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Blockchain Implementation for Faster Accessing of Database of Banking Industry

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Abstract
In today's world, blockchain is one of the most significant innovations, especially in the banking sector. It has a wide range of applications across various sectors, with banking being one of the most prominent. Integration of blockchain in the banking infrastructure holds great potential, especially in the areas of payment settlement and credit information system. This adoption is essential in gaining control over cryptocurrencies, which will help in combating money laundering and terrorism financing worldwide. Blockchain is at the forefront of the technological revolution of our time. It stands out from the competition by transcending traditional data structures by preserving transactional records while maintaining the principles of security, transparency and decentralization. Every transaction has its own unique digital signature, making the ledger immutable and inviolable. This tamper resistant framework ensures the integrity of records and strengthens blockchain as a reliable foundation for smooth, secure and efficient transactions. In the banking sector, blockchain's potential is particularly promising.
The rapid growth of blockchain technology began with the launch and rapid growth of the revolutionary cryptocurrency Bitcoin. Today, the banking sector faces a wide range of challenges, and some of these challenges can be directly addressed through the use of blockchain. In this paper, we look at the possibility of carrying out transactions across a secure blockchain network, eliminating the need for third-party intermediaries. We also look at the complex ways blockchain strengthens the security architecture of the banking industry.

Keywords: Distributed Computing, Database, Blockchain, Cloud Server, Faster Access

1. Introduction

In recent years, distributed computing has become a key enabler in providing seamless access to databases 24/7. Within the banking sector, which has a large customer base, managing large volumes of data has become a major concern. In this chapter, we will explore an innovative application that combines blockchain technology with cloud server infrastructure to increase the availability of information stored in cloud. This includes a wide variety of data formats such as text, audio, video files, etc. Using the inherent capabilities of blockchain, we introduce a new approach for creating database blocks. Database blocks introduce a new paradigm shift, allowing for faster and easier access to information, which in turn provides users with greater usability and convenience. We will provide a detailed presentation of computer generated results, carefully represented in tables and graphs, to demonstrate the effectiveness of our proposed solution.

What is Blockchain

As a public and distributed digital ledger, blockchain has the potential to revolutionize the banking sector. Its underlying technology promises security, efficiency and transparency that go beyond what is possible with traditional methods. However, blockchain's impact goes beyond banking, ranging from gaming to cryptocurrencies, with Bitcoin being a prime example.

1.1 Need for research

Blockchain's impact on the banking sector In a sector known for its cautious attitude and strict regulations, blockchain's widespread adoption, combined with the explosion of crypto currency usage and ICO's, has led many banking and finance leaders to recognize its transformative potential.

- Economic Benefits
  At its core, blockchain provides financial institutions with an effective way to keep track of their records while engaging customers. For example, banks can use blockchain to provide customers with accurate information about how their funds are allocated and when interest payments are made. Instead of producing and distributing ATMs, banks can use secure, encrypted apps based on blockchain to manage their finances. This not only reduces costs for financial institutions, but also

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provides customers with increased security, control, and oversight of their entrusted funds.

