**"More than your regular crypto glossary. On this page, you'll find all the latest blockchain terminology and crypto terms that make the Web3 world go round. It's a lot of new language. But no worries, we keep this page updated. In the second part, you'll find terms that are unique to Onchain."**

**Business Membership**

The “business membership” is tailored for companies, allowing multiple employees to access the membership portal simultaneously.

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The standard membership perks contain access to all reports, store items, Onchain and partner events, Discord access, and more.

**Entrepreneurs**

An entrepreneur builds onchain use cases that address both of our external goals. Both non-Web3 and native Web3 entrepreneurs already understand blockchain technology and Web3. With our resources, we inspire and enable them to conceptualize and build their own **o**nchain use cases.

**Magazine**

The magazine mainly serves as a source of information about how [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) improves the world in various aspects of life. The Onchain research reports are repurposed by breaking down their content into several shorter articles in our digital magazine. The idea is to help [entrepreneurs](https://onchain.org/onchain-glossary-blockchain-web3/#entrepreneurs), start-ups, and investors find solutions for their own challenges.

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We also address current topics of interest to our target audience. New magazine articles are distributed through our social media channels.

**Non-Web3 Businesses**

Non-Web3 businesses, sometimes also referred to as [Web 2.0](https://onchain.org/onchain-glossary-blockchain-web3/#web2) businesses, are businesses that have not engaged in Web3 so far. Many businesses can benefit from implementing [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) technology; often, there is simply a knowledge gap. Onchains’ [research](https://onchain.org/onchain-glossary-blockchain-web3/#research) supports those businesses that desire to engage with Web3 but lack the knowledge or creativity to come up with promising **o**nchain use cases. Ultimately, targeting non-Web3 businesses can pave the way for tailored studies and further collaborations.

**Print Magazine**

The Onchain print magazine is designed to capitalize on the advantages of providing a non-digital magazine. These include distributing it to enterprises (e.g., Axel Springer, Porsche, Google, Amazon) and co-working spaces (e.g., Full Node, Wework)

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This should, in turn, attract large [non-Web](https://onchain.org/onchain-glossary-blockchain-web3/#non-Web3-businesses)[3](https://onchain.org/onchain-glossary-blockchain-web3/#non-Web3) audiences and introduce them to the possibilities and use cases blockchain offers in the real world.

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We offer it to lifetime members as an additional membership perk and distribute it to partners and thought leaders as an incentive to join our [DeSci](https://onchain.org/onchain-glossary-blockchain-web3/#DeSci) platform.

**AirDrop**

An AirDrop is the distribution of free [tokens](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) or cryptocurrencies to a large number of [wallet](https://onchain.org/onchain-glossary-blockchain-web3/#wallets) addresses. [Blockchain](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.8snqzngpz4dk) projects often use this distribution as a marketing or promotional strategy to increase awareness, reward existing users, or attract new users to their platform.

**Automated Market Maker**

An Automated Market Maker (AMM) is the most common [decentralized exchange](https://onchain.org/onchain-glossary-blockchain-web3/#decentralized-exchange) (DEX) type that uses a liquidity pool of tokens to set asset prices automatically. Instead of an order book that most centralized or traditional exchanges use, AMMs rely on a mathematical formula to balance the token ratios in the liquidity pool. For example, to exchange [ETH](https://onchain.org/onchain-glossary-blockchain-web3/#DeFi) for [USDC](https://www.usdc.com/), a user adds ETH to the pool and receives USDC in return, with the exact amount determined by the pool’s current ratio and formula. In this way, AMMs ensure constant liquidity and allow for seamless trading without the need to match buyers and sellers. While larger trades may experience some slippage due to their impact on the pool’s balance, AMMs have become a cornerstone of decentralized finance ([DeFi](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.2lv6e6f1qe6h)), offering 24/7 trading of diverse tokens and democratizing access to financial markets.

**Bitcoin**

Bitcoin is a digital currency designed to eliminate the need for central authorities like banks or governments. Instead, it leverages [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#peer-to-peer) technology to facilitate [peer-to-pee](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.9na4jkgk27ua)[r](https://onchain.org/onchain-glossary-blockchain-web3/#peer-to-peer) transactions on a decentralized network. Transactions are authenticated via Bitcoin’s proof-of-work ([PoW](https://onchain.org/onchain-glossary-blockchain-web3/#consensus-mechanism)) [c](https://onchain.org/onchain-glossary-blockchain-web3/#consensus-mechanism)[onsensus mechanism](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.hwg650g688zp), which rewards cryptocurrency miners for validating [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions).

