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Monitored Charity Funds using Blockchain Technology

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ABSTRACT: In our country, charities are opaque and difficult to monitor, which has a negative impact on people's motivation to give. When deciding whether or not to do anything, there are a few things to consider. Many people donate money to charitable organisations.

They wonder if their contribution will make a difference. Many non-profit organisations People's faithin charity has been broken by organisations. and questioned the legitimacy of humanitarian projects by engaging in dubious business methods to boost profits

In today's non-profit industry, transparency is a key concern. Smart contracts [2] and block chain [1] create fresh opportunities by translating aid into digital assets for charity and increasing the trustworthiness of non-profit organisations. Donors may now trace the impact of their donations, and organisations can now measure the impact of their donations. To encourage donations, crypto tokens might be used.

KEYWORDS: Ethereum, Smart contract, Block chain, charity, digital ledger, transparency.

I. INTRODUCTION

In a democratic society, charity is essential. It is common knowledge that many situations in the world result in catastrophic loss. There were several faults in the old system, including a lack of openness, donor distrust, and corruption. With current charity platforms, we wanted to address the following major issues:

Security:

The funds must be more secure as they grow in size. Despite the fact that e-payments are protected by strict protocols such as symmetric encryption, they are nonetheless vulnerable to hackers. Because it has never been hacked, Block chain can provide that level of security.

Anti-fraud and transparency measures: We've seen and continue to see a lot of crowd funding scams. There is no way to keep track of how the money is used. We wanted to make the entire cash flow visible at all levels so that no funds were misused.

II. AIM AND SCOPE

Protecting Charities from Harm is a set of guidelines aimed to help trustees understand their legal obligations and responsibilities, as well as the strategy they should (best practise) take for their charity and its activity. This strategy will be determined by a number of considerations, including the kind of charity work and the danger involved, the amount of money involved, and whether partner organisations operate internationally, particularly in high-risk locations. This project details how trustees can do due diligence and monitoring, as well as the practical steps they can take to safeguard their charity's funds, operations, and reputation. This project will assist trustees in understanding how to comply with legal requirements, particularly when working with international partners and ensuring that the right application of laws is being followed.

III. GOALS AND OBJECTIVES

Good Monitoring procedures help trustees to fulfil their legal duties to ensure the charitable funds are used for the purpose's they should reach their intended recipients. They can only help trustees assess and review the key risks to the charity and its funds. The procedures, controls and systems the charity needs to use will develop on the charity and its activities and number of other factors. There are some things charity must do as a matter of law. Aside from those, the nature and the extent of the monitoring should be proportionate to the level of risks the charity is exposed to.

IV. LITERATURE SURVEY

A. Block chain: A block chain is a digital ledger that stores and organises data, particularly electronic data, accounting, retrieval, processing, and control reasons

A distributed ledger is a data structure that can be used to store and manage information bring a collection of uncommitted copies to a conclusion consistent state (eventual consistency) via a consensus mechanism.

A distributed ledger is implemented using block chain technology. A block chain is a network of fully functional nodes. (participants) who carry data on their own. When you get there, a consensus among network participants, and new data inserted. With this technology, data is immutable, transparent, and secure. Block chain.

B. Smart Contract : A smart contract is a contract that is entered into by two or more parties. Smart contracts enable for the implementation of business logic on a block chain that can be tracked. Smart contracts are value streams that are governed by a set of rules. Unlike traditional contracts, smart contracts are fully digital, consisting of pre-programmed code stored on the block chain. A smart contract may do calculations, store data, and transfer funds to other accounts on its own. A transaction in which the sender becomes the smart contract owner can be used to host a new smart contract on the block chain. Another function that may be defined in a smart contract is the self-destruct function. In most cases, the owner of the smart contract is the only one who can use it.

C. Ethereum: Rizal Mohd Nor proposed to use block chain technology to manage the assistance funds in disaster areas and establish the entire platform on Ethereum. The method is software-based, and it establishes transparency and trust through smart contracts with pre-programmed milestones for each philanthropic cause.

D. Cryptocurrency-tokens: Crypto currency is a sort of digital currency that uses cryptographic technologies to issue and govern its units. We obtained virtual Ethereum tokens for donation and expenditure using Ethereum's Ropsten test network. The Ropsten network has a simple access point in Infura. With the Meta Mask wallet, we can store Ethereum tokens and conduct transactions with them.

