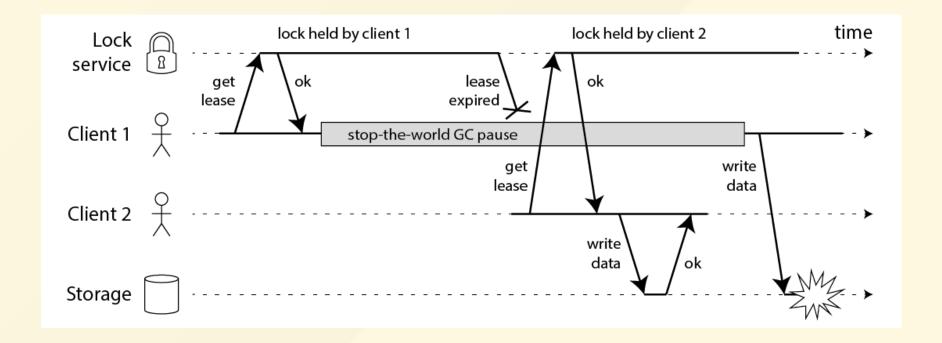
Introduction to Blockchain and Smart Contracts

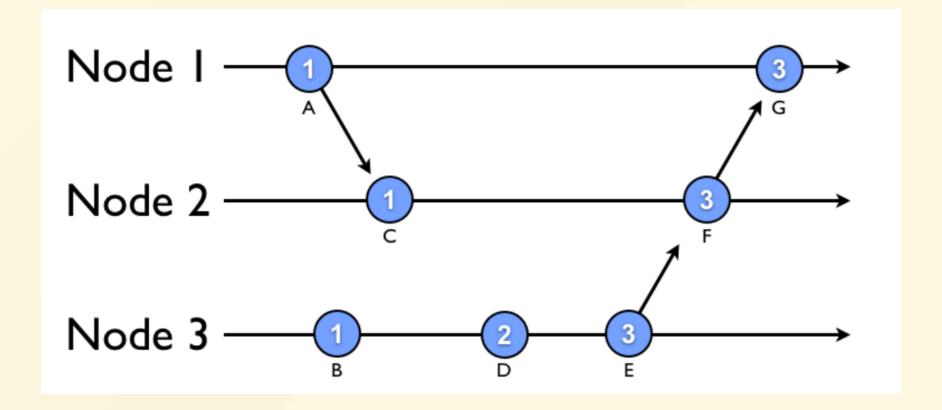
Created by Girish Ramnani

Distributed Systems are hard

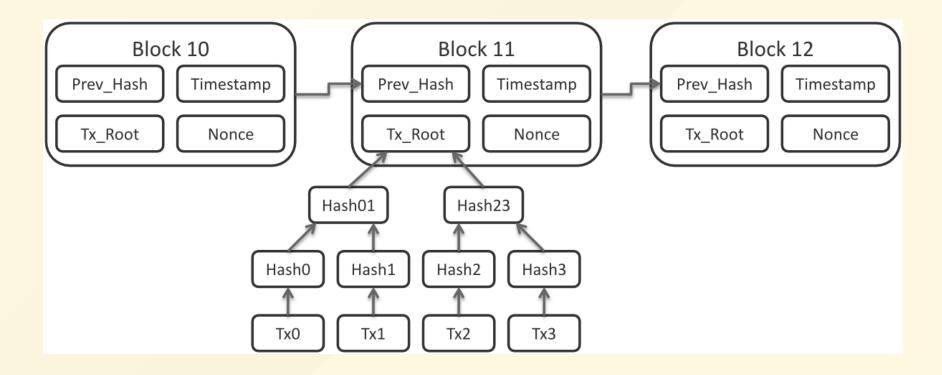
Just a distributed lock



G-Counter



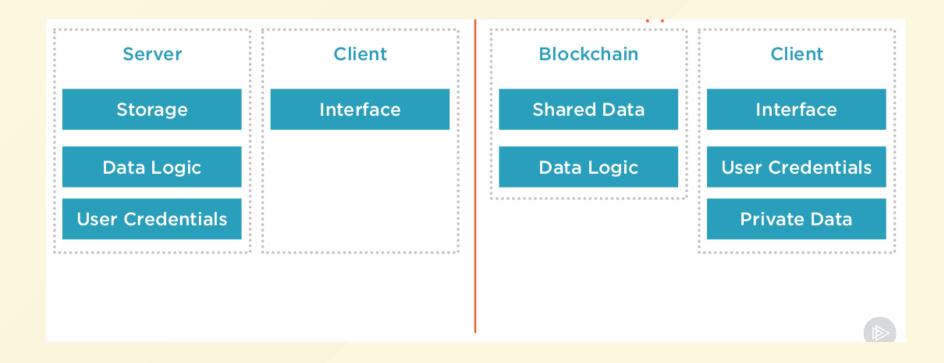
What is blockchain?