**Blockchain**

A blockchain is a public [ledger](https://onchain.org/onchain-glossary-blockchain-web3/#ledger) of [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) maintained and verified by a decentralized, peer-to-peer ([P2P](https://onchain.org/onchain-glossary-blockchain-web3/#peer-to-peer)) network of computers using a [c](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.hwg650g688zp)[onsensus mechanism](https://onchain.org/onchain-glossary-blockchain-web3/#consensus-mechanism) to confirm data. Each computer in the network keeps its own copy of the shared record, making it nearly impossible for a single computer to alter past transactions or for malicious actors to compromise the network.

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It can be considered a database that keeps a continuously growing list of records known as [blocks](https://onchain.org/onchain-glossary-blockchain-web3/#blocks). These blocks are cryptographically linked, and each block contains a cryptographic [hash](https://de.wikipedia.org/wiki/Hash) of the previous block, the transaction data, and a [timestamp](https://onchain.org/onchain-glossary-blockchain-web3/#timestamp).

**Blockchain Trilemma**

The blockchain trilemma highlights the difficulty of simultaneously optimizing three crucial factors in blockchain technology: decentralization, security, and [scalability](https://onchain.org/onchain-glossary-blockchain-web3/#scalabilitiy). Achieving the highest levels in all three aspects simultaneously is a challenging task.

**Centralized Exchange**

A Centralized Exchange (CEX) is an online platform that enables internet users to buy, sell, and swap crypto assets. CEXs are operated and owned by a single entity. They act as intermediaries between buyers and sellers and are bound to comply with the laws and regulations of the jurisdiction in which they operate.

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A CEX platform maintains an order book for buy and sell orders, where traders specify the amount and price of [tokens](https://onchain.org/onchain-glossary-blockchain-web3/#tokens)/[coins](https://onchain.org/onchain-glossary-blockchain-web3/#coins) they wish to trade. It helps conduct these [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) by providing liquidity for the tokens/coins it supports on its platform.

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Some examples of CEXs are [Binance](https://www.binance.com/en), [Coinbase](https://www.coinbase.com/en-de/), [Kraken](https://www.kraken.com/), and [HTX](https://www.htx.com/).

**Coin**

A coin is classed as a form of money and is native to its [layer 1](https://onchain.org/onchain-glossary-blockchain-web3/#layer1) blockchain. Its primary purpose is to act as a [store of value](https://onchain.org/onchain-glossary-blockchain-web3/#store-of-value) and a medium of exchange, which can be equated to other forms of currency. Examples of coins are (BTC) [Bitcoin](https://onchain.org/onchain-glossary-blockchain-web3/#Bitcoin), (ETH) [Ethereum](https://onchain.org/onchain-glossary-blockchain-web3/#Ethereum), and (LTC) [Litecoin](https://litecoin.org/).

**Coinbase Transaction**

A generation transaction, commonly referred to as a coinbase transaction, is the initial [transaction](https://onchain.org/onchain-glossary-blockchain-web3/#Bitcoin) in a [block](https://onchain.org/onchain-glossary-blockchain-web3/#block) on the [Bitcoin](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.z63eovl5i5h1) [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain). It specifies the recipient(s) of the block reward. Unlike standard transactions that include both input and output data, a generation transaction creates new bitcoin (BTC) directly from the [protocol](https://onchain.org/onchain-glossary-blockchain-web3/#protocol), so it does not need input data.

**Cold Wallet**

A cold wallet can be considered a digital safe for your cryptocurrency. It’s a type of wallet that is kept offline, making it highly secure against online threats; unlike a [hot wallet](https://onchain.org/onchain-glossary-blockchain-web3/#hot-wallet), which is always connected to the internet for easy access, a cold wallet is disconnected, protecting your assets from hackers. It can be thought of as storing your valuables in a secure vault instead of carrying them around. Examples of cold wallets include hardware wallets like Ledger and Trezor and paper wallets, where private keys are printed on paper and stored safely.

**Consensus Mechanism**

A [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) [consensus mechanism](https://onchain.org/onchain-glossary-blockchain-web3/#consensus-mechanism) refers to a protocol unanimously adopted by all nodes in a blockchain network to validate and incorporate new [blocks](https://onchain.org/onchain-glossary-blockchain-web3/#PoS) into the blockchain. Different types of consensus mechanisms exist, such as [PoW](https://onchain.org/onchain-glossary-blockchain-web3/#POW), [PoS](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.d4wssg7vism7), and [DPoS](https://onchain.org/onchain-glossary-blockchain-web3/#DPoS). The primary function of the consensus mechanism is to ensure all [nodes](https://onchain.org/onchain-glossary-blockchain-web3/#nodes) within the network reach agreement on the order and validity of the [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions).

