

CSE 486-DISTRIBUTED SYSTEM

WORKING WITH ETHEREUM BLOCKCHAIN

Title: PropChain

ABSTRACT

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Project 3

INTRODUCTION

This project aims at creation of a blockchain decentralized application on a practical use case. A blockchain can be defined as digital ledger in which transactions made in ethereum or another cryptocurrency are recorded chronologically and publicly. Ethereum is an open-source, public, blockchain-based distributed computing platform and operating system featuring smart contract functionality. It primarily supports a modified version of Nakamoto consensus via transaction-based state transitions.

CORE PROBLEM

Our team has selected to apply blockchain on Validation and Fault Detection in Properties Sale. We tend to address this problem and provide potential solution through our solution using the blockchain. The existing problem with the properties includes the fraudulent while selling the property by the use fake documents of the property, pending taxes and mortgages which are kept hidden in order to sell. Also, in some cases the regulation of minimum worth of a property in a particular area is violated. The unavailability of authentic documents and a maintained record in the Public Record Agencies' accounts has also been a crucial factor to mitigate this problem. To have a check on the above stated malpractices we tend to provide our solution using the blockchain as it is incorruptible and enforces transparency.

SOLUTION: PropChain

The PropChain solution tackles the problem using blockchain to promote transparency and legitimacy. It has the secured group of people in the blockchain and the potential seller when proposes to sell a property, the information is sent to the interested buyers. To avoid any malpractice in the deal a report of the property is prepared which includes key factors like:

- Does the property has all the necessary authentic documents validating a record of past and present owners?

- If any liens exist on the property which need to be paid off at closing? Like the back taxes and other assessments.
- If the land is free from any mortgage?
- How has the insurance and safety record of that property has been so far? Any questionable activity recorded.

To accomplish the above stated milestones and have certified a saleable and marketable property, we came up with the following diagrams.

SUPPORTING DIAGRAMS:

Figure 1: The Architectural Flow Diagram

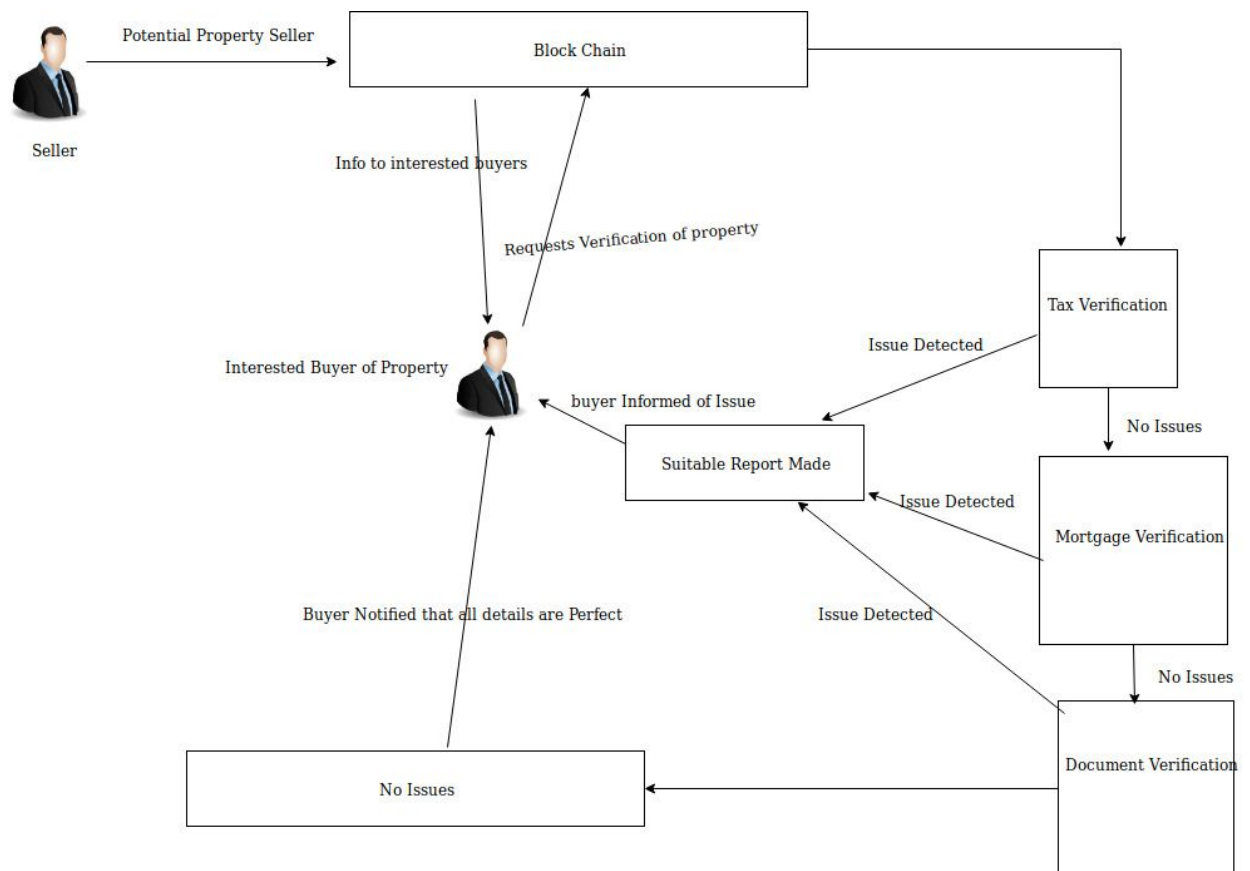
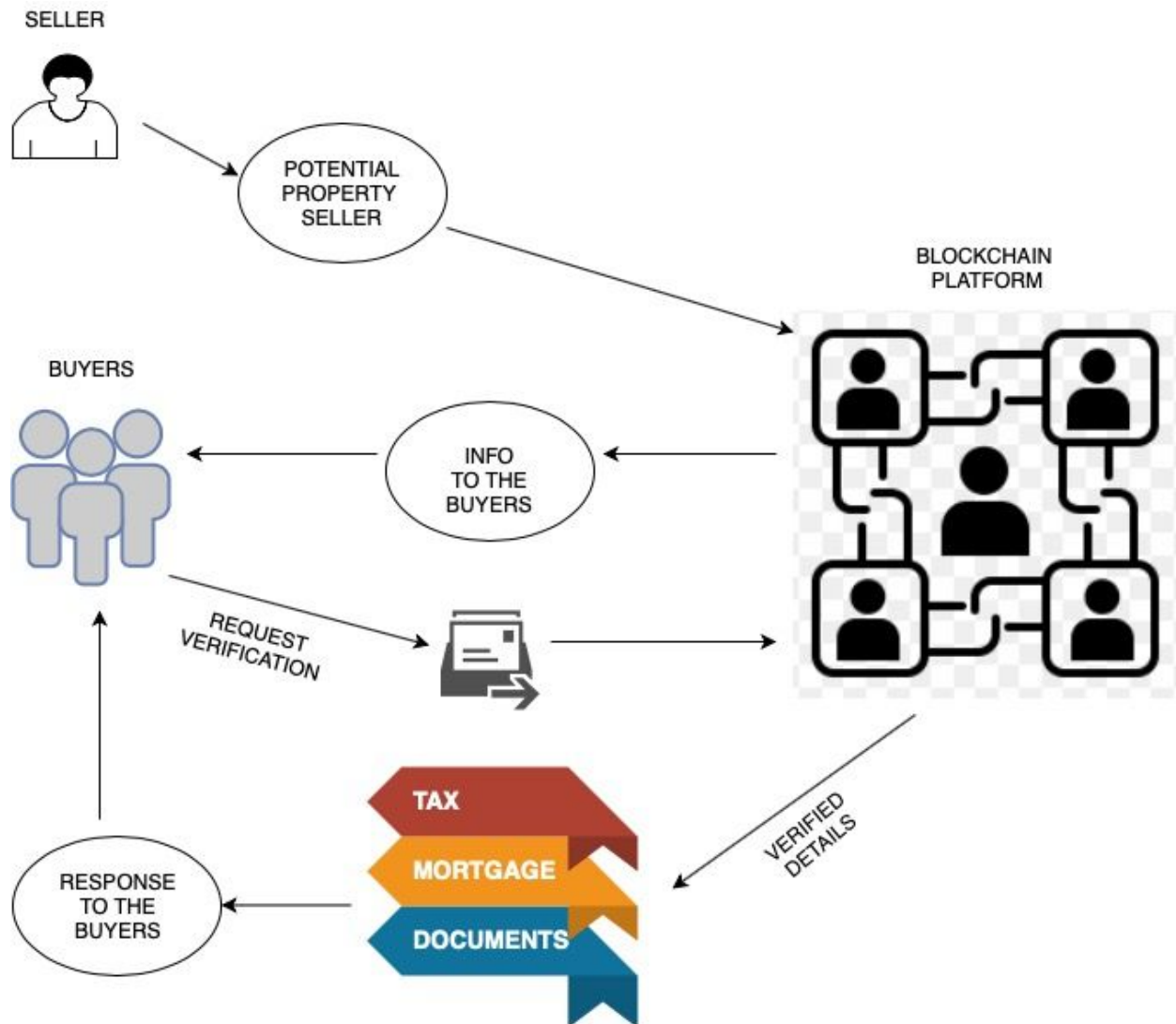


Figure 2: The Use Case Diagram



PSEUDOCODE:

1. Call function `load_data()` to make all Property Data available
2. Call function `make_properties_available()` to make all properties for sale available for others to view.
3. Interested People can call function `verify()` which does the following:

i) If Call function `tax_verification()` which verifies tax details is not successful:

Print `Error_Message` and make individual aware of error

ii) If Call function `mortgage_verify()` which verifies mortgage is not successful:

Print `Error_Message` and make individual aware of error

iii) If Call function `document_verify()` which verifies documents is not successful:

Print `Error_Message` and make individual aware of error

5. If function `verify()` is successful:

Inform individual about the same

CONCLUSION:

PropChain will help the end-users to assess and better transparency to deal with the property buying options. The robust backing of the blockchain make it far more transparent and reliable to go around buying the land assets. With the propagation of this platform we will be ensuring to achieve quality and less fraudulent in one the most corrupted yet crucial market. The future scope of PropChain includes the supervision of commodities with in a land and evaluation of the properties to avoid the exploitation of any less informed end-user.