



Blockchain

Agenda

- › Why ?
- › What ?
- › How ?
- › Examples
- › Demo

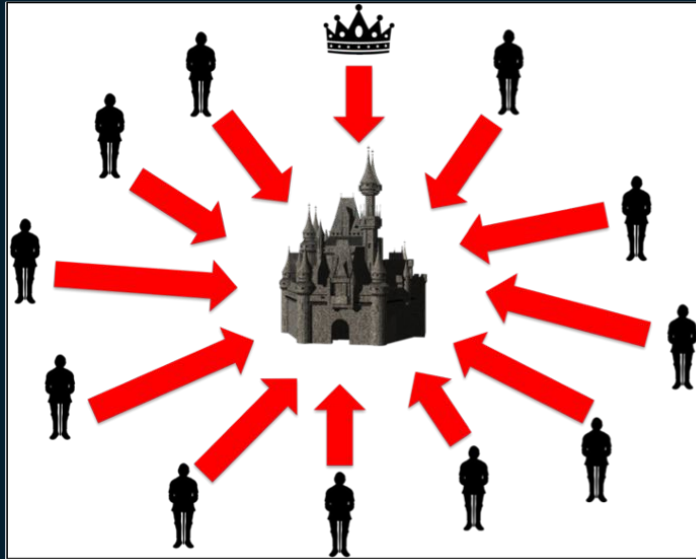
Abstract geometric shapes in the top-left corner, including a green parallelogram, a blue parallelogram, an orange parallelogram, and a pink parallelogram, all overlapping and tilted at various angles.

1. Why ?

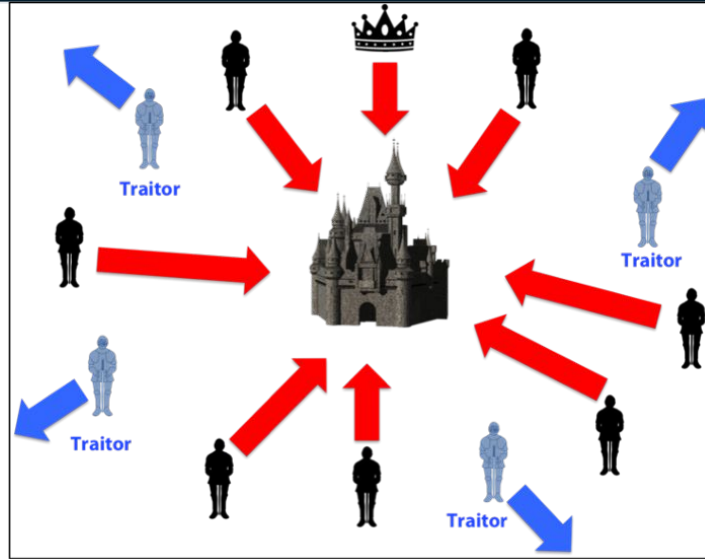
Which problem does it
solve ?



