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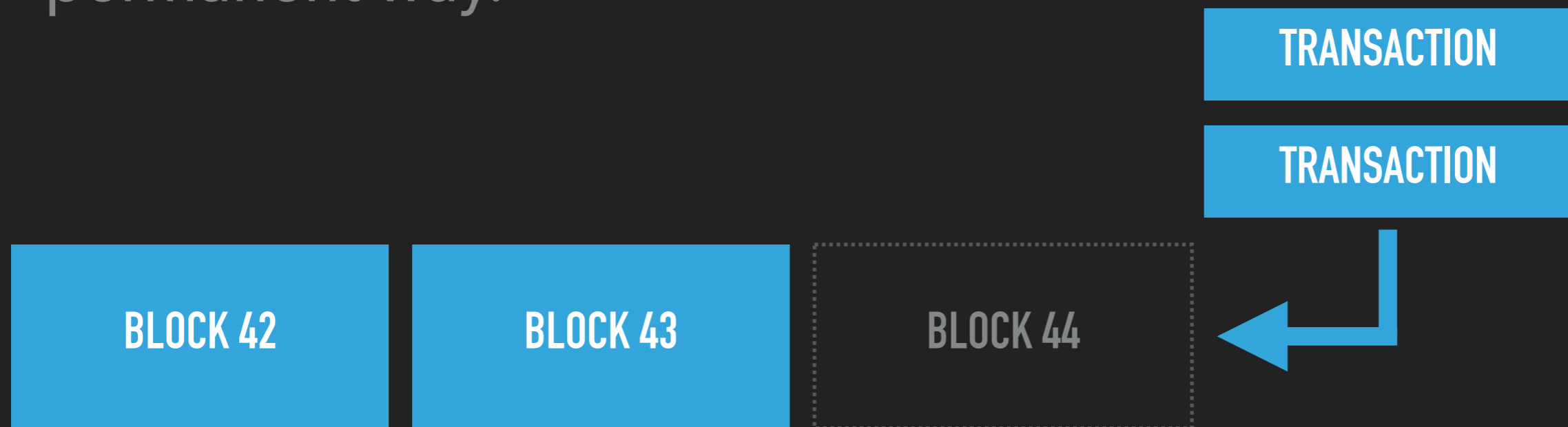
RUBY STORIES V

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HOW TO LAUNCH AN ICO

INTRODUCTION TO BLOCKCHAIN

- ▶ Bitcoin: A Peer-to-Peer Electronic Cash System, *Satoshi Nakamoto, 2009*
- ▶ Open, *distributed ledger*, that can record transactions between two parties efficiently and in a verifiable and permanent way.



WHAT'S AN ICO?

- ▶ Initial Public Offering Analogy - An initial public offering (IPO) is the first time that the stock of a private company is offered to the public.
- ▶ Initial Coin Offering - An ~~unregulated~~ means by which funds are raised for a new cryptocurrency venture. ... In an ICO campaign, a percentage of the cryptocurrency is sold to early backers...
- ▶ 2016 - \$90,250,273 raised in 29 ICOs
- ▶ 2017 - \$6,101,438,558 raised in 871 ICOs
- ▶ 2018 - \$4,557,371,620 raised in 737 ICOs

ICO REQUIREMENTS

- ▶ Registration

- ▶ Provides basic information
- ▶ KYC Process - Know Your Customer (Identity)
- ▶ Investor registers his Ethereum Address

- ▶ Investment

- ▶ Investor sends ETH from his registered Address

- ▶ Token Issuance

- ▶ Investor receives tokens based on invested amount

STACK & TOOLS

- ▶ Javascript Frontend
- ▶ NodeJS Backend
- ▶ MongoDB Database
- ▶ Parity Ethereum Client on AWS
- ▶ Solidity
- ▶ Etherscan
- ▶ ETH Gas Station



STACK & TOOLS

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- ▶ **Solidity**
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ETHEREUM

- ▶ Ethereum is a *decentralised* platform that runs smart contracts.
- ▶ Applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third-party interference.
- ▶ Use Cases
 - ▶ Design and issue your own cryptocurrency
 - ▶ Kickstart a project with a trustless crowdsale
 - ▶ Create a democratic autonomous organisation

ETHEREUM'S SMART CONTRACTS

- ▶ Solidity
- ▶ Influenced by C++, Python and JavaScript
- ▶ Designed to target the Ethereum Virtual Machine (EVM)
- ▶ Static-typing, Inheritance, Libraries, User-defined types
- ▶ Every account has a persistent key-value store mapping 256-bit words to 256-bit words called storage.



```
pragma solidity ^0.4.21;

contract Coin {
    // The keyword "public" makes those variables
    // readable from outside.
    address public minter;
    mapping (address => uint) public balances;

    // This is the constructor whose code is
    // run only when the contract is created.
    function Coin() public {
        minter = msg.sender;
    }

    function mint(address receiver, uint amount) public {
        if (msg.sender != minter) return;
        balances[receiver] += amount;
    }

    function send(address receiver, uint amount) public {
        if (balances[msg.sender] < amount) return;
        balances[msg.sender] -= amount;
        balances[receiver] += amount;
    }
}
```

PARITY ETHEREUM CLIENT

- ▶ Lightweight and Fast
- ▶ Written in Rust
- ▶ Both TestNet and MainNet accessible
- ▶ Provides JSONRPC and WebSockets
- ▶ Deployed to AWS
- ▶ Access Rights

NODEJS-PARITY INTEGRATION

- ▶ Web3.js
- ▶ Ethereum compatible API, implements JSONRPC
- ▶ sendTransaction
- ▶ getBalance
- ▶ blockNumber
- ▶ ...



```
const Web3 = require('web3');
const web3 = new Web3(new Web3.providers.HttpProvider(PARITY_NODE_URL));

const contractABI = [
  {
    "constant": false,
    "inputs": [
      { "name": "_receiver", "type": "address" },
      { "name": "_amount", "type": "uint8" }
    ],
    "name": "send",
    "outputs": [],
    "payable": false,
    "stateMutability": "nonpayable",
    "type": "function"
  }
]

const contract = web3.eth.contract(contractABI).at(CONTRACT_ADDRESS);

function send(receiver, amount) {
  return contract.send.sendTransaction(receiver, amount);
}
```

SUMMARY

- ▶ Blockchain technology
- ▶ ICO
- ▶ Ethereum
- ▶ Smart Contracts
- ▶ Parity
- ▶ Web3.js

SOURCES

- ▶ <https://www.icodata.io/>
- ▶ <https://www.ethereum.org/>
- ▶ <https://solidity.readthedocs.io/en/v0.4.24/>
- ▶ <https://www.parity.io/>
- ▶ <https://github.com/ethereum/web3.js>
- ▶ <https://etherscan.io/>
- ▶ <https://ethgasstation.info/>