

TrackoDrug

We secure your health...



TEAM

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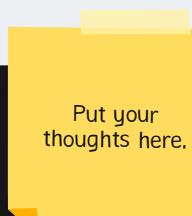
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Problem Statement

FAKE MEDICINES



Detecting Fake Medicines

- The global sales of counterfeit drugs range from 163 bn USD to 217 bn USD and lead to a loss of 205 bn USD every year in sales incurred by the drug manufacturers.
- Also, these manufacturers have to spend large sums of money to take anti-counterfeiting measures that are only marginally effective.

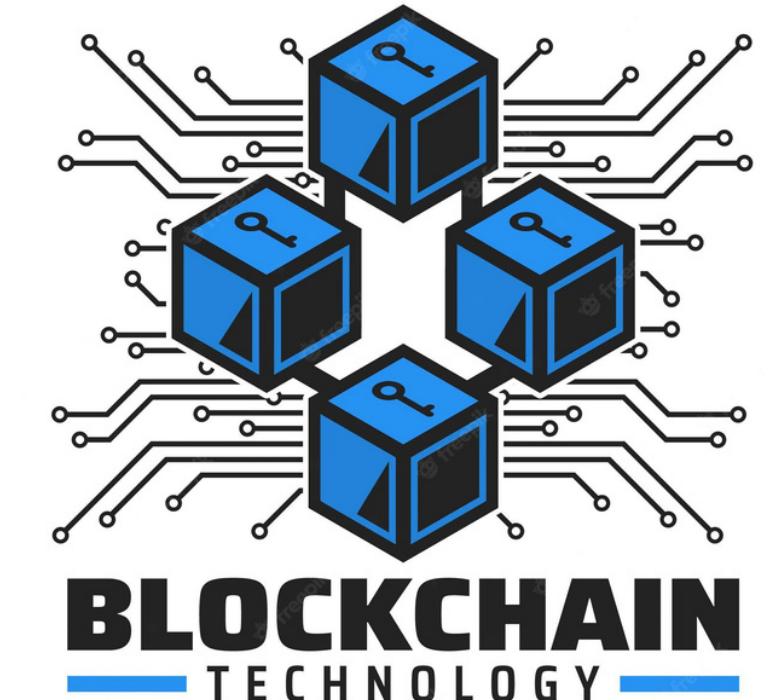
Solution :

Give a better solution rather than spending too much money in anti-counterfeiting

Solution

I

Blockchain tracker



Idea



We generally think blockchain means currency which is crypto and can only be used for finances.

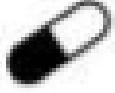
BUT NO

Blockchain is an idea of how to make our money more secure and that same feature can be used in other places as well.

