Industrial Engineering Journal
ISSN: 0970-2555
Volume : 53, Issue 4, April : 2024

# State Government Fund Allocation & Tracking System Using Blockchain

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**ABSTRACT:** In response to the critical need for greater accountability, transparency, and efficiency in public financial management, this paper introduces a pioneering Blockchain-Enabled Fund Allocation and Tracking System (BEFATS) specifically designed for state government operations. The system leverages the decentralized and immutable nature of blockchain technology to redefine the management of public funds, tackling long-standing issues such as misallocation, fraud, and delays in fund disbursement. The BEFATS is grounded in a permissioned blockchain framework, which ensures that sensitive financial operations are securely managed and accessible only by verified participants within the network, including government agencies, financial institutions, and oversight bodies. This framework supports the deployment of smart contracts, automated self-executing contracts with the terms of the agreement directly written into lines of code, to facilitate the direct and automatic transfer of funds based on compliance with pre-set criteria, thereby significantly reducing manual processing errors and the potential for corruption. One of the cornerstone features of the BEFATS is its real-time tracking capability, providing unprecedented transparency and up-to-the-minute reporting on the flow of funds from allocation to end-use. This capability allows for immediate corrective action in the event of any discrepancies and builds public trust by making fund management processes visible and understandable to all stakeholders. The system has been piloted in a state-level government department responsible for the distribution and management of education funds. The pilot demonstrated a marked improvement in operational efficiency, with a significant reduction in the time required for funds to be allocated and made available to schools and educational institutions. Furthermore, the blockchain's immutable ledger ensured a tamper-proof record of all transactions, facilitating seamless audits and substantially reducing instances of fraud.

In conclusion, the BEFATS proposes a transformative approach to managing state government funds, harnessing the power of blockchain technology to ensure that public resources are managed with the highest standards of integrity, transparency, and efficiency.

**1. *Key Words*:** Blockchain Technology, State Government, Fund Allocation, Financial Tracking System, Transparency, Accountability, Financial Management, Smart Contracts, Permissioned Blockchain, Real-Time Tracking and Efficiency.

## INTRODUCTION

The modern state government faces an array of challenges in managing public funds, where issues such as inefficiency, opacity, and vulnerability to

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fraud have long undermined public trust and the effective allocation of resources. In this milieu, the advent of blockchain technology offers a transformative solution, promising to redefine the paradigms of transparency, security, and efficiency in public financial management. This paper introduces a ground breaking Blockchain-Enabled Fund Allocation and Tracking System (BEFATS) tailored for state government operations, aiming to tackle these persistent issues head-on. Blockchain technology, with its decentralized nature, immutability, and transparency, provides an ideal foundation for developing a system that not only streamlines the allocation and tracking of state funds but also secures the process against tampering and unauthorized access. The BEFATS leverages these characteristics to create a permissioned blockchain environment where transactions and fund flows are recorded in real time, providing an indelible audit trail that enhances accountability and public trust.

Certainly, here's a condensed introduction to the state government fund allocation and tracking system using blockchain, broken down into key points:

1. **Persistent Challenges**:
   State governments traditionally grapple with inefficiencies, opacity, and susceptibility to fraud in managing public funds, undermining public trust and effective resource allocation.

2. **Blockchain Solution**:
   Introducing a Blockchain-Enabled Fund Allocation and Tracking System (BEFATS) tailored for state governments, leveraging blockchain's decentralization, immutability, and transparency to address these issues. Blockchain is a very secure technology in this we use smart contracts for the implementation

3. **Core Features**:
   - **Permissioned Blockchain:** Ensures secure and authorized access, maintaining privacy and regulatory compliance.
   - **Smart Contracts:** Automate fund allocation based on predefined criteria, reducing bureaucracy and the potential for human error.
   - **Real-Time Tracking:** Offers an unprecedented level of transparency and accountability in fund management.

4. **Advantages Over Traditional Systems:**
   - Reduction in bureaucratic overhead and inefficiencies.
   - Enhanced security against tampering and fraud.
   - Improved transparency and public trust through easily auditable records.