- Empowerment
  Although it's often overlooked, digitization and software have already significantly reduced both external and internal fraud and company resources. However, blockchain has the potential to further reduce fraud for institutions adopting this technology. By making all transactions visible and making any changes to records unachievable, fraudsters can be stopped before funds even leave the institution, protecting customer accounts.
- Intrinsic Security
  Blockchain is much more complex than traditional networks, which can be penetrated by hackers to gain access to and manipulate data stored in a centralized repository. By decentralizing, encrypting, and validating the entire network, data is protected. Once a record has been written onto the ledger, it is almost impossible to modify or delete it without being detected, and it is nearly impossible to invalidate the associated signature.
- Blockchain's Impact on Banking
  Blockchain has gained a lot of attention and recognition in recent years for its disruptive potential across various sectors. However, its integration with the banking industry has raised questions, with some doubting its compatibility. The traditional banking practices, despite advances in technology, have largely remained the same, with financial regulators in control. This traditional approach often involves high costs, collection of personal information, and a strict framework that dictates how individuals use their financial resources. However, despite the allocation of significant resources, individuals have little control over this paradigm. The blockchain revolution in banking
- Blockchain technology offers a revolution in traditional banking.
  Banking institutions can take advantage of the properties of Blockchain to transform the economic landscape. This innovation has the potential to reshape business operations on a global scale in various industries. With continuous development and refinement, blockchain continues to empower enterprises by increasig transparency, traceability and operational efficiency in countless transactions and contracts
- Addressing the challenges of global banking
  The current banking system is characterized by high costs and the need for multiple intermediaries to guarantee the integrity and security of transactions, which puts a lot of strain on loyal customers. Banks are often criticized for their inefficiency, high cost, and lack of transparency. Fintech disruptors such as N26 and Revolut, as well as PayPal, are already shaking up traditional banking norms with cutting-edge solutions.
  Blockchain stands out as a solution to these challenges and offers a clear advantage within the fintech space. The increasing investment in Blockchain is a sign of the growing interest of central banks and governments in its future. The combination of blockchain with emerging technologies such as AI, robotic process automation and big data makes it one of the most innovative innovations in the world. With its decentralized, tamper-proof blockchain, blockchain has the potential to revolutionize record-keeping across a wide range of industries. This promises streamlined banking processes, lower operational costs, and effective solutions to existing issues.
- Enhancing Security and efficiency in banking through Blockchain
  Recent data breaches in the banking sector have highlighted the need to strengthen security measures. Hackers have taken advantage of vulnerabilities to target banks and steal large sums of money. This highlights the need for increased security protocols. Furthermore, the slow processing of transactions in the banking sector is a growing concern. In this study, we explore how blockchain technology can be used in the banking sector to strengthen security and speed up transactions. Blockchain is a game-changer in the modern world. Its entry into banking offers security, efficiency and transparency that have never been seen before. As blockchain continues to evolve, its integration in banking operations has the potential to revolutionize financial transactions. This paper serves as a wake-up call to decision makers in the banking and government sectors, urging them to adopt blockchain technology to improve the security and efficiency of the industry..

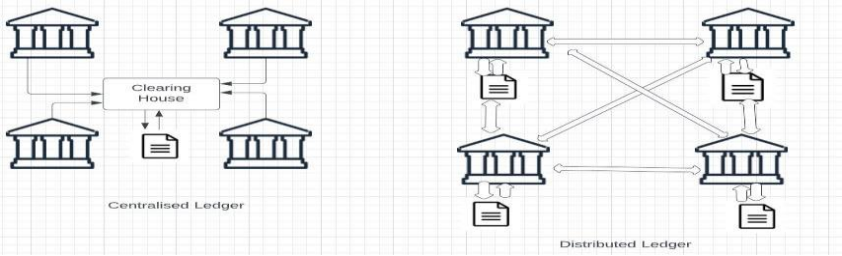

Figure1. Distributed versus Centralized Ledger

On the above aspects, let us describe some of the important references. Zhang and Zhang [1] have researched and analyzed the use case of blockchain in the area of internet of finance. ZAHO and MENG [2] focused on fraud risk, market