Flow-chart

Manufacturer

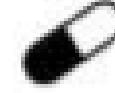


 The manufacturer produces the drug and marks it with a unique code

 The information is stored on the blockchain

Distributor



 The wholesaler verifies the origin of the product

 The transaction is added to the blockchain

Pharmacist



 The pharmacist verifies the origin of the product

 The transaction is added to the blockchain

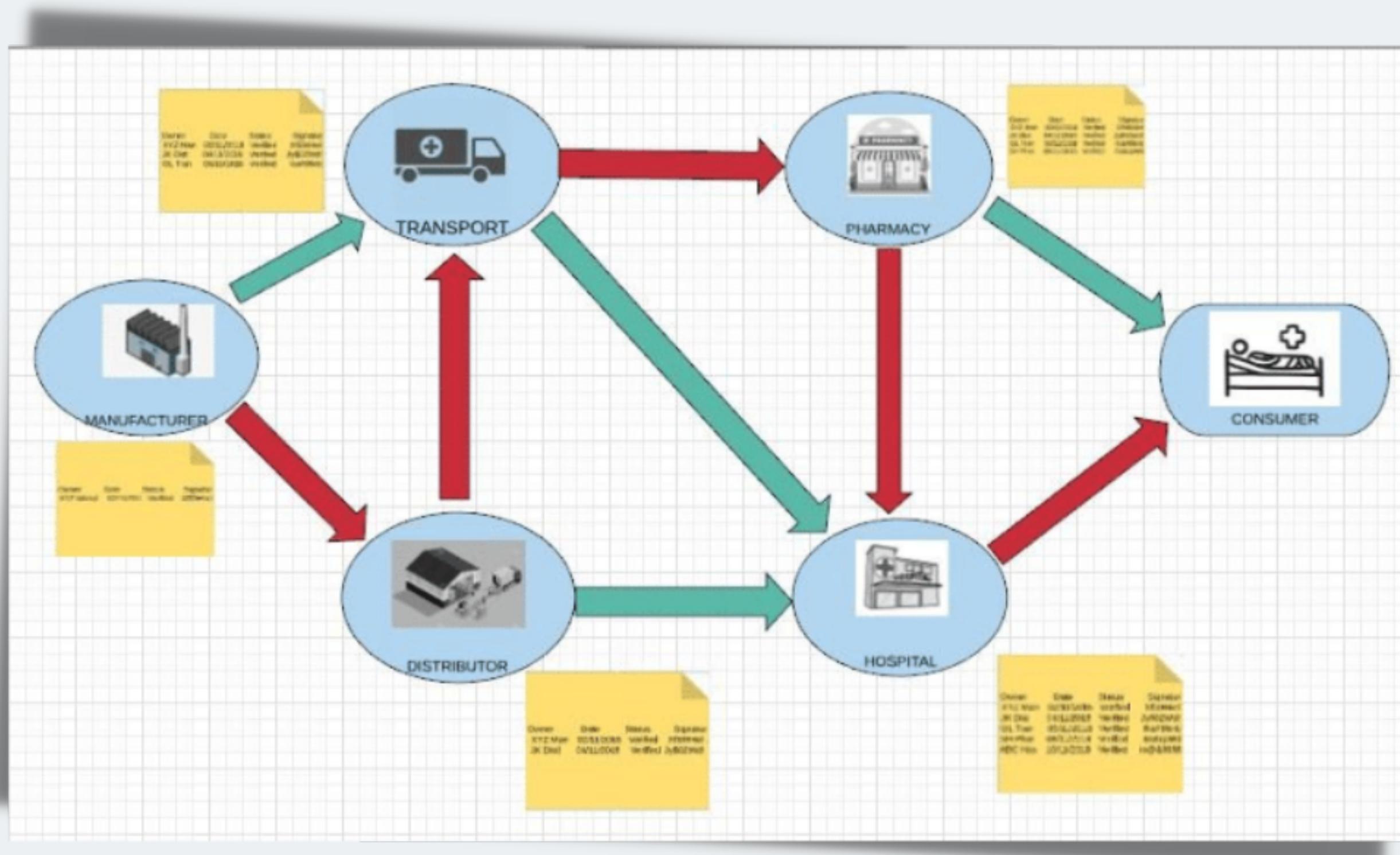
Patient



 The patient verifies the origin of the product

 The transaction is added to the blockchain

At each stage, hashed signature block is added to the chain with the information of dealer, longitude and latitude of dealer.

