



# “Government e-Nidhi management Using Blockchain”

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**Abstract:** India, Being the world's fastest-growing economy, India holds immense potential to attract global customers and adapt to new technologies and changes, possesses tremendous potential to attract global customers and embrace new technologies and advancements. The process of digitalization holds immense capabilities, fostering improved connectivity across nearly every sector of the Indian economy. However, the distribution of these approaches can sometimes be uneven among certain government sectors. Embracing the latest technological advancements can bring about significant value and catalyze a drastic transformation in the mode of operations and work for a large segment of the population. One technology that stands out in this regard is blockchain. Blockchain is being globally adopted due to its decentralized approach, secure nature, immutability, and tamper-proof characteristics. In contrast, the management of funds in India remains a contentious issue, with substantial amounts of money allocated to various schemes in the public interest. Yet, due to a lack of transparency, blockchain can serve as a solution to bridge this gap and provide a fully secure and immutable environment for tracking funds.

**Keywords:** Blockchain, HyperLedger, IPFS, Blockchain applications.

## INTRODUCTION

Blockchain is a term that resonates in today's serious and rapidly advancing world. However, regrettably, only a few possess a comprehensive understanding of the technology. Some individuals mistakenly associate blockchain with cryptocurrencies like Bitcoin and Ethereum, while others recognize them as applications built upon the principles of blockchain. To dispel any confusion, let us shed light on the subject.

The inception of blockchain can be traced back to 'Satoshi Nakamoto,' the assumed pseudonymous figure behind the development of Bitcoin, who introduced the concept in a white paper. Blockchain serves as a method of storing data in a manner that presents challenges or renders it nearly impossible to alter, tamper with, or modify the records. It is often referred to as a digital ledger, much like the records maintained by financial institutions for tracking accounts.

In essence, blockchain is a digital ledger maintained within a decentralized and distributed environment. Each block in the blockchain is intricately linked to every other block,

## LITURATURE SURVEY

### Blockchain for government fund tracking using Hyper ledger

Blockchain is one of the technology that has created a disruptive change in many industries. Currently, Blockchain is being used in several places and there are many more applications of Blockchain yet to be discovered and implemented. Blockchain is characterized by its decentralized nature, integrity of the data stored in the chain and its openness. Due to these characteristics, another place where Blockchain can be

used is to release government funds for a project. Usually when a project is allocated funds, there is no knowledge as to how these funds are being used and a large part of it is never shown in records due to corruption. To solve this problem, a system has been proposed using Blockchain to provide the transparency. This paper also gives a description about a prototype which was developed using Hyperledger Composer. It then discusses the future development of this prototype and finally, concludes with the applicability of Blockchain.

### **Track-to-Track Association by Coherent Point Drift**

In this letter, we propose a probabilistic method, called the coherent point drift (CPD) algorithm, to address track-to-track association with sensor bias. In the CPD method for a pair of sensors, the local tracks of one sensor are represented by Gaussian mixture model centroids, and the local tracks of the other sensor are fitted to those of the first sensor by maximizing the likelihood. An expectation-maximization algorithm is proposed to find the correspondence matrix between the local tracks. Experiments illustrate the effectiveness of our method.

### **Online Multiple Object Tracking Based on Open-Set Few-Shot Learning**

How to make an online tracking model effectively adapt to newly appearing objects and object disappearance as well as appearance variations of target objects from few examples is an essential issue in multiple object tracking (MOT). Learning target appearances from few examples is a few-shot classification problem, while identifications of newly appearing objects and object disappearance has the aspect of open-set classification. In this work, we regard online MOT as open-set few-shot classification to address both learning from few examples (few-shot classification) and unknown classes such as new objects (open-set classification). Specifically, we develop an embedding neural network, called VOFNet, consisting of convolutional and recurrent parts, to perform open-set few-shot classification. The convolutional part constructs a feature from an example of a target object and the recurrent part determines a representative feature of a target object from few examples. Then VOFNet is trained to provide effective features for open-set few-shot classification. Finally, we develop an online multiple object tracker based on the combination of VOFNet and the bipartite matching. The proposed tracker achieves 49.2 multiple object tracking accuracy (MOTA) with 28.9 frames per second on MOT17

dataset, which shows a significantly better trade-off between the accuracy and the speed than the existing algorithms. For example, the proposed algorithm yields about 3.17 times faster speed with 0.99 times lower accuracy than recent existing MOT algorithm [1].

### **MOTIVATION**

Here we propose a smart system to track funds allocated to the state government as they travel through the government process at each stage. We here make use of blockchain technology to secure the transactions at every stage while maintaining transparency in every transaction sealing every transaction with proofs as the funds move ahead. This allows to maintain crystal clear record with on demand right to transactional data on a need to know basis. The system makes use of encryption to secure transactional data using hashes to maintain a block of transactions in a chain manner which is maintained and verified by every node involved to verify the transaction and save the data in a transparent form within the government. The system allows for a full proof, secure and authentic fund allocation and fund tracking system to help form an incorruptible government process.