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risk and credit rating and central institution in the traditional financial market and the challenge of blockchain technology in financial services. Jumde et al. [3] have research on blockchain technology and its implications for accounting and financial services focused on the following areas and their implications for blockchain technology: Pawczuk, et al. [4] concluded that in India many banks and business conglomerates' have experimented with blockchain in number of use cases. Further, Hin [5] focused on the usage of blockchain technology in various fields like smart contracts, fraud detection, and trade finance and to maintain the customer's history with its challenges in adoption in the financial sector with its future analysis against the presentscenario. Cui [6] have studied how blockchain technology can impact the internet and how it can impact large-scale data. Yasmin and Mohammed [7] have focused on the effects of new technologies such as Fintech combined with blockchain on the Indian banking sector and the use of AI and machine learning. Huang et al. [8] have studied there are various stages in the development of blockchain, including 1.0, 2.0, 3.0, digital currency, digital finance, and digital society. Johari, et al. [9] focused on the use of blockchain in areas such as IPR, finance, academia and medicine, as well as comparative statistical literature reviews. Zhang et al. [10] have analyzed a common consensus mechanism based on existing blockchain application consistency evaluation and have a high degree of summary with its problem and futuredevelopment trend. Sharma [11] discussed blockchain and distributed ledger system. Chang et al. [12] have looked at FinTech and the impact it has on the financial industry. They highlight their key features and discuss three key challenges and ethical questions related to Blockchain technology Schar [13] have proposed a layered approach to explore the underlying structure and different components of decentralized finance (deFi) for transparent financial infrastructure. Khan et al. [14] have presented a comprehensive analysis of public blockchain scaling issues and challenges across a wide range of sectors, including agriculture and education, finance and resource management, as well as health. Chowdhury et al. [15] have looked at how blockchains work and how they can be integrated into the banking ecosystem. We'll also explore how blockchain technology can be used to enhance the security of banking transactions.. Kumar, A. S. et al. [16] have sought to understand the relevance of transparency, examine blockchain's use in banking, and identify problems with earlier banking financial transactions. Blockchain technology has been offered as a research model to solve issues with financial transactions. The increased security and transparency that blockchain technology provides was constantly emphasized in the study. Awotunde, J. B.et al. [17] have designed a blockchain based system that protects and secures the financial data on the mobile bank platforms. I designed a time-based one-time password (TOTP) for safe money transfer using 2-factor verification protocol. Multi-factor authentication has been designed to secure mobile banking. Ramchandra, Vinode et al. [18] have mentioned energy providers, start-ups, and technology developers all took notice of blockchains as a developing technology. By removing budgetary constraints, it provided numerous benefits for developing novel processes. Through case studies and literature, it was shown that blockchain technology offered a safe and open business solution, increasing its usefulness to the government and the energy industry. Despite issues with scalability, technology was crucial in process improvement and adaptation. Additionally, the concept of crypto currencies like Bitcoin had become important in the modern commercial environment. Kumari, A., and Devi, N. C. [19] have examined how blockchain and FinTech were incorporated into online banking and financial services. It proved that these technologies have a significant influence on digitalization-related developments. The study focused on how banking and financial services were being modernized, paying particular attention to how the community was affected. Mohhammad. M. Khan et al. [20] have created a system that addresses cyber security risks during the transmission of data in an e-commerce transaction using blockchain and smart contracts. Blockchain's decentralized and secure ledger features enabled secure and efficient transaction data transfer. Smart contracts played an important role in digitally enforce contract terms, improve transaction security, and ensure protocol compliance, paving the way for e-commerce's future. Raddatz, N. [21] has discussed a theoretical framework covering these factors were empirically evaluated through the analysis of 304 participants. The study's findings showed that variables like threat intensity, threat susceptibility, awareness, and inertia had a significant impact on how consumers saw the advantages of blockchain, which ultimately influenced their intents to switch to blockchain-based apps. Garg, P. [22] have examined the Intermediation Function of Central Counterparty (CA) of the Indian Banking Sector and the Relationship between Central Bank of India (BC) and Operating Bank of India (OP) gave new insights and added to the existing knowledge in this field. Looking back on the findings of the study, it helped to explain the complex relationship betweenKhanna, P., and Haldar, A. [23] have discussed five issues that were identified through theme analysis: Technology Structural Functionality Regulatory Environment Originality / Value By providing insights into the context of an emerging country, the study complemented the limited literature available on the early uptake of blockchain technology in the banking sector of a developing country.. Chuadhry, M. A. et al. [24] have focused on the use of blockchain in the banking industry. Transactions took place both online and via real credit scanners. As the number of customers in the banking industry increased, the industry was more susceptible to cyber attacks. Blockchain is an essential part of a solution that protects client information from unauthorized access and cyber security vulnerabilities such as phishing attacks, ransom ware attacks, and DDoS attacks. Financial data threats are significantly increased by cyber security vulnerabilities. Vukovljak, B. [25] The study highlighted the potential of streamlining financial sector

