PROJECT -APARTEMA

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(A Solidity based Registration of Owners on blockchain For Secure Flat Booking)

Abstract

A secure and verified owner registration paves a way to a smooth functioning of buying and selling.

Independent flats have complained about the exorbitant commissions charged by Online Agencies (OTAs) such as Booking, LateRooms, and others.The intermediates can be removed, resulting in a 30% cost reduction. Even in the context of automation (automatic updating of room availability on the website), many booking phases are carried out manually, making them inefficient and unreliable.
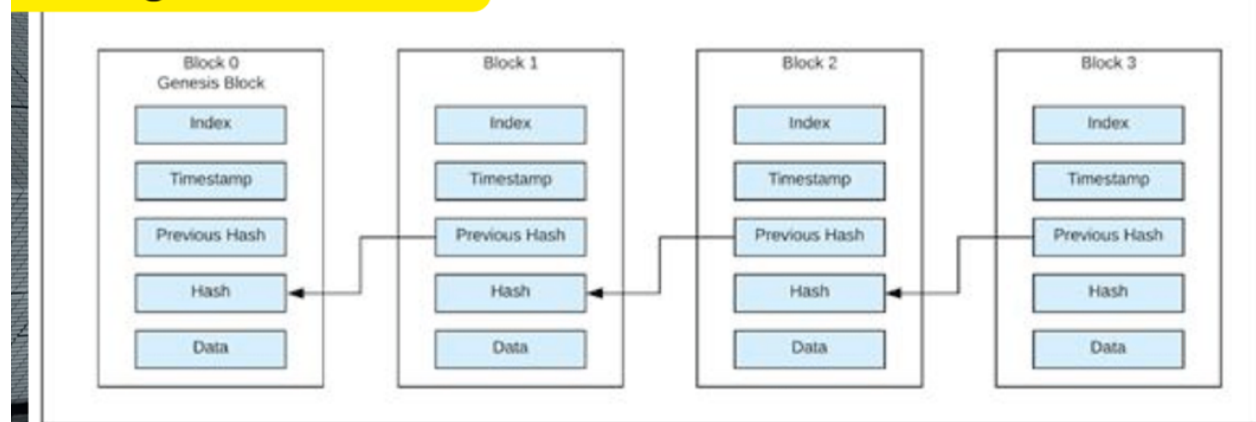
Because blockchain adds "transparency and honesty to the review system," vendors cannot pay for manipulated feedback and only genuine customers can leave comments. There will be no forgeries.

Introduction

A block is nothing more than a data container. Each block contains three elements: data, hash, and the previous block's hash. Data can be anything, for example. Bitcoin data includes transaction information such as From, To, and Amount. Filename, Size, and Date are all included in the file storage block.

| Block 0 Genesis Block	Block 1	Block 2	Block 3
Index	Index	Index	Index
Timestamp	Timestamp	Timestamp	Timestamp
Previous Hash	Previous Hash	Previous Hash	Previous Hash
Hash	Hash	Hash	Hash
Data	Data	Data	Data

Using blockchain technology and use cases of solidity and frontend technology, connecting societies and the constituent flats that are available for rent or sale in one place (website). Because blockchain adds "transparency and honesty to the review system," vendors cannot pay for manipulated feedback, and only genuine customers are allowed to leave comments. There will be no forged documents.

Blockchain replaces old paper deeds with real programmed sources and tracks changes on a perpetual record, serving as the sole protected wellspring of truth for information among various get-togethers and affiliations. Ethereum utilises substitute and property proprietorship measurements to be more open, enabling 16 business undertaking district trades, expanding monetary master assurance, beginning induction to back, and progressing financial and social network development.

WHAT IS BLOCKCHAIN ?

