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Blockchain Based System for Money Investment & Secure Transactions

Prof. Abdul Khadar A[1], Maakam Gari Sreya[2], Anusha G[3], Lakshmipriya Y L[4], Meghana N S[5]
Assistant Professor, Department of ISE[1]
Students, Department of ISE[2,3,4,5]
SJC Institute of Technology, Chickballapur, India

Abstract: *Cross-border financial transactions and credit access are still difficult, time-consuming, and expensive. Long wait times, exchange rate losses, counter-party risks, bureaucracy, and voluminous documentation are further drawbacks of the current money transfer systems. Two billion adults are thought to be unbanked and have little or no access to financial services. Offering practical financial services to this group is frequently cited as a crucial step in eradicating global poverty and boosting local economies. By utilising blockchain technology for cross-border transfer, online payment, currency exchange, and microlending without the volatility difficulties of existing, non-stable coin cryptocurrencies, the Everex application focuses on alleviating the financial inclusion problem.Finally, the Everex wallet enables a fiat-to-cryptocurrency gateway that makes it easier for users to access cryptocurrencies, allowing them to buy and sell tokens right away without having to go to an exchange. By introducing a blockchain-based capital transfer system that intends to eliminate financial inclusion obstacles and deliver financial services to the unbanked, this project closes a gap in the state of the art. We detail the system's benefits, the needs and objectives, and the design of the Everex financial eco-system.*

Keywords: Ethereum, Blockchain, SHA256-Secure Hashing Algorithm, Security, Transactions

I. INTRODUCTION

Blockchain is made up of individual blocks that are connected in a chain-forming network, as the name suggests. Individuals' transactional records are kept in blocks, and related series of transactional blocks are maintained. Because there are no middlemen required and it can be used like Google Sheets, it is also referred to as a decentralised ledger ("Reilly, Mary Margaret," 2007). Anyone can view the data, but it cannot be altered. Transactions are completed more quickly with blockchain, which also allows for efficiency and transparency. The peer-to-peer (P2P) topology is used in this, which is also known as distributed ledger technology. Since the owner's digital signature authorises the information, it is safe in this ledger. Without the use of an intermediary like a bank or the government, it is used to secure money, property, contracts, etc. Blockchain is a technology that is used to track everyday transactions in cryptocurrencies (Peters & Panayi, 2015). Transactions must take place in order for a block to be added to a blockchain. It is formed as a block, which is then added to the chain after being confirmed against the public data. The transaction is recorded in a block, and following its verification, a special identification number, or hash, is created.

The three requirements for blockchain technology are decentralisation, transparency, and immutability. Transparency displays the transaction data without disclosing the person's true identity, while decentralisation allows for everyone in the network to view the information. Finally, immutability means that information entered into a blockchain cannot be changed after that. Every bank is implementing blockchain technology for money transfers, keeping track of transactions, and other purposes. With this decentralised and paperless transaction, banks are more productive and valuable because their transaction costs are lower. Another benefit is that it takes longer to process client transactions because a block needs to be added to the chain first. Blockchain technology, automation, cybersecurity, and artificial intelligence may be the major technological advancements that alter banking in the future. Banks are only beginning to use internet finance services, and this will encourage them to use technology to improve their current processes.

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II. LITERATURE REVIEW

A project report's literature survey or review outlines the numerous studies and analyses that have been conducted in the area of interest as well as the findings that have already been published, all while taking into account the project's varied constraints and scope. The primary goal of a literature review is to analyse the project's background in order to identify any weaknesses in the current system and provide recommendations for how to remedy any outstanding issues. Therefore, the following themes not only present the project's history but also expose the issues and shortcomings that prompted the development of this project.

1. Title: Blockchain Applications in the Indian Banking Industry
Author: Divya sharma
The goal of the study paper is to investigate how cryptocurrency-based blockchain technology will affect the banking industry. Technology advancement and its commercial utilisation are the focus of research.

2. Title: Blockchain deployment in Indian banking sector: obstacles and future prospects
Authors: Vinod Sople and Aarti Patki
This study aims to examine the advantages of blockchain technology (BCT) in banking operations in the Indian banking sector. The difficulties it has utilising blockchain technology are discussed in this study.