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processes and provided an overview of the current applications of blockchain within banking operations. It noted that there is a considerable amount of experience and expertise in this area. Recent studies have demonstrated that blockchain, although still in its research and development phase, has the capability to enhance banks' business models, performance, and capabilities, thus emphasizing its significance in the banking sector.

2. Methodology

Blockchain is a cutting-edge technology that revolutionizes the way data is stored and secured. It works by creating immutable data blocks that guarantee the integrity of information over time. This innovation has the potential to revolutionize financial transactions as well as other areas such as medical records. At the heart of blockchain is the trust principle. Once a piece of data finds its home on a blockchain, all attempts to alter or create a new version are useless. This guarantees the trustworthiness of the information stored in the blockchain. This article aims to explore how blockchain works in the banking sector and explain the key processes involved.

2.1 How is a TransactionRrecorded on a Blockchain

In order to record a transaction on a blockchain, there are several key steps. The proposed algorithm for blockchain technology is given below:

Step 1. First, a block containing transaction details is created.

Step 2. This block is shared with all nodes or participants in the blockchain network.

Step 3. These nodes collectively verify the transaction.

Step 4. If the validation process fails, the transaction is invalidated.

Step5. If the transaction is validated, the updated data is distributed to all nodes in the blockchain.

Step 6. The block is attached to the blockchain.

Using the above steps, flow diagram is shown in the figure 2, a blockchain is created and shown below in the figure3 and creations of further blocks are shown in the figure 4.

