What is Ethereum?

Ethereum is a decentralized software platform powered by blockchain technology that acts as a foundation for communities, applications, organizations and digital assets that everyone can build and use.

Core innovation of Ethereum is the ability to not have to trust a central authority.

Anyone can use Ethereum thanks to its scalability, programmability, security and decentralization.

