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BLOCKCHAIN APPS DEVELOPMENT

Honeywell

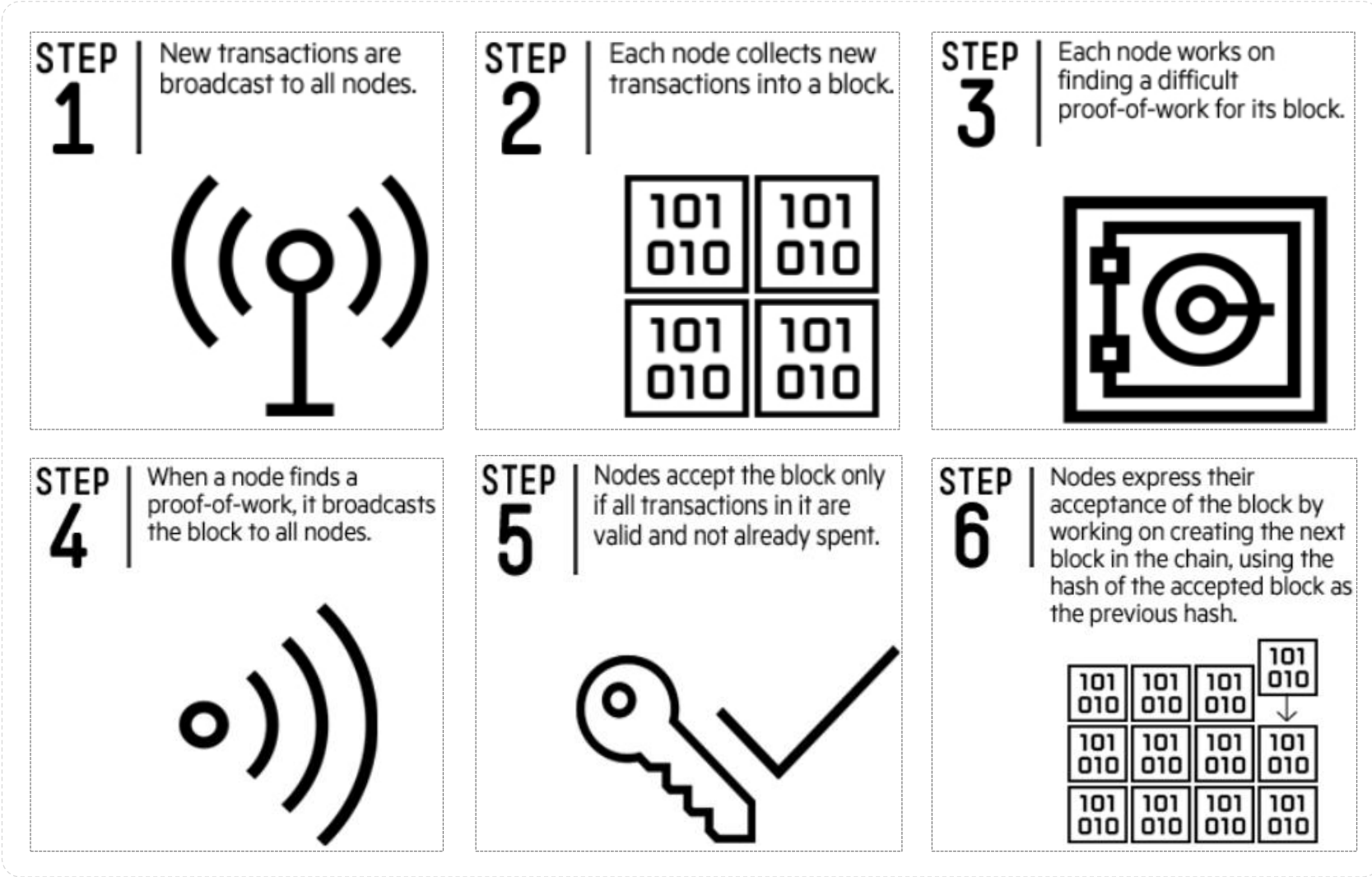
Contents

- What is Blockchain?
- How Blockchain Works?
- Blockchain Apps
- Blockchain App Development
  - Basic Tools & Utilities
  - Build an example : Crypto Bank
  - Advanced Tools & Utilities
- Q&A
- Appendix

What is Blockchain?

"Blockchain is a public, open, and shared distributed ledger to enable the trusted & secured transactions across the participants without any intermediator or trusted third parties"

How Blockchain works?



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Blockchain App Development

Building Blocks of a Blockchain Application

- Blockchain Network (Local/Custom, Public TestNet, MainNet)
- Users or Accounts
- Smart Contracts
- DApps
- API Optional

What you should know

- MetaMask
- MyEtherWallet
- Solidity
- Web3JS (for Ethereum)
- AngularJS

Blockchain App Development – Basic Tools

- Solidity IDE (Remix Browser)

  https://ethereum.github.io/browser-solidity/#version=soljson-v0.4.16+commit.d7661dd9.js

- Any Text Editor or Web Development Utilities

- Public Testnet

  Ropsten https://ropsten.etherscan.io

Blockchain App Development – An Example

A simple cryptocurrency(Ether) based banking application(Crypto Bank) with the following functionalities

- Balance Check
- IssueEther
- Transfer
- Deposit
- List Accounts

- **Source Code is available at @CryptoBank in GITHUB**

  https://github.com/EmergingTechSpace/BlockChain

Blockchain App Development – Advance Tools

- NodeJS and NPM

  Download and install Node and NPM - https://nodejs.org/en/download/

- TestRPC (Local TestNet)

  follow the steps mentioned in https://github.com/ethereumjs/testrpc to install TestRPC ON Linux/Windows

- Truffle

  Install instructions can be found at http://truffle.readthedocs.io/en/beta/getting_started/installation/

- Visual Studio Code or any other Text editor

- Windows PowerShell [Optional]

- Truffle Ganache [Advanced tools]

Q&A

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APPENDIX

BlockChain - Videos

- Blockchain Introduction

  https://www.youtube.com/watch?v=oNhpm9NMVXs

- How the blockchain will radically transform the economy (TED talk)

  https://www.ted.com/talks/bettina_warburg_how_the_blockchain_will_radically_transform_the_economy

- How BlockChain Works

  https://www.youtube.com/watch?v=lD9KAnkZUjU

- Blockchain Demystified (TED Talk)

  https://www.youtube.com/watch?v=40ikEV6xGg4

- BlockChain Visual Demo

  https://www.youtube.com/watch?v=_160oMzblY8

Key Terminology

Glossary	
Bitcoin	The well known cryptocurrency, based on the proof-of-work blockchain
Ledger	An append only record store where records are immutable
P2P	Peer-to-peer (P2P) refers to the decentralized interactions that happen between at least two parties in a highly interconnected network
Participant	An actor who can access the records (Read & Write)
Proof-of-Work	A system that ties mining capability to computational power. Blocks must be hashed
Proof-of-Stake	An alternative to the proof-of-work system, in which your existing stake in a cryptocurrency is used to calculate the amount of that currency that you can mine
Smart Contracts	Are contracts whose terms are recorded in a computer language instead of legal language. Smart contracts can be automatically executed by a computing system, such as a suitable distributed ledger system
Mining	The process by which transactions are verified and added to a blockchain. In Bitcoin world this process of solving cryptographic problems using computing hardware also triggers the release of cryptocurrencies
Blocks	A digitally recorded data in packages. Each block is chained to the next block using a cryptographic signature.