**Crypto-off-Ramp**

Crypto-off-ramps are services that enable cryptocurrencies or [tokens](https://onchain.org/onchain-glossary-blockchain-web3/#fiat-currencies) to be converted back into [fiat currenc](https://onchain.org/onchain-glossary-blockchain-web3/#fiat-currencies)[y](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.kyjp1yp9zxud), facilitating the transition from digital assets to traditional financial institutions. Crypto off-ramps are required to convert digital asset holdings into [fiat](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.kyjp1yp9zxud).

**DAO – Decentralized Autonomous Organization**

A decentralized autonomous organization (DAO) operates without central leadership. Decisions originate from the community and are governed by a set of rules enforced on a [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain).

**Dai**

Dai is a crypto asset that attempts to maintain a stable 1:1 value with the U.S. dollar by locking other crypto assets in contracts.

**Decentralized/Decentralization**

Decentralization is a core feature of [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) technology, reducing or even eliminating intermediaries across industries. For instance, decentralized finance ([DeFi](https://onchain.org/onchain-glossary-blockchain-web3/#DeFi)) platforms bypass banks, allowing profits and governance to be shared with users and the community. A decentralized network also allows crowdsourced consensus, making it difficult for any single entity to control or censor data. However, many experts believe that greater decentralization can reduce network throughput.

**Devnet**

A [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) network for development purposes. For example, ~~the~~ [~~Lisk software development kit~~](https://lisk.com/sdk) ~~(SDK)~~ a software development kit (SDK) can be used to provide a dedicated [genesis block](https://onchain.org/onchain-glossary-blockchain-web3/#genesis-block) and configurations to conveniently set up a local Devnet while developing a blockchain application.

**DeSci – Decentralized Science**

Decentralized Science (DeSci) uses [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#Web3) and [Web3](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.bfv0v93yygtt) technologies to make scientific research more accessible, transparent, and efficient. By decentralizing funding, data management, and peer review, DeSci overcomes the limitations of traditional scientific institutions. This approach fosters broader participation and interdisciplinary collaboration and ensures the integrity of research. DeSci is instrumental in translating scientific advancements into practical applications, particularly in areas like healthcare and biotechnology, contributing to innovation across various industries.

**DEX – Decentralized Exchange**

A Decentralized Exchange (DEX) is an online platform that enables users to buy cryptocurrencies directly through [peer-to-p](https://onchain.org/onchain-glossary-blockchain-web3/#peer-to-peer)[eer](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.9na4jkgk27ua) transactions without any middleman. Examples include [Binance](https://www.binance.com/en), [Coinbase](https://www.coinbase.com/en-de/), and [Bitstamp](https://www.bitstamp.net/). Unlike traditional centralized exchanges, where a third-party entity manages user funds and oversees [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions), a DEX operates on a [p](https://onchain.org/onchain-glossary-blockchain-web3/#peert-to-peer)[eer-to-peer](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.9na4jkgk27ua) basis.

**DLT – Distributed Ledger Technology**

Distributed Ledger Technology (DLT) is a decentralized [peer-to-peer](https://onchain.org/onchain-glossary-blockchain-web3/#peer-to-peer) digital system that records [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) simultaneously across multiple locations. Utilizing cryptography and [consensus mechanisms](https://onchain.org/onchain-glossary-blockchain-web3/#consensus-mechanism), DLT enables participants to share an unalterable copy of the same [ledger](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.t8l3pyq2rjsz).

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[Blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) is one of the four types of DLTs, whereby its transaction records are kept in the [ledger](https://onchain.org/onchain-glossary-blockchain-web3/#ledger) as a chain of [blocks](https://onchain.org/onchain-glossary-blockchain-web3/#blocks).

**Double Spending Problem**

The double spending problem is a significant risk associated with digital currencies, where the same funds can potentially be duplicated and spent more than once. In contrast, with [fiat currency](https://onchain.org/onchain-glossary-blockchain-web3/#fiat-currencies), once the spender hands over physical cash, it cannot be used again. However, with digital currency, [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) systems are specifically designed to prevent the same digital [coin](https://onchain.org/onchain-glossary-blockchain-web3/#coin) or [token](https://onchain.org/onchain-glossary-blockchain-web3/#tokens) (e.g., [Bitcoin](https://onchain.org/onchain-glossary-blockchain-web3/#Bitcoin)) from being sent to multiple addresses. The risk of double spending in cryptocurrencies is reduced through various mechanisms ensuring all transactions’ authenticity.

**DPoS – Delegated Proof of Stake**

DPoS is the mechanism for determining eligible [block](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) creators. It is achieved by voting for registered delegate accounts, which can then create blocks depending on their vote weight. It is part of a [blockchain’s](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.8snqzngpz4dk) consensus algorithm.