V. PROPOSED WORK

Any web-based application is a centralized application which means that anything we do on the platform is managed by a server that is owned by a single company. In our project we are proposing a Decentralized Application for charity funding in which there are two main categories- the campaign creators and donors. With the help of Ethereum Block chain the information about all the transactions is secured on a block chain network. Block chain has a series of blocks which holds funds and transactions and as a result, it does not permit the money to end up in the hands of anyone and minimizes all potentials of it being mishandled.

1.1 Proposed Architecture

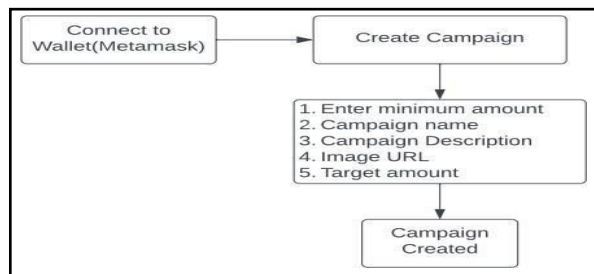


Fig 3.1(a) Creating a Campaign



Fig 3.1(b) Donating to a Campaign

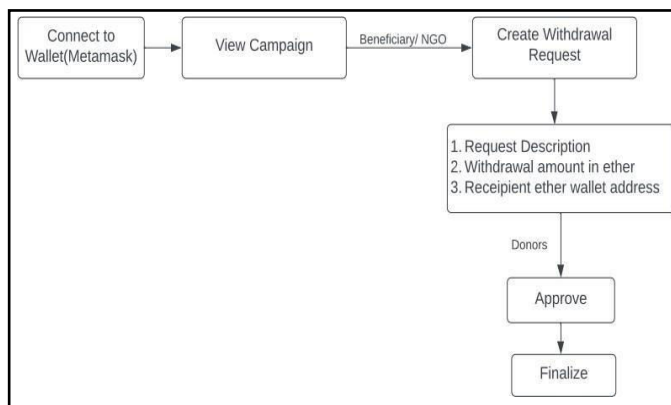


Fig 3.1(c) Withdrawal of Funds

(a) Creating a Campaign

For initiating a charity funding or to donate in an existing campaign, to perform these transfers, a client is first required to associate to the site their Ethereum wallet. Meta mask, a browser extension, is used to integrate the wallet, which can be utilized to approve exchanges for digital currency. Any client whose wallet has been associated with the application can add to a mission. The client is just required to choose the mission, enter the contribution sum they want to donate, and afterward approve the exchange (for this situation, allowing it via Meta mask). The mission data will be overseen by the smart contract which is Ethereum-based and as a result cannot be accessed maliciously.



(b) Donating to a Campaign

Clients with successful integration of wallet to the charity can donate the funds. The steps are easy with detailed instructions in the diagram given. The client needs to input the donation sum in their choice of campaign. Next step is to give consent for the transaction using Metamask. After the approval, assets will go directly to the campaign’s wallet address. The creator of the campaign will not receive the funds in their wallet, this safeguard makes this process more streamlined and keeps itsafe from unauthorized access.

(c) Funds Withdrawal

The creator of a campaign can suggests that the assets be used in a Withdrawal Solicitation. Anyone who offers more than a certain amount is referred to as an approver, and they will have theoption of supporting or rejecting the request

If you're in charge of the campaign, you may need to withdraw funds from the available pool for a variety of reasons. As illustrated in the diagram, you can make a Withdrawal Solicitation. To be approved, the request must have the support of more than half of the Approvers.

Taking into account the fact that if you are a Donor who has offered more than the specified base donation amount, you are an approver. You have the option of supporting or opposing the Maker's withdrawal demands.

3.2. Requirement Analysis

A. Software

1. **NextJS:** Next.js is an open-source React front-end development web framework that allows React- based web apps to perform server-side rendering and generate static websites.
2. **Chakra UI:** Chakra UI is a component toolkit that provides the building blocks needed tocreate React apps in a straightforward, modular, and accessible way.
3. **Solidity:** It is the programming language for implementing Ethereum based SmartContracts.
4. **Web3:** web3.js is a bunch of libraries that enables one to use HTTP, IPC, or WebSocket tointercommunicate with a nearby or far off Ethereum node.
5. **Ethereum Smart Contract:** It's a collection of functions and data stored at a specificEthereum Blockchain address.

