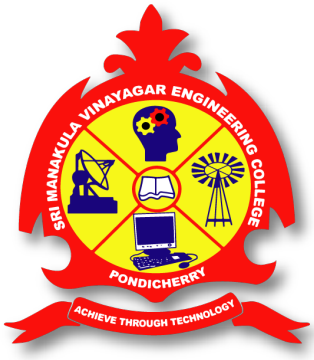
INFRAMIND SEASON-3

USE CASE

BLOCKCHAIN

TEAM

EXTERMINATORS



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Github link:

https://github.com/navinm12/Xbank_HomeLoan.git

Presentation link:

https://youtu.be/47ednmlb5IA

Contents

Introduction:

The blockchain serves as an immutable ledger that allows transactions to take place in a decentralized manner. Blockchain-based applications are springing up, covering numerous fields including Bank for a safer transaction, financial services, reputation system and Internet of Things (IoT), and so on. It created the backbone of a new type of internet.

Problem Statement:

The problem statement is about a private bank wanting a safer transaction between the bank and the user without any intermediate. Then they need a platform to enhance their cross border transaction and fast loan disbursement for home two-wheelers and for welfare schemes. So in these, we build a blockchain network for the home loan section in which we can add any number of participants. If someone needs a loan to be added to the network then the customer provides details. In the network the stakeholders verify the document and estimation is calculated according to the user Income and send the verified information to the bank. After that bank will transact the estimated loan amount to the customer.

Details of Technology used:

Solidity

It is a programming language to develop a smart contract to implement on a various blockchain. Smart contract is computer-based protocols that are mostly used to help verify, facilitate and improve the performance of contracts. In this case, smart contracts are used in creating a home loan, verifying the user id and estimation of a loan based on the salary of the customer.

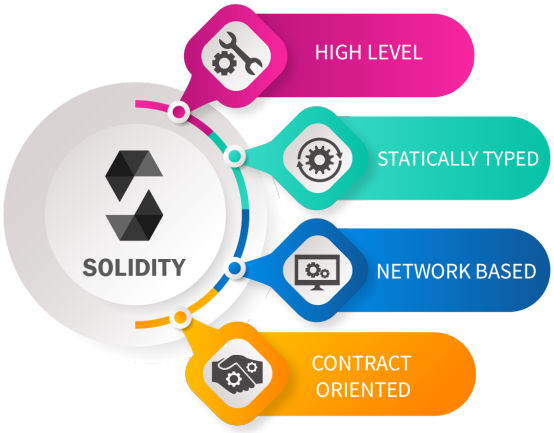

Fig. Features of solidity

Ethereum

Ethereum is software that allows creating smart contracts and applications based on Blockchain technology (Dapps) and you can deploy on their own platform.

Web3.py

Web3.py is the python library to interact with the Ethereum Blockchain. Web3.py is a collection of libraries that enable you to do the following operations:

- Create Ethereum transactions
- Create smart contracts.
- Read and Write data from smart contracts

Technology Stack:

Fig. Tech Stack

Software required:

1. Operating System : Linux Ubuntu 18.04.2
2. Code editor (Preferred: Visual Studio Code)
3. Python3
4. Django
5. Remix solidity

Solution Description

- Salary details, pan card no for age verification and Estimation amount and their home loan documents etc. of the customer are required
- Once the user entered then the solidity that we have written in the backend has a check for the information is valid or not...
- If the information is valid then the bank will split the work for document verification and estimation loan amount from the bank authorized civil Engineers. The document verifier checks the document and provides true result to the bank and Authorised civil engineer put the estimation amount based on land size and based on how many floors and return estimation to the bank
- When both the document verifier and a civil engineer are approved then the bank makes the transaction to the customer. In these we used web3.py to make a transaction between the bank and the client. Initially, the customer gives their information such as name, salary, date of birth, estimation amount for loan.