**EoT – Economy of Things**

The Economy of Things goes beyond the [Internet of Things](https://onchain.org/onchain-glossary-blockchain-web3/#iot) by letting devices independently make money and trade the value they create. In contrast to the [Internet of Things,](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.ijykk3nl8f24) where devices are contextually aware and linked, the Economy of Things turns devices into economic agents. It’s a system of decentralized and borderless economic connections between machines and people, allowing them to become increasingly autonomous and economically independent.

**ERC-20 Token**

ERC-20 [tokens](https://onchain.org/onchain-glossary-blockchain-web3/#tokens) are Ethereum-based tokens with standardized features. These ensure compatibility can be maintained with the broader [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) ecosystem. Simply put, ERC-20 serves as the technical standard governing the implementation of [tokens](http://tokens/) through [smart contracts](https://onchain.org/onchain-glossary-blockchain-web3/#smart-contracts) on the [Ethereum](https://onchain.org/onchain-glossary-blockchain-web3/#ethereum) [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain).

**Ethereum**

Launched in 2015, Ethereum is a decentralized, blockchain-based platform designed as a global supercomputer to support a range of interoperable [decentralized applications](https://onchain.org/onchain-glossary-blockchain-web3/#decentralized-applications) (dApps) using token economies and [smart contracts](https://onchain.org/onchain-glossary-blockchain-web3/#smart-contracts). It operates on self-executing smart contracts that eliminate the need for intermediaries. The network is powered by its native cryptocurrency, ether (ETH), which covers [transaction](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) fees. Ethereum is open-source, programmable, private, and censorship-resistant, serving as the foundation for a decentralized internet that has led to innovations such as Initial Coin Offerings (ICOs), [stablecoins](https://onchain.org/onchain-glossary-blockchain-web3/#stablecoin), and decentralized finance ([DeFi](https://onchain.org/onchain-glossary-blockchain-web3/#DeFi)) applications.

**Forging**

Forging is the process of creating new [blocks](https://onchain.org/onchain-glossary-blockchain-web3/#ethereum) on a [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain). Rewards can be paid to the participants with cryptocurrencies and fees. Similar to mining in [Bitcoin](https://onchain.org/onchain-glossary-blockchain-web3/#Bitcoin) or [Ethereum](https://onchain.org/onchain-glossary-blockchain-web3/#ethereum), forging validates [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) but operates differently in ecosystems like proof-of-work [(PoW](https://onchain.org/onchain-glossary-blockchain-web3/#POW)) and proof-of-stake ([PoS](https://onchain.org/onchain-glossary-blockchain-web3/#PoS)). A more in-depth explanation of forging can be found [here](https://0-100.io/glossary/forging).

**Fork**

A fork can be defined as an occurrence of a [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) diverging into two forward paths in the network. In other words, an alternative version of the blockchain is created by simultaneously generating two [blocks](https://onchain.org/onchain-glossary-blockchain-web3/#blocks) on different parts of the network. See [h](https://onchain.org/onchain-glossary-blockchain-web3/#hard-fork)[ard fork](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.xkd96wh9j2yj) and [soft fork](https://onchain.org/onchain-glossary-blockchain-web3/#soft-fork).

**Genesis Block**

The genesis [block](https://onchain.org/onchain-glossary-blockchain-web3/#blocks) describes the very first block in the blockchain [~~blockposchain~~](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain)~~.~~ It defines the initial state of the blockchain at the start of the network. A genesis block must be given to the application, and all networks should have a different genesis block.

**Layer 1**

A layer 1 [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) serves as the foundational blockchain upon which secondary blockchain networks and applications can be constructed. L1s offer the fundamental infrastructure and security necessary for the operation of [layer 2](https://bitcoin.org/en/) blockchains. Good examples of Layer 1 networks are [Bitcoin](https://bitcoin.org/en/), [Ethereum](https://ethereum.org/en/), and [Solana](https://solana.com/).

**Ledger**

A ledger is a record-keeping system for tracking financial transactions. [Blockchains](https://onchain.org/onchain-glossary-blockchain-web3/#blockchains) are often referred to as distributed ledgers.

**Mainnet**

A [mainnet](https://onchain.org/onchain-glossary-blockchain-web3/#mainnet) is a fully developed, functional, and independent [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) that runs on its own network and uses its own protocol and technology.

**Merkle Trees**

A Merkle tree is a data structure made up of data-converting [hashes](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) used by [blockchains](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) to verify information securely. It summarizes all the [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) in a [block](https://onchain.org/onchain-glossary-blockchain-web3/#blocks) by generating a digital fingerprint (i.e., a single [hash](https://onchain.org/onchain-glossary-blockchain-web3/#hash)) representing the entire set of transactions.

**Multi-Signature Wallet**

A multi-signature (multi-sig) [wallet](https://onchain.org/onchain-glossary-blockchain-web3/#wallet) is a type of wallet that requires multiple keys to sign a [transaction](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) before it can be executed. In contrast, standard wallets need only a single signature to authorize transactions.