Byzantine Generals Problem



Coordinated Attack Leading to Victory



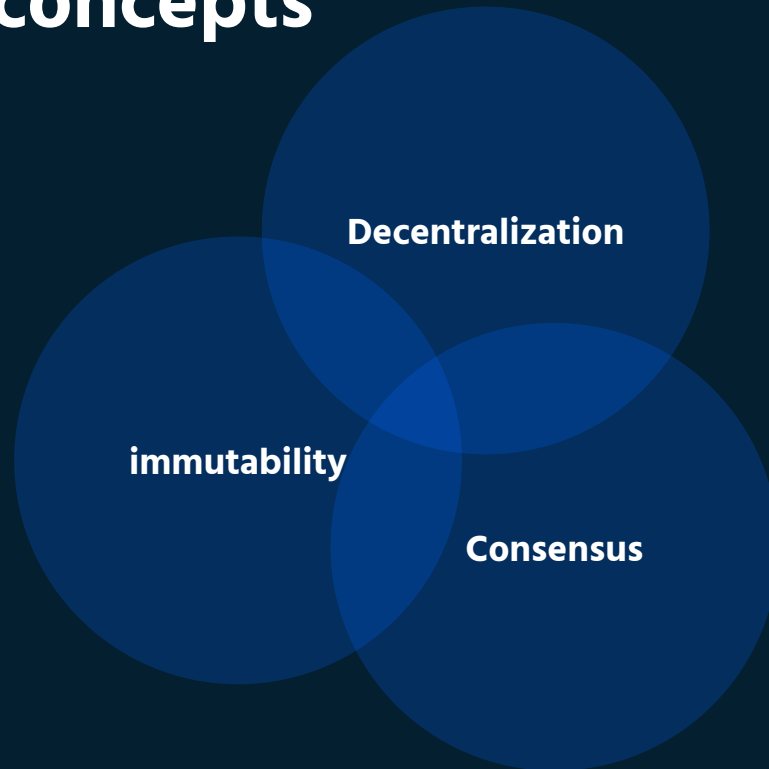
Uncoordinated Attack Leading to Defeat



2. What?

A mix of pre existing
concepts

Core concepts

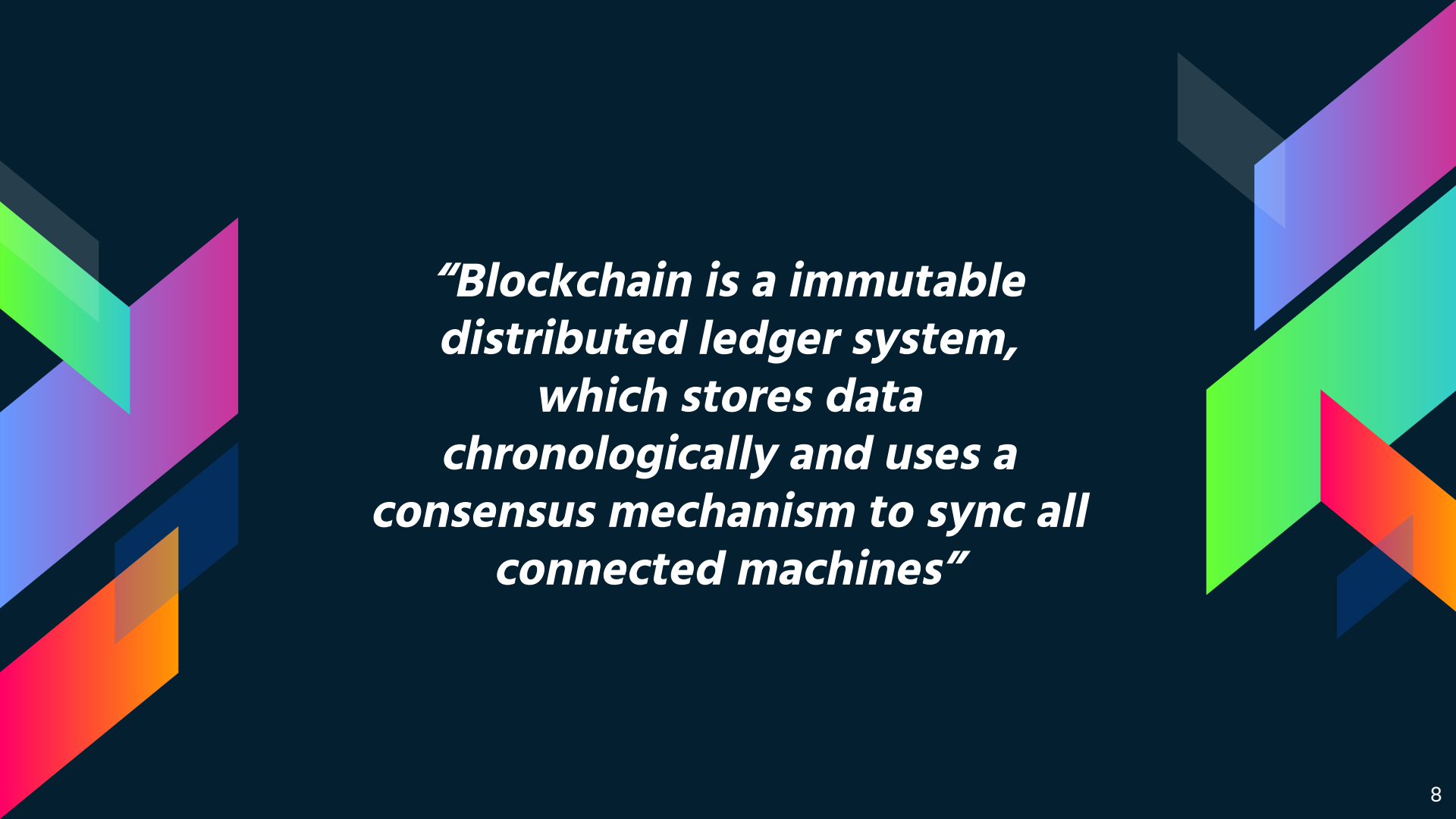




**An overhyped
linked list**

**Blockchains
everywhere**



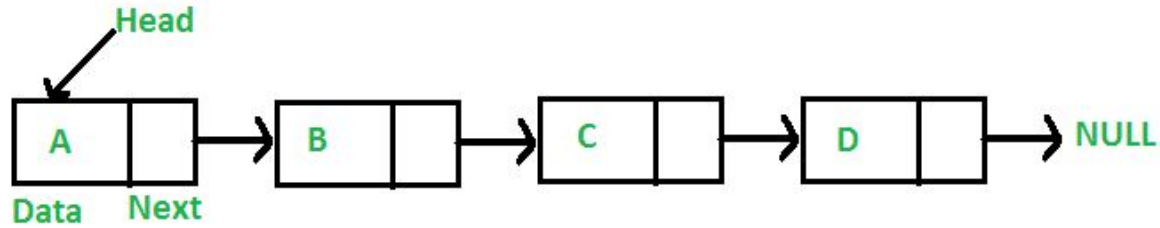
The slide features a dark blue background with abstract geometric shapes in the corners. On the left, there are overlapping shapes in shades of green, cyan, purple, and orange. On the right, there are shapes in shades of purple, cyan, green, and orange. The central text is white and italicized.