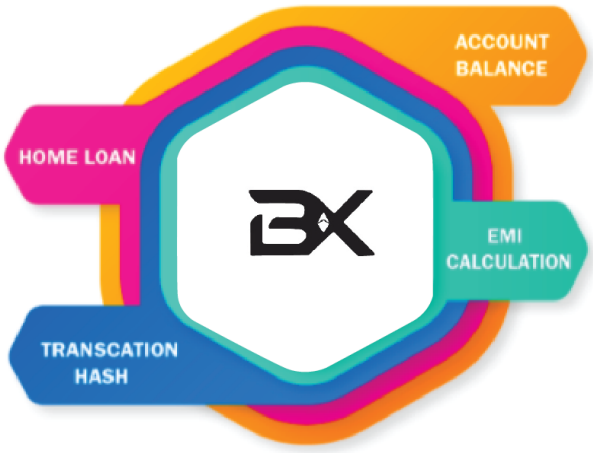

Fig. Features of Bitex

Overall Workflow:

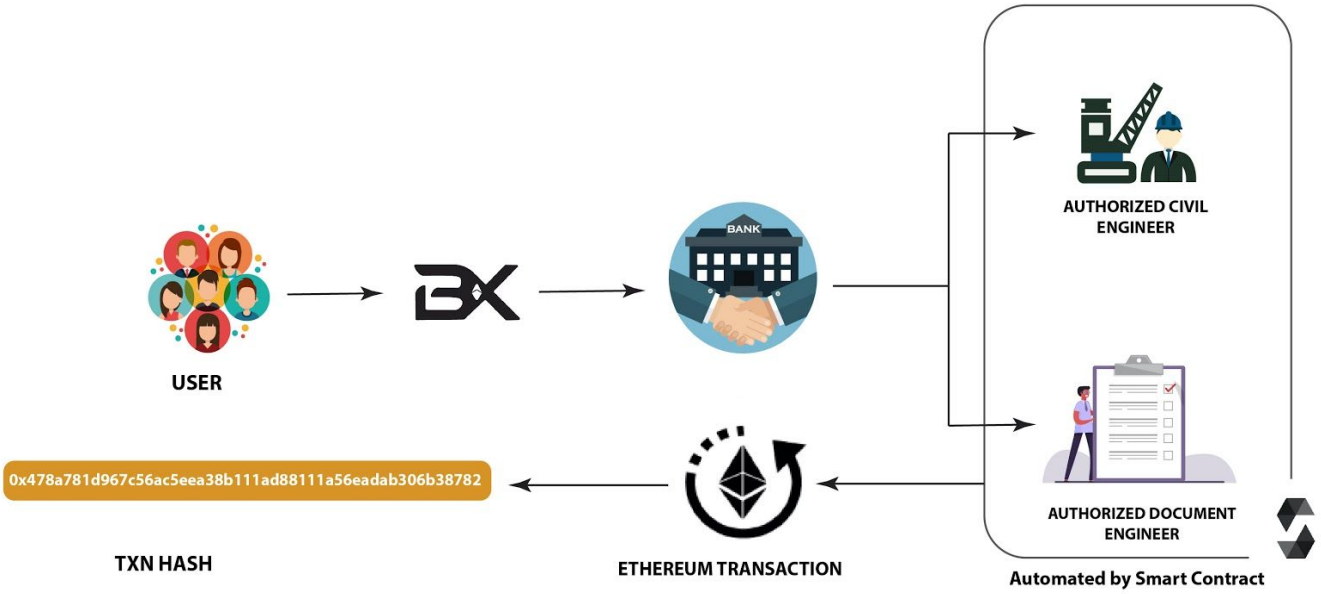

Fig. Overall workflow

Technical workflow:

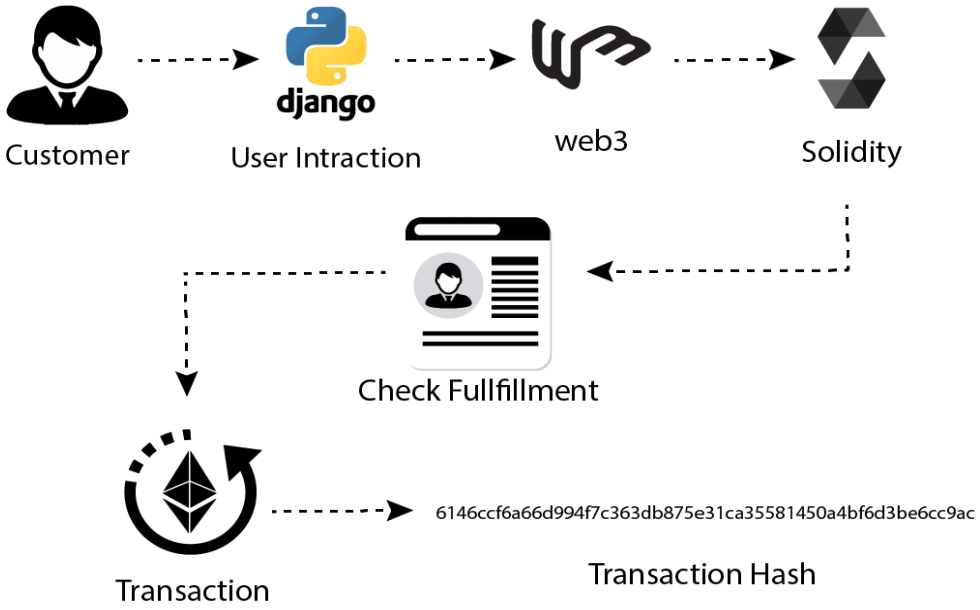

Fig. Technical workflow

Pros:

1.Less expenditure

It has an edge over traditional methods in software, communications, and encryption with its shared, distributed database. This means investment banks don't have to maintain a separate, fragmented database. The shared digital ledger of transactions records and verifies data across a network of participants.

2.Improved Security

Ledgers can help banks secure transaction information in a few ways. Since blockchain enables transactions to be completed much quicker than is possible with centralized systems.

The two security keys are used as a private key and public key. The public key can be used to view a user's account balance and transaction history, but it cannot be used to identify the account owner's identity or to make changes to their record. The private key is linked to the user's account number, and can only be used once. Even if a hacker could steal the private key and decrypt it, it would not enable them to make further transactions.