**Nonce**

A nonce (short for “number only used once”) is a number added to the data in a [block](https://onchain.org/onchain-glossary-blockchain-web3/#hash) before it is [hashed](https://onchain.org/onchain-glossary-blockchain-web3/#blocks) during the Proof of Work ([PoW](https://onchain.org/onchain-glossary-blockchain-web3/#POW)) mining process.

**Optimism**

[Optimism](https://onchain.org/onchain-glossary-blockchain-web3/#ethereum) is a [Layer 2](https://onchain.org/onchain-glossary-blockchain-web3/#layer2) scaling solution built on top of the [Ethereum](https://onchain.org/onchain-glossary-blockchain-web3/#ethereum) [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchains). It addresses the challenges faced by running on the Ethereum network. Optimism developed the [OP](https://onchain.org/onchain-glossary-blockchain-web3/#superchain) [Superchain,](https://onchain.org/onchain-glossary-blockchain-web3/#op-chains) a network of interconnected [layer 2](https://onchain.org/onchain-glossary-blockchain-web3/#layer2) [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) networks built using its open-source OP Stack, which was designed to provide enhanced [scalability](https://onchain.org/onchain-glossary-blockchain-web3/#scalability), [interoperability](https://onchain.org/onchain-glossary-blockchain-web3/#interoperability),

**Oracles**

Oracles are third-party services that provide external real-world data to [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#smart-contracts) protocols, often to [smart contracts](https://onchain.org/onchain-glossary-blockchain-web3/#smart-contracts). They enhance the blockchain’s functionality by securing, verifying, and validating its data, as blockchains and [smart contracts](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.jyc0nzbj202w) are typically closed systems. Oracles can be either decentralized, drawing from multiple data sources, or centralized, controlled by a single entity. An essential use of blockchain oracles is delivering price and data feeds for the trustless execution of smart contracts in the [DeFi](https://onchain.org/onchain-glossary-blockchain-web3/#DeFi) sector.

**POAP – Proof of Attendance Protocol**

A Proof of Attendance Protocol refers to [NFTs](https://onchain.org/onchain-glossary-blockchain-web3/#nft) that prove a person has attended a particular event. These badges are supported by a cryptographic record and sent to a person’s [wallet](https://onchain.org/onchain-glossary-blockchain-web3/#wallet) as a reward for participating in certain activities.

**PoS – Proof of Stake**

Proof of Stake (PoS) is a consensus mechanism used to achieve agreement over a distributed network. With PoS, the consensus is determined based on each user’s stake in the network.  
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In PoS networks, participants are incentivized to stake native [coins](https://onchain.org/onchain-glossary-blockchain-web3/#nodes) in [validator](https://onchain.org/onchain-glossary-blockchain-web3/#validator) [nodes](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.b98tv6rmjwvj), which involves validating [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) and earning rewards. By staking, users help secure and stabilize the network while earning interest on their investment.

Validator nodes are randomly selected to validate [block](https://onchain.org/onchain-glossary-blockchain-web3/#blocks) data and generate the next block, earning native coins as a reward.

A strong network of nodes enhances security, resilience, and computational power. Additionally, PoS systems often allow validator nodes to participate in decentralized governance by voting on important updates and decisions. PoS networks already demonstrate faster speeds, greater [scalability](https://onchain.org/onchain-glossary-blockchain-web3/#scalability), and improved energy efficiency compared to Proof of Work ([PoW](https://onchain.org/onchain-glossary-blockchain-web3/#POW)) [blockchains](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain).

**Private Key**

[Public-key](https://onchain.org/onchain-glossary-blockchain-web3/#public-key) cryptography (asymmetric cryptography) is a specialized cryptographic system that uses pairs of long alphanumeric keys that must be used together. Public keys serve as [wallet](https://onchain.org/onchain-glossary-blockchain-web3/#wallet) addresses that can be shared with others, while private keys, known only to their owner, provide access to funds. These keys are generated through cryptographic algorithms that solve mathematical problems to create a one-way function.

**Protocol Layer**

The protocol layer comprises the core [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#layer2) [consensus mechanism](https://onchain.org/onchain-glossary-blockchain-web3/#consensus-mechanism) and [nodes](https://onchain.org/onchain-glossary-blockchain-web3/#nodes) that form the foundation of a blockchain. It can also include external [layer 2](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.ws5uenk1b9qm) systems like [sidechains](https://onchain.org/onchain-glossary-blockchain-web3/#sidechains) and virtual machines. Typically, this layer refers to the underlying architecture of all [layer 1](https://onchain.org/onchain-glossary-blockchain-web3/#layer1) blockchain networks. It contains elements such as [node](https://onchain.org/onchain-glossary-blockchain-web3/#nodes) addresses, error reporting, interface identification, network synchronization, state changes, and the processing of network [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions).