### **PROBLEM DEFINITION**

State Governments need to cater to a huge number of responsibilities of a state. The working of state governments involves huge number of transactions towards various operations that need to be carried out throughout the state. This includes new projects, repair and maintenance works, awarding contracts, paying of government employees, farmer schemes and so on. A major hurdle that the top government face is the low level corruption that is sometimes impossible to track which deprives the state progress. Tracking it is a very difficult task due to the current system

### **AIM & OBJECTIVES**

- To design and create a system for funds tracking than existing system.
- To provide security and to have exact data of money use
- To develop a system which will be used by government for keeping track on their money

## PROJECT SCOPE

Blockchain is referred to as the Digital ledger, same as the ledger maintained financial institutions for keeping the track of records. Blockchain technology harnesses the distributed software and provides a shared ledger with a single source of truth for the recorded transactions without depending on a centralized entity for trust. Hence, it helps in trust in the digital world using technology. Any tangible or intangible asset can be represented and tracked on a Blockchain network, which brings transparency, increases processing speed and reduces cost. On top of Blockchain, can be automated through smart contracts. Therefore, benefits of Blockchain technology include transparency, security, and efficiency, which make it in enabling a layer of trust over Internet for various applications. Each block in a blockchain is linked to one another forming a chain of, that's why the name "Blockchain". Each block has certain information like number of transactions and every time a transaction happens the record gets updated in peer network.

## PROPOSED SYSTEM

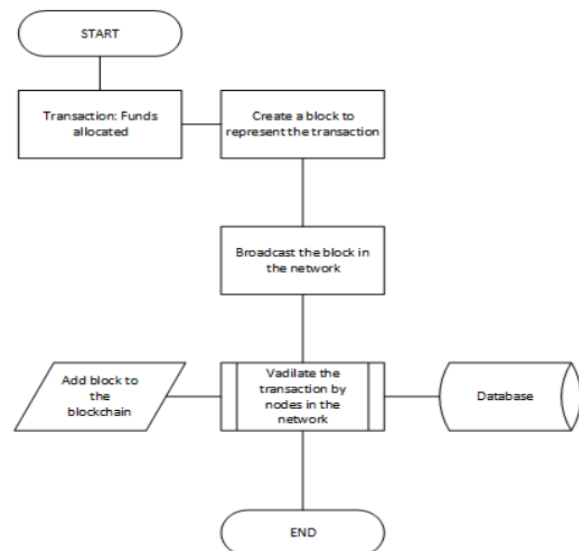
**FRONT-END PART:** We have developed a portal which provides the user to bid for the schemes that have been listed by the government for selling. For the front-end we have used web technologies like HTML5, CSS3 and JavaScript for adding the dynamicity to the portal and handling the logic part. This portal acts as the interface where the sellers (govt. Officials) and buyers (the ones bidding for particular schemes) interact and take the advantage of a full transparent and tamper proof system at their disposal.

**BACKEND PART:** The backend of our project is fully developed using frameworks based on Blockchain technology like Ganache, Truffle suite. Ganache is actually a personal Ethereum block chain which you can use to run tests, execute commands, and inspect state while controlling how the chain operates. It provides you 10 ethereum accounts with 100ETH each for testing the network. Also each and every transactions taking place in the network is stored in blocks with some details like Timestamp, hash of the block, and other necessary details required to make the ledger complete. Truffle is actually a development environment, testing framework all in one. It is based on Ethereum and allows the smooth and seamless development of DApps i.e. Distributed Applications. With truffle you can compile the smart contracts and deploy them into web applications and using it you can develop the frontend for your applications. The smart contracts are developed using the

Solidity language that we have used to set the terms of agreement between the buyer and sellers of the schemes. For the payment gateway we have used the MetaMask which acts as a wallet for your web applications. All the transactions taking place are confirmed using the metamask

**PROCESS:** Including many projects, maintenance or repairing work and recording employment of the area and many more are included in the role activity of the state as well as central government. A major hurdle that the top government faces is the low level corruption that is sometimes impossible to track which deprives the state of progress. Hence we are going to propose a theory based on the blockchain, which includes the tracking of every other transaction done within the city on the basis of small scale industries or large scale companies. This allows to maintain a crystal clear record with on-demand right to transactional data on a need to know basis

