Lauro Gripa Neto

Smart Contracts on Ethereum

SUMMARY

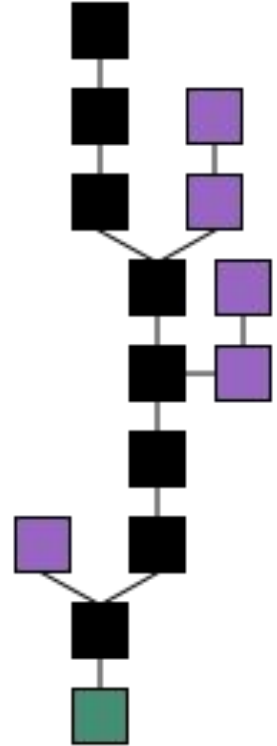# Introduction to Blockchain

"an open, **distributed ledger** that can record transactions between two parties efficiently and in a verifiable and permanent way."

[DEMO]

[Blockchain Demo](#)

What is Ethereum?

"Ethereum is a **decentralized platform** that runs **smart contracts:** applications that run exactly as programmed without any possibility of **downtime**, **censorship**, **fraud** or **third-party interference**." [ethereum.org]

How does Ethereum work?

"(…) apps run on a **custom built blockchain**, an enormously powerful **shared global infrastructure** that can move **value** around and represent the **ownership of property**." [ethereum.org]

- Smart contracts are written in **Solidity** and deployed as binary codes
- Transactions can be **value transfers** or **contract method calls**
- Code is run by each node using an **EVM** (Ethereum Virtual Machine)
- Therefore, code must be deterministic

What are smart contracts?

"A smart contract is a computer protocol intended to **digitally facilitate**, **verify**, or **enforce the negotiation or performance** of a contract. "

Proposed by **Nick Szabo** in 1996.

Blockgeeks
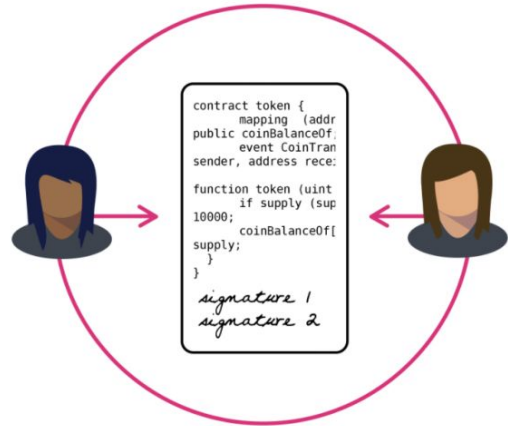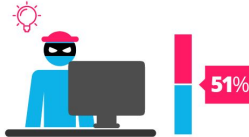
Proof of Work   *vs*   Proof of Stake

proof of work is a requirement to define an expensive computer calculation, also called mining
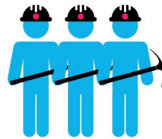
Proof of stake, the creator of a new block is chosen in a deterministic way, depending on its wealth, also defined as stake.

51%

51%

A reward is given to the first miner who solves each blocks problem.

The PoS system there is no block reward, so, the miners take the transaction fees.

Network miners compete to be the first to find a solution for the mathematical problem

Proof of Stake currencies can be several thousand times more cost effective.

source: https://blockgeeks.com/guides/proof-of-work-vs-proof-of-stake/

Running your own node

Repositório: https://gist.github.com/laurogripa/

Local: workshop.md
https://gist.github.com/laurogripa/f568285bcd5fe6ca116ce5562ee9a37f

Testnet: Rinkeby.md
https://gist.github.com/laurogripa/59d0ea3da3c8b8efac3d8b402ac7a8ae

Capturing (and creating) value

The Web | Blockchain

VALUE CAPTURED

APPLICATIONS LAYER

PROTOCOL LAYER

VALUE CAPTURED

APPLICATION LAYER

PROTOCOL LAYER
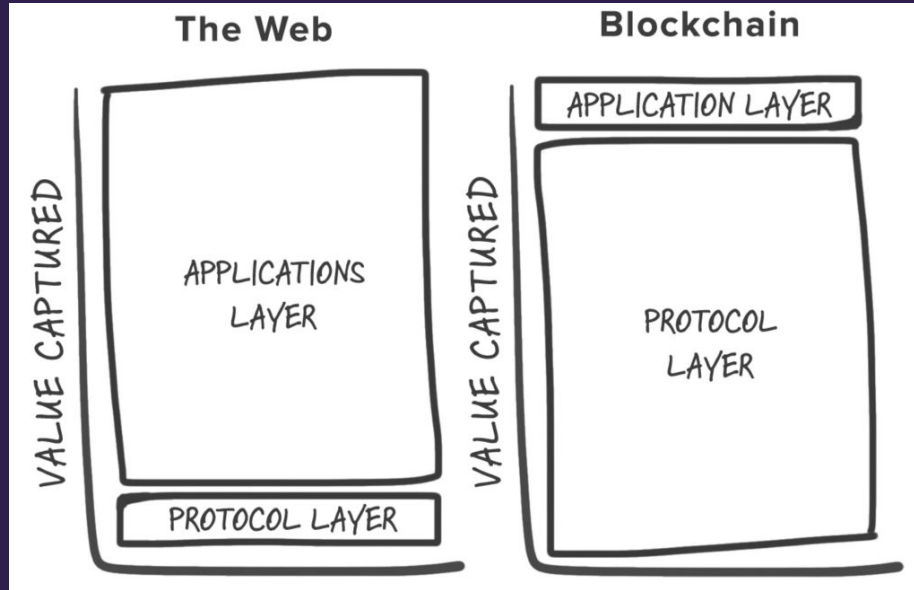
Possible applications

- Collectible Digital Art
- Federated Chains
  - Consortiums
- Private Chains
  - Audit
- Resolving Puzzles / Finishing Games
  - The Legend of Satoshi Nakamoto
  - Montecrypto: The Bitcoin Enigma

Possible applications

- Bounty hosting/hunting
  - Bounty0x
  - Solidity debugger
- Decentralized Marketplaces and Exchanges
  - Particl
- Raspberry Staking

Sources

- https://ethereum.org
- https://medium.com/@mvmurthy/full-stack-hello-world-voting-ethereum-dapp-tutorial-part-1-40d2d0d807c2
- https://medium.com/@mvmurthy/full-stack-hello-world-voting-ethereum-dapp-tutorial-part-2-30b3d335aa1f
- https://gist.github.com/laurogripa/59d0ea3da3c8b8efac3d8b402ac7a8ae
- https://github.com/laurogripa/voting-dapp
- http://www.ethdocs.org/en/latest/introduction/what-is-ethereum.html
- http://truffleframework.com
- https://github.com/ethereum/web3.js/
- https://github.com/ethereum/go-ethereum
- https://tpbit.blogspot.com.br/2014/12/the-paradox-of-presales-pondering-gems.html

MAGRATHEA LABS

www.magrathealabs.com

contact@magrathealabs.com

Thank you!

MAGRATHEA LABS

www.magrathealabs.com