



An introduction to bitcoin,
the blockchain, and cryptocurrency



Overview

- About myself
- What is Bitcoin, Cryptocurrency?
- Breaking it down into layers
- Explore the blockchain
- Send some ether

About Me (Scott Bigelow)

- **Received first crypto token in 2013 when a friend sent me Dogecoin**
- Got into Bitcoin in 2014
- Ethereum early this year
- Joined Ethereum project Augur in October 2017



About Me (Scott Bigelow)

- Received first crypto token in 2013 when a friend sent me Dogecoin
- **Got into Bitcoin in 2014**
- Ethereum early this year
- Joined Ethereum project Augur in October 2017



About Me (Scott Bigelow)

- Received first crypto token in 2013 when a friend sent me Dogecoin
- Got into Bitcoin in 2014
- **Ethereum early this year**
- Joined Ethereum project Augur in October 2017



ethereum

About Me (Scott Bigelow)

- Received first crypto token in 2013 when a friend sent me Dogecoin
- Got into Bitcoin in 2014
- Ethereum early this year
- **Joined Ethereum project Augur in October 2017**



Goals

- Holding Token
 - Blockchain resists change
 - Mining
-
- Cryptography
 - Layers

Bitcoin is a distributed system which implements a
blockchain-based cryptocurrency



Bitcoin is a distributed system which implements a *blockchain-based cryptocurrency*

Bitcoin is [unfortunately] ALSO the name of the tokens used on the *Bitcoin* network



Ethereum is a distributed system which implements a
blockchain-based cryptocurrency



ethereum

Ethereum is a distributed system which implements a *blockchain-based cryptocurrency*

