BLOCKCHAIN: The Future of Computing

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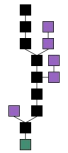
Introduction

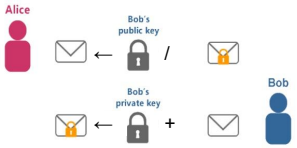
- What is blockchain?
- Who created blockchain?
- Blockchain technologies:
  - Bitcoin
  - IPFS
  - Etherium
- Fully distributed internet.
- Ethical Issues.

What is Blockchain?

- Distributed, continuously growing list of records, which are linked and secured using cryptography.
- Stored on ALL devices on the network.
- Communicates peer to peer
  - Rather than client server



Working of RSA



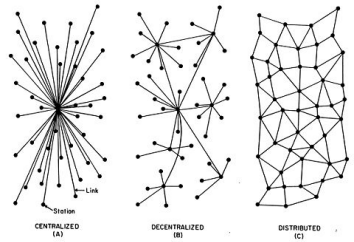


FIG. 1 — Centralized, Decentralized and Distributed Networks

History

- Blockchain was originally created, in 2008, by "Satoshi Nakamoto" for use with the Bitcoin network.
- To this day no one knows how he is.
- Many doubt he is even Japanese.
- Net worth is estimated to be $19.4 billion (980, 000 BTC)

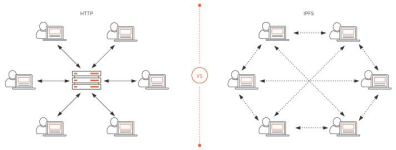
Bitcoin

- Most people's primary exposure to bitcoin.
- Only purpose is to hold "value".
- Inefficient, Low Volume.

IPFS

- More of a hybrid service.
- Allows for a more permanent web and tracks version history based on content.
- Uses blockchain to address content.
- Filecoin

IPFS

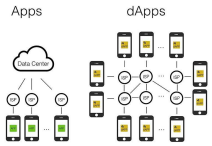


Etherium

- Similar to Bitcoin
- Major difference is you can use smart contracts.
  - Have code that is run by nodes in the network.

ethereum

Fully Decentralized Internet



Ethical Concerns

- Your private key is your identity
  - If you lose it you no longer exist.
  - If it is stolen, the thief is now you (Like a SSN)
  - Online Wallet Services
    - Defeats the purpose of having a completely distributed system.
- If RSA is cracked the whole infrastructure collapses.

Ethical Concerns

- Bitcoin alone currently uses about 63.8 TWh of energy annually.
- Almost the equivalent of 6 million American homes. 0.29% of world's energy consumption.
- The country of iceland uses more energy mining bitcoin than powering homes.
- Burstcoin

850 kWh
Electricity consumed per transaction (Bitcoin)

0.2 kWh
Electricity consumed per transaction (Burst)

Conclusion

- Blockchain is a technology that will revolutionize the way we store and consume data.
- There is much more to Blockchain than just bitcoin
- Ethical Issues