3. RemBit: a blockchain-based remittance solution for Ethiopian
Authors: Piergiorgio Ricci and Valentina Mammanco
Blockchain technology has been viewed as a huge possibility to enable new business scenarios for both developed and developing countries ever since it was first introduced in Satoshi Nakamoto's Bitcoin white paper, which was published in 2008.

4. The Future of Finance and Defi Application for an Ethereum Blockchain-based Finance Market
Authors: S. Ganesh Kumar and B. Sriman
Abstract: This article looked at how transactions that are recorded in digital ledgers and stored there are transferred to the Blockchain. It keeps track of all the crucial information about the user's transactions. Results demonstrate that Blockchain has propelled the financial sector to new heights and earned a positive reputation among those who initially doubted its viability.

III. SYSTEM ARCHITECTURE

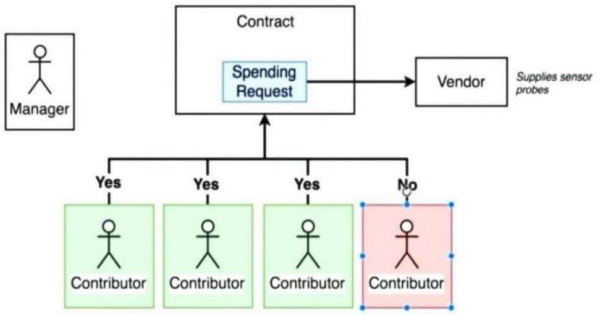

Fig 1: System Architecture

Utilising blockchain technology to make transaction histories more safe and transparent. Blockchain is a sort of distributed ledger, thus rather than having individual copies of the same documents, each network participant has access to the same data. By casting their votes, contributors can choose where to invest their money and also acknowledge the project creators' requests for funding. A given request can only be funded if a specified minimum number of contributors accept it. It will guarantee that the funds are spent on necessities rather than frills. To increase transparency and stop fraudulent activities that happen in the startup world and on platforms that have been created around it up until now, including Kickstarter. E-payments are safe and secure thanks to strict security measures like symmetric encryption, but they are still susceptible to hackers. Businesses utilising internal e-payment systems must spend more money on the acquisition, setup, and maintenance of advanced payment-security solutions. There is no assurance that

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those who post projects on Kickstarter will follow through with them, use the funding to carry them out, or produce finished products that live up to the expectations of their backers.

IV. METHODOLOGY

1 SHA-256:

A secure hashing method, often known as SHA-256, is an unkeyed cryptographic hashing function that accepts inputs of varying lengths and generates outputs with 256 bits of length.

One of the original and most well-known hashing algorithms still in use today in blockchains like Bitcoin, Bitcoin Cash, and Bitcoin SV is HA-256. In a blockchain, SHA-256 is employed at many stages, most notably:

Convergence mechanism By adjusting the nonce value in a bitcoin block until they attain a hash below the cutoff, miners use SHA-256 to determine the hash of newly produced blocks. The block can then be approved for entry into the ledger.

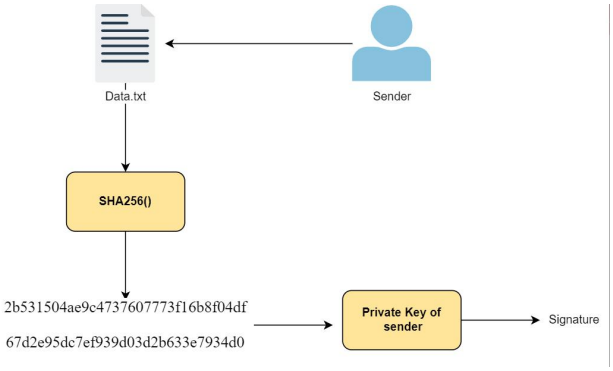

Fig 2:SHA256 Workflow

SHA-256 gives dependability and security. Here are some of SHA-256's key characteristics that make it ideal for use as a blockchain's primary hashing function:

- Collision-proof: Different input values cannot result in the same hash value. This guarantees that a distinct hash value is assigned to each block in the blockchain ledger.
- Preimage resistance: When provided a hash value, the input cannot be reproduced. This makes sure that during the Bitcoin proof of work, miners cannot estimate the value of the nonce by converting the valid hash back into the input; instead, they must employ the brute force approach, which makes sure that the job is completed.
- Deterministic: As long as the input is constant, the output of the hash function should also be constant. The computed hash against a given input should stay consistent when computed by the sender and receiver; this is a fundamental characteristic of digital signatures.
- Large output: The 22562256 possibilities in the 256-bit output make it hard to use the brute force method to crack the hash.
- Avalanche effect: A minor change in the input causes a large change in the output. By doing this, the hash value is protected from being deduced from the input values. The hash is safer as a result.

