

# Blockchain Technology

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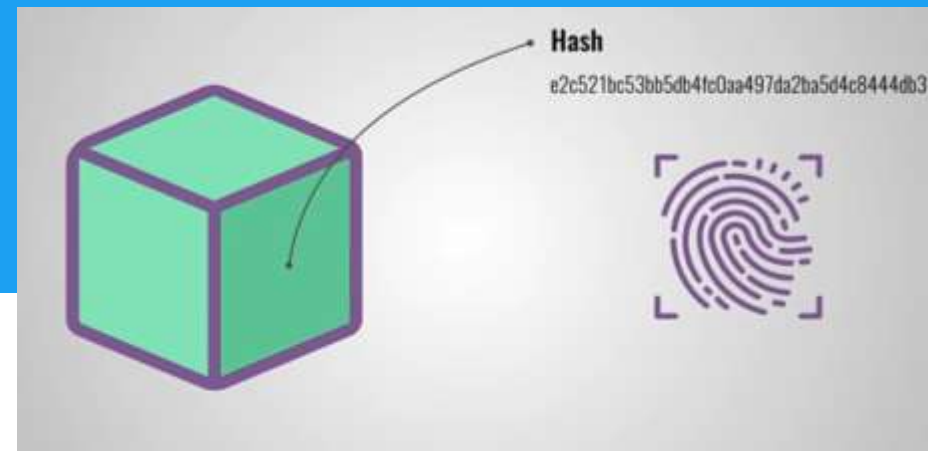
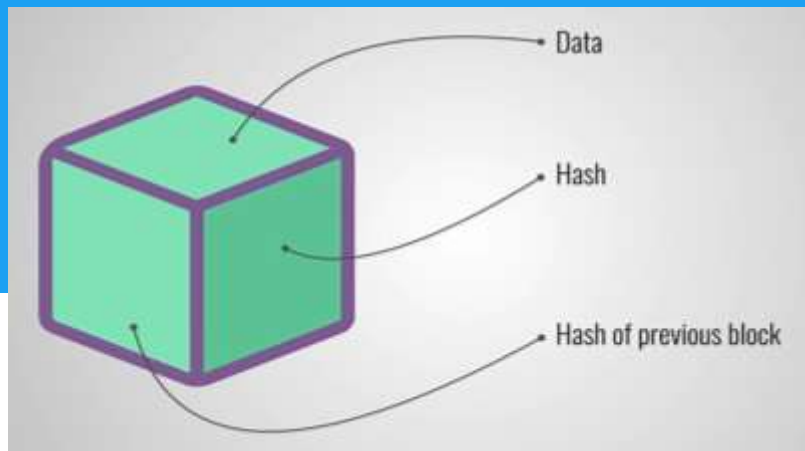
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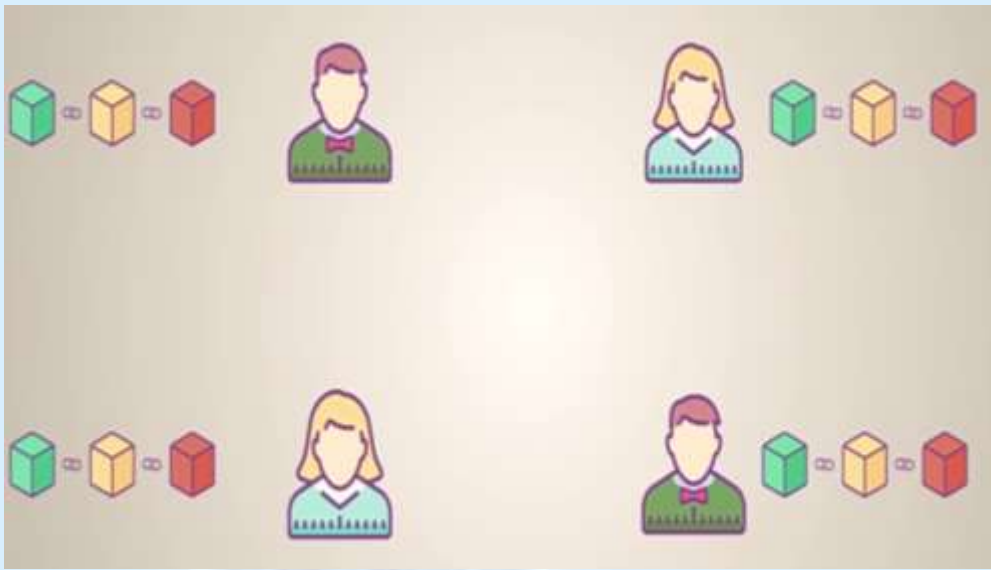
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# What is Blockchain?

