Decentralized App on Ethereum Blockchain

presented by

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Blockchain Technology

- A “blockchain” is digitalized public record of all transaction.
- It is also decentralized means instead of single computer controlling ,there are networks of computer communication with each other.
- Whenever someone makes a transaction, it is sent to the network where it is validated, if valid it is added to the network of previous transaction.
- This chain of linked transaction is called “blockchain.”

Advantages of Blockchain

- **Blockchain is a lot more secure than traditional database**
- **Malicious Activity on a single file becomes very difficult since every computer on the network has the copy of data**
- **Auditing the records are much faster due to its shared ledger feature.**
- **No Single point of failure.**

Ethereum Blockchain

Ethereum is a powerful , decentralized , super computer running on blockchain technology.

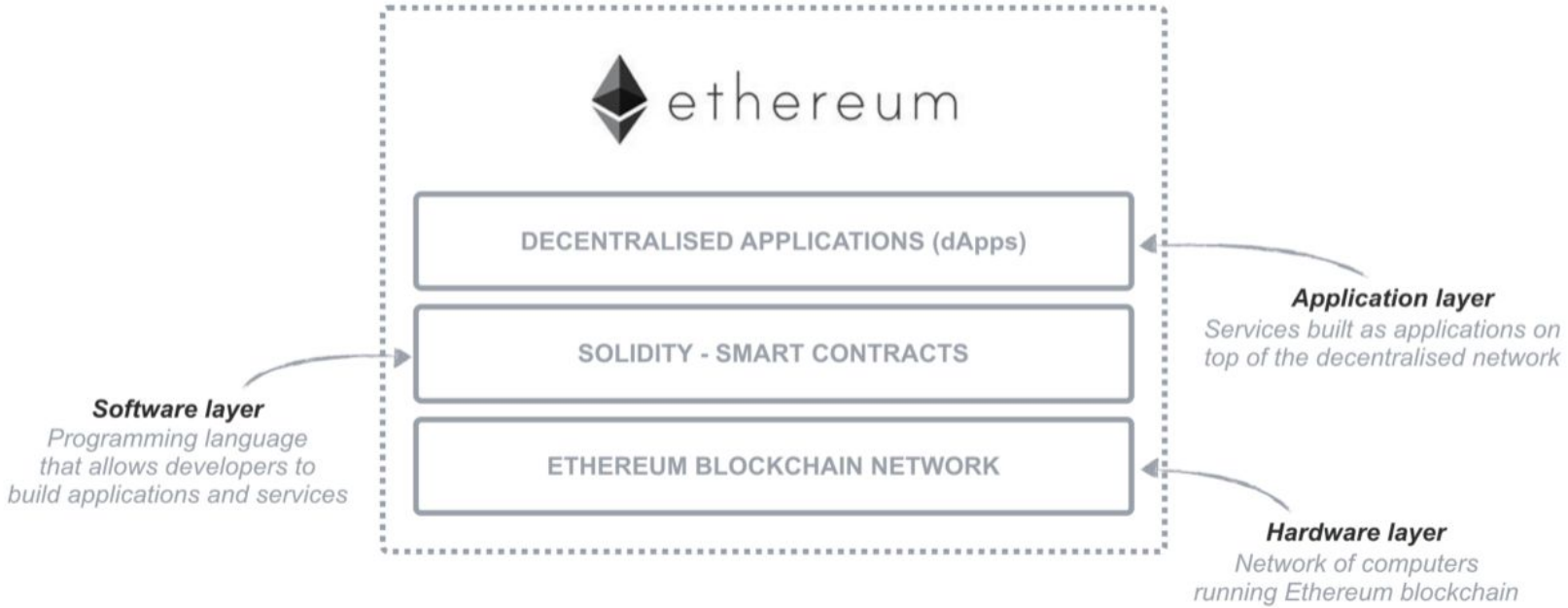


Fig. 1 - The different layers of the Ethereum platform

- Ethereum blockchain is transaction based state machine.
- It starts with the “genesis state” where after a successful transaction it is changed to final state.
- The state has many transaction which are grouped into “blocks” and each block is linked to its previous block.
- To change the state of the transaction, it must be a valid transaction