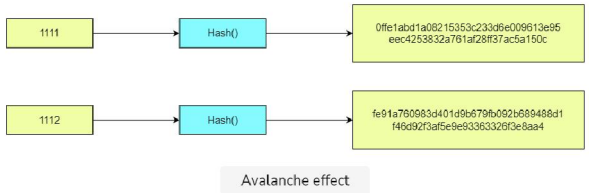

Fig 3:Avalanche Effect

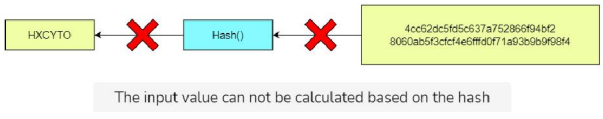

Fig 4:Input value cannot be calculated

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2. Dataflow Diagram

1. The bubble chart is another name for the DFD. It is a straightforward graphical formalism that may be used to depict a system in terms of the data that is fed into it, the different operations that are performed on it, and the data that is produced as a result of those operations.
2. One of the most crucial modelling tools is the data flow diagram (DFD). The system's component models are created using it. These elements include the system's operation, the data it uses, a third party that engages with it, and the way information moves through it.
3. DFD demonstrates the information's flow through the system and the various changes that affect it. It is a graphical method for representing information flow and the changes made to data as it travels from input to output.
4. Another name for DFD is bubble chart. Any degree of abstraction for a system can be represented by a DFD. DFD can be divided into stages that correspond to escalating functional complexity and information flow.

Level-0

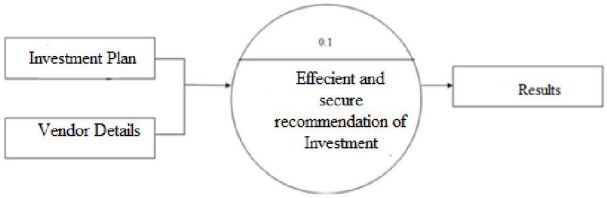

Fig 5:Level-0: Data Flow Diagram

The project's overall process is described by Level: 0. The system will effectively recommend the investment plan to the contributor after receiving the contribution's investment plan and vendor information as input.

Level-1:

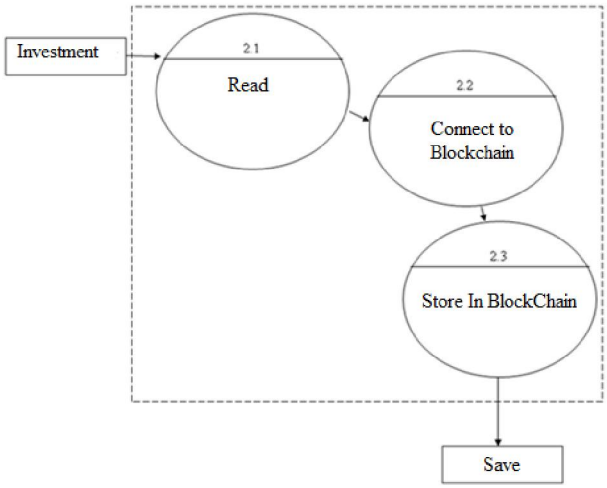

Fig 6:Data Flow Diagram

Level: 1 describes the project's first step-by-step procedure. Investment plans are being sent to a system that will connect to a blockchain and store them there.

