the main page, he is taken to the campaign contribution page.

The name and description of the campaign, the minimum amount of contribution set by the

campaign creator, the campaign creator wallet address, the number of requests so far given, the number of approvers or contributors who have contributed so far to the campaign, and the status of the fund collected will all be displayed on that page.If the contributor does not connect his ethereum wallet using meta mask, the person will not be able to contribute to the campaign. Before contributing to the campaign, the contributor can view the campaign withdrawal requests. The funds will be sent to the campaign address rather than to the campaign founder, making the procedure more efficient and anti-fraudulent.

Withdrawal of Funds:

The Creator of a Campaign can propose how the funds should be spent in the form of a Withdrawal Request. Anyone in need of funds for the same campaign cause can submit a withdrawal request using the site. They must present a valid reason for the requested amount. They should submit the address of their Ethereum wallet. The withdrawal request page has a table with columns such as request Id, withdrawal description, amount needed, recipient wallet address, approval count, and finalize. The approvers can decide whether or not to provide funds for the requests that have been submitted, as well as examine the request description. The request can potentially be denied by the approvers. Without the consent of approvers, funds cannot be withdrawn. The desired amount can be deposited into the recipient wallet once all approvers have authorized and finalized.

IV.SYSTEM FLOW

List of figures shows the system flow of this work where

Figure 1 describes the flow that user can create a new campaign or contribute to the existing campaign.

Figure 2 describes the flow that contributors can contribute to the campaign and analyze the withdrawal request.

Figure 3 describes about the flow of withdrawal request.

Fig 1. Flow of creating and contributing campaign

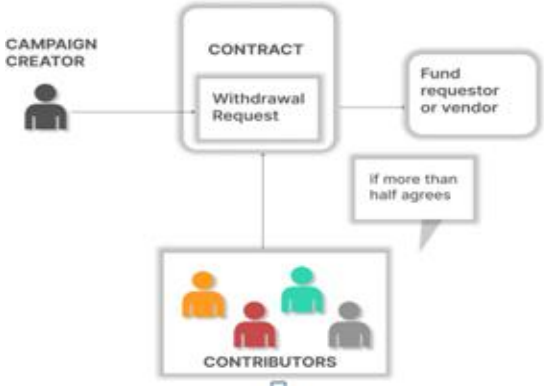

Fig 2. Flowchart for Contributors

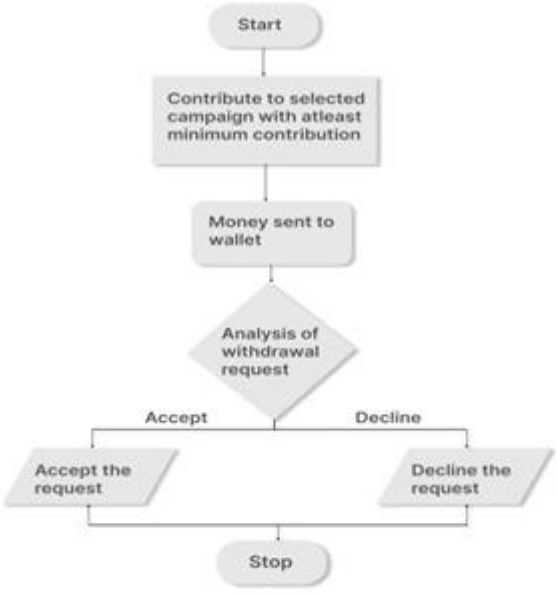

Fig 3. Flow of withdrawal request

V.CONCLUSION

Blockchain-powered Crowdfunding Platform is operational and safe to use. Traditional methods of crowdfunding have long been plagued by inconsistency and fraud. It is a preventable problem with a certain to put in place of a robust solution that will solve these long-standing issues. To a large extent, the goal of having a transparent, anti-fraudulent, decentralized platform was met. The project addressed the flaws in typical crowdfunding platforms in order to increase openness and trust in the crowdfunding process, allowing individuals to donate their money to worthy causes without worry of being scammed. For any concepts that are realized through the suggested crowdfunding application, the proposed research effort can develop further in the future in an easier and safer method.

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