Application UI

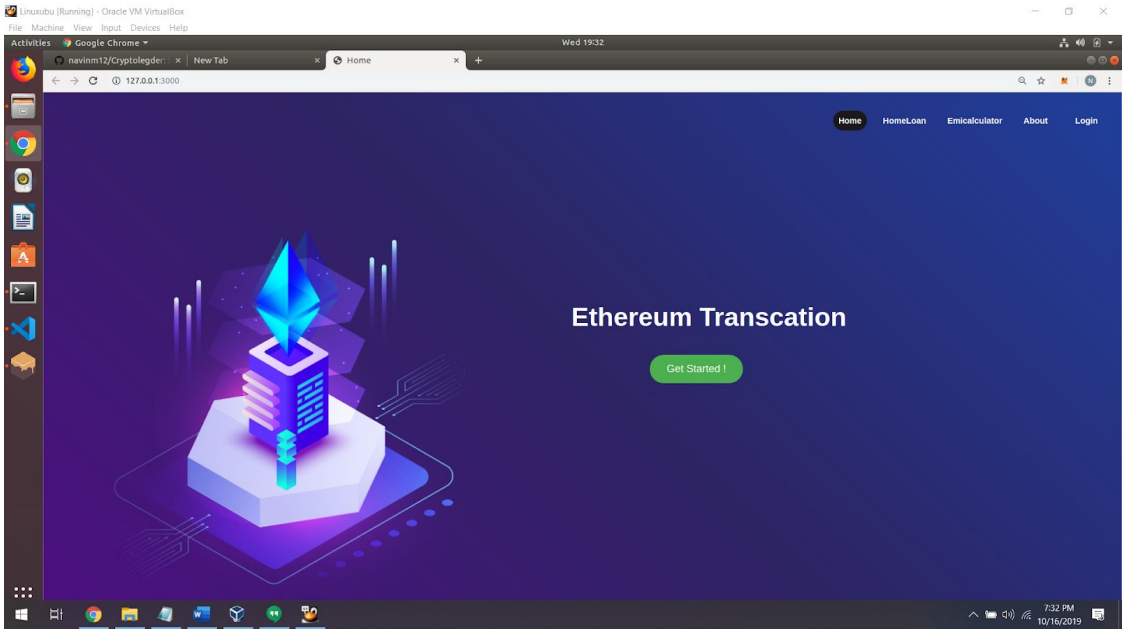

Fig. Home page of our Application **(Bitex)**

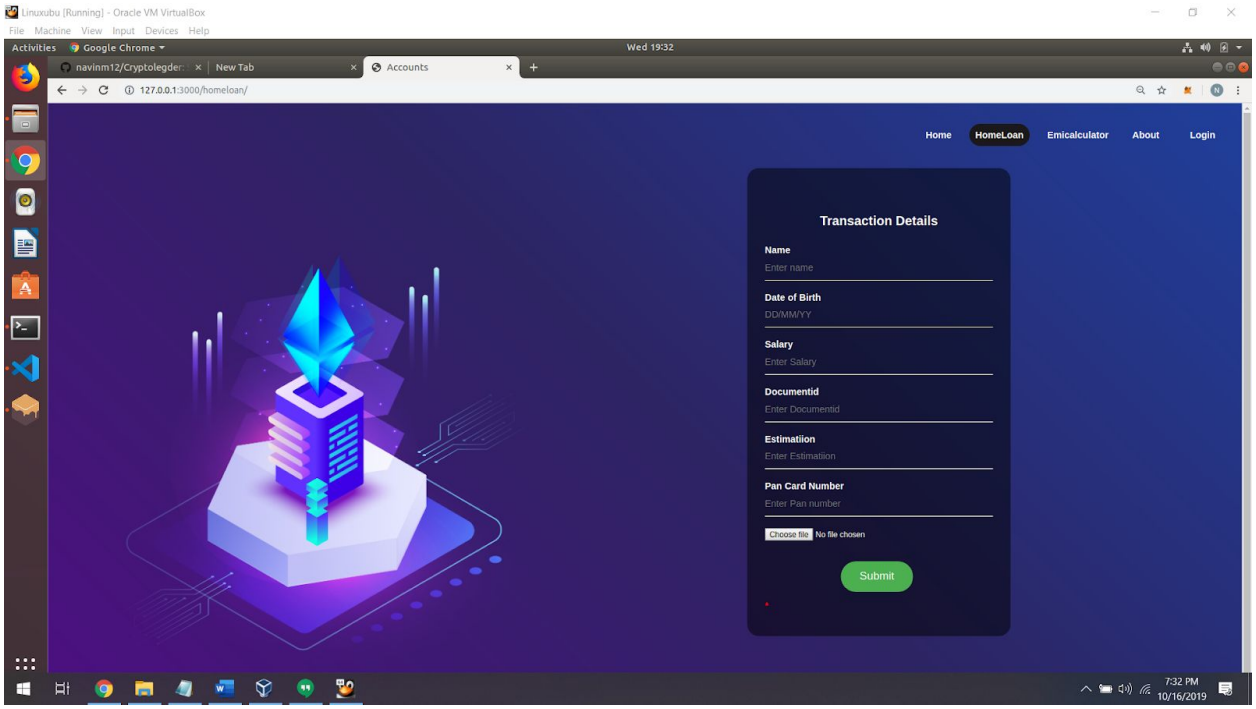

Fig. Home Loan form to be filled by Customer

Conclusion

The application of Blockchain technology is not limited only to the finance industry. It has a fantastic future in different sectors such as supply chain management, digital advertising, forecasting, cybersecurity, Internet of things, networking etc. The transactional activities can be performed much faster and efficiently using Blockchain. it is going to be used in many more sectors in the future such as in government systems. Implementing Blockchain technology in government systems can make their operations much more secure and efficient.

Thank You