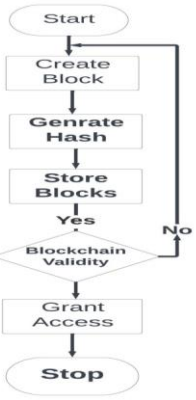

Figure 2. Flow Model of Blockchain

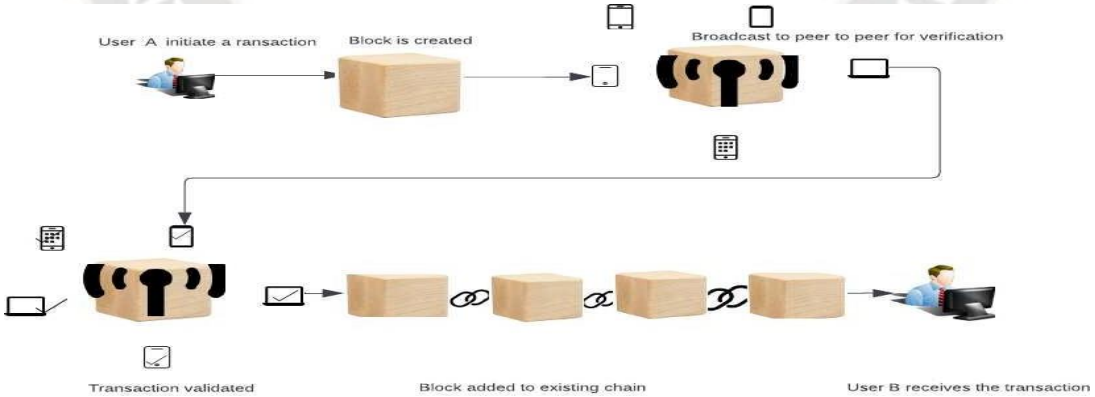

Figure 3. Creation of Blockchain

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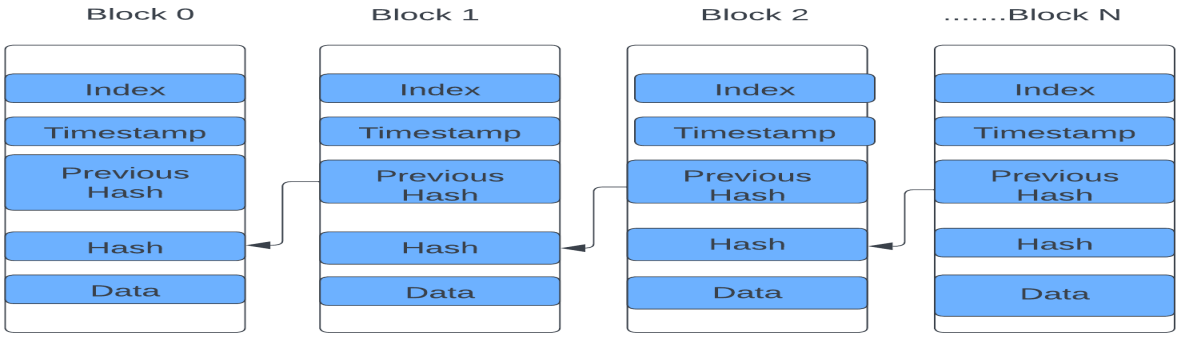

Figure 4. Formation of Blocks

Nodes participating in Proof of Work typically receive cryptocurrency as a reward for their work.

2.2 Authentication

A transaction can be verified on a blockchain by using a combination of two cryptographic keys: a private key and a public key. A private key is a unique code owned by each user that acts as their digital personality. It's the foundation of their online identity. On the other hand, public key acts as their digital signature, allowing for secure transaction execution.

2.3 Authorization

Before a transaction can be incorporated into the blockchain, it must be authorized, which is done through a consensus algorithm. The PoW algorithm defines the conditions that must be met to validate data within blocks. In order for a transaction to become valid, it must be approved by the majority of nodes on the network.

2.4 Proof of Works

The Proof of Work (PoW) algorithm is responsible for verifying a transaction's legitimacy. It is based on a mathematical puzzle that is solved by miners around the world. The miner who solves the puzzle is rewarded accordingly.

2.5 Mining

The process of mining involves adding transaction information to the current public ledger. The process of mining involves creating the hash of the block transaction, which is made computationally difficult to guarantee the security of blockchain without a central authority

2.6 Types of blockchains

There are three main types of blockchain technology: public blockchain, consortium blockchain, and private blockchain.

Public blockchain is accessible to anyone who wants to join, participate in, and verify transactions on the blockchain. It is highly decentralized, with no single entity controlling the network. Examples include Bitcoin, Ethereum, etc.

Private blockchain is restricted to a specific set of users or organizations, with a central authority controlling access, validation, and adding transactions. It is less decentralized than public blockchain, as control is centralized. Examples include Hyperledger and Corda.

Consortium blockchains are semiautonomous, meaning they are operated and managed by a consortium or a group of organizations. They provide a middle ground between decentralization and decentralization, meaning multiple entities have control over the network instead of a single authority. For example, Quorum and B3i are two examples of semiautonomous blockchains. Types of Consumable Blockchains Each type of consumable blockchain have its own unique set of uses and benefits. Public blockchains are best for applications that need transparency and censorship resistance. Private blockchains are better for applications that require privacy and control. Consumable blockchains balance the two and are suitable for some enterprise applications.

3. Result and Discussion

The above proposed algorithm is implemented through Python programming language and can be used to write the scripts to automate the process for creating transaction, verifying the transaction and adding block to the blockchain. JSON can be used to store and exchange the data between different components of the system. In this example, block is defined as class; each block has an index, timestamp, data, previous hash, and its own hash. The hash is calculated by serializing the block as a JSON object, storage the key and hashing the resulting string withSHA-256. It is also defined a blockchain that can keep track of the chain of block. The 'create_genisis_block( )'method is used to create the first block in the chain with a hard codes value of 'Genesis Block' for the data field. The'get_latest_block()' method returns the most recently added block in the chain. The add_block() method takes the new block and adds it to the chain by replacing its previous hash field with the most recent block in the chain that calculates its own hash and adds it. In this work, we are going to look at the data set of the bank customer as shown in Table 1. The table contains four fields ID, name, age and Card#1.