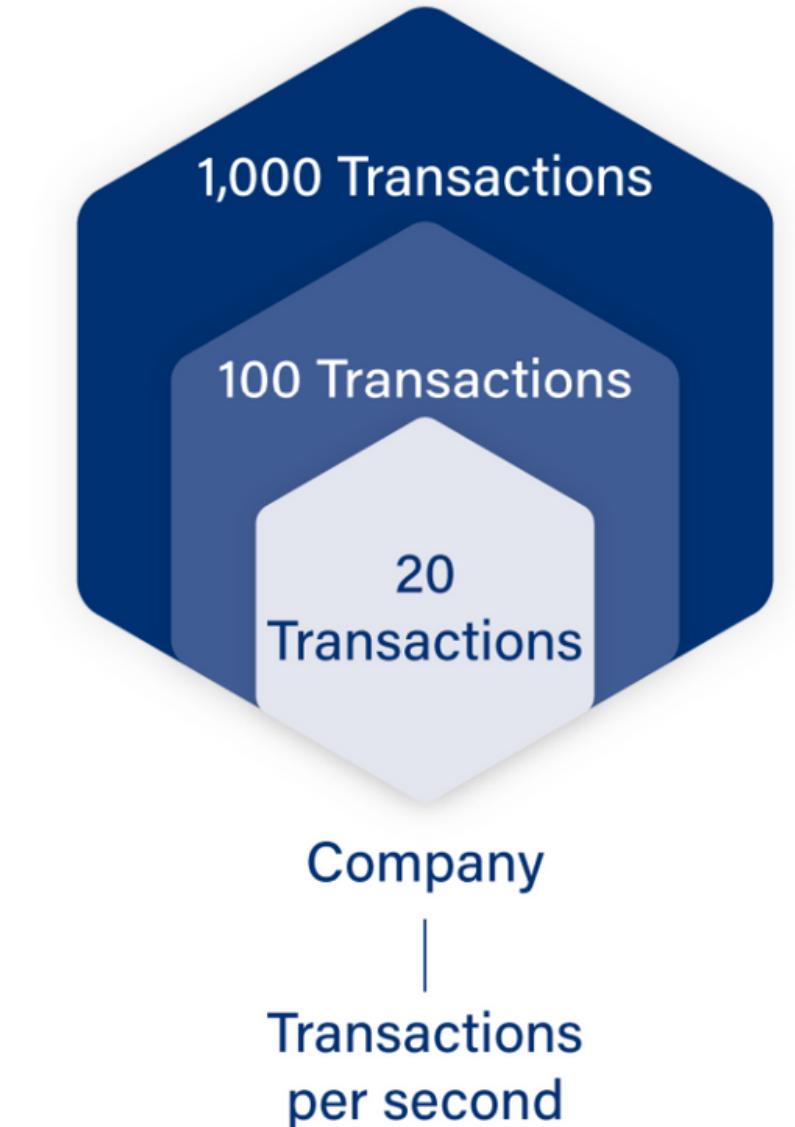


WAIT

Isn't Blockchain Slow ??