**Public Key**

A public key is a cryptographic code that allows you to receive cryptocurrency [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#private-key). Paired with a [private key](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.644bfddu7tz0), it can be shared publicly, enabling others to send transactions. However, the private key is required to “unlock” and prove ownership of the received cryptocurrency. Typically, a public key is presented as an address, a shortened version of the public key itself. The private key, in contrast, should always remain confidential.

**QR Code**

A quick response (QR) code is a type of matrix barcode that uses a machine-readable optical label, often scanned with a mobile phone, to store sensitive information about the item it’s attached to. QR codes typically contain data for tracking, locating, or identifying that links to a mobile app or website. They store data using four standardized encoding methods (byte/binary, alphanumeric, numeric, and kanji).

**Recovery Phrase/Recovery Seed Phrase**

A recovery phrase, also known as a “seed phrase” or “recovery seed phrase,” is a 12, 18, or 24-word code used as a backup to regain access to a cryptocurrency [wallet](https://onchain.org/onchain-glossary-blockchain-web3/#wallet) if the [private key](https://onchain.org/onchain-glossary-blockchain-web3/#private-key) is lost. This phrase corresponds to information stored within the wallet that can unlock the private key needed to restore access.

**Rollups**

A rollup is a type of modular [layer 2](https://onchain.org/onchain-glossary-blockchain-web3/#scalability) scaling solution that conducts [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) off the main [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) to lower transaction costs and enhance throughput on the mainchain. It enhances [scalability](https://onchain.org/onchain-glossary-blockchain-web3/#scalability) and performance by reducing the computational load on the primary [layer 1](https://onchain.org/onchain-glossary-blockchain-web3/#layer1) chain.

**Scrypt**

Scrypt is the [hash](https://onchain.org/onchain-glossary-blockchain-web3/#hash) function used by [Litecoin](https://litecoin.org/) to convert an input of letters and numbers into an encrypted output. While it differs from the [SHA-256](https://onchain.org/onchain-glossary-blockchain-web3/#sha-256) hash function used by [bitcoin](https://onchain.org/onchain-glossary-blockchain-web3/#Bitcoin), it operates within a similar [Proof of Work](https://onchain.org/onchain-glossary-blockchain-web3/#POW) (PoW) [consensus mechanism](https://onchain.org/onchain-glossary-blockchain-web3/#consensus-mechanism). Scrypt was initially designed to restrict mining to [CPUs](https://onchain.org/onchain-glossary-blockchain-web3/#CPU) and [GPUs](https://www.arm.com/glossary/cpu#:~:text=The%20CPU%2C%20also%20referred%20to,programs%20running%20on%20the%20device.), although scrypt-capable [ASICs](https://getbtcz.com/what-is-an-asic/#:~:text=Application%2Dspecific%20integrated%20circuit%20(abbreviated,after%20CPUs%2C%20GPUs%20and%20FPGAs.) have since been developed.

**SHA-256**

SHA-256 is part of the SHA-2 cryptographic [hash](https://www.nsa.gov/) function family, developed by the National Security Agency ([NSA](https://www.nsa.gov/)) and later became well-known as a core component of the [bitcoin](https://onchain.org/onchain-glossary-blockchain-web3/#Bitcoin) [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) network. As a Secure Hash Algorithm (SHA), SHA-256 secures data using a cryptographic mathematical operation to generate a unique 256-bit, 64-character sequence of letters and numbers, known as a hash, from an input. These functions are typically designed to be one-way operations, making it nearly impossible to reverse-engineer the original data from its hash value.

**Smart Contract**

A smart contract is a self-executing code or protocol that automatically enforces a set of instructions verified on the [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain). These contracts are trustless, autonomous, decentralized, and transparent, becoming irreversible and unmodifiable once deployed. While they have many applications, some of the most common include financial contracts like loans, derivatives, and trading. They are also used in legal agreements, identity management, and various other scenarios. Popular in decentralized finance [(DeFi](https://onchain.org/onchain-glossary-blockchain-web3/#DeFi)), [smart contracts](https://onchain.org/onchain-glossary-blockchain-web3/#smart-contracts) can be combined into decentralized applications ([dApps](https://onchain.org/onchain-glossary-blockchain-web3/#decentralized-applications)) to perform more complex functions.

**Store of Value**

A store of value is an asset that is anticipated to retain its value or purchasing power over time and can be reliably accessed and exchanged in the future. Historically, [fiat currency](https://onchain.org/onchain-glossary-blockchain-web3/#fiat-currencies), real estate, and precious metals like gold and silver have been considered reliable stores of value. As [blockchain](http://blockchain/) technology becomes more mainstream, many people also view certain cryptocurrencies, especially [bitcoin](https://onchain.org/onchain-glossary-blockchain-web3/#Bitcoin) (BTC), as an effective store of value.

