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Blockchain-Based Crowdfunding Platform for Disaster Relief and Effective Charity

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ABSTRACT

Charity plays an essential role in our society, and often recognized as a type of social debt, leading to the circulation of a significant amount of money globally. We have seen a increased growth of organizations and public charity funds through recent years, collecting donations for various philanthropic needs. Unfortunately, most of the charity funds frequently gain much funds from the unethical organization, resulting in significant damage for industry's reputation, which results in reducing trust level which affects the ability to raise donations. We strongly believe that utilizing this technology will boost trust , increase efficiency, and encourage more donations. The Charity project, a blockchain-based charity foundation platform that facilitates the trustful network's formation and is accountable for collecting donation funds. The blockchain network contains publically recognized, trustful, and prestigious organizations. The complete system will be decentralised using Blockchain Technology, Smart Contracts and Cryptocurrency. We strongly believe that utilizing our technology will boost trust , increase efficiency, and encourage more donations. All organization's operations and functions within the platform will become fully transparent and visible, leveraging properties of immutability, provenance, and non- repudiation to the users. All organizations operations and functions within the platform will become fully transparent and visible, therefore the platform will reduce the results of dishonest actions, revealing fraudulent organizations' activity.

Keywords : Blockchain Technology, Charity, Donations, Peer-To-Peer Transactions, Cryptocurrency.

I. INTRODUCTION

Now a days Donors or investors are concerned about the impact of their contributions and are ready to donate generously for the causes they believe in but usually end up in not having any trust on the society. We have a lot of NGO's and other organizations who are in need of capital, who are working for the

betterment of society. Blockchain technology provides benefits that change the way business proceeds in the world. This new way of establishing trust helps business owners to think diversely. For charitable donations, donors must either trust a charity trust or spend time in searching crowd-funding sites based on their interests. There are a lot of online portals to donate to these charities but seems to be trust less. There are also few charity trust that call people for funds as they don't operate on a large scale. But they face a lot of problems to convey their true intentions and hence don't get enough donations. Blockchain is a peer-to-peer connections used to monitor transactions on the internet. In this project we have implemented on ethereum blockchain, interacts with the block chain through smart contracts for each transaction performed the transaction hash is generated which is provided as a proof for Transaction is performed safely/correctly. Hence, in spite of all the transparency that the charitable organizations are trying to implement in their platform, but there still exists a distrust about the way of how the money is being put to implementation. Also, if an individual wants to go out and do a noble deed by helping society , nobody would fund him as people would only trust recognized charitable organisations. Hence, in this way apart from NGOs and Organisations, individuals can also contribute their talent and time to contribute for the wellness of the society and hence can make the world better place to live. Blockchain technology increases the project transparency and has accountability. This technology helps to resolve the trust issues, as people already know what they are paying and the system involves a decentralized way to solve the problem. Through this technology donors can donate the larger funds. The user can keep a record of his transactions using Blockchain technology.

We are using the decentralized fault tolerant distributed system to build the platform where certificates will be kept on the public distributed network of blockchain. The blockchain provides a means to obtain a decentralized transaction ledger that can be used to generate, validate and send transactions to other nodes present in the same network. Blockchain can be applied in many fields like business, industry, healthcare and many more. The system proposed here is a system that validates itself and doesn't depend on the third party websites or software's. Blockchains are being used as they are not restricted to a particular system and because they can independently verify the integrity and consistency of transactions. Through blockchain, the charity system will no longer be monopolised and restricted to one authority. The public will have easy access to the transactions and can verify if their money is being used like they expected. Blockchain is being used by many private institutions to increase cyber security. The advantages of blockchain are that it is faster, cheaper, has a decentralised system and provides secure payment information. Loss of data due to single point failure can be eliminated through Blockchain technology. Our main contribution in this design of a blockchain network is that it addresses the issues and take advantage of the new features of the blockchain technology.

II. LITERATURE SURVEY

The blockchain provides a means to obtain a decentralized transaction ledger that can be used to generate, validate and send transactions to other nodes present in the same network. The blockchain can be applied to financial services, healthcare services and business and industry. This research presents an internet- based approach for crowd funding platform for disaster relief. It employs technologies such as web harvesting data, and a user-friendly online platform interface to raise public awareness of donating to people's cause.

