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BLOCKCHAIN-POWERED CHARITY: A REVIEW ON DECENTRALIZED, SECURE, AND RELIABLE DONATION SYSTEMS

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ABSTRACT:
Individuals In our fast-paced modern world, individuals often pursue personal advancement at the cost of social connection and cohesion. Many struggle to make a living, while others are intensely competitive, focusing only on financial gain. Yet, there are those who genuinely wish to give back to society for altruistic reasons. Unfortunately, existing centralized charity systems are often riddled with dishonest intermediaries, leading to distrust and reducing the impact of charitable contributions.
Imagine a solution where technology could transform charitable giving into a transparent, trustworthy, and decentralized system. By combining blockchain, cryptocurrency, and decentralized finance, we can create a charity system that harnesses even the most financially driven individuals in a way that benefits society. In this approach, individuals or organizations perform charitable work and receive certificates of completion, which can then be sold as assets, much like stocks in a financial market. This model allows individuals to raise funds for charity, with certificates issued solely based on verified charitable activities, ensuring that all proceeds ultimately support charitable causes.
For the development of this project, we propose using Django for the backend, Vue.js for the frontend, Python for core programming, and SQL for data management. This robust stack will support a scalable, reliable, and secure platform to facilitate decentralized charity contributions in a transparent manner.
***Index Terms*— Blockchain, SHA256 , Secured, Decentralized System, Donation, Reliable Charity System.**

INTRODUCTION :

People are increasingly motivated to make meaningful contributions to society. Many wish to donate generously to causes they care about but often hesitate due to a lack of trust in existing systems. Countless charitable organizations and NGOs work tirelessly for societal betterment, yet they frequently struggle to secure adequate funding. Despite the presence of various online donation platforms, concerns about transparency and trustworthiness prevent potential donors from contributing.
While many charitable organizations strive for transparency, doubts linger about how funds are ultimately utilized. Additionally, individuals wanting to make a personal impact face challenges in securing support, as donations typically flow only to well-known organizations. What's needed is a system that rewards noble deeds by providing proof of contribution on a trustworthy, third-party platform.

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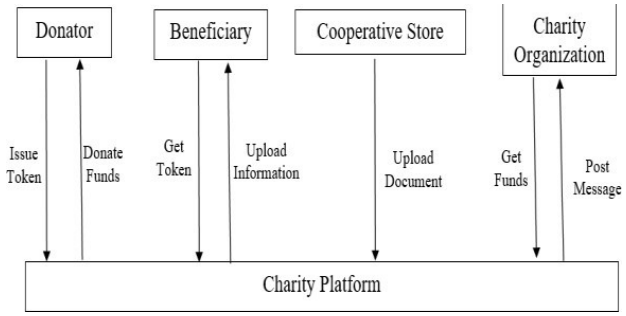
Our solution proposes a decentralized platform where individuals and organizations receive certificates for their contributions. These certificates, representing proof of work, can be issued on a blockchain-based platform and traded using cryptocurrency. By allowing donors to see tangible proof of impact, this approach builds trust. Furthermore, these certificates gain an exchangeable value, similar to stocks, and can be traded like financial assets. This system introduces a unique value mechanism, where individuals can continually earn by repeating charitable contributions, thus encouraging sustained efforts.

To develop this system, we propose using a technology stack that includes Django for a secure and scalable backend, Vue.js for an intuitive and responsive frontend, Python for robust programming logic, and an SQL database for reliable data storage. Leveraging blockchain for decentralized data handling and cryptocurrency for secure, transparent transactions will further enhance trust in the platform. This setup will allow for seamless certificate generation, verification, and trading, all while ensuring that donor contributions are directly linked to tangible social impact. By combining these technologies, we can create a user-friendly, trustworthy, and effective solution that empowers individuals and organizations.

PROPOSED WORK



Review Stage

We have suggested a decentralized system for using cryptocurrencies for charitable endeavors to increase transparency. Many people have become more altruistic as a result of urbanization's increased care for others. However, there are also some who wish to ultimately profit from the process. Both of these needswill be met by this method. Additionally, it will offer a trustworthy method and increase transparencythroughout the entire process. This will assist in removing middlemen between donations and those who perform acts of charity.

The adoption of blockchain technology has emerged as a solution to challenges in cross-regional and cross-domain charitable donations. Blockchain enhances data security, enforces access controls, ensures transparency in donations, and enables tracking of donor activities. With blockchain's decentralized deployment, no single individual can make unauthorized changes to the database, effectively addressing a key vulnerability in traditional systems. This makes the entire charity system more reliable and secure, fostering greater trust among donors and recipients alike. We also place a strong emphasis on the ability to manage and handle materials comprehensively, and we set up a system for charitable donation services that consistently advances in terms of structure, technology, and functionality. In the charity giving system, where data is shared, information is managedbetween contributors and recipients, contracts are managed between charitable organizations, and attention to blockchain technology is increasing daily.

SCHEMATIC DIAGRAM:

On charity platform there are few interfaces such asDonor interface where donor can donate funds, needy interface where needy can get the funds after enrolling, and admin interface where are transactions are validated.