**Superchain**

The Superchain is a concept designed by [Optimism](https://onchain.org/onchain-glossary-blockchain-web3/#optimism). It comprises a network of [layer 2](https://onchain.org/onchain-glossary-blockchain-web3/#layer2) chains, referred to as [OP Chains](https://onchain.org/onchain-glossary-blockchain-web3/#op-chains), that jointly utilize security, a communication layer, and an open-source technology stack. The Superchain builds interconnected layer 2 [rollup](https://onchain.org/onchain-glossary-blockchain-web3/#rollups) networks, or OP chains’ that share the standardized OP Stack architecture for seamless interaction, as opposed to creating isolated [blockchains](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain).

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Unlike multi-chain designs, these chains are standardized and meant to function as interchangeable resources.

**Timestamp**

A timestamp is a digital record that marks a [transacti](https://onchain.org/onchain-glossary-blockchain-web3/#ledger)ras[on’s](https://onchain.org/onchain-glossary-blockchain-web3/#ledger) precise moment. Timestamps logged onto a blockchain’s [ledger](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.t8l3pyq2rjsz) are immutable and uniquely correspond to the specific transaction they record.

**Token**

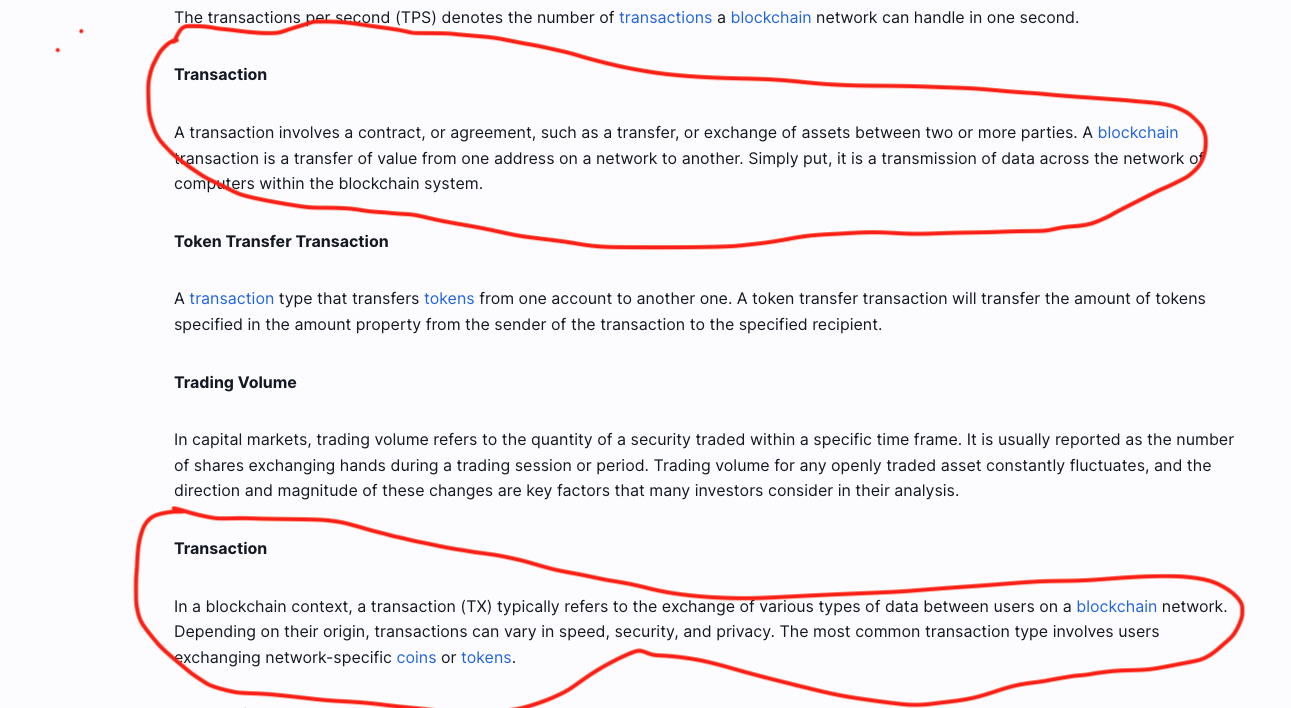
A token represents a physical or virtual object or an abstract concept like a gift.

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In the digital world, tokens vary. Crypto tokens function as digital keys on specific [ledgers](https://onchain.org/onchain-glossary-blockchain-web3/#ledger), unlike digital [coins](https://onchain.org/onchain-glossary-blockchain-web3/#coins) that are central to their systems.