“Blockchain is a immutable distributed ledger system, which stores data chronologically and uses a consensus mechanism to sync all connected machines”

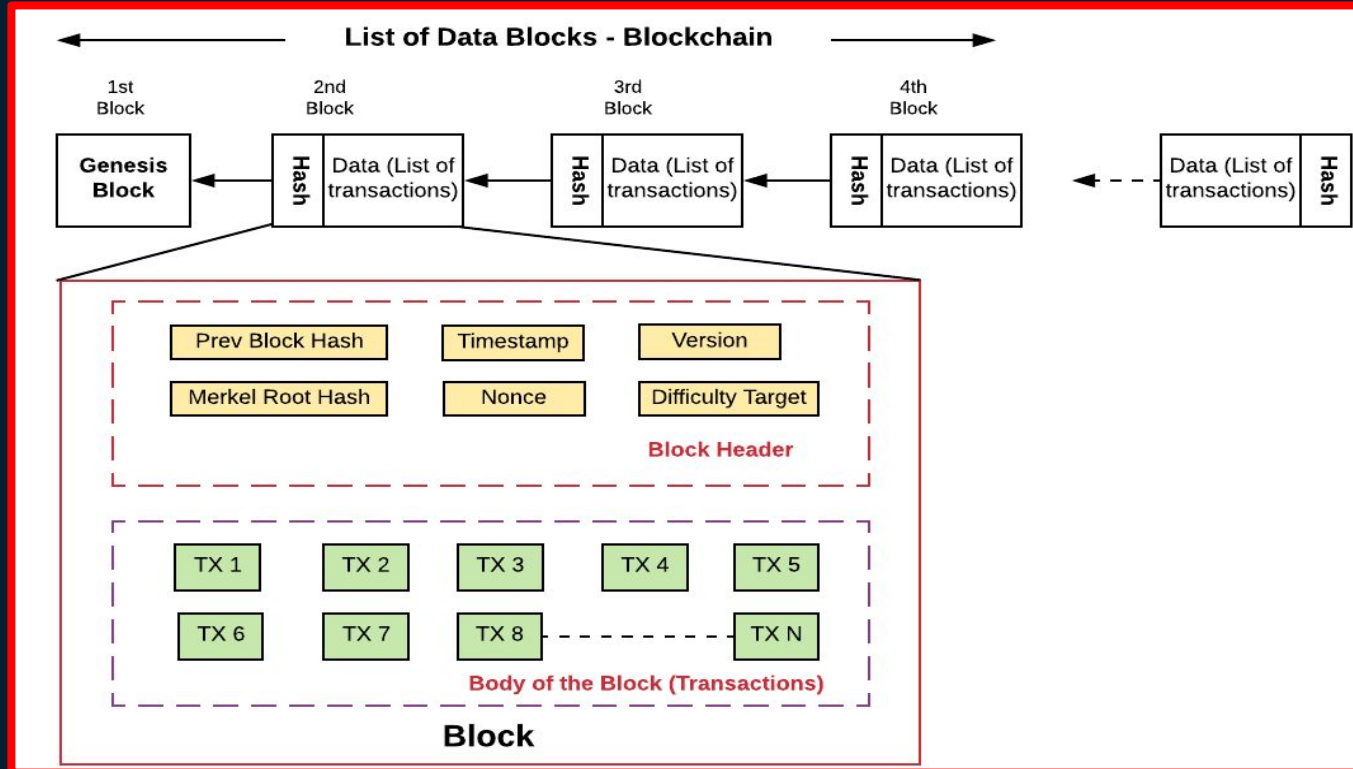
3. How?