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Table 1. Data Set of Customer

ID	Name	Age	Card#1
101	Choudhary	52	4200778927351900
102	Jaydeep	32	4351245711358470
103	Pawan	44	4200101521325820
104	Arvind	38	4050453813353890
105	John	35	4361664384555660
106	Smith	28	4183026391245030
107	Deelip	25	4874657217235480
108	Deena	43	4053057452828780
109	Richa	36	4153727943447130
110	Ruchi	27	4275688577132560
111	Amit	45	4809729378151410
112	Hemant	42	4009162922114070
113	Rajive	30	4445466134688480
114	Prashant	47	4782495158244830
115	Ravi	53	4926851896119880
116	Rahul	55	4321402897333950
117	Ravindra	50	4819825422548530
118	Mohan	48	4476131559731100
119	Sohan	25	3733803757525570
120	Sita	33	4449521734654070
121	Geeta	39	4843288947855130
122	Neena	44	4906992218896500
123	Sangita	34	4758977475625990
124	Rakesh	29	4912716221948540
125	Satyendra	40	4605826661673470

In the implementation of blockchain in Python, it creates a Block_chain class with the ability to create a new block, add transaction to a block and hash block. The class keeps track of a chain list and a transaction list where a new block's added, the transition list is reset and the new block is added to the chain list The class hashes the block using SHA 256 A dictionary is added to the block. A new block_chain object is created and multiple transactions are added to it the blocks are added to the list Simple Blockchain is a distributed digital ledger that records transactions on multiple computers in a secure, transparent, and permanent way.

The following steps are considered for development of blockchain:

1. Initially, the necessary libraries(hashlib, Json,time) are imported;
2. The Block_chainclass is defined with a _init_method. The class has two attribute: 'chain'which is an empty list that will store all the block sand 'transaction' which is empty list will store pending transaction;
3. The 'newBlock' method creates a newblock and add it to the chain, it takes two arguments 'the_proof'(the solution to the proof of work algorithm) and 'previous Hash' The previous block's hash is used to create a dictionary named 'the_block', which contains the following key and value pairs:

- The 'index' is the chain's index, which is greater than the previous block's index.
- The 'timestamp' is the time it took to create the block using the 'time ()' function.
- The 'transaction' is the list of transactions that have been executed after the block was created.
- The 'proof' is the algorithm used to prove that the block is valid.
- The 'previous' and 'first' hashes are the previous block's and the first block's hash respectively.

4. The 'last Block' method returns the most recent block in the chain;
5. The 'new Transaction' method adds a new transaction to the list of pending transaction, it takes three arguments: 'the_sender' (the sender's name), 'the_recipient' (the recipient's name), and 'the _amount' (the amount of crypto currency being transferred);
6. The 'hash' method takes a block and returns its SHA256 hash;
7. An instance of the 'Block_chain' class is created;
8. Several transactions are added using the 'newTransaction' method ;
9. A block is created using the 'newBlock' method and the pending transaction are added to the block;
10. More transaction is added and another block is created;
11. Finally, the entire chain is printed using print ("Genesis block:" block_chain. chain).

From the above steps, the blockchain is shown in the figure 4 and resultant is given in the figure 5 in which each transaction in the blockchain include the sender, recipient and amount of cryptocurrency to be transferred. Forexample,in the first transaction, the blockchain was from "Choudhary" to" Jaydeep" for 10 BTC. The second transaction was from "Jaydeep" to "Choudhary" for 2 BTC, so resultant is the blockchain consisting of four Blocks, where each block contains a block index, timestamp, list of transaction, proof of value and the hash value of previous block. The first block is the Genesis block, which is hard, coded with a proof value and the hash value.