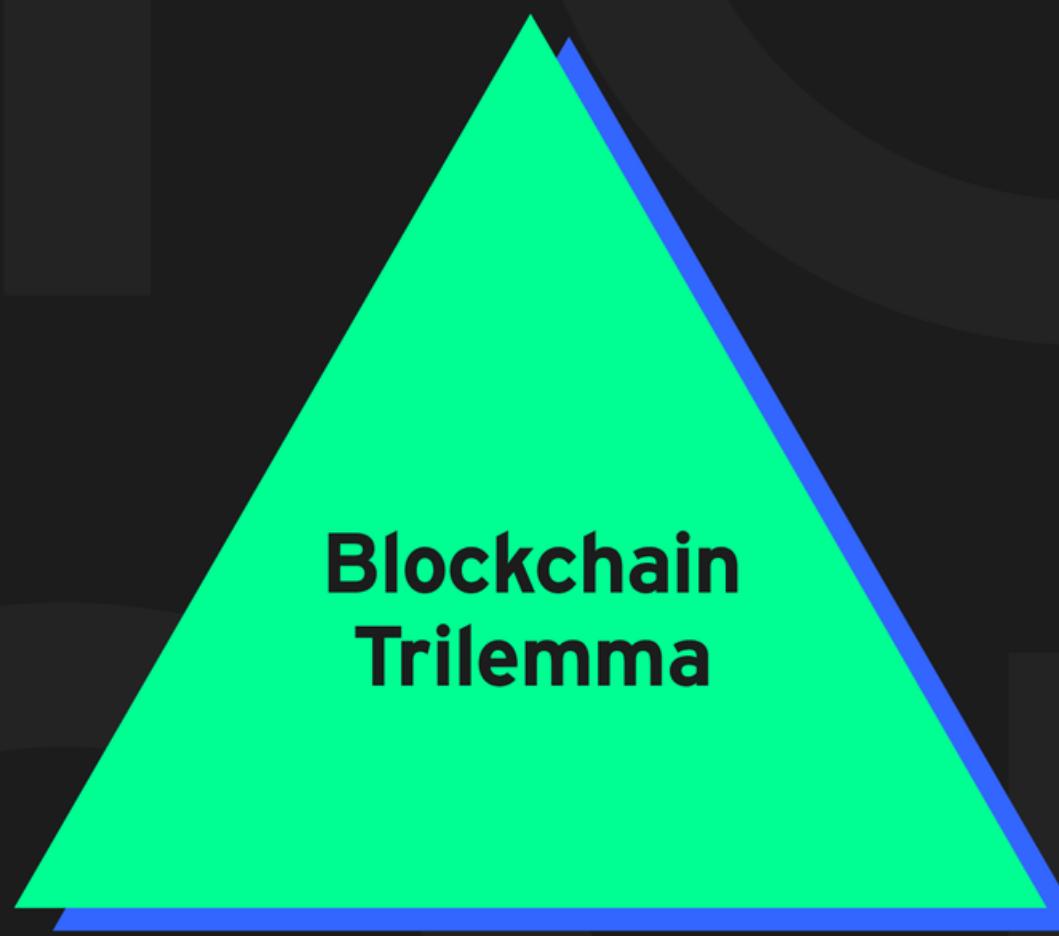
Scalability issues with Blockchain

Cryptocurrencies Transaction Speeds Compared to Visa & Paypal



Scalability

The number of computations the network can process per second