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Level-2:

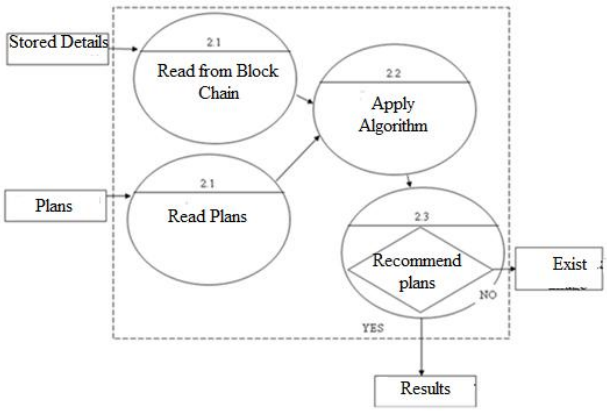

Fig 7: Level2 Dataflow Diagram

Level 2 details the project's last step-by-step procedure. As input, we are sending level 1 investment data from the blockchain and current intentions. As the system reads data and plans, it will suggest plans to the contributor.

3. Use Case diagrams

In the Unified Modelling Language (UML), a use case diagram is a specific kind of behavioural diagram that results from and is defined by a use-case analysis. Its objective is to provide a graphical picture of a system's functionality in terms of actors, their objectives (expressed as use cases), and any dependencies among those use cases. A use case diagram's primary objective is to identify which system functions are carried out for which actor. The system's actors can be represented by their roles.

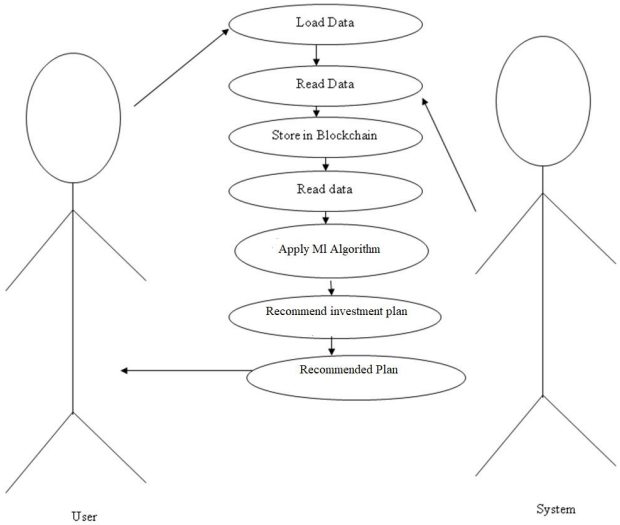

Fig 8: Use case Diagram

IV. SEQUENCE DIAGRAMS

In the Unified Modelling Language (UML), a sequence diagram is a type of interaction diagram that demonstrates how and in what order processes interact with one another. It is a Message Sequence Chart construct. Event diagrams, event situations, and timing diagrams are other names for sequence diagrams.

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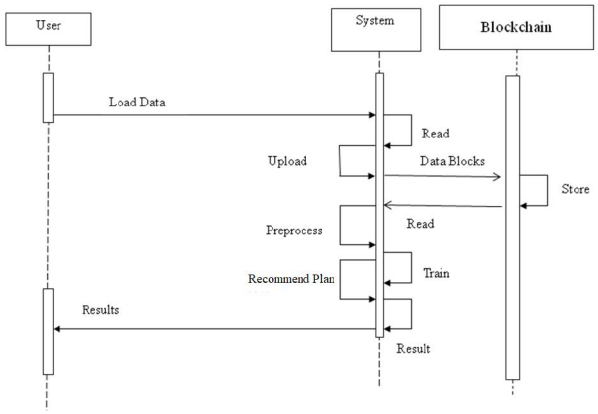

