



# DBANK- DECENTRALISED BANKING

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**Abstract :** A decentralized market allows people to trade directly with each other. Decentralized banking systems are usually self-regulated systems that operate with an organization or authority. Our office at dBank is blockchain technology that can be used to record and settle transactions, manage finances, payments, as well as create secure contracts between many parties. It provides a secure way to exchange any product, service or business. Blockchain includes multiple value chains, faster product delivery, better customer relationships, and faster integration with IoT and cloud technologies.

Unlike traditional banks and investment companies, dBank (decentralized banking) financial services companies use digital assets rather than fiat currency to provide financing such as banking and deposit services, loans, investments and services.

**IndexTerms - Banking, Decentralized, Blockchain, Transaction, Payments.**

## I.INTRODUCTION

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## INTRODUCTION

Blockchain is a distributed ledger used to exchange digital currency to make transactions secure, complete. All members of the network have access to the latest copy of the registry so they can verify the latest changes. The blockchain ledger is a record of all past bitcoin transactions. It is basically a distributed information system that manages the continued growth of data evidence involving individual products.[1]

Complete additional blocks in order and on time.

Each block is interconnected and links to the previous block. Bitcoin is a peer-to-peer permissioned network that allows any user to connect to the network and send new transactions to verify and generate new blocks. Satoshi Nakamoto explained the design of the Bitcoin digital currency in a 2008 research paper published on Cryptography Listing Service. Satoshi Nakamoto's idea solved the longstanding problem of cryptographers and laid the foundation for digital currency. Banks and financial institutions are using blockchain technology to reduce risk and prevent online fraud[2].

For example, Nasdaq announced plans to develop blockchain-based digital ledger technology to help improve its equity management system. Standard Chartered is working with DBS to develop an electronic payment system using blockchain. Bitcoin Core users store blockchain metadata in Google's LevelDB[4]. We can think of blockchain as a vertical stack in which blocks are stacked on top of each other and the bottom block is the base of the stack. Individual blocks are linked and refer to previous blocks in the chain.

Individual blocks are identified by a hash generated using the cryptographic hash algorithm of the block header Secure Hash Algorithm (SHA-256)[5]. A block can have one main block but multiple subblocks, each referencing the same main block and therefore has the same hash in the hash space of the previous block. Each block contains the hash of the parent block in its own header, and the hash string linking each block to its parent creates a chain pointing to the first block, called the genesis block.[6]

**NEED OF THE STUDY.**

Blockchain is recently introduced and revolutionizing the digital world bringing a new perspective to security and efficiency of systems. While initially popularized by Bitcoin, Blockchain is much more than a foundation of crypto currency. It offers a secure way to exchange any kind of good, service, or transaction. Blockchain enables more value chains, faster product innovations, closer customer relationships, and quicker integration with IoT and cloud technology. The concepts are transferable to a wide range of industries as finance, government and manufacturing where security, scalability and efficiency must meet. A healthcare industry application, Health chain, is formalized and developed on the foundation of Blockchain using IBM Blockchain initiative.

**RELATED WORK**

As part of our research, we are investigating some applications of companies that are already in the market. The aim is to review and evaluate how these applications work and see how they can be improved and how they differ.

Decentralized banking applications have grown in popularity in recent years as they provide a safe and secure way to exchange money and provide transparency between customers and organizations. Here are some brief and up-to-date data reviews on the subject:

- The White Paper writes "an integrated electronic cash system that will allow money to be sent directly online from one party to another, without going through a financial institution or third party." Nakamoto Satoshi proposed in 2008. This became the basis for my piece, the most popular blockchain application. i.e. bitcoin.
- A paper published by Maline Swan in 2015, explains that the "blockchain is a decentralized public ledger that can be used for registration, inventory and the transfer of all assets in finances, property as well as in intangible assets such as votes, software, health data, and idea". He considered the theoretical, philosophical, and societal impact of cryptocurrencies and blockchain technologies.
- A paper published by SveinØlnes in 2015, studied the "potential use of the blockchain technology to enable governments to utilize the secure, open, distributed and inexpensive database technology". It was emphasized that Bitcoin could be a promising technology for validating many types of persistent documents in the public sector.
- Yli-Huumo J, Ko D, Choi S, Park S, Smolander K in 2016 extracted 41 primary papers from scientific databases and studied the current research, drawbacks and the future perspective of blockchain technology from the technical point of view. The statistics shows that 80-percent of the research is only on Bitcoin as compared to other blockchain applications. Most of the studies are focussing on benefits of blockchain technology. However, many of the Blockchain scalability related challenges have been left unstudied.
- A research paper by J. Leon Zhao, Shaokun Fan and Jiaqi Yan in 2016 gave an overview of blockchain technology research and development. The study showed that the widespread use of Bitcoin in the financial and business sector will open new ways for business innovations and research.
- The Institute for Development and Research in Banking Technology (IDRBT), established by the Reserve bank of India in 2017 has conducted an extensive research to explore the applicability of blockchain technology in Indian Banking and Financial Industry.
- The above review of literature revealed that a peer-to-peer version of electronic cash, Impact of cryptocurrencies and blockchain technologies, Potential use of the blockchain technology to enable governments, blockchain technology research and development. [7]

None of the above studies not focused on Block-chain technology in banking sector, advantages and challenges of block-chain technology in Banking sector.

**PROPOSED METHODOLOGY**

This dBank application will have an easy client login where clients can log in themselves for safety and security. Dbank allows users or customers to transfer, online deposit, payments, etc. It will have all the features of any online bank where it can make financial transactions such as This dBank app will drive online commerce forward while reducing the risk of user error.[8]

Description of modules are mentioned below:

- **Login/ Register**

This module required the user to create an account on this application with proper authentication so that each user can be distinctly identified. It contains all the information about the authenticated person.

It contains the process of verifying the identity of a person by obtaining some sort of credentials and using those credentials always proceeds to the authorization process.

- **Wallet**

This module consists of debit and credit information which helps the users to pay for goods and services digitally using their mobile devices.

- **Withdraw**

In this module clients, users or customers can withdraw their currency by performing some predefined steps in the dBank.

- **Deposit**

In this module of the dBank , users can store or deposit their funds or currency. Users can check their balance enquiry in this module of the application.

- **Currency token**

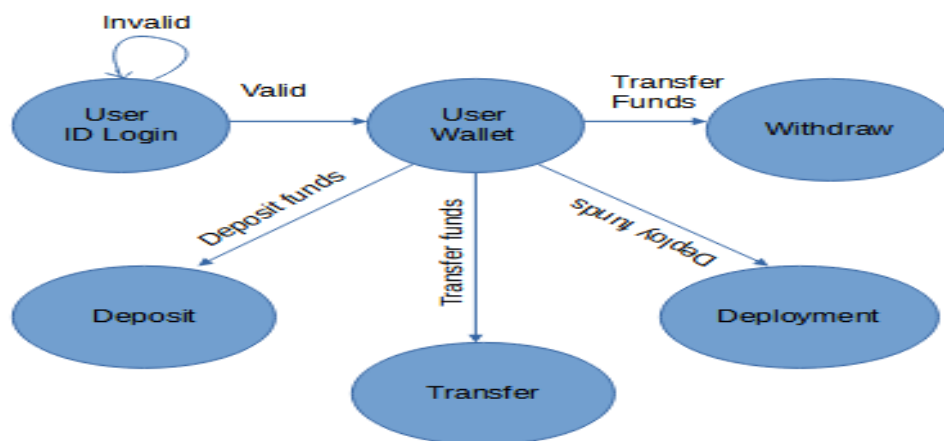
In this module of the dBank, currency calculation will be performed to examine the current balance.[9]