## SYSTEM ARCHITECTURE



**Fig -1:** System Architecture Diagram

## APPLICATION:

1. Tracking.
2. Security.
3. Banking
4. Government sector
5. Fund Monitoring

### RESULT AND ANALYSIS

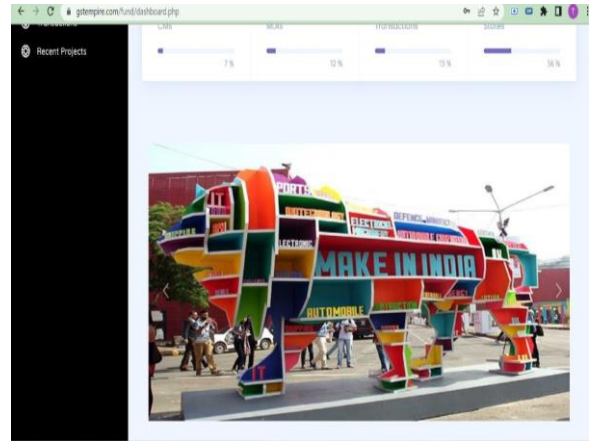
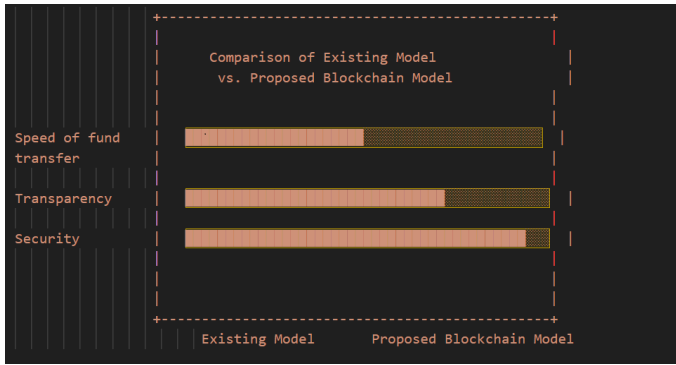


Figure 3 Dashboard page details details

### OUTPUTS

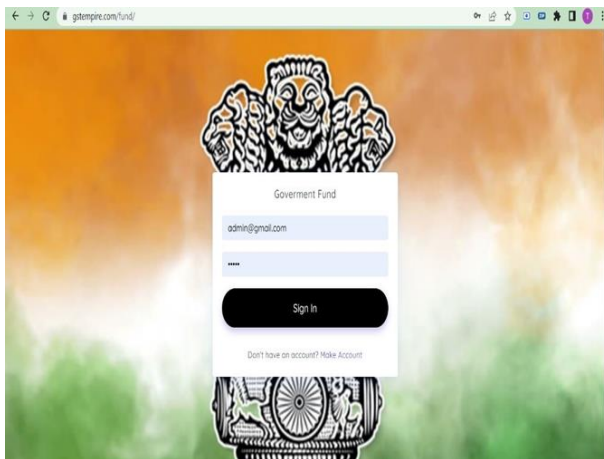


Figure 1 Home page (Super Admin)