Three Layers of ethereum

Ethereum Hardware layer : Blockchain

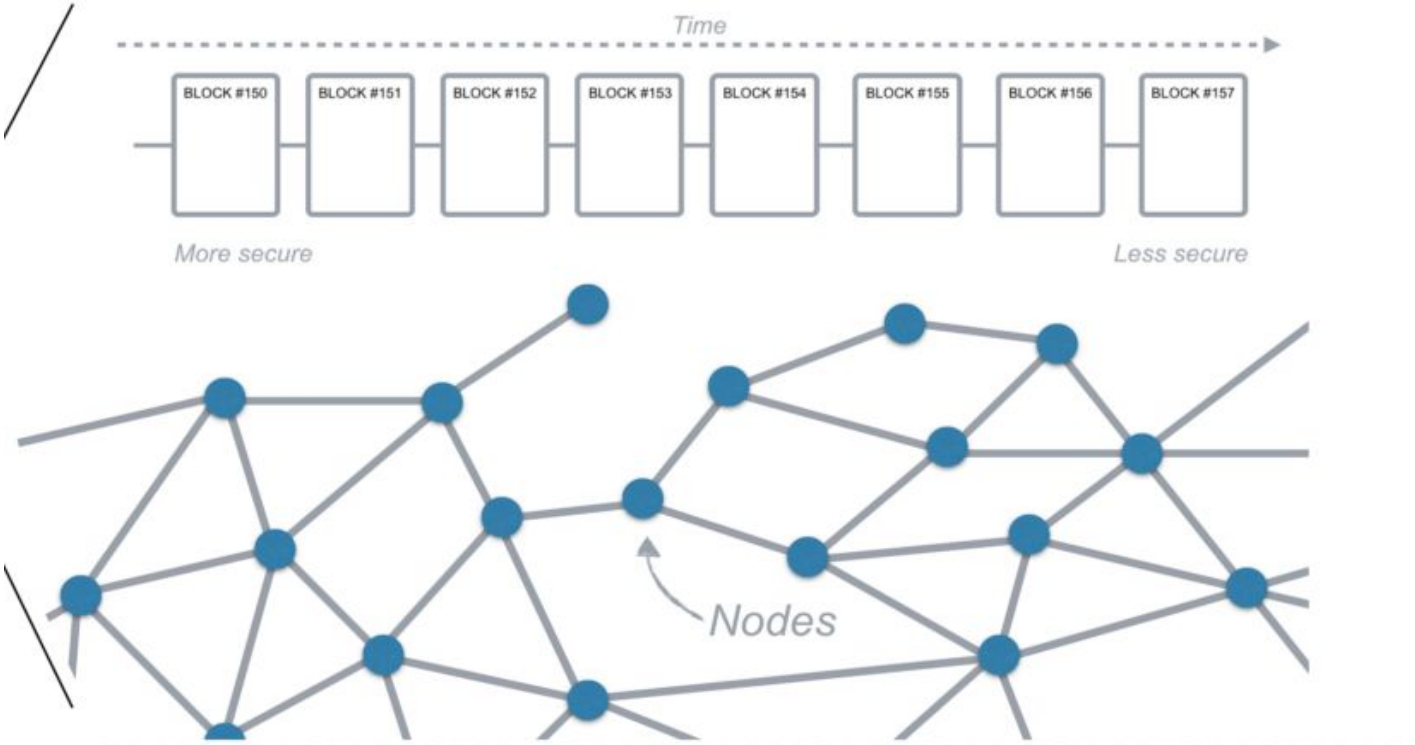


Fig. 2 - Ethereum hardware layer: blockchain

- Ethereum Software Level : Solidity

```
contract MyToken {
    /* This creates an array with all balances */
    mapping (address => uint256) public balanceOf;

    /* Initializes contract with initial supply tokens to the creator of the contract */
    function MyToken(
        uint256 initialSupply
        ) {
        balanceOf[msg.sender] = initialSupply;
    }

    /* Send coins */
    function transfer(address _to, uint256 _value) {
        require(balanceOf[msg.sender] >= _value);
        require(balanceOf[_to] + _value >= balanceOf[_to]);
        balanceOf[msg.sender] -= _value;
        balanceOf[_to] += _value;
    }
}
```