Under the hood

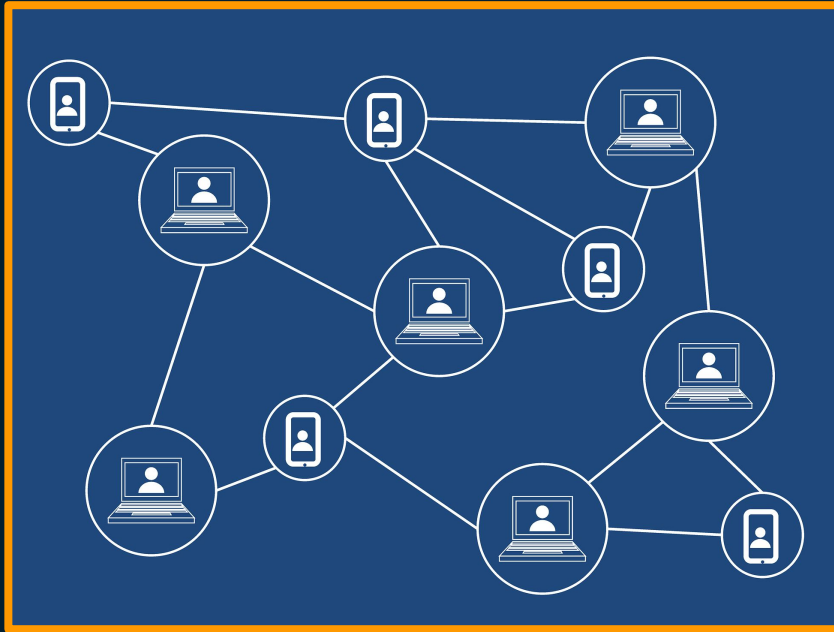
Immutability



Immutability

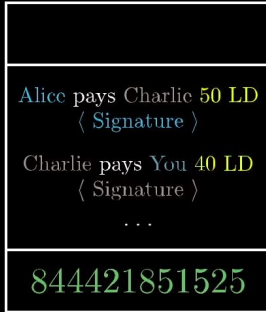


Decentralization

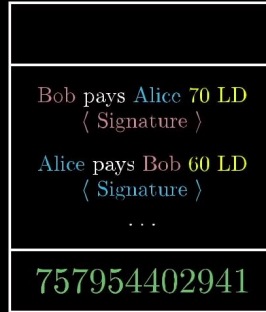


- A peer-to-peer network
- No central authority
- Fault tolerance
- E.g. Torrent, Internet

Consensus



SHA256

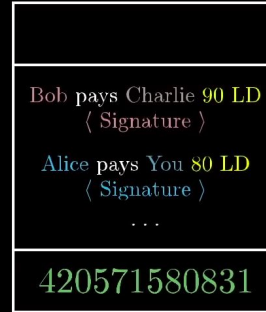
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SHA256

```

0000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000001
0011111110010011111101010110101011
1001111101111010011010111000001
10100000100110011111101100010001
11011100100010001010011111011001
1010001010110101000101111011111
00011000010101000010001001000000

```



SHA256

[illegible]

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4. Examples

So it became a thing

Popular blockchains

Bitcoin

- A peer-to-peer electronic cash system
- Proof of work
- Not much smart contract support

Ethereum

- Global computer
- Proof of stake
- A lot of smart contracts support

Hyperledger Fabric

- Framework for developing blockchain for business
- RAFT
- Lots of smart contracts
- Permissioned

Use cases

- Real estate
- Supply chain
- Health care

CONGA COMICS

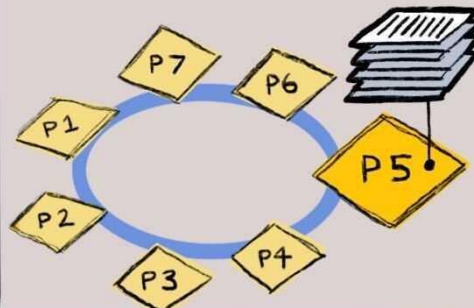
Block Height 79: St Clears



AS I WAS COMING TO THE PUB FOR THESE BEERS, I MET A BLOCKCHAIN NETWORK WITH SEVEN PEERS...



...AND EVERY PEER HAD SEVEN CONTRACTS, AND EVERY CONTRACT HAD SEVEN TRANSACTIONS...



...BUT THEY WERE ALL OWNED BY THE SAME ORG SO I TOLD THEM TO JUST GET A DATABASE.



Abstract geometric shapes in the top-left corner, including a green parallelogram, a blue parallelogram, an orange parallelogram, and a pink parallelogram, all overlapping and tilted at various angles.

5. Demo

Show me the code

Abstract geometric shapes in the top-right corner, including a green parallelogram, a blue parallelogram, a pink parallelogram, and an orange parallelogram, all overlapping and tilted at various angles.

Real estate

- › A buyer and a seller can negotiate a property without a third party

THANKS!

Any questions?

@0xkalvin



- **Blockchain: The Byzantine Generals Problem**
<https://medium.com/wolverineblockchain/blockchain-the-byzantine-generals-problem-2f17097bad73>
- **3Blue1Brown: But how does bitcoin actually work?**
<https://www.youtube.com/watch?v=bBC-nXj3Ng4>
- **Hyperledger: write your first app**
https://hyperledger-fabric.readthedocs.io/en/release-2.2/write_first_app.html