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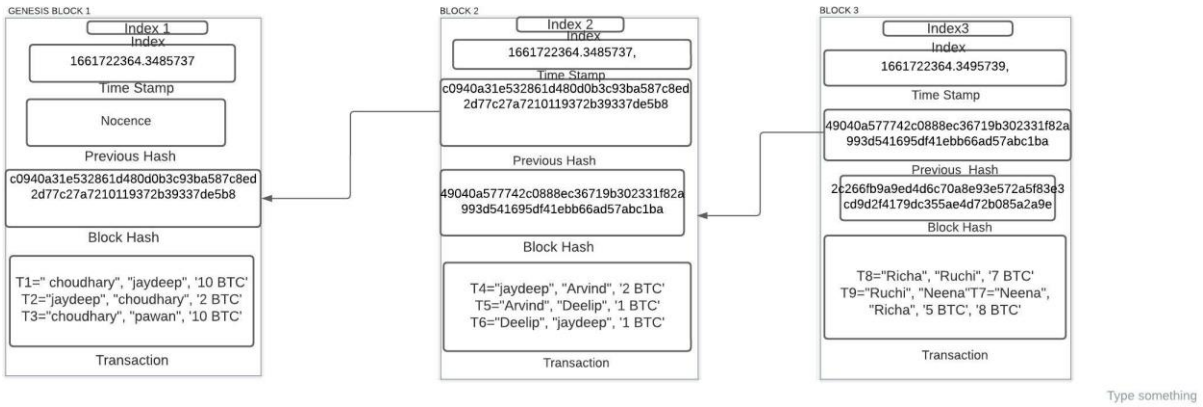

Figure 5. Resultant for Creation of Blockchain

Genesis block: [{'index': 1, 'timestamp': 1661722364.3485737, 'transactions': [], 'proof': 100, 'previous_hash': 'The Times 2 8/aug/2022'}, {'index': 2, 'timestamp': 1661722364.3485737, 'transactions': [{'sender': ' choudhary', 'recipient': 'jaydeep', 'amount': '10 BTC'}, {'sender': 'jaydeep', 'recipient': 'choudhary', 'amount': '2 BTC'}, {'sender': 'choudhary', 'recipient': 'pawan', 'amount': '10 BTC'}], 'proof': 10123, 'previous_hash': 'c0940a31e532861d480d0b3c93ba587c8ed2d77c27a7210119372b39337de5b8'}, {'index': 3, 'timestamp': 1661722364.3495739, 'transactions': [{'sender': 'jaydeep', 'recipient': 'Arvind', 'amount': '2 BTC'}, {'sender': 'Arvind', 'recipient': 'Deelip', 'amount': '1 BTC'}, {'sender': 'Deelip', 'recipient': 'jaydeep', 'amount': '1 BTC'}], 'proof': 10384, 'previous_hash': '49040a577742c0888ec36719b302331f82a993d541695df41ebb66ad57abc1ba'}, {'index': 4, 'timestamp': 1661722364.3495739, 'transactions': [{'sender': 'Neena', 'recipient': 'Richa', 'amount': '5 BTC'}, {'sender': 'Richa', 'recipient': 'Ruchi', 'amount': '7 BTC'}, {'sender': 'Ruchi', 'recipient': 'Neena', 'amount': '8 BTC'}], 'proof': 10486, 'previous_hash': '2c266fb9a9ed4d6c70a8e93e572a5f83e3cd9d2f4179dc355ae4d72b085a2a9e'}]

Figure 6. Sample Result

Discussion

Blockchain technology has revolutionized the banking sector in recent times. It allows untrusted parties, such as banks, to agree on the status of a database. This eliminates the need for middlemen in transactions. Blockchain extends financial services, including payments, without the need for traditional intermediaries. Its decentralized ledger for payments offers faster and more efficient payment solutions. It also allows for the issuance of securities, such as stocks, bonds, or alternative assets, on open blockchains. Here are the top benefits of blockchain in banking:

1. Cost reduction:

Blockchain is a game-changer for banks. Studies have shown that blockchain technology can potentially reduce central finance reporting costs by 70%. It can also reduce business operation costs by 50%, and compliance costs by over 50%. By 2022, it is expected that blockchain technology could enable banks to reduce infrastructure costs by $20 billion.