One can only lie on
one side of triangle

Security

The amount of resources required
to corrupt network consensus

Decentralization

The number of full nodes
participating in the network

Solution

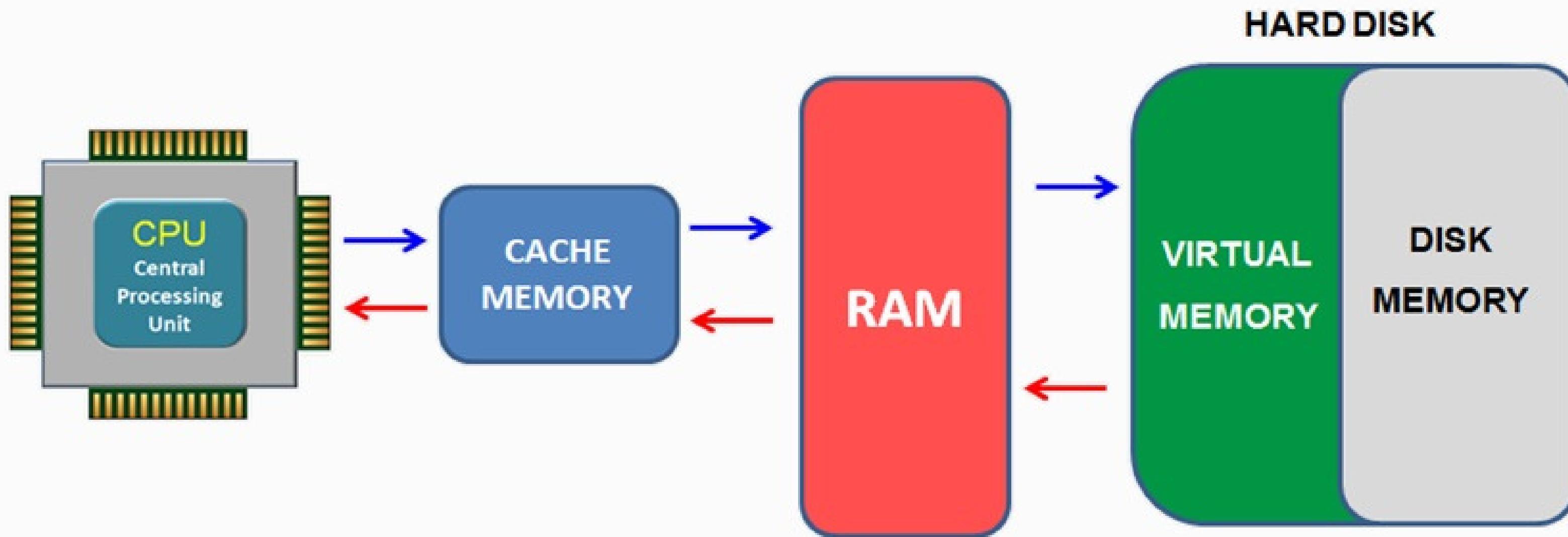