A blockchain is a time-stamped collection of immutable information records that is managed by a network of computers and is not owned by a single entity. Each of these information squares is (i.e., block) secured and bound to each other using cryptographic principles (i.e., chain). Except for the genesis block, each subsequent block contains the hash value of the previous block. The hash serves as the foundation of the block chain. It is generated using algorithms such as MDA (Message Digest Algorithm), SHA-1, and SHA-2 (Secure Hash Algorithm)
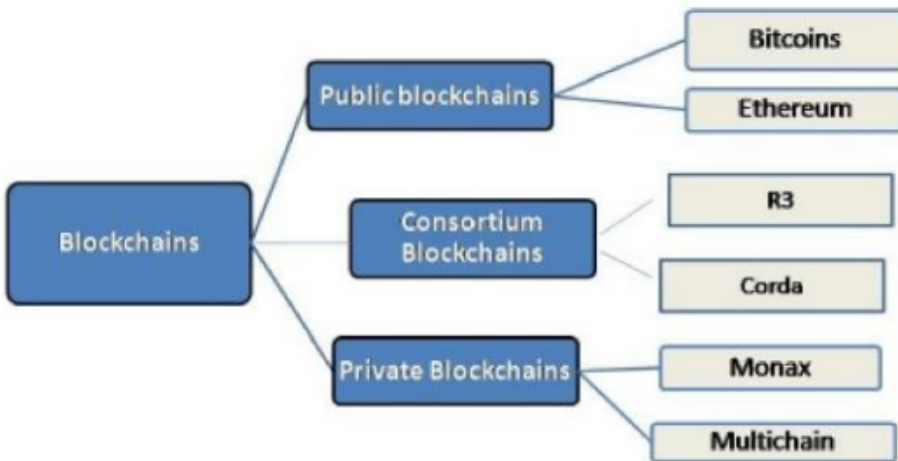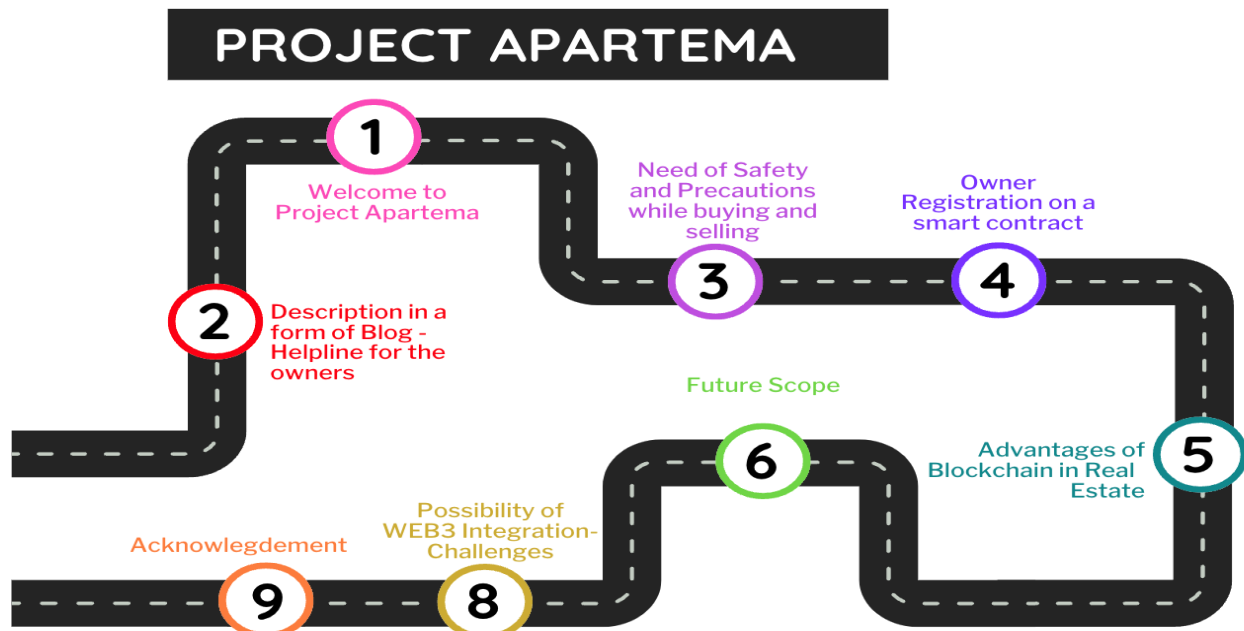
Security Features : Blockchain Implementation

Trading valuable assets and redesigning decisions are frequently made based on outdated realities. Blockchain provides banking foundations with a unique state of indicated records, consistent realities, sharing constant substitute checking, and unending settlement. By digitizing a FICO rating or homegrown credit, it is possible to incorporate relevant realities, for example, possession rights, and improve portion records to assist an estate fate on upgrading blockchain options.

Advantages of Solidity Smart Contracts:

- Smart contracts are encrypted, and cryptography keeps all the documents safe from infiltration.
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- Smart contracts do not need brokers or other intermediaries to confirm the agreement; thus, they eliminate the risk of manipulation by third parties. Moreover, the absence of intermediary in smart contracts results in cost savings.