2. Faster transactions:

Blockchain allows transactions to take seconds to complete, which is faster than many traditional methods of payment. Since blockchain eliminates intermediaries, customers and banks can handle more transactions efficiently.

3. Improved security:

Banks can improve the security of their transactional data by using shared ledgers offered by blockchain. Transactions processed through blockchain are fast, and the risk of intercepting or diverting payments is greatly reduced. The prevalence of large data breaches in the banking sector highlights the need for improved security measures. Major banks such as JP Morgan Chase and large credit bureaus such as Equifax have suffered major data breaches that exposed millions of account details.

4. Improved data quality:

Blockchain allows for the storage and retrieval of different types of data in accordance with predetermined rules and regulations. A key component of this technology is smart contracts, which automatically validate and enforce contracts. When financial data is moved to shared ledgers, it inherits the benefits of blockchain's tamper-proofness.

5. Digital Currencies:

Banks benefit from the introduction of digital currencies, as they allow for a wider range of transactions to be processed. This allows for faster and more secure settlement and clearing of financial transactions.

6. Accountability:

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Blockchain creates accountability, which reduces fraud and mismanagement of company resources. As transactions are digitally recorded, concerns about critical errors are alleviated. Banks are able to manage transactions with greater accuracy, as Blockchain makes verification and validation easier.

7. Compliance

Blockchain improves compliance by allowing auditors and regulators to view transaction data in real-time. This makes auditing easier and allows financial institutions to detect suspicious transaction activity in advance.

8. Reconciliation

Blockchain makes it easier for banks to reconcile transactions. Transactions can be monitored in real-time and errors can be identified quickly. Banks gain the benefit of correcting errors before they turn into bigger problems for themselves and their customers.

9. Global Impact

Blockchain is expected to transform international payments by eliminating intermediaries and streamlining payment records and accounting. This will reduce operational costs and make payments faster and more transparent for customers. Blockchain can improve the complicated process of drafting letters of credit by allowing private distributed ledgers (PDLs) and smart contracts.

Blockchain can be used to securely store and share customer data between banks, improving operational efficiency and reducing unnecessary work. The integrity of the data is preserved in blocks, ensuring its accuracy and allowing multiple banks to use the information. Blockchain can also improve the effectiveness of trade services and asset protection. It can be used to process transactions in real-time and increase transparency for the organizations involved. In summary, blockchain is set to revolutionize banking, providing a number of benefits ranging from increased security to more efficient operations.

4. Conclusion

The integration of blockchain into database access within the banking industry is a major step towards improving data availability and security. The benefits of blockchain, including decentralized storage and its immutable nature, provide a solid basis for building blocks within databases. This approach has proven to be highly effective in speeding up the retrieval of information, resulting in increased usability and ease of use for users. In the wider context of the financial system, blockchain is a game-changer. Its potential is immense, but it is not without challenges. Compliance with ever-changing privacy and security laws is critical for the banking industry to reap the benefits of blockchain. As the industry progresses, regulators and financial institutions will need to work together to ensure a smooth integration of blockchain, safeguarding the massive troves of data underpinning modern banking operations.

In a world where data availability and security are of utmost importance, the combination of blockchain with cloud technology is a game-changer. Implementing this cutting-edge approach will not only improve operational efficiency, but it will also strengthen the banking industry's position in a digital-driven world. If left unchecked, traditional banking models could fall victim to obsolescence. This highlights the importance of proactively adopting and adapting to this ground-breaking technology.

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