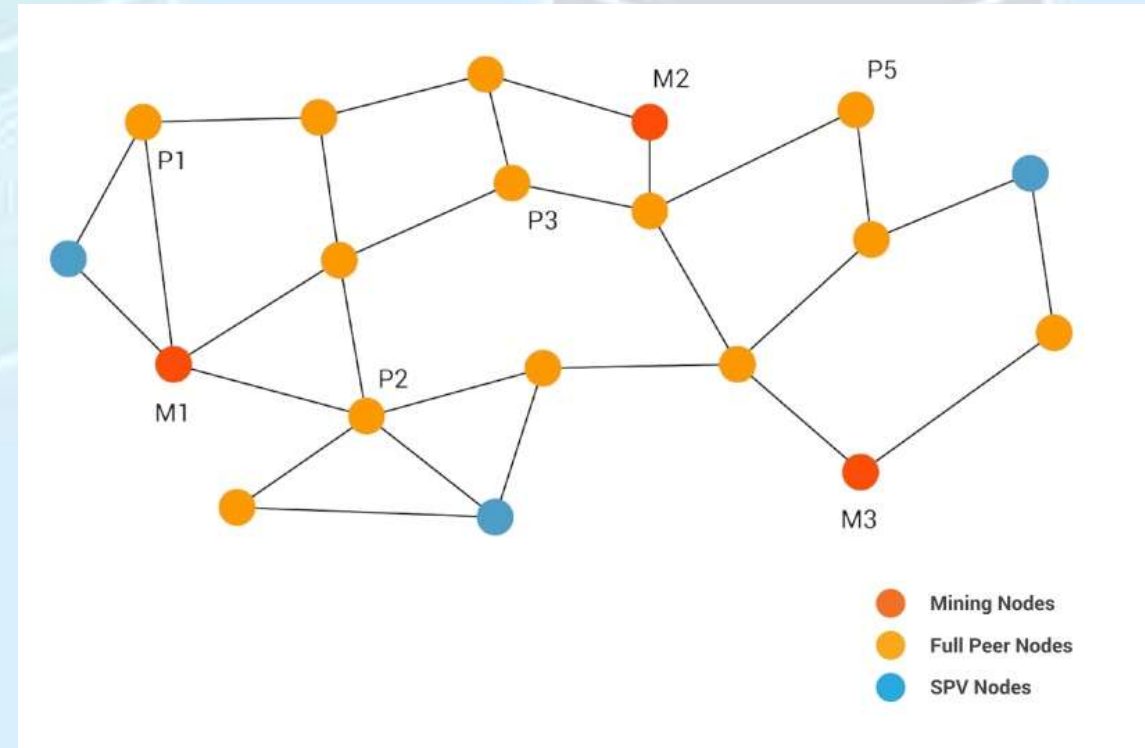
Blockchain is a decentralized and distributed ledger, where, block containing a set of transactions are chained together by cryptographic hash.





- Rather than centralized type of network, blockchain is decentralized peer to peer network, Where each node has a copy of the ledger.

- The transaction originating from a node are validated by participating nodes and a set of transactions are added into a block by a mining node.





- Blockchain uses peer to peer network overlay on the internet. Each node communicate with a set of neighbor nodes, each of which communicate with their neighbor nodes and so on.

## Typical Features



Available for anyone to access



Data can be added, but not altered



To add data, a mathematical puzzle has to be solved



The solution has to be approved by everyone in the network



No central authority has control over the information



Privacy is protected by cryptography

# There are 4 major features of blockchain technology -



Public Distributed Ledger

- A public distributed ledger is a collection of digital data which is shared, synchronized and replicated across the world, across multiple sites, countries and institutions.



Hash Encryption

- Blockchain uses cryptography to ensure the blocks are kept secure from unauthorized access and alteration. Blockchain uses SHA256 algorithm for encryption. To validate users, blockchain also makes use of digital signatures.



Proof of Work

- Proof of Work is a competition among people around the world, who want to add a block to the blockchain (miners). Finding the nonce value is the mathematical puzzle that miners need to solve.



Mining

- Mining is the process of a miner being rewarded for being a first one to find the nonce. This by extension, adds that block to the blockchain.

# Fields that use blockchain :

Travel



To ensure the verification of documents

Music



To stop music piracy and to compensate artists for purchased songs

Cyber security



Data integrity can be guaranteed. There cannot be a single point of failure

Human Resources



Verification of identity of employee, history, etc. Payment and benefit process validation

# References :

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- [www.Wikipedia.com/blockchaintechnology](http://www.Wikipedia.com/blockchaintechnology)
- [www.youtube.com/SimplyExplained/BlockchainWorking](http://www.youtube.com/SimplyExplained/BlockchainWorking)
- [\*YouTube/Study IQ Education/Cryptocurrency and Blockchain\*](#)