- Ethereum Application level : Dapps

Smart Contract

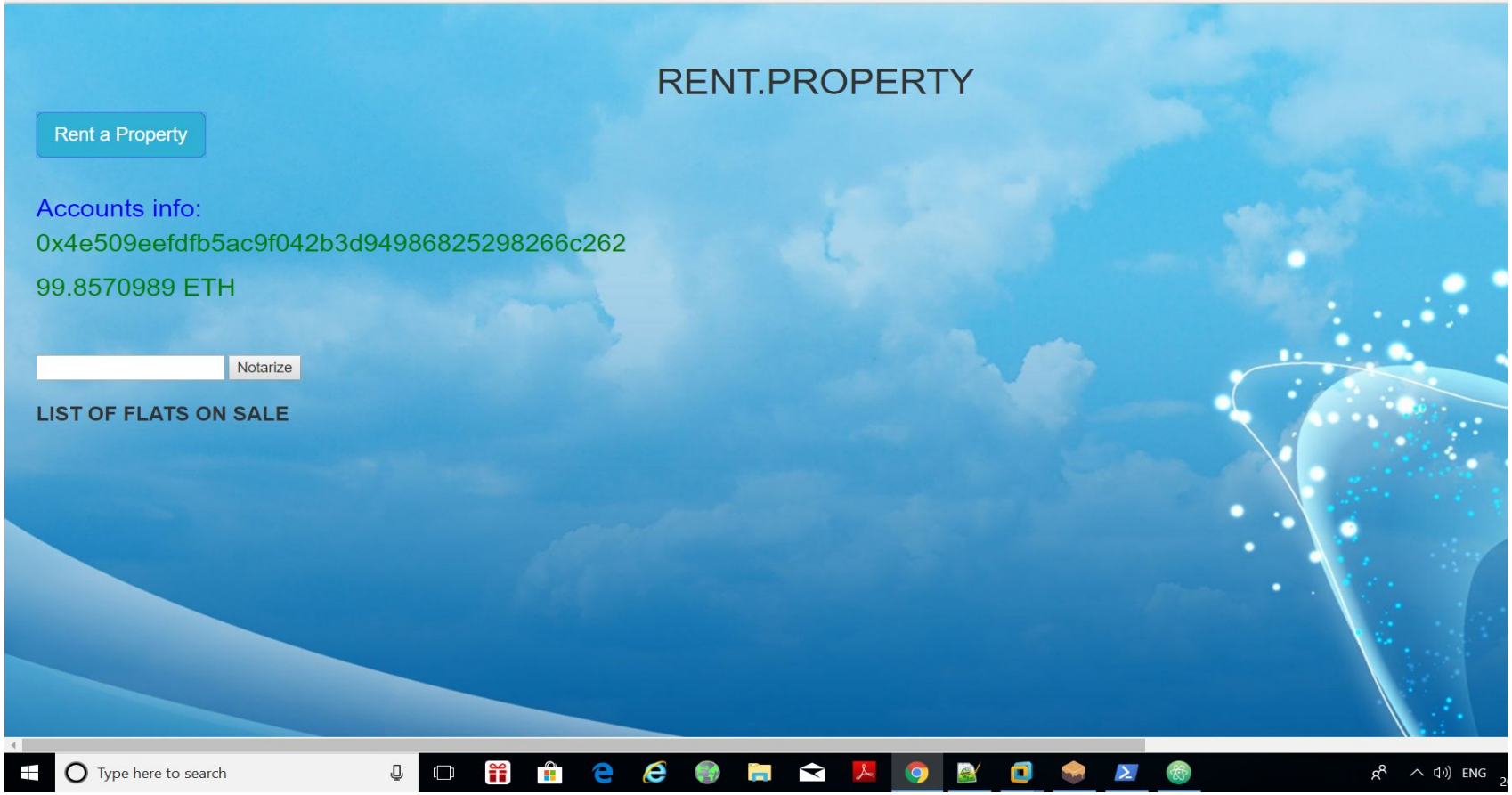
- Smart contracts are software programs which runs on blockchain technology.

- Advantage of Smart Contract:
    1) Accuracy
    2) Transparency
    3) Security
    4) Trust

Rent.Property

- A decentralized Application used for renting flats and apartments for buyers.
- Backend is developed in Ethereum blockchain.
- All the transaction are moved into blocks and is linked to its previous chain, so no records are lost.

Front end of the Dapp



Feature of the Application

- User can put up an ad to rent the flats or apartment for the required price.
- User can buy the flat on rent till its time expires.
- As soon as the tenure is over, the ad is automatically removed.
- User can see his account details.
- If the flat has already been rented, it cannot be put up again for sell.
- User, after buying the flat, can Notarize it based on its ID which will guarantee that the property has been sold.
- Multiple users can put the ad for property and anyone can buy it.

Technology Used

- **Truffle** : A Development framework for Ethereum written in JavaScript.

- **Ganache** : A private blockchain environment created for testing application.

- **Solidity** : A javascript programming language used for smart contract.

THANK YOU