Fig 9: Sequence Diagram

V. ACTIVITY DIAGRAM

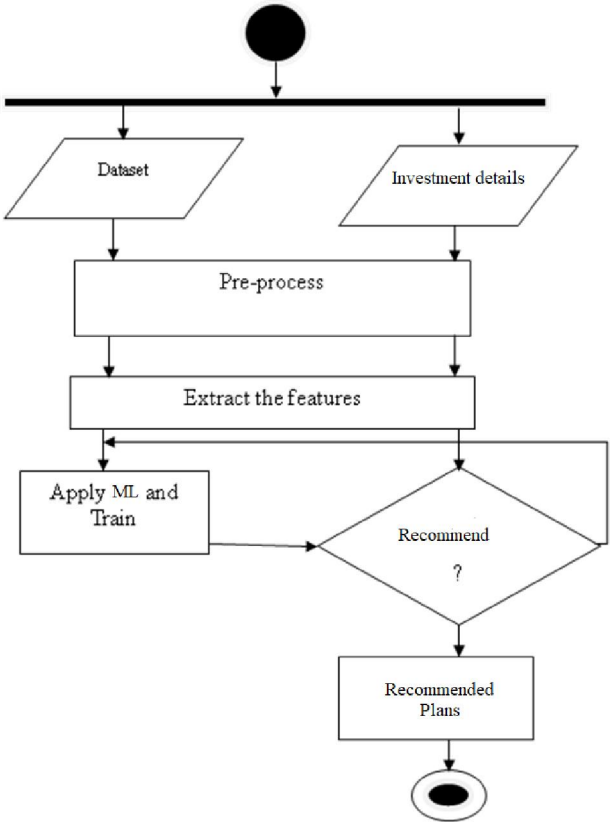

Fig10: Activity Diagram

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VI. RESULTS

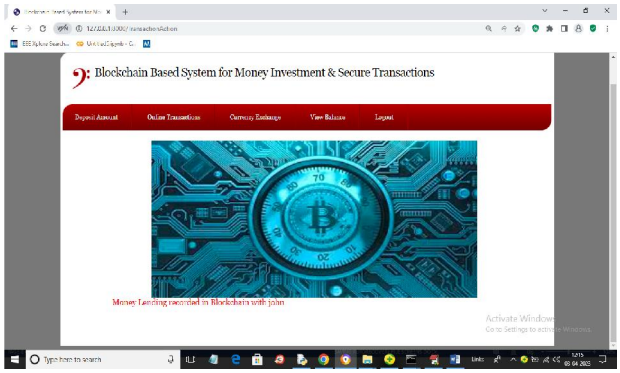

Fig 10:Signup Screen

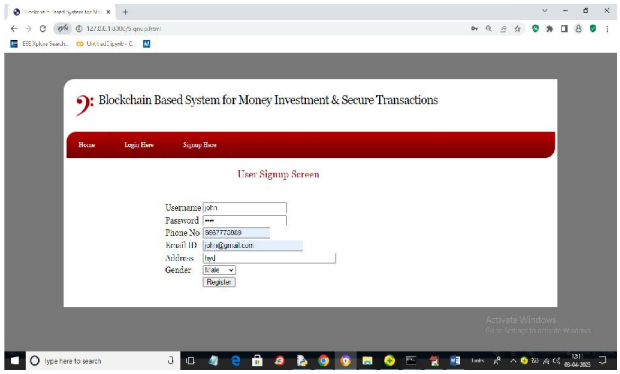

Fig 11:User Registration Details

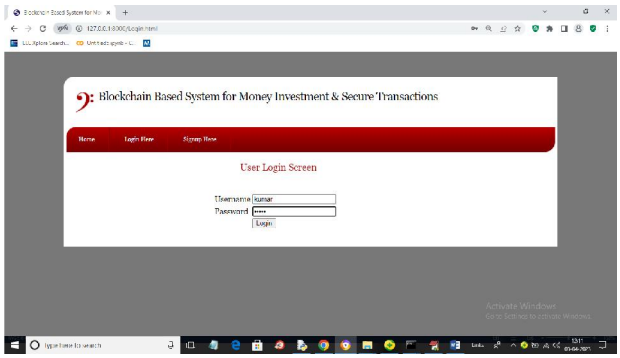

Fig 12: Details of Data Sent

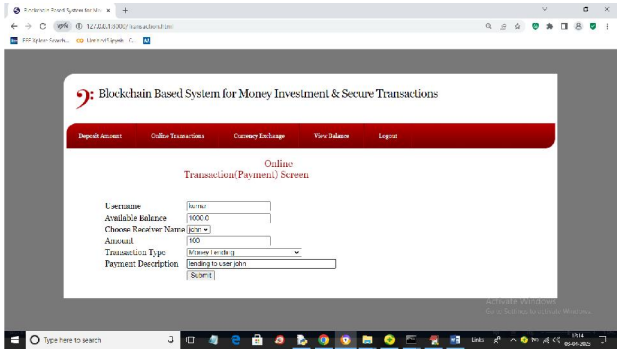

Fig 13: Source Details of the User

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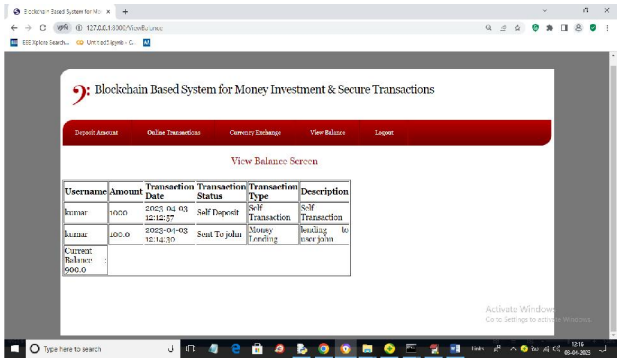

Fig 14:Balance Screen

VII. CONCLUSION

By including a number of features in its services, blockchain plays a significant role in the Indian banking industry. also offers a wide range of answers to the issues that the conventional banking system is currently facing, but also has a number of drawbacks. Because this technology is more recent, one of its disadvantages may be a lack of technical expertise in using it. To become experts in this field, the people should receive training. The parties' exchange of information raises concerns about security and confidentiality. Despite its well-defined infrastructure, India's cybercrime system is fragile and needs strict laws and restrictions. Lack of security might be the main obstacle to using this technology.For the purpose of optimising operations, performance parameters like database management, performance, and scalability should be regularly checked. Because Blockchain maintains a real-time ledger and the volume of data is higher, more nodes must be created for each transaction, increasing power usage. It uses a lot of energy to do this. Finally, there are benefits, drawbacks, and chances to grow the banking industry's financial operations associated with the implementation of blockchain technology. The banks will benefit from this technology in that it will increase their productivity, lower their costs, and shorten the time between transactions.The building