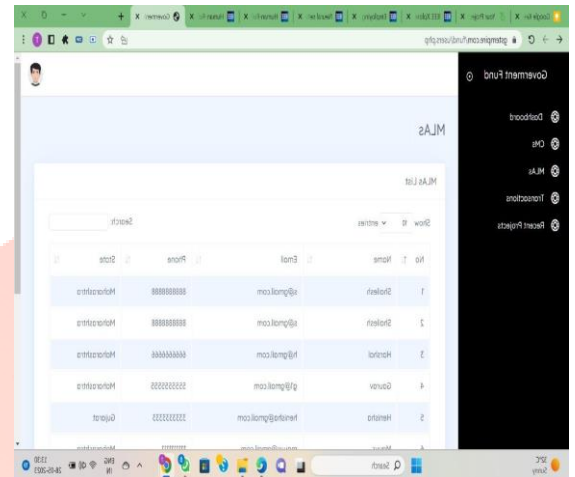


Figure 4 MLAs list

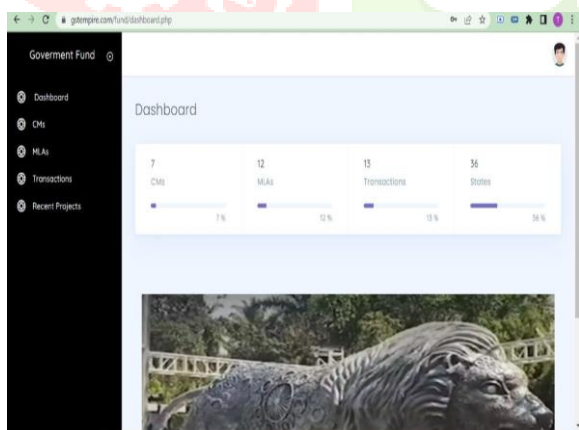


Figure 2 Dashboard

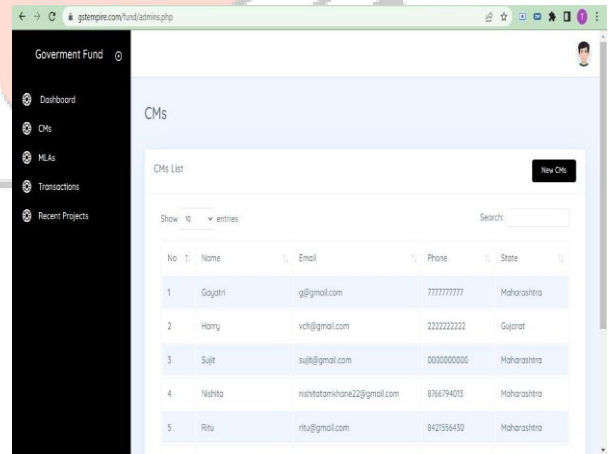


Figure 5 CMs list

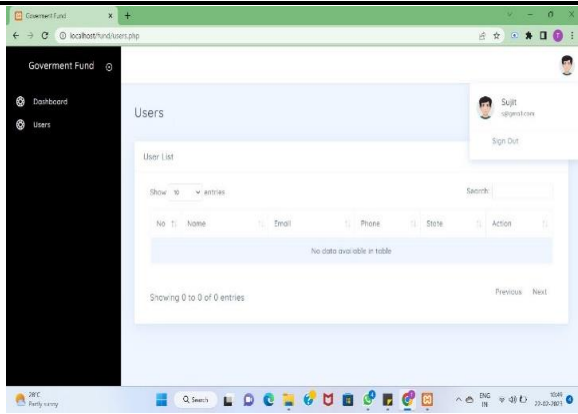


Figure 6 Admin page

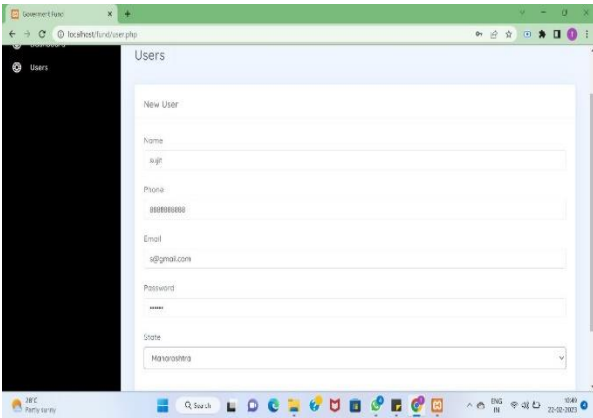


Figure 7 Login Page

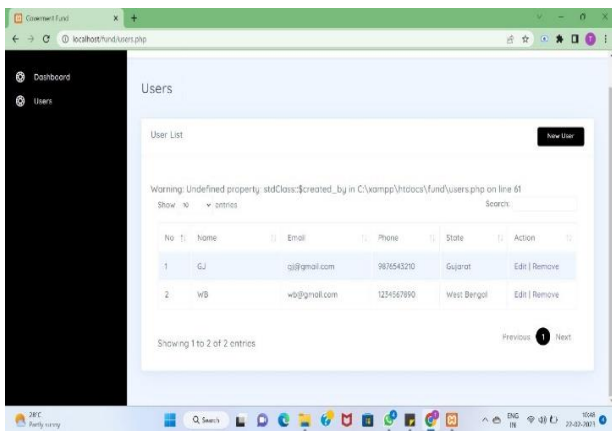


Figure 8 User Page

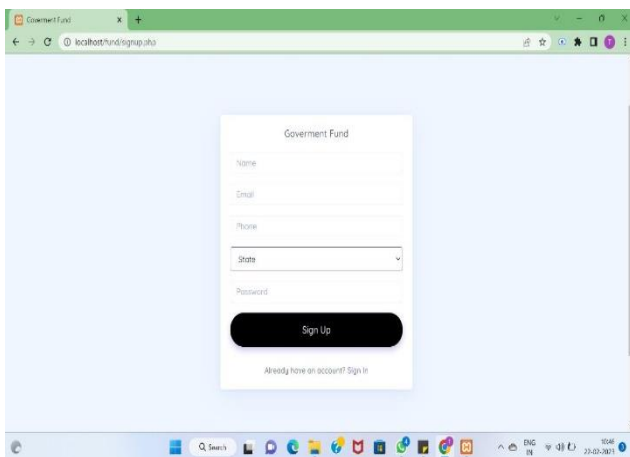


Figure 9 government funds

### CONCLUSION

The features of Blockchain like immutability, tamper-proof, secured and decentralized approach helps in eliminating the security vulnerability of the application. Hyperledger fabric is like other blockchain technologies which has a ledge, uses smart contracts and is a system by which participants manage their transactions. It provides proper governance and access control and can be scaled up whenever needed.

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