01

Use of
Elasticsearch
and cache

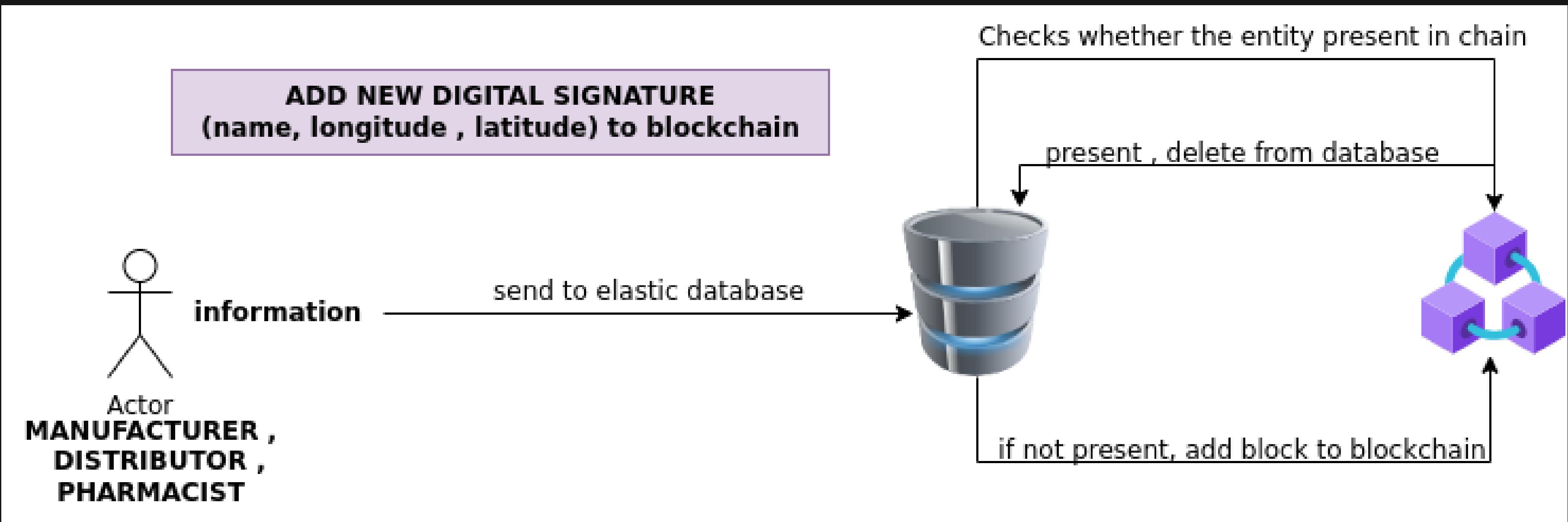


Analogy with Operating System

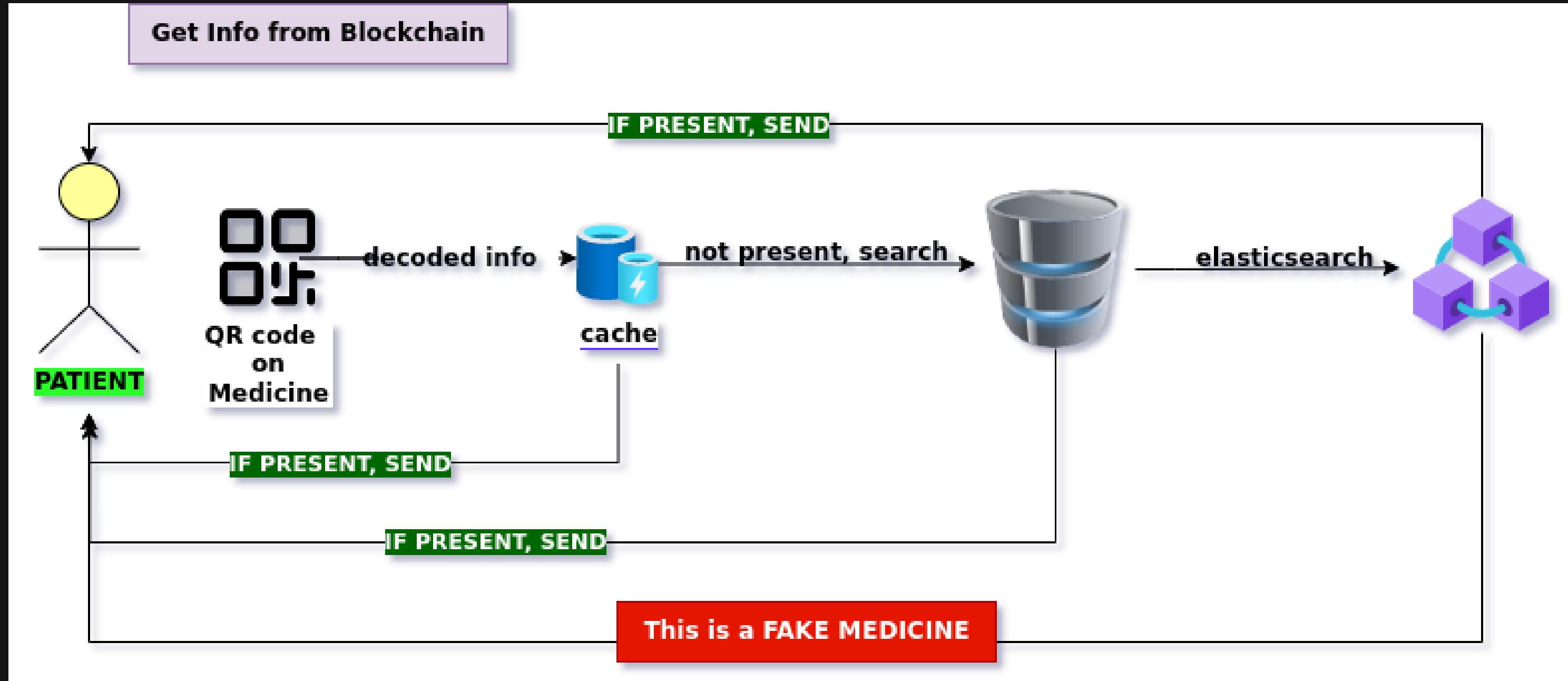
Operating System Memory Management - Virtual Memory