5. **Impact:**
   - Streamlines fund allocation and utilization processes.
   - Fosters greater accountability and trust between the government and the public.
   - Sets a new standard for integrity and efficiency in public financial management

## MODULES

1. **Admin:**
   - Admin can log in
   - Admin can View Request
   - Admin can Add or Edit Different Categories
   - of Fund/Scheme
   - Admin can Reject/Approved the Request
   - Admin can View Transaction on Funds

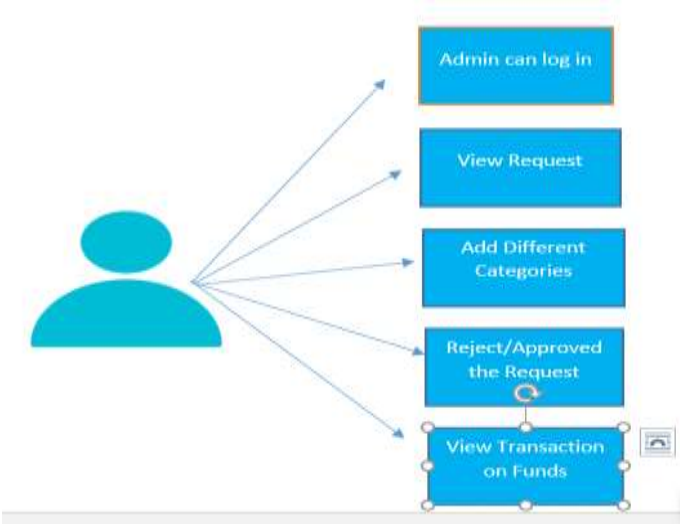


**Figure 1:** Admin diagram

2. **User:**

Industrial Engineering Journal
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- Users can Register
- Users can log in
- Users can Request for Fund/Scheme
- Users can View Transaction on Funds

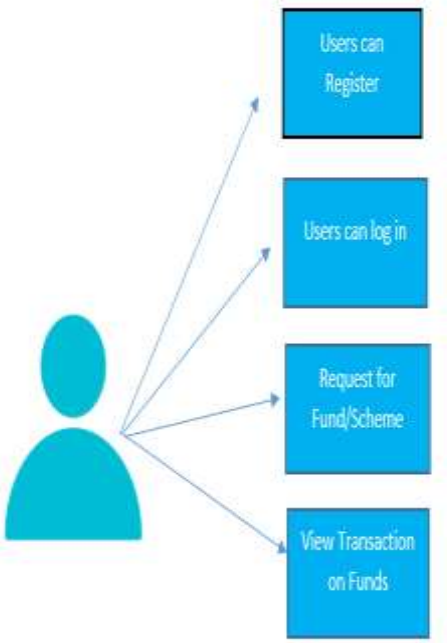


**Figure 2:** user diagram

## OBJECTIVES

- Develop a transparent and secure fund allocation and tracking system using blockchain technology.
- Enable real-time visibility of fund flow to enhance accountability and transparency.
- Implement smart contracts to automate fund allocation processes and ensure compliance with predefined conditions.
- Utilize cryptographic techniques and consensus mechanisms to prevent unauthorized access and fraudulent activities.
- Streamline administrative processes, reduce paperwork, and minimize manual interventions.
- Facilitate faster and more efficient fund transfers, reducing delays and administrative overhead.
- Increase public confidence through verifiable information on fund allocation and utilization.
- Foster stakeholder engagement and collaboration through decentralized governance mechanisms.
- Design the system to be scalable, interoperable with existing government systems, and compatible with regulatory requirements.
- Implement robust data encryption and privacy protection measures to safeguard sensitive information.

## PROPOSED SYSTEM

The proposed system tracks the funds granted to the state government as they go through the government process. It uses blockchain technology to safeguard transactions at each level while retaining transparency in every transaction and sealing every transaction with proof as the money goes forward. The system secures data using hashes to keep a block of transactions in a chain. It enables a complete proof, secure, and authentic financial distribution and tracking mechanism, which contributes to the formation of an incorruptible government. Our system has 2 modules, i.e., Admin (Government) and User. Admin (Government) Module: The government provides the requested funds to the user.

