

## Survey on Aid Donation Tracking Using Blockchain

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### ABSTRACT

The Blockchain, a decentralized digital ledger system which has now been emerged as a technology that combines cryptographic, data management, networking, and incentive mechanism to support the verification, execution and recording of transactions between parties. The blockchain technology was first introduced for supporting the digital currency transactions in a secured way but now its potential has been recognized as a great importance in all form of transaction. Aid-donation taking and providing companies can take advantage of it by providing a transparent and safe transaction mechanism with smart contract system to the donors. It will allow the user to track their donation's and will get to know about the utilization of their donation hence makes this a crystal-clear transparent mechanism.

**Keywords:** Blockchain, Cryptographic, Data Management, Networking, Incentive Mechanism, Transactions, Digital currency.

### I. INTRODUCTION

An increasing corruption and carelessness in different organization have led to decreasing faith of people towards these organizations. One of those organization are the aid-donation taking organizations which are meant to help others but is struggling from the same problem. Here blockchain can be introduced to create an online digital donation platform where every donor can donate easily and also they can track their donated amount and get to know about its utilization at ground level. This will increase the faith of people towards these organizations. Here user also have options to audit and also the smart contract system has been introduced here which is intended to automatically execute, control or document legally relevant events and actions as per the terms of an agreement. The basic objectives are to

reduce the intermediations, arbitrations and enforcement costs, fraud losses as well as reduction of malicious and accidental exceptions.

### II. METHODOLOGY

#### A. Proposed System:

In the existing system, the problem is. There is no track of the records of the money, transparency

- Payers are unaware of how their money has been utilized
- Fraudulent authorities indulge in corruption
- Corruption by the intermediaries administering funds and services.

These problems restrict payers from paying proper tax or donate in a campaign, as they are not sure about the legitimacy of authorities in the chain.

In the proposed system, the campaign creators will post their campaign for aid donation in the campaign and the interested people will donate the fund to the campaign. Where it defers from the old Aid donation platform is that all the money is now digital currencies like ether, dai. All ether coin will be recorded and keep tracks in the blockchain. Where the blockchain is an immutable ledger. The Donor has control over the funded money. The donor has full control over the money they have donated. By giving control on donated money the trust is built.

**B. System Implementation:**

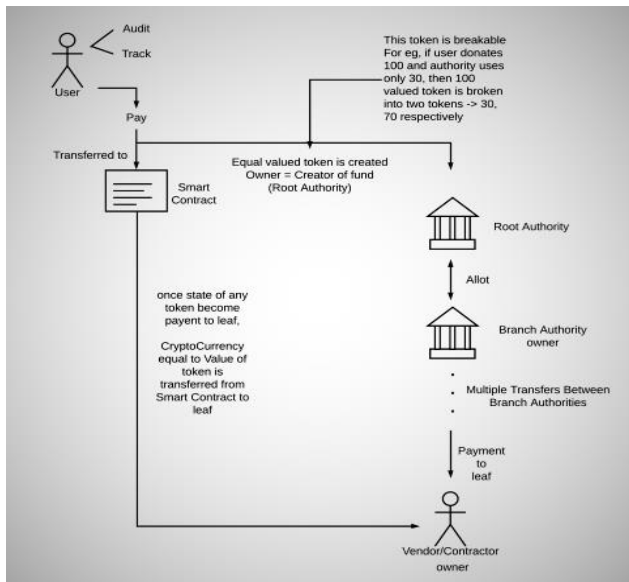


Figure 1: Flow of Aid Donation Tracking System

The proposed system is web application and smart contracts implemented using the solidity programming language. Solc is the solidity compiler used to compile the smart contracts and contracts file into bytecode and abi. The Bytecode will be deployed in the blockchain where the abi is in JSON format and is used to interact with the front-end. The front-end is designed using the React Js, Next Js, and Semantic-UI. The user interactive form will be used to donate easily. The creator or manager of the campaign or authority is to request money for donation. Moreover, the donor or payer can easily

track; audit the funds that has donated to authority or campaign. Then authority provide donated amount to vendor. This will be recorded and stored in the blockchain.

