Blockchain

CHEAT SHEET

Blocks
A collection of data containing multiple transactions over a given period of time on the blockchain network.

Chain
The cryptographic link which keeps blocks together using a 'hash' function.

Blockchain
Blockchain is a decentralized, secure, immutable ledger of chronologically recorded data. It is a chain of blocks that has anonymous individuals as nodes who transact securely using cryptography.

Peer-To-Peer Network
Every node of the network is a client as well as server, holding identical copies of the application state.

Cryptography
Use of public key cryptography and cryptographies hash functions: essential for transparency and privacy.

Game Theory
Nodes of P2P network validates transactions by consensus, following economic incentive mechanism like Proof of Work or Proof of Stake etc.

Bitcoin
A Peer to Peer Electronic Cash System that would enable people to spend it directly without it going in a financial institution. Blockchain is the technology that runs Bitcoin.

Coin
A means of payment, act like money - to allow transactions of products and services to occur. Depending on the coin, it is a store of value, unit of account or medium of transfer.

Token
It is more than just a means of payment. Tokens offer added advantages like voting rights, dividend payouts,access to services and more.

Decentralised
A system where no individual has ownership of the system and there is no central point of control. Here, the system is spread over the entire network of users.

Cryptocurrencies
The digital currencies that are secured using cryptography and built using blockchain technology.

DApps
DApps are 'decentralised applications'. They are applications, like Bitcoin or Ethereum, that are built on a decentralised blockchain.

Hash
The result of applying an algorithmic function to data in order to convert them into a random string of numbers and letters. This acts as a digital fingerprint of that data, allowing it to be locked in place within the blockchain.

Digital Signature
A digital code generated by public key encryption that is attached to an electronically transmitted document to verify its contents and the sender's identity.

Public Address
The cryptographic hash of a public key. They act as email addresses that can be published anywhere, unlike private keys.

Private Key
A string of data that allows you to access the tokens in a specific wallet. They act as passwords that are kept hidden from anyone but the owner of the address.

Proof of Stake
A consensus distribution algorithm that rewards earnings based on the number of coins you own or hold. The more you invest in the coin, the more you gain by mining with this protocol

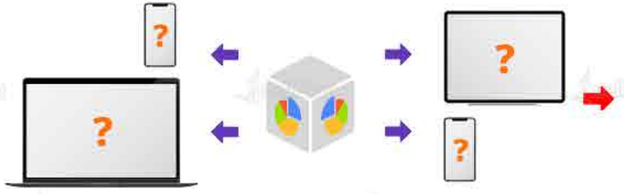
Proof of Work
A consensus distribution algorithm that requires an active role in mining data blocks, often consuming resources. The more 'work' you do or the more computational power you provide, the more coins you are rewarded with.

Node
A copy of the ledger operated by a participant of the blockchain network.

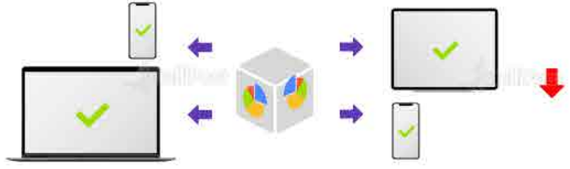
Blockchain Workflow

1. Someone wants to register a transaction
2. The transaction is represented as a block in the shared ledger

3. The block is broadcast to all participants



4. The participants approve the transaction is valid, providing consensus



5. The block is added to the chain

6. A single picture of the chain and actual state is available to all authorized participants

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Blockchain Certification Training Course