B. Hardware

Operating system	Windows / Linux / macOS
Processor	i3 or Higher
RAM	4GB(Minimum)
HDD	80GB

VI. RESULTS

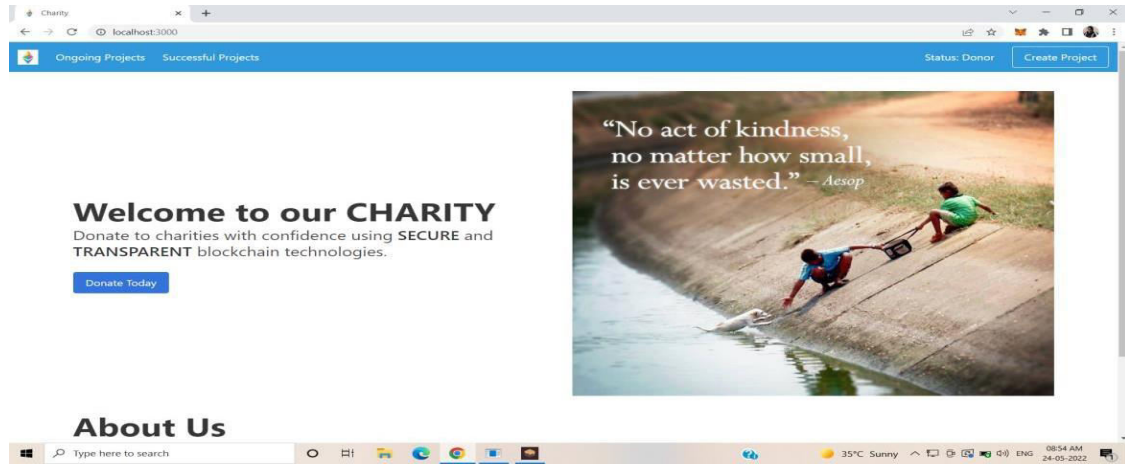


Fig 4 (a) Creating Campaign

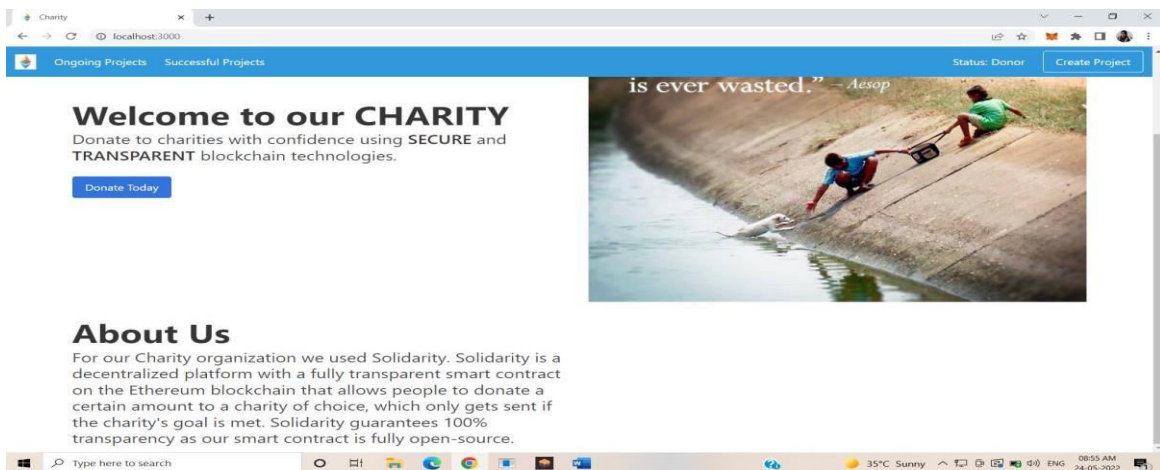


Fig 4 (b) Campaign description

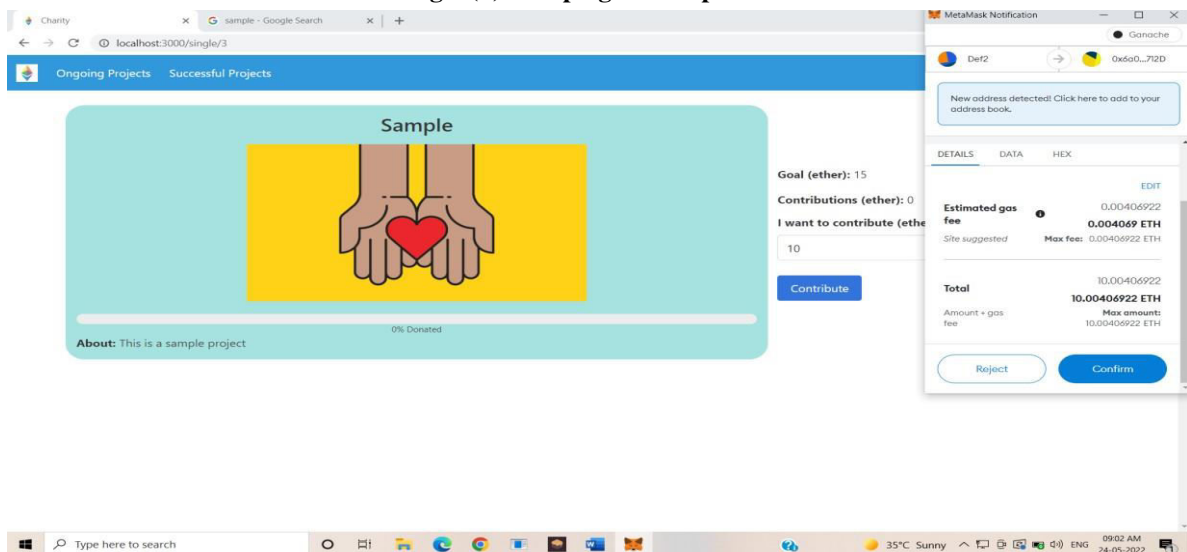


Fig 4 (c) Withdrawal Requests

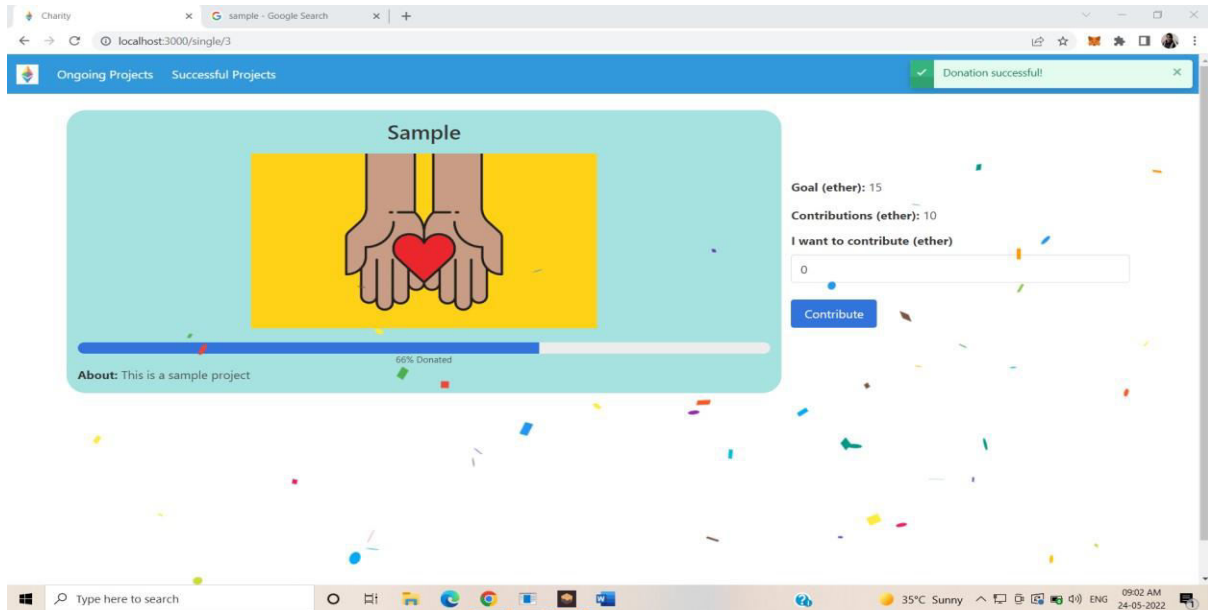


Fig 4 (d) Successful Donation

VII. CONCLUSIONS

In India's current charity system, insufficient transparency, data security, individual trust concerns, and issues relating to bogus foundations have all become problem areas that must be addressed immediately. This article proposed a revolutionary way to transform the Charity framework by employing block chain technology. Our suggested resolution was put in place to ensure a strong start-to-finish process and to provide a framework for decentralised foundations.

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