**C. Mathematical Model**

Let's Assume input as a

{t}= token,

{N}: as amount of money (Cryptocurrency for eg: ether) user donates,

{T}: as a required amount allotted by authority to a vendor /contractor / owner

Input: {N}

{N} is amount in Cryptocurrency donated by donor

$$\{T\} = \{N - t\}$$

(The token is breakable if user donates {N} and authority uses only {N}-{t} amount {N} valued token is broken into two parts)

First Part: {T}={N}-{t}

Second Part: {t}={N}-{T} respectively.

**D. Working Model and Architecture of project**

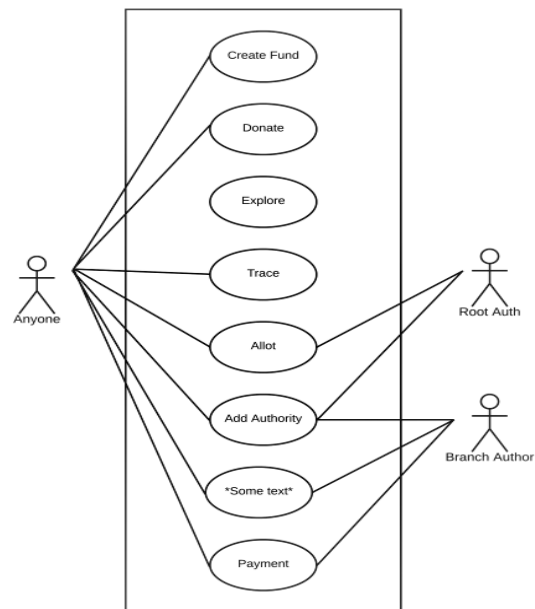


Figure 2: Working Model

A Both Aid Donation and Cryptocurrency is a trend on the internet and they match perfectly. Blockchain technology is one solution that can be used to reduce

the problems that occur in aid donation system. The contract is written in a way that all money will be sent to the authority or campaign. When the request meets the specified condition then required amount will be transferred to the Vendor. In addition, anyone can create funds add authority, donate amount to authority, trace the amount donated in authority and root authority can allot the donated amount to vendors.

Ethereum is an open-source, public; blockchain based distributed platform and operating to featuring smart contract functionality. It is the modified version of Bitcoin via transaction-based state transitions. Ether is a cryptocurrency that is generated and used by the ethereum platform. Ethereum provides a decentralized operating, the Ethereum Virtual Machine (EVM), which can execute an application on the public nodes.

Metamask creates a transaction signs it with user's private key and sends that transaction to Ethereum network. These transactions can be tracked by Ether scan using this procedure the aid donation system works.

### III.CONCLUSION

Implementation of blockchain technology to Aid donation tracking provide transactions that are more transparent. As a result, users can feel more confident when they want to donate to an Authority. The application of smart contract on spending request also can help donor to know how their money are being spent. The purpose of a smart contract-based solution is to enable secure way of Aid donation by ensuring that the money donated by the donors is safe and also each and every step taken in the Authority with help of donated money has been tracked make a spending request where the purpose of using the money, to whom the money is being sent(vendor) and the amount needed should be mentioned. The main advantage of using the smart contract is the concept of blockchain that it is resilient against many threats. In addition, it provides many features like improved reliability, faster and efficient operation. It is user friendly, and has required options, which can be utilized by user to perform the desired operation. The expected goals can be achieved by the website are:

- Creating an Authority
- Contributing to Authority or campaign
- Track donated Fund
- Audit the donated Amount

### IV. REFERENCES

[1]. Singh, A., Rajak, R., Mistry, H. and Raut, P., 2020, June. "Aid, Charity and donation tracking