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A [token](https://onchain.org/onchain-glossary-blockchain-web3/#tokens) is different from a coin in that it is created on top of an existing chain, as opposed to a coin that is native to its [layer 1](https://onchain.org/onchain-glossary-blockchain-web3/#layer1) [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain). Crypto tokens serve multiple purposes beyond currency, such as providing access to services or representing ownership of digital art. There are generally five types of digital tokens: payment, utility, security, equity, and [NFTs](https://onchain.org/onchain-glossary-blockchain-web3/#nft).



A [transaction](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) message is a piece of data signed by an external party. It represents either a message or a new autonomous object.

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Transactions are recorded into each [block](https://onchain.org/onchain-glossary-blockchain-web3/#block) of the [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain). A message is created by contracts interacting with each other or by a transaction.

**TVL – Total Value Locked**

TVL is simply defined as the total value of cryptocurrency locked in a [smart contract](https://onchain.org/onchain-glossary-blockchain-web3/#smart-contract).

**Unit of Account**

A unit of account is a standard measure used to assess the value of goods or services. ~~a good or service.~~ By assigning a specific measurement unit to an offering, its monetary value can be easily understood in abstract terms, eliminating the need for bartering. This function of providing a consistent measure of value is one of the three essential roles of money, alongside serving as a [store of value](https://onchain.org/onchain-glossary-blockchain-web3/#store-of-value) and a medium of exchange.

**Validator**

In the context of [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) technology, a validator is an entity tasked with verifying and approving [transactions](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) submitted by users or blockchain clients. Each blockchain [protocol](https://onchain.org/onchain-glossary-blockchain-web3/#protocol) defines its own criteria for what qualifies as a validator and how these validators function. Most decentralized blockchain networks depend on some type of validator [node](https://onchain.org/onchain-glossary-blockchain-web3/#nodes) to process on-chain transactions in a permissionless and distributed way.

**Wallet**

Wallets can be divided into three distinct categories: software, hardware, and paper wallets. Software wallets can be desktop, mobile, or online.  
In short, a wallet will store [public keys](https://onchain.org/onchain-glossary-blockchain-web3/#private-key) and [private keys](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.644bfddu7tz0) and can interface with various [blockchains](https://onchain.org/onchain-glossary-blockchain-web3/#tokens), enabling users to monitor their balance, send [tokens](https://onchain.org/onchain-glossary-blockchain-web3/#tokens), and conduct other operations.

**Web3**

Web3 is the next generation of the Internet, in which all applications are decentralized and can run on the blockchain. Web3 enables most users to be linked through decentralized networks and maintain control over their own data.

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The ~~four~~ core concepts of Web3 are decentralization, [artificial intelligence](https://onchain.org/onchain-glossary-blockchain-web3/#artificial-intelligence), and [machine learning](https://onchain.org/onchain-glossary-blockchain-web3/#machine-learning), trustless and permissionless networks, and omnipresent connectivity.

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The first version of the Web (Web 1.0) was the “read-only Web,” and the second version added the ability to “write.” Web 2.0 is described as the “participative social Web.” Web3 goes a step further and can be classed as the “read, write, own, Web.” This stage shifts users away from centralized platforms such as Facebook and Google.

**Zero Knowledge Rollups**

A zero-knowledge rollup (zk rollup) is a [layer 2](https://onchain.org/onchain-glossary-blockchain-web3/#layer2) scaling solution that shifts computation by executing them off the main [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) (off chain) while still storing the [transaction](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) data on the main blockchain and retaining the [transaction](https://docs.google.com/document/d/1DoeA0G-EPqgRwLWFEjxcHcHVdnV4gmJ8GCfay5GsUjc/edit#heading=h.9xn3i92u2dqg) data on chain in a [layer 1](https://onchain.org/onchain-glossary-blockchain-web3/#transactions) network. By using [zero-knowledge proofs](https://onchain.org/onchain-glossary-blockchain-web3/#zero-knowledger-proofs), off-chain computation results are proven valid on chain.

**Zero Knowledge Snarks**

A Zero-Knowledge Succinct Non-Interactive Argument of Knowledge (zk SNARK) is a cryptographic proof used to maintain privacy in blockchain-based distributed [ledger](https://onchain.org/onchain-glossary-blockchain-web3/#ledger) systems. It allows one party to prove they have specific information without revealing the actual data to the network by using a secret key before the transaction is broadcast. Zk SNARKs gained prominence with privacy-focused [blockchain](https://onchain.org/onchain-glossary-blockchain-web3/#blockchain) protocols like [Zcash](https://onchain.org/onchain-glossary-blockchain-web3/#ledger) and [Monero](https://www.getmonero.org/).