- **Transfer**

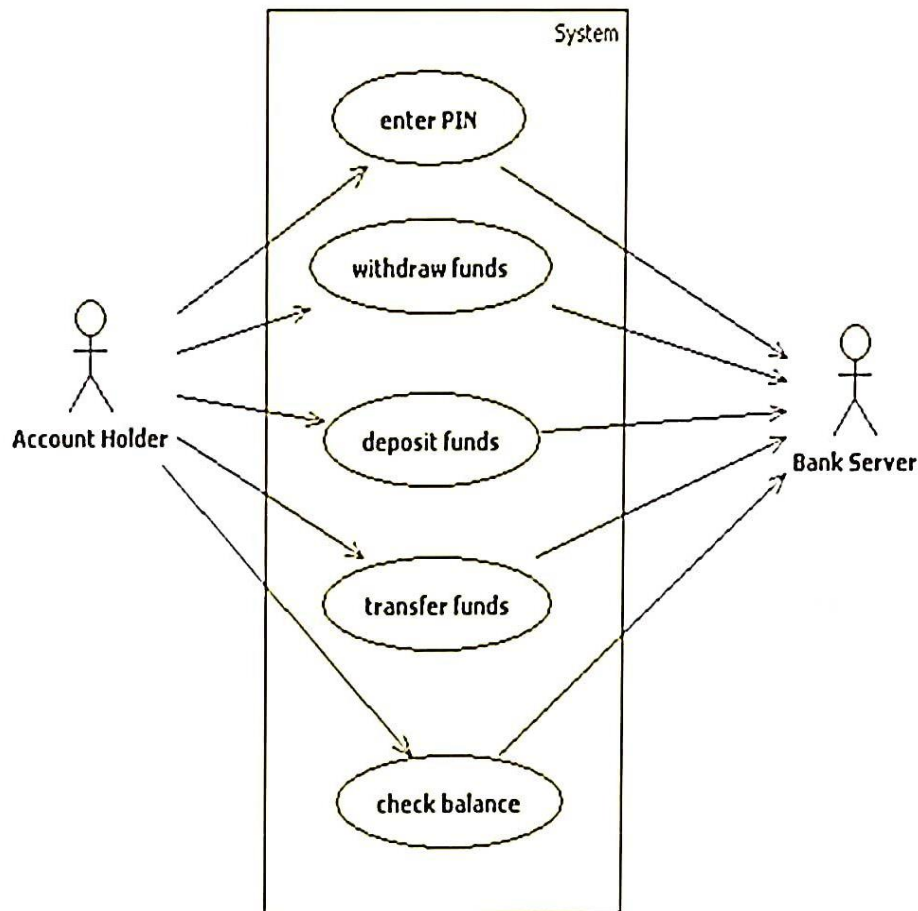
In this module the application will work smartly. Here users or customers can do the transaction of the currency with proper authentication and security. Funds will be transferred in a secure and safe way.

- **Deployment**

This module will increase the total funded currency into investments exceeding amounts repaid in the same period.



**Fig.3.1: Data Flow Diagram of Decentralized Banking**



**Fig.3.2 Use Case Diagram of Decentralized Banking**

A use case diagram is a type of behavioral diagram defined by the UML created from a use case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals represented as use cases and any dependencies between those use cases. Four modeling elements make up the use case diagram; these are:

**Actors:** Actors refer to a type of users, users are people who use the system. In this case student, teacher developer are the users of the framework and application

**Use cases:** A use case defines behavioral features of a system. Each use case is named using a verb phrase that expresses a goal of the system. The name may appear inside or outside the ellipse.

**Associations:** An association is a relationship between an actor and a use case. The relationship is represented by a line between an actor and a use case.

## IMPLEMENTATION

Dbank application will contain a basic clients login module where clients safely and securely login themselves, the Currency calculation where users can do their balance calculation and balance enquiry. In our dBank users or customers can perform financial transactions like transfer funds online, pay currency and will provide more security and privacy to the users. This dBank will propel the online marketing forward with lesser risk of user error.