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CONCEPTUAL DESIGN

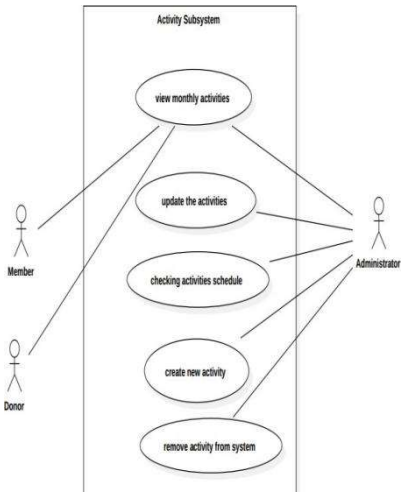

Fig. 2. Conceptual design of features

It emphasizes the comprehensive management andhandling capability of material supply, and establish a charity donation service system with sustained innovation in framework, technology, and operation.

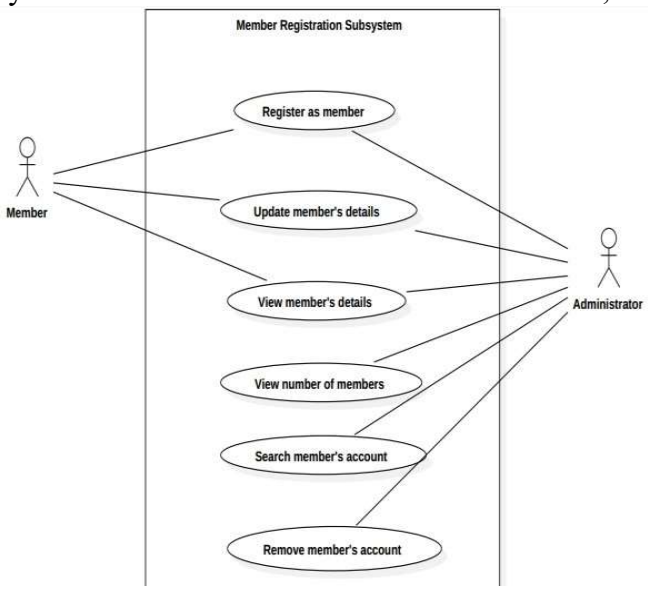

Fig 2.Block diagram of member interface

Multiple sections such as posts of the needy, charity lists are available which enhances convenience for thecontributors to come across the challenges to decide and donate.

In this we introduce a platform to generate the charities systems. We present how the products are generated by the system. Here both Contributor as well a needy (Charity) has to register first by undergoing the document verification in the sake of proof.

EXPERIMENTAL WORK:

The user interface for this charity platform is developed using HTML, CSS, and JavaScript, creating

multiple interactive pages such as Needy Signup/Login, Needy Document Verification, Needy Post, Donor Signup/Login, Donor Document Verification, Admin Interface, and Contact Us. The backend, implemented with Python and Django, securely manages all donor and recipient data, transaction histories, and insights. Data is stored and managed using an SQL database, ensuring efficient access and retrieval for all users.

The core of this decentralized charity system is built on blockchain technology, enabling secure and transparent transactions. Blockchain, a shared and immutable ledger, records each transaction and tracks assets across the network. An asset could be tangible (such as products) or intangible (like intellectual property). Blockchain's purpose is to allow digital information to be recorded and distributed without being edited, forming an immutable ledger of transactions. Each transaction is added as a "block" of data, recording details like who, what, when, where, and asset conditions.

Each data block links to the one before and after, creating an unbreakable chain as the asset moves or ownership changes. This chain structure, along with secure timestamping, prevents any alterations to blocks or insertion of new blocks between existing ones. This tamper-evident feature ensures trust and transparency in all transactions.

To secure transactions, hashing is applied, using the SHA-256 algorithm. SHA-256, a cryptographic hash function developed by the National Security Agency (NSA), creates a 256-bit output, providing a unique, fixed-size hash for data of any length. Unlike encryption, hashing transforms data into an irreversible, fixed-size string that verifies data integrity without revealing the original content. This is critical for applications like password storage, digital signatures, and transaction verification, where secure verification without access to plain-text data is essential.

The system is designed with a decentralized architecture using Django for the backend, Vue.js for an interactive and responsive frontend, and blockchain for secure, decentralized deployment. This combination of technologies offers a reliable, transparent, and user-friendly platform where individuals can engage in charitable activities, knowing their contributions are managed securely and transparently.

CONCLUSION:

To enhance transparency through a decentralized approach, we propose using cryptocurrencies to support charitable efforts. Urbanization has fostered a greater sense of compassion, motivating more people to contribute to society. This system will accommodate both altruistic individuals and those seeking to benefit from their contributions, satisfying diverse motivations. By removing intermediaries between donors and beneficiaries, it will increase trust and provide a clearer, more direct giving process.

We have outlined each component of the system, creating a comprehensive, decentralized, and secure charity platform. Multiple user interfaces, including roles for Needy, Contributor, and Admin, are designed and securely managed. Each action within the platform is thoroughly validated, further enhancing the system's security and reliability.

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