Architecture

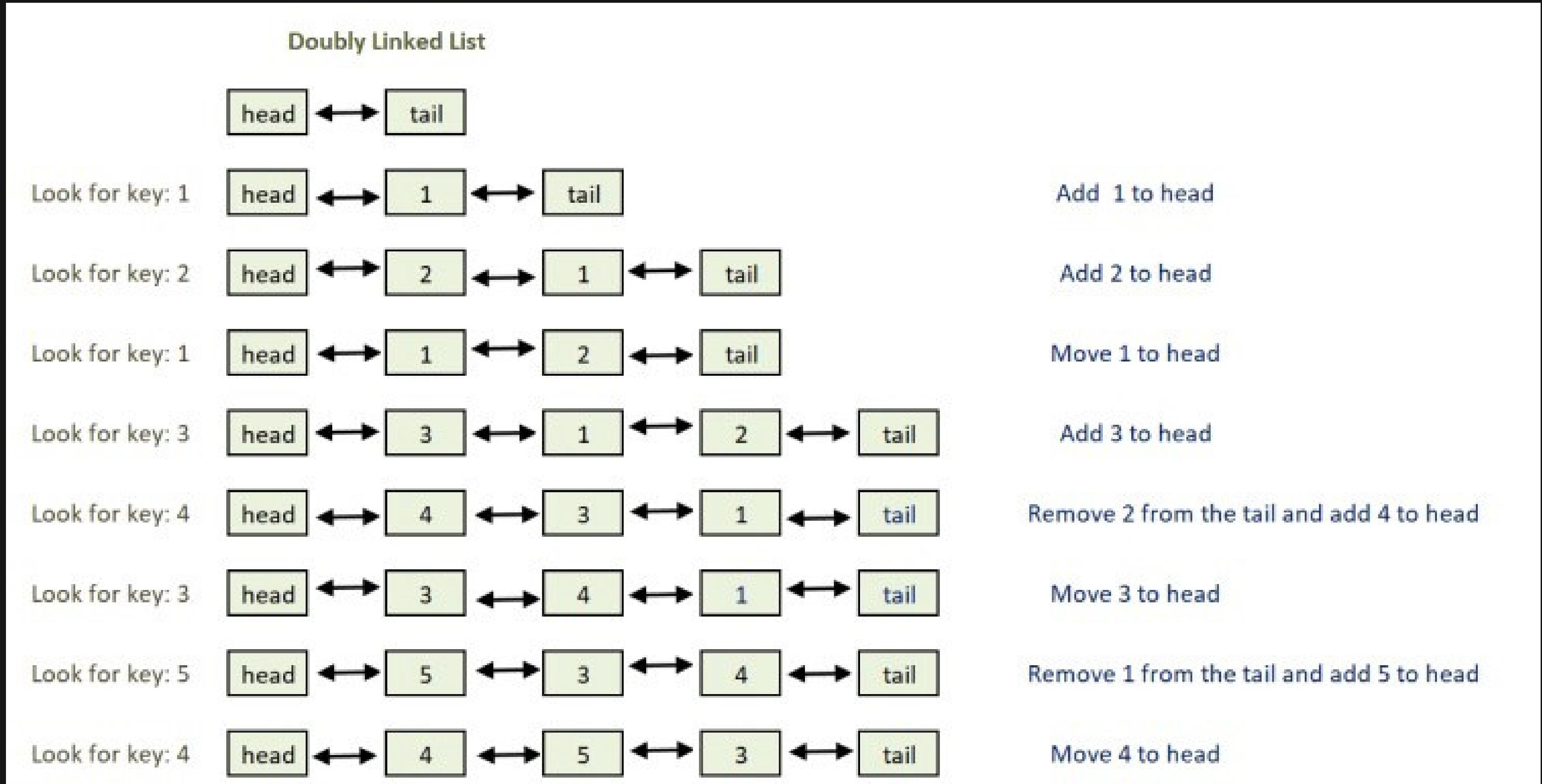


Architecture



If data is found, it is stored in cache according to ranking system

Ranking in cache with LRU (least-recently used)



Smart Contract

```
pragma solidity >=0.7.0 <0.9.0;
contract DrugSign{
    struct Item {
        uint id;
        string name;
        uint timesTracked;
        address creator;
        mapping (uint => State) states;
    }

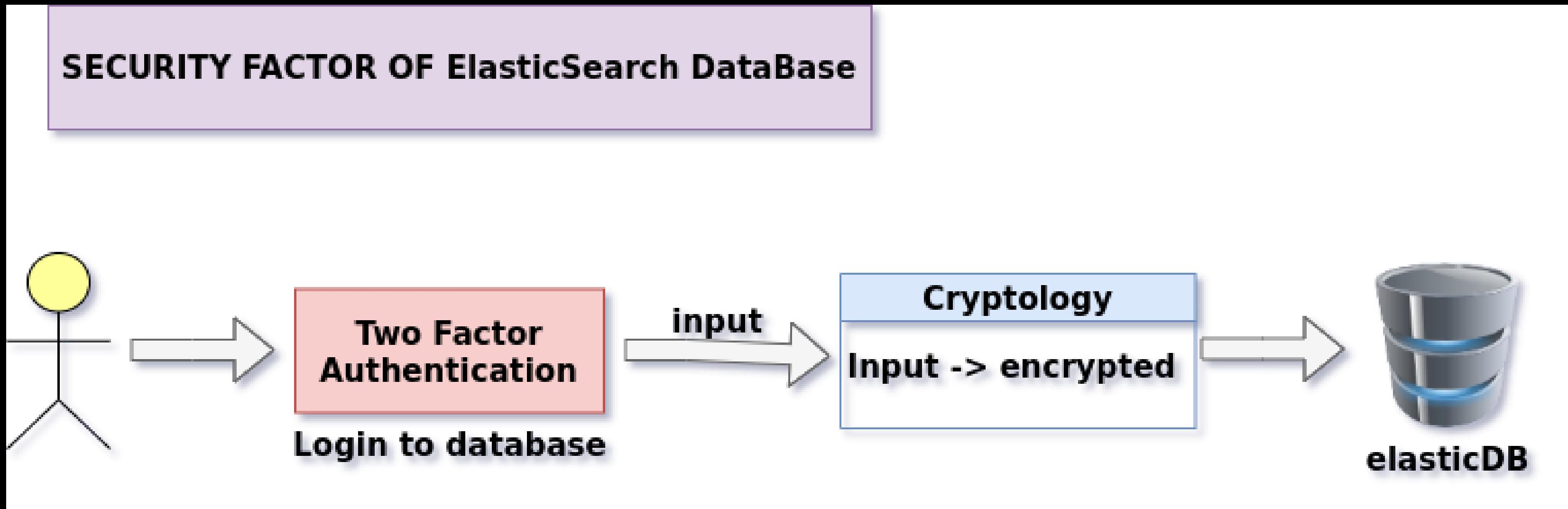
    struct State{
        string date;
        string location;
        string editor;
    }
}
```

Polling Blockchain

*structure of Algo

```
startBlock = 0 ;  
lastBlock = getLatestBlock()  
current = startBlock;  
while( current < lastBlock ) {  
    processBlock(current)  
    current++  
    lastBlock = getLatestBlock()  
}
```

Adding Security to system



Tough Work

- 1 Connect blockchain with Elastic Search
- 2 Crypto security with elasticsearch DB
- 3 Implement rank system in cache.
- 4 Make whole process faster with QR code.