[1]A charity application today needs a system that validates itself without depending on any other system or application. Blockchains are not restricted to a particular system because they can independently verify the integrity and consistency of transactions. Ethereum is chosen as a platform because it is a public platform and has better scalability. It can run 7-20 transactions per second. [2] Through blockchain, the charity system will have no longer control ove rthe system and restricted to one's authority. The public will have easy access to the transactions of the organization's and can verify if their money is being use properly. This helps in equal distribution of the resources to the people and increases the accountability of the Government since all the transactions are recorded and can be viewed in case of disparity. The advantages of blockchain are that it is faster and cheaper and has a decentralised registry and provides and makes secure payment information.

[3] Proposed system will trace the donations by implementation of Byzantine consensus algorithm for providing scalability. [4] Implementation of blockchain technology can be adapted for the realm of charitable donations and social entrepreneurship. [5] Introduced a novel use case where the conventional methods can be improved through decentralization with blockchains. Transactions or simply data are bundled into blocks and supported with the metadata that helps to chain the block. [6] Efficient mining of bitcoin, Distributed ledger technology is the emerging new way of keeping records by distributing them to the participants of a network. Peer-to-peer networking is used to scale the reach of these networks so that participants can all maintain and witness the same set of transactions. [7] Ethereum scripts for writing rules and protocols which controls the flow of transactions and data throughout the platform.

[8] In India, an Aadhar number is issued to all Indian citizens that asserts their biometric data along with their location and other details. The Aadhar can be utilised along with Blockchain technology for many applications like healthcare and voting, data loss due to single point failure and privacy disclosure can be eliminated through Blockchain. [9] Consensus protocol is of a large significance as it decides the parameters on which the new node is validated. An inappropriate consensus protocol may lead to undesirable results while using the application.[10] Blockchain technology can create new opportunities for each industry through its features and capabilities.The challenges faced by a blockchain application are the need of resources and scalability.

III. PROPOSED SYSTEM

A Decentralized System that provides security and prevents loss of Transactional Data. The beneficiaries can get help and create charitable projects through the platform. Money Lenders learn about charity projects on the platform, then donate to beneficiaries or the charity organizations. Beneficiaries upload their information to the platform for help, they can get and spend tokens in accordingly. Funds are directly transferred to beneficiaries .No third Party is involved. Low Transaction charges as no governmental charges are included and the Transactional Fees(Gas Fees) remains same for all the transactions irrespective of the amount that is transferred.

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V. MAIN OBJECTIVE

The main objective of the project is to develop the platform such that the charitable trust or organizations. The main purpose of the platform are as follows:-

- To make the work of charitable trust with reporting document which makes it more easier to have a record of transactions.
- To increase the transparency of charitable trust by creating a common platform based on Block chain Technology.

VI. PLATFORM FUNCTIONALITY

The functionality of the platform depends on two people: Donor and Charitable Organization.

The functionality of a donor:

- The main functionality of a donor is to get the information about his donations to the charitable organization through the platform. A donor can get the information about his donations and can have the information on the flow of funds for different companies through a unique ID.

The functionality for charitable Organization:

- The main functionality of charitable organization is to get the updated information about the donations through many donors and foundations. The organization need to be able to record the information about the donations. Based on the donations, a charitable organization can give a report for publication on the website.
- The combination of platform with the charitable trust takes place through the API through which all donations and movements will have to be registered.

VII. CONCLUSIONS

We have proposed a system for charity work to make it more transparent through a decentralised system. It will provide a trusted system and will make the entire process more transparent. This will help to do away with the middle men between donors and charitable trust. Thus, the proposed system will trace the donations and let the donor know that his/her money has reached the beneficiary successfully. Charity chain uses Smart contracts to perform the process of donations and track them. Ethereum platform is used as it is a public platform. This will provide transparency in the donations will ultimately motivate the donor to contribute more to such flexible yet efficient and traceable charities. The Covid-19 situation has also given rise to a large demand of funds and materials. It has energized to monitor the process of capital flow and improve the functional network chain of relief materials. Blockchain has receiving more attention in the charity donation system in sharing donation data, in managing information among donors and beneficiaries, in contract management among charitable organizations and enterprises, and its application in dealing with the Covid-19-centered donations are growing increasingly day to day. It is an emergency response to specific regional disaster in the wake of the changing Covid- 19 status. Instead of a proof-of-work approach, we use a well known leader based consensus scheme from distributed computing, with the addition of incentives to participate in block creation. The ultimate goal of our research is to fulfill that blockchain supported solution taps into the integration of traditional web service and blockchain technology, speeds up the system development and then responds to the needs of users in a timely fashion.

Most importantly, the features of the system promote social good through incentives for transparency, accountability and participation.

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