ACTIVITY DIAGRAM OF THE PROJECT

PROJECT APARTEMA

1 Welcome to Project Apartema

2 Description in a form of Blog - Helpline for the owners

3 Need of Safety and Precautions while buying and selling

4 Owner Registration on a smart contract

5 Advantages of Blockchain in Real Estate

6 Future Scope

7 Possibility of WEB3 Integration- Challenges

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9 Acknowlegdement

Resolving safety Issues while buying Apartments
The volatile housing market set the stage for one of the fastest growing white collar crimes — real estate fraud. This growing trend encourages intervention by government officials to prevent, investigate, and prosecute instances of fraud.
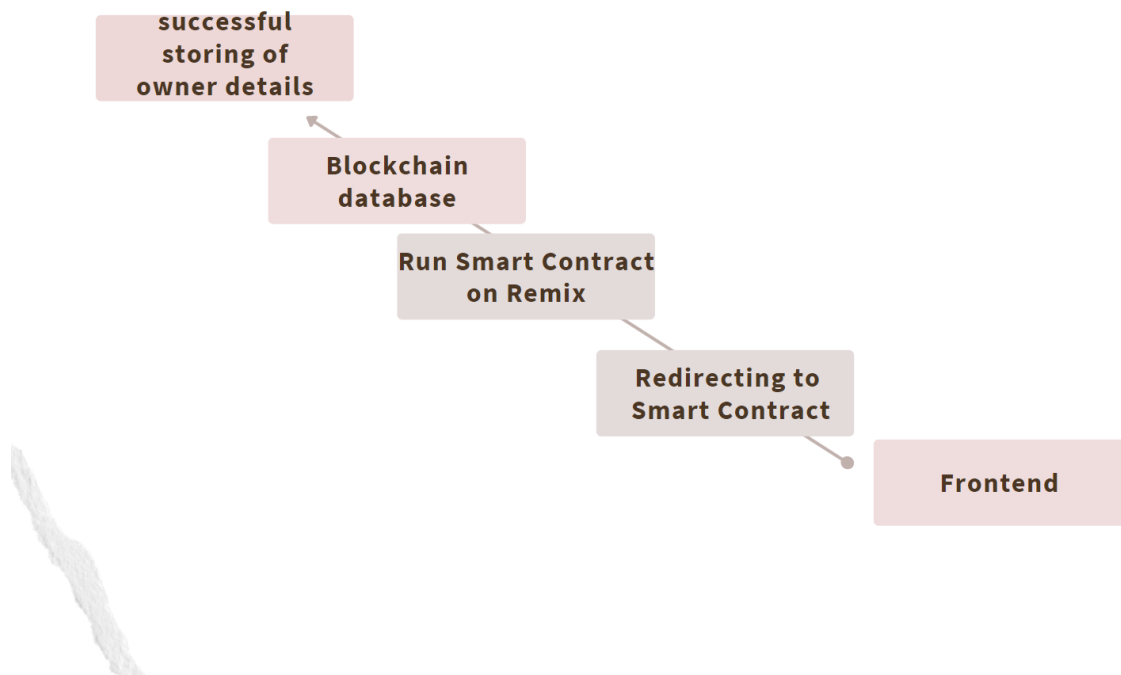
Common Types of Real Estate Fraud
 • Brokers taking advantage of Social Apps
 • Home Equity Fraud
 • Home Renovation Scams
 • Rental Fraud