**User Module:** In this system, the user will request the funds according to their needs and also, and they can check their transaction history and wallet balance as well. The user requests the funds from the admin (Government) then the requests are sent

to the Government for approval. After that, the government views the request and then can approve or reject the request. The transaction is validated by the network's nodes (people in real life). Following this confirmation, the block is put on the blockchain along with a timestamp. After that, the transaction could be enforced. All transactions submitted in this manner will be noted and made publicly available to everyone. the proposed work for a state government fund allocation and tracking system using blockchain involves a series of steps and tasks to design, develop, and implement such a system.

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**Figure 3:** Block diagram

## SYSTEM DESIGN

In Figure there are various modules like government, users, and various types of departments. in our system, there are 2 main modules i.e., Admin (Government) and User. Admin (Government) Module: The government provides the requested funds to the user. User Module: In this system, the user will request the funds according to their needs and also, and they can check their transaction history and wallet balance as well.

- Design the architecture of the blockchain-based system, including the choice of blockchain platform (e.g., Ethereum, Hyperledger), data storage, and user interfaces.
- Create the data schema for the blockchain ledger, specifying the types of transactions

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- Develop smart contracts that will automate fund disbursement based onpredefined rules and conditions

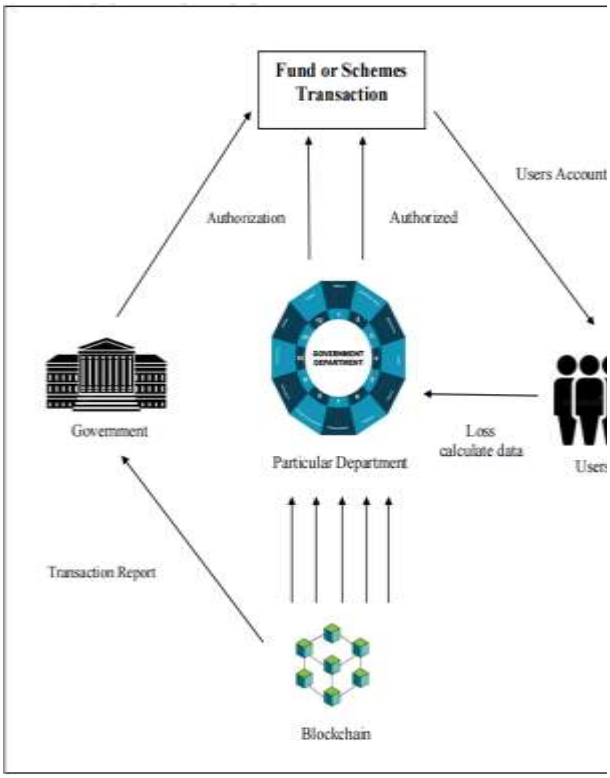


**Figure 4:** System Architecture

## RESULT




## FUTURE W0RK

- Decentralized Governance: Implement transparent governance models for inclusive decision-making.
- IoT Integration: Use IoT devices for real-time data collection to improve fund allocation accuracy.

- Cross-Border Transactions: Develop protocols for secure cross-border fund transfers and collaborations.
- Smart Contract Advancements: Evolve smart contracts for dynamic fund allocation adjustments.
- Enhanced Identity Management: Strengthen identity verification on blockchain to prevent fraud.
- Impact Measurement: Implement tools for assessing and reporting project outcomes.
- Digital Currency Integration: Explore using CBDCs or stablecoins for efficient fund transfer.

## CONCLUSION

In conclusion, the implementation of a blockchain-based system for state government fund allocation and tracking holds immense promise for revolutionizing transparency, efficiency, and

accountability in public financial management. By leveraging blockchain technology, governments can ensure secure and tamper-proof record-keeping, streamline administrative processes, and foster greater trust among citizens and stakeholders.

Moreover, collaboration between governments, private sector entities, and academia is essential for driving innovation, addressing scalability challenges, and ensuring compliance with regulatory frameworks. Through education and awareness initiatives, stakeholders can better understand the benefits of blockchain technology, fostering greater acceptance and adoption.

In essence, the journey towards blockchain-enabled government fund allocation systems represents a transformative shift towards more transparent, accountable, and efficient governance, ultimately benefiting both citizens and the public sector.

## ACKNOWLEDGEMENT

I would like to express my deep gratitude to our guide Prof. Aashish Jagneet sir my research supervisor, for their patient guidance, enthusiastic encouragement, and useful critiques of this research work.

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