

# Securing Charity Donation System using Blockchain

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**Abstract:** Charities and non-profit organisations play a key role in tackling many social concerns and giving support to those in need in the modern digital era. However, because of problems including a lack of trust, accountability, and openness, managing charitable donations and making sure the allocation of cash is transparent can be difficult. This study suggests a blockchain-based charity donation management system as a solution to these problems. Blockchain, a distributed ledger technology, provides a clear, safe, and unchangeable method of keeping track of transactions. A wide range of parties will be involved in the system, including donors, charities, and beneficiaries. The funds will be accessible to charities using a private key, who will also have a public address where they can accept donations. For security reasons, user information and the money will be encrypted using the SHA-256 technique and stored in database. The technology will also offer real-time donation tracking so that contributors can monitor how their money is being used.

**Keywords:** Block chain, Secure Hash Algorithm-256, Encryption

## I. INTRODUCTION

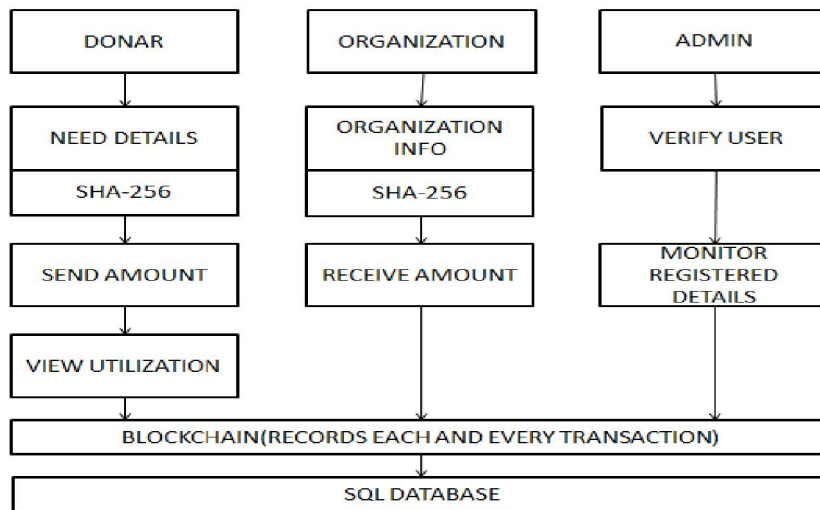
A democratic society must prioritise charity. It is well known that there are several events that occur in this world every year that result in catastrophic loss, whether it be connected to property or life, and inflict significant harm. Many those affected need assistance from humanitarian organisations, which may include financial aid for basic necessities, to recover from various forms of losses. People are today more eager than ever to give back to society. So, charity is a rapidly expanding industry today that has moved away from traditional organisational models and towards a decentralised crypto-currency-based one. We will therefore put out a decentralised system based on blockchain that serves as a platform to distribute funds for donors to other users who have made requests. Everything is happening with the utmost security and confidence. In an effort to profit from our generosity and compassion for those in need, fake charities strive to exploit these qualities in us. In order to get your money, scammers will pose as legitimate charities. These frauds steal funds from legitimate charities and causes, which is in addition to costing you money. Charity donation system using blockchain technology can provide a secure, transparent and cost effective platform for charitable organization to receive and distribute donation ensuring that funds are properly allocated and used for their intended purposes. By using SHA-256 to generate a unique identifier for each block in the chain, the blockchain is able to maintain a secure and tamper-resistant record of all transactions. This helps to ensure that all participants in the network can trust the integrity of the blockchain, and that transactions cannot be altered or deleted without being detected.

## II. BLOCK CHAIN

A blockchain is a decentralized digital ledger that uses cryptographic algorithms to secure and verify transactions between participants in a network. The ledger consists of blocks of data, each containing information about previous transactions, a timestamp, and a unique cryptographic hash that verifies the integrity of the block. Once a block is added to the chain, it cannot be altered without the consensus of the network, making it highly resistant to tampering and fraud. This makes blockchain technology well-suited for a variety of use cases, including financial transactions, supply chain management, identity verification, and more. The first step in the blockchain process is the creation of a block. A

block is a group of transactions that have been validated and are ready to be added to the blockchain. Before a transaction can be added to a block, it needs to be validated by nodes on the blockchain network. This process involves checking the validity of the transaction, ensuring that the sender has the necessary funds, and that the transaction has not already been added to the blockchain. Once a block is created, it is assigned a unique identifier called a hash. This identifier is created using complex algorithms that ensure the integrity of the data within the block. The validated block is then added to the blockchain network. Each block contains a reference to the previous block, creating a chain of blocks that cannot be altered without affecting the entire chain. For a blockchain network to function properly, there needs to be a consensus mechanism in place. This mechanism ensures that all nodes on the network agree on the state of the blockchain. Different consensus mechanisms exist, such as proof of work, proof of stake, and delegated proof of stake. Blockchain technology is highly secure due to the use of cryptography, decentralized network architecture, and consensus mechanisms. These features ensure that the data stored on the blockchain is tamper-proof, immutable, and highly resistant to attacks.

**III SYSTEM ARCHITECTURE**

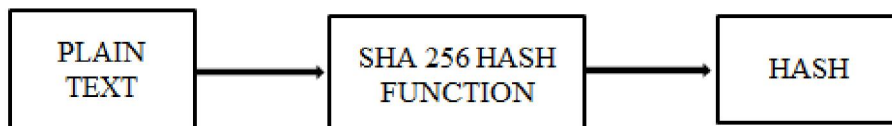


**IV. DESIGN ISSUES**

The challenge is to convey user information securely without resorting to fraud or scams. In this project, we want to leverage blockchain technology to securely transfer user and donation information while also giving users security.

**ALGORITHM USED**

The Bitcoin protocol uses the Secure Hashing Algorithm (SHA) -256 hash function and mining algorithm, which is a cryptographic hash function that returns a result that is 256 bits long. It controls address generation and management and is also employed in transactional verification. Technology pioneers mostly employ SHA-256 because, unlike some other well-liked hashing algorithms, it has not been "broken" and has no known security flaws.



#### IV. RESULTS AND DISCUSSION

- Using blockchain technology in charity donations is increased transparency.
- Using blockchain technology in charity donations is increased security and efficiency.
- In conclusion, charity donation systems using blockchain technology have the potential to increase transparency, security, and efficiency in the donation process. While there are still some challenges and limitations to overcome, the benefits of using blockchain technology in charity donations are significant and should be further explored

#### V CONCLUSION

In conclusion, a blockchain-based system for charitable donations has the potential to revolutionise the way donations are received and dispersed by nonprofits. Blockchain can improve efficiency and lower costs associated with conventional donation systems by offering a safe and transparent platform for recording donations, assuring proper fund allocation, lowering the risk of fraud and mismanagement, and automating the transfer of cash. Additionally, blockchain technology enables donors and charitable organisations to have more transparency and trust in one another, which can increase involvement and donations. By using blockchain, donors may increase accountability and transparency in the donation process by clearly understanding how their money is being utilised and the impact it is having. Overall, a blockchain-based system for charity donations has the potential to have a huge impact on the world of philanthropy and charitable giving, enabling people to make a difference in their communities and beyond.

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