Ether is the name of the tokens used on the *Ethereum* network

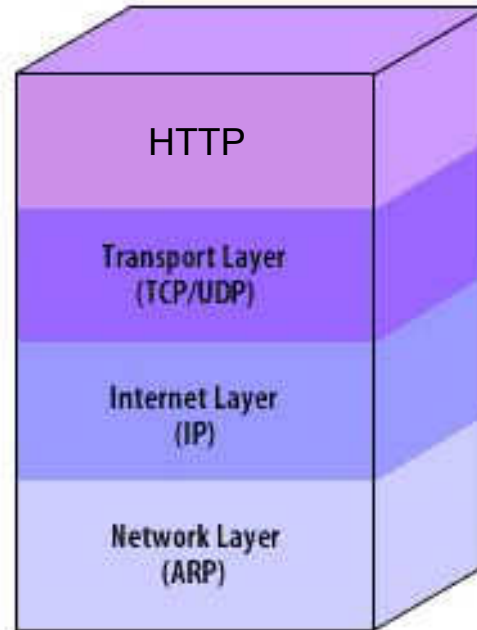


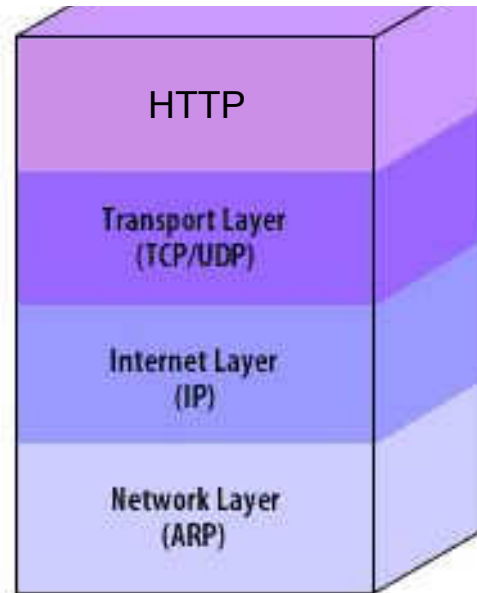
ethereum

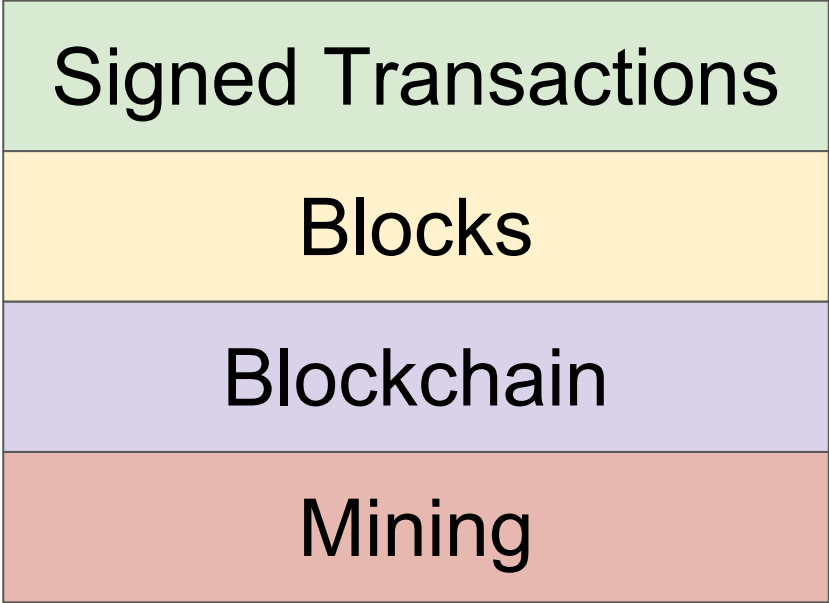
Cryptocurrency

Digital asset designed to work as a medium of exchange using cryptography to secure the transaction

TCP/IP Protocol Layers







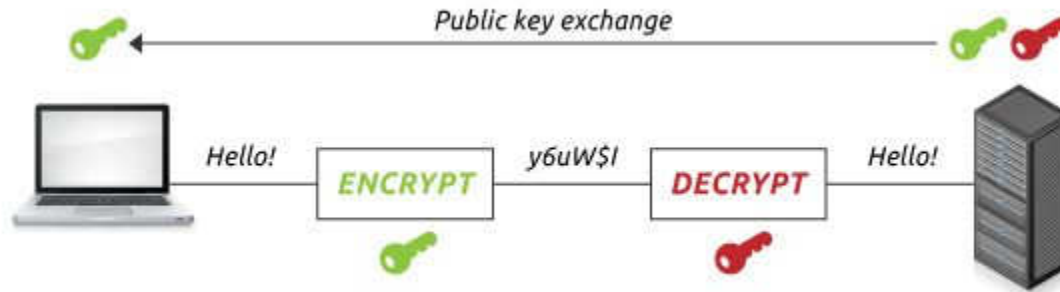
Signed Transactions

Blocks

Blockchain

Mining

Crypto[graphy] currency



Crypto[graphy] currency



Digital signatures

- Scheme for demonstrating the authenticity of digital messages or documents.
- A valid digital signature gives a recipient reason to believe that
 - the message was created by a known sender (authentication)
 - that the sender cannot deny having sent the message (non-repudiation)
 - and that the message was not altered in transit (integrity).

Scott's Public
Key

1549d7cca121

I just love
blueberries

Sig: db01c4a4

Scott pays Alice
1 Bitcoin

Signature:
1abd38bacd1aee3ee3

16K4FJiAdM4aX82xw2

pays

1Ajmb9A2boyor2ZvX4

1 Bitcoin

Signature:

1ab38bacd1aeed3ee3

Digital Signature Functions

`createSignature(message, privateKey) => signature`

`checkSignature(message, signature, publicKey) = 👍 / 👎`

Where do we put them?

Blockchain

Blocks
Blockchain

continuously growing list of records, called blocks, which are linked and secured using cryptography

Blocks
Blockchain

- Demo - <https://anders.com/blockchain/>
- Bitcoin Explorer - <https://blockexplorer.com>
- Ethereum Explorer - <https://etherscan.io/>

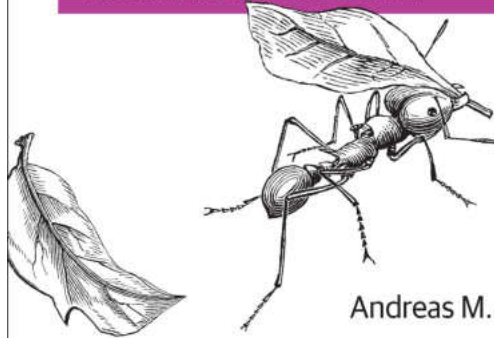
O'REILLY®

2nd Edition



Mastering Bitcoin

PROGRAMMING THE OPEN BLOCKCHAIN



Andreas M. Antonopoulos

<https://github.com/bitcoinbook/bitcoinbook> - FREE