- The First major function is the registration of the user on this application. This module required the user to create an account on this application with proper authentication so that each user can be distinctly identified. It contains all the information about the authenticated person. It contains the process of verifying the identity of a person by obtaining some sort of credentials and using those credentials always proceeds to the authorization process.
- The Second function of the application where users or customers can do the transaction of the currency with proper authentication and security. Funds will be transferred in a secure and safe way. This module works smartly.
- The Third function of the application consists of debit and credit information which helps the users to pay for goods and services digitally using their mobile devices.
- The Fourth function is withdraw where clients, users or customers can withdraw their currency by performing some predefined steps in the dBank.

- The Fifth module of the dBank ,where users can store or deposit their funds or currency. Users can check their balance enquiry in this module of the application.
- The Sixth function of the application is currency calculation will be performed to examine the current balance.
- The Seventh function of the application is a deployment module that increases the total funded currency into investments exceeding amounts repaid in the same period.

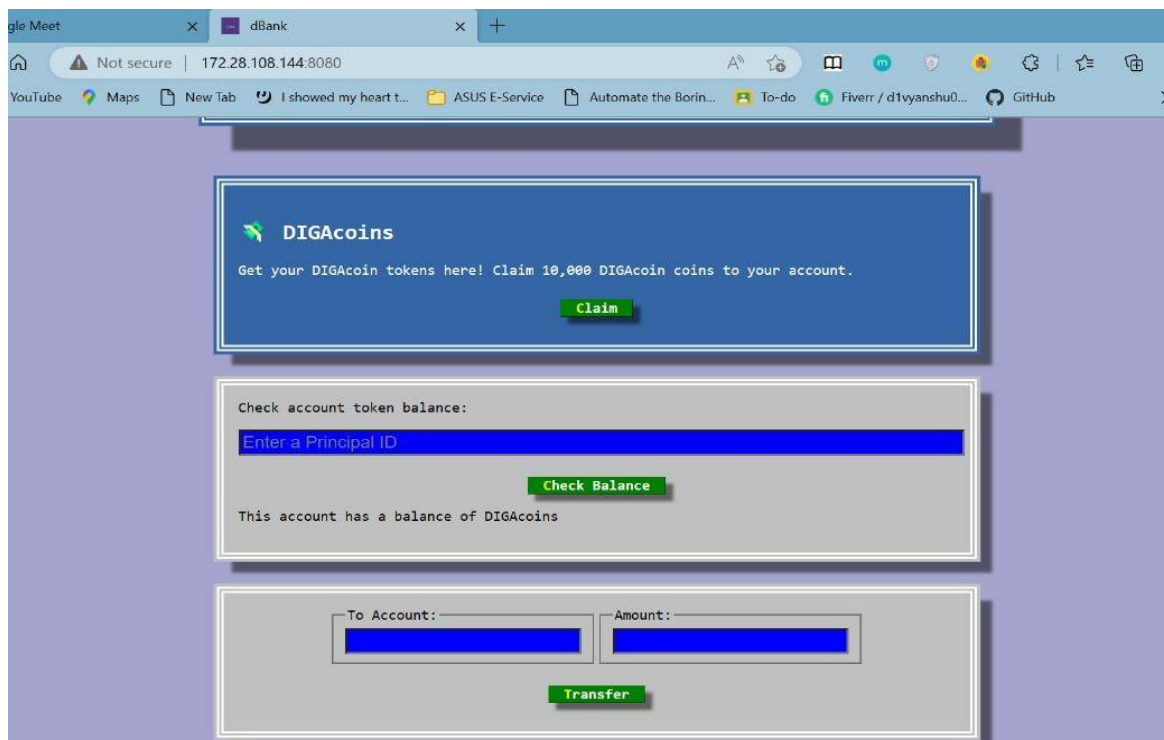


Fig.4.1: Home Screen of Decentralized Banking

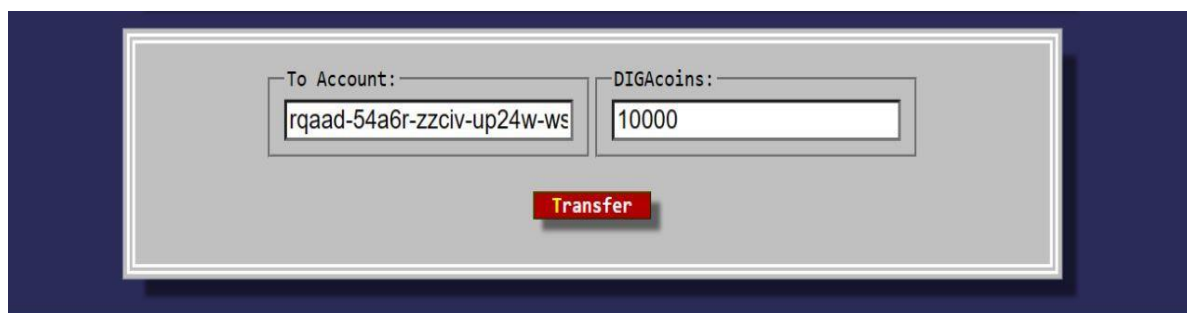


Fig.4.2: Transfer Currency Module

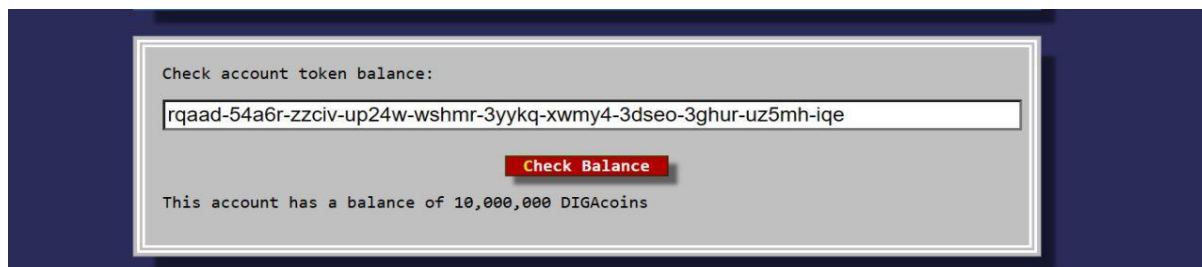
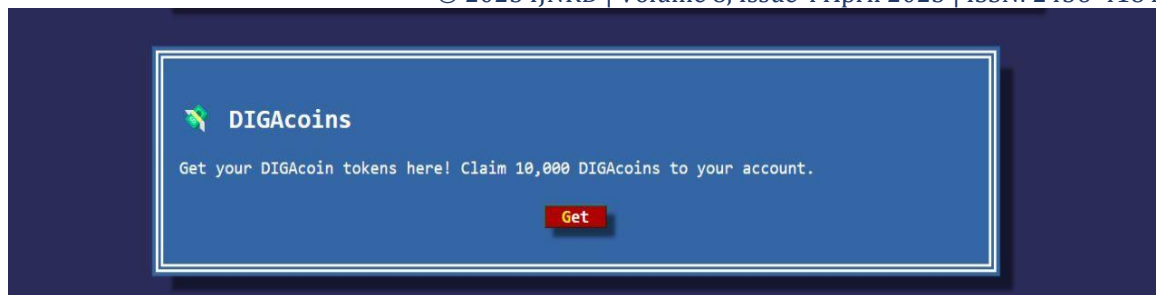


Fig.4.3: Check Balance Module



**Fig.4.4: Currency Token**

## RESULT

The testing results of the above mentioned functions or modules are provided with the screenshots taken in various intervals of time from the developer's device.

## CONCLUSION AND FUTURE SCOPE

This research work plays an important role towards providing the fastest, safest way of transferring currency digitally.

- The proposed methodology will help the users in faster and safer transactions of the digital currency.
- An innovative idea where users or customers can perform financial transactions such as online transfers, payments, and this will provide more security and privacy for users.
- This will drive online business forward with less risk of user error.
- Also, some further upgrades can be done when the user or customer does not have a stable internet connection.[10]

Decentralized banking will drive the online business forward with lesser risk of user error.

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