

CSE 5095-007: Blockchain Technology

Lecture 1 Overview

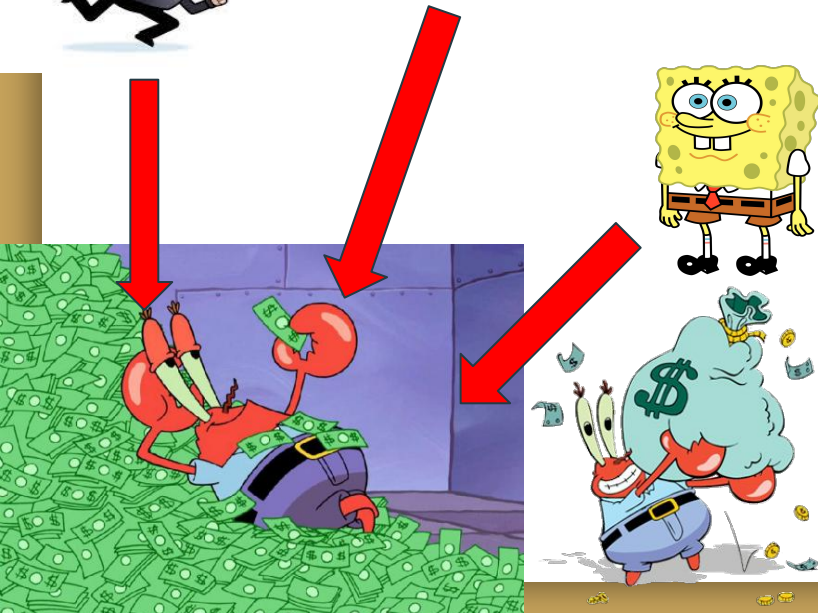
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Outline

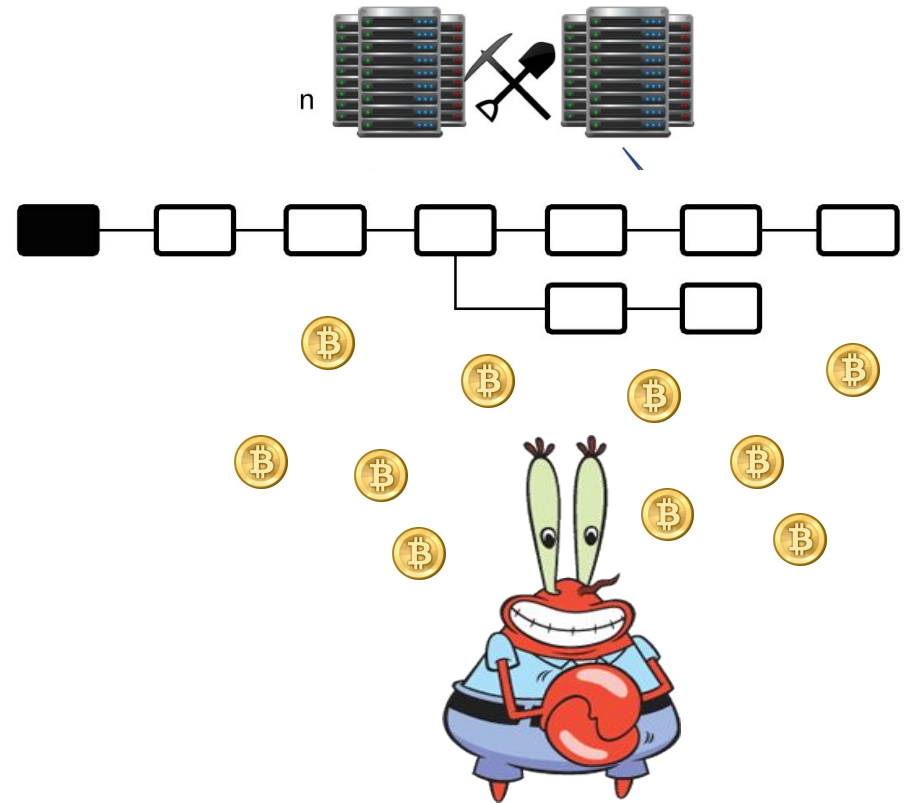
- Motivation.
- Brief history.
- Useful resources.

Once Upon A Time

Centralized Currency



Decentralized Currency



History

- A whitepaper posted online in 2008: “Bitcoin: A Peer-to-Peer Electronic Cash System,” by Satoshi Nakamoto.
- Described a distributed cryptocurrency system not regulated by any government.
- The system went live on January 2009.
- Now “Satoshi Nakamoto” is only associated with certain public keys on Bitcoin blockchain.
 - She/He/They was/were active on forums/emails/etc. until 2010.
- Currently there are hundreds of cryptocurrencies (<https://coinmarketcap.com/>).

Cryptocurrencies

- The use of cryptographic primitives and distributed consensus protocols to secure virtual money creation and flow between various parties.
- “A type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community” - European Central Bank.

Blockchain

- An append only ledger.
 - Simply an immutable record of all transactions and actions performed in the system so far.
 - Each page of this ledger is called a block.
 - These pages are glued together by using a hash chain.
 - Adding a new page on the ledger is done through a process called mining.

Utility of Blockchains

- Initially, the goal was to build a decentralized virtual currency medium.
- Interest has shifted towards providing a decentralized service on top of this medium.
- Lately blockchains on their own (without involving any currency) are used in several applications.
 - Mainly to support transparency and public verifiability.
 - Examples include healthcare, business management, and supply chains.

Useful Resources

- Keeping up with daily developments:
 - <https://en.bitcoin.it/>, bitcoin wiki covering almost every topic related to bitcoin.
 - [The Blockchain Association](#)
 - [CoinCenter](#), focusing on policy issues facing cryptocurrencies.
 - [CoinMarketCap](#), [BitcoinCharts](#); market data (market cap, price, volume, etc) for all cryptocurrencies.
 - News sites: [CoinDesk](#), [CCN](#), [TheBlockCrypto](#), [DecryptMedia](#), [CoinTelegraph](#), [Altcoin Magazine](#),
 - New York Times - Nathaniel Popper
 - His book “Digital Gold: Bitcoin and the Inside Story of the Misfits and Millionaires Trying to Reinvent Money” is a very interesting read.
 - And a long list of podcasts.

Disclaimer

The opinions and content in the previous links do not represent my personal opinions about the topic. It is just a list of suggested items in case you are interested and you need to vet them.