of secure client databases is undergoing a transformation in the banking sector thanks to blockchain technology. Despite its difficulties, this will transform the current financial system into one that is quick and effective. In the coming years, the financial sector will undergo a major upheaval thanks to blockchain technology.

REFERENCES

[1]. Nofer, Michael, et al. "Blockchain." Business & Information Systems Engineering 59.3 (2017): 183-187.

[2]. Ahram, Tareq, et al. "Blockchain technology innovations." Technology & Engineering Management Conference (TEMSCON), 2017 IEEE. IEEE, 2017.

[3]. Atzori, Marcella. "Blockchain Technology And Decentralized Governance: Is The StateStill Necessary?". 2015

[4]. Garg, Kanika; Saraswat, Pavi; Bisht, Sachin; Aggarwal, Sahil Kr.; Kothuri, Sai Krishna; Gupta, Sahil (2019). [IEEE 2019 4th International Conference on Internet of Things: Smart Innovation and Usages (IoT-SIU) - Ghaziabad, India (2019.4.18-2019.4.19)] 2019

[5]. Zheng, Zibin, Et Al. "An Overview of Block-Chain Technology: Architecture, ConsenSus, And Future Trends."Big Data (Bigdata Congress), 2017 Ieee International Congress On. Ieee, 2017

[6]. Çabuk, U.C.; Adiguzel, E.; Karaarslan, E. A survey on feasibility and suitability of blockchain techniques for the e-voting systems. arXiv 2020, arXiv:2002.07175.

[7]. Hakak, S.; Khan, W.Z.; Gilkar, G.A.; Imran, M.; Guizani, N. Securing smart cities through blockchain technology: Architecture, requirements, and challenges. IEEE Netw. 2020, 34, 8– 14.

[8]. Ometov, A.; Bardinova, Y.; Afanasyeva, A.; Masek, P.; Zhidanov, K.; Vanurin, S.; Sayfullin, M.; Shubina, V.; Komarov, M.; Bezzateev, S. An Overview on Blockchain for Smartphones: State-of-the-Art, Consensus, Implementation, Challenges and Future Trends. IEEE Access 2020, 8, 103994–104015.

[9]. Prashar, D.; Jha, N.; Jha, S.; Joshi, G.; Seo, C. Integrating IOT and blockchain for ensuring road safety: An unconventional approach. Sensors 2020, 20, 3296. [CrossRef