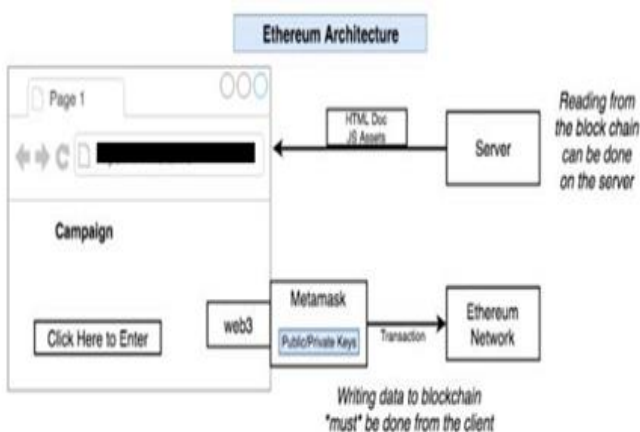


Figure 3: Architecture of Project

Figure 3 represents the architecture of the Ethereum, that shows how web application with solidity as backend works. Here server does far less work than what it does in a traditional web application. Server just sends some html, JavaScript content to the browser and but when user does an action or clicks on a button they do not reach server instead Ethereum application running inside the web browser uses web and communicates with Metamask, then

- system using blockchain.”, In 2020 4th International Conference on Trends in Electronics and Informatics (ICOEI)(48184) (pp. 457-462). IEEE.
- [2]. de Vrij, Anna. “Blockchain in humanitarian aid: a way out of poverty and famine”. Diss. Ph. D. thesis, 2018
- [3]. Reinsberg, Bernhard. "Blockchain technology and the governance of foreign aid.", *Journal of Institutional Economics* 15, no. 3 (2019): 413-429.
- [4]. Kumar, Randhir & Marchang, Ningrinla & Tripathi, Rakesh. (2020). “Distributed Off-Chain Storage of Patient Diagnostic Reports in Healthcare System Using IPFS and Blockchain.” 1-5. 10.1109/COMSNETS48256.2020.9027313.
- [5]. Saleh, Hadi & Avdoshin, Sergey & Dzhonov, Azamat. (2019). “Platform for Tracking Donations of Charitable Foundations Based on Blockchain Technology.”, 182-187. 10.1109/APSSE47353.2019.00031.
- [6]. Singh, Aashutosh & Rajak, Rohan & Mistry, Harsh & Raut, Prachi. (2020). “Aid, Charity and Donation Tracking System Using Blockchain.” 457-462. 10.1109/ICOEI48184.2020.9143001
- [7]. Nizamuddin, Nishara & Salah, Khaled & Azad, Muhammad & Arshad, Junaid & Habib ur Rehman, Muhammad. (2019). “Decentralized Document Version Control using Ethereum Blockchain and IPFS. *Computers & Electrical Engineering*.” 76. 10.1016/j.compeleceng.2019.03.014.
- [8]. Lin, Chao & He, Debiao & Huang, Xinyi & Khan, Khurram & Choo, Kim-Kwang Raymond. (2020). “DCAP: A Secure and Efficient Decentralized Conditional Anonymous Payment System Based on Blockchain. *IEEE Transactions on Information Forensics and Security*. PP.” 1-1. 10.1109/TIFS.2020.2969565.
- [9]. I. Sukhodolskiy and S. Zapechnikov, "A blockchain-based access control system for cloud storage," 2018 IEEE Conference of Russian Young Researchers in Electrical and Electronic Engineering (EIConRus), Moscow, 2018, pp. 1575-1578, doi: 10.1109/EIConRus.2018.8317400.
- [10]. C. V. N. U. B. Murthy, M. L. Shri, S. Kadry and S. Lim, "Blockchain Based Cloud Computing: Architecture and Research Challenges," in *IEEE Access*, vol. 8, pp. 205190-205205, 2020, doi: 10.1109/ACCESS.2020.3036812.
- [11]. M. D. Karumanchi, J. I. Sheeba and S. P. Devaneyan, "Cloud Based Supply Chain Management System Using Blockchain," 2019 4th International Conference on Electrical, Electronics, Communication, Computer Technologies and Optimization Techniques (ICEECCOT), Mysuru, India, 2019, pp. 390-395, doi: 10.1109/ICEECCOT46775.2019.9114692.