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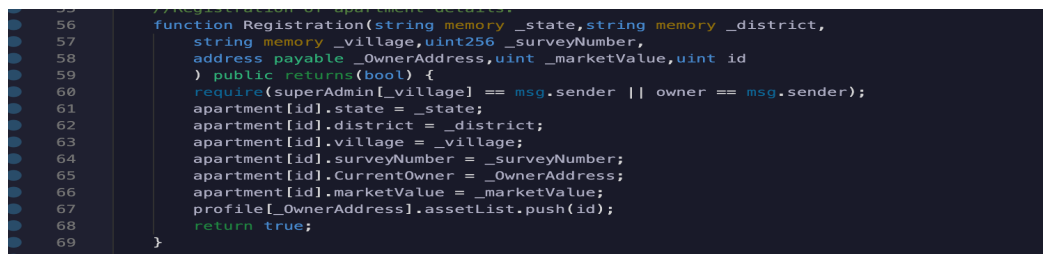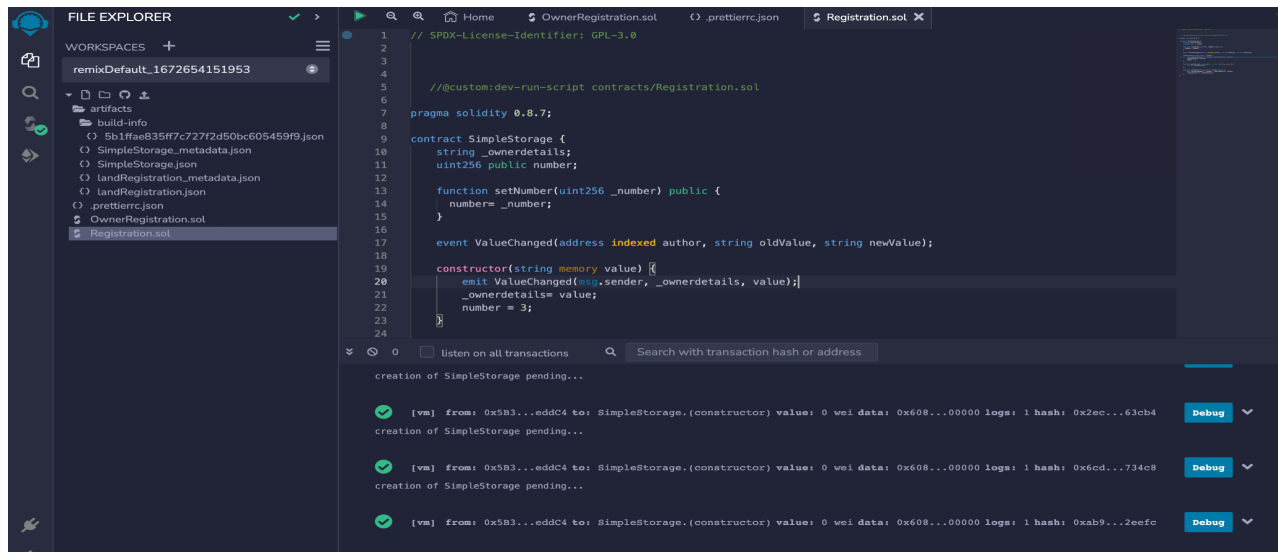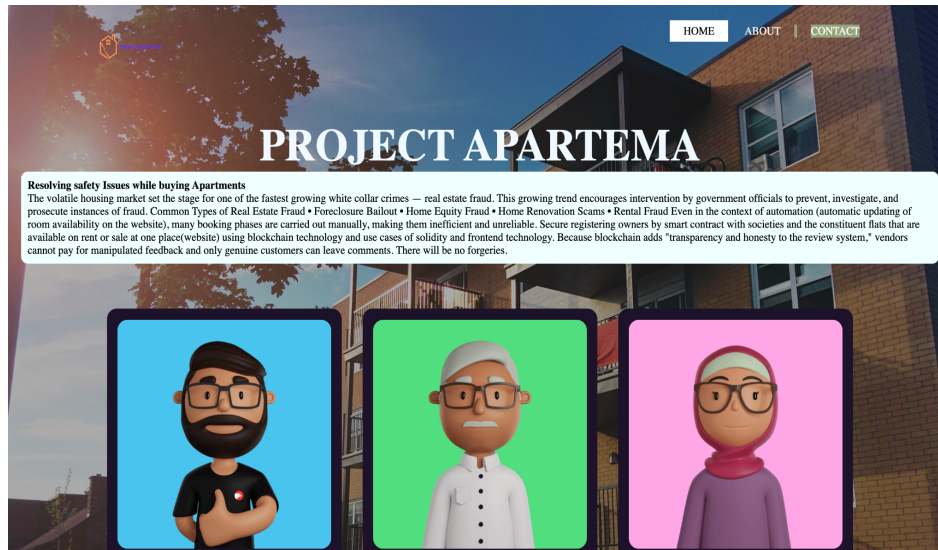
Secure registering owners by smart contract with societies and the constituent flats that are available on rent or sale at one place(website) thausing blockchain technology and use cases of solidity and frontend technology for awareness about real estate frauds.

Because blockchain adds "transparency and honesty to the review system," vendors cannot pay for manipulated feedback and only genuine customers can leave comments. There will be no forgeries.

Development Flow

successful storing of owner details

Blockchain database

Run Smart Contract on Remix

Redirecting to Smart Contract

Frontend

PROJECT OUTPUTS/ IMPLEMENTATION :


```solidity
56   function Registration(string memory _state,string memory _district,
57       string memory _village,uint256 _surveyNumber,
58       address payable _OwnerAddress,uint _marketValue,uint id
59   ) public returns(bool) {
60       require(superAdmin[_village] == msg.sender || owner == msg.sender);
61       apartment[id].state = _state;
62       apartment[id].district = _district;
63       apartment[id].village = _village;
64       apartment[id].surveyNumber = _surveyNumber;
65       apartment[id].CurrentOwner = _OwnerAddress;
66       apartment[id].marketValue = _marketValue;
67       profile[_OwnerAddress].assetList.push(id);
68       return true;
69   }
```

References for the project :

- https://www.datatracetitle.com/hubfs/resources/datatrace-real-estate-fraud-prevention-3-2-18.pdf
- http://shodhgangotri.inflibnet.ac.in/bitstream/123456789/8065/2/02_introduction.pdf
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- https://stackoverflow.com/