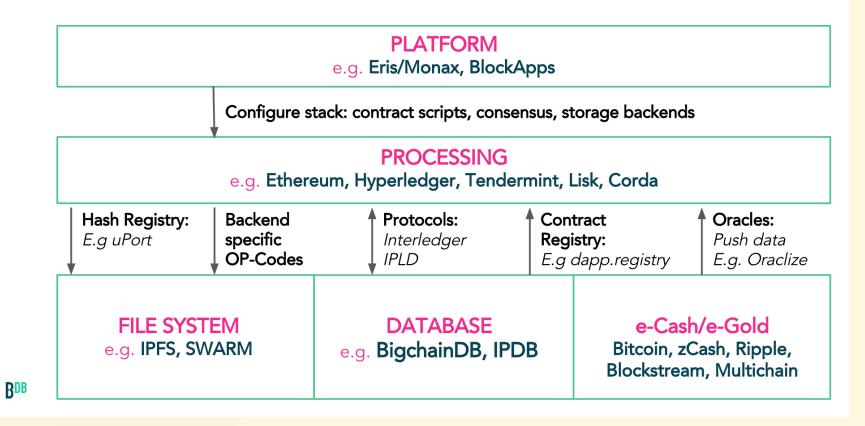
Problems solved by blockchain

- Removes single point of failure.
- Every node has the same authority in the network.
- Solves the Byzantine Generals' problem.

What are Decentralized apps?



Decentralized Stack Interoperability



Ethereum

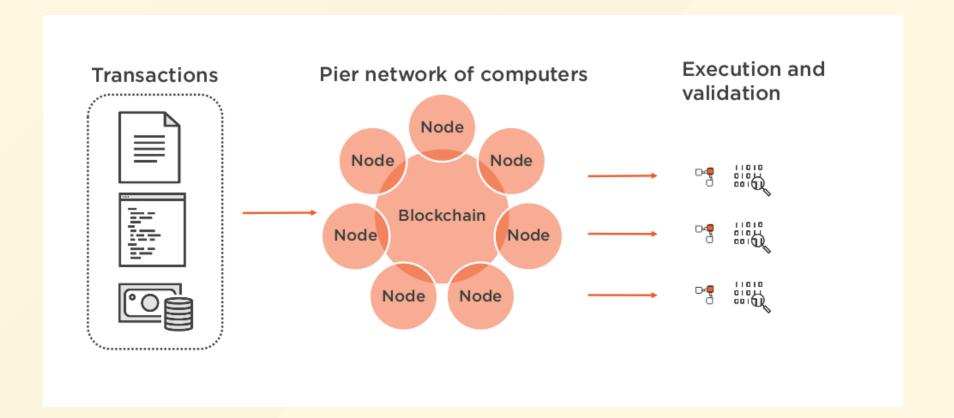


Bitcoin vs Ethereum



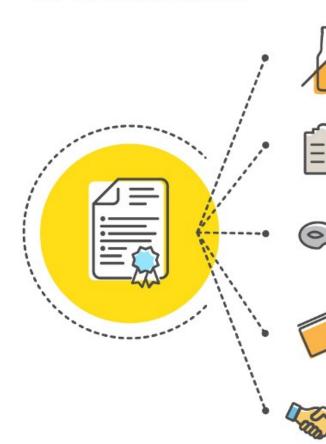


Transaction



Contracts

THE FIVE ELEMENTS OF A CONTRACT



Two or more parties with legal capacity to make a contract

Neither party is a minor, mentally ill, on drugs, or drunk.

Resonably definite terms

The more open the terms are, the less likely it is that the parties intended the contract to be binding.

A lawful purpose

There can be no legal prohibition on the contract. For example, it can't be a contract to divide the proceeds of a robbery.

Consideration

Something (money, a forbearance, a return promise) given in exchange for the another party's promise.

Mutual Assent

Also called a "meeting of the minds," this requires that each party either makes a promise or begins or renders

Smart Contracts



Solidity

Dev Tools

- MetaMask
- Truffle
- Testrpc
- Mist

Example Contracts

- Hello World
- One Value Store
- key value store
- Voting

StringUtils

Exercise

 Change the key value store contract such that each key has a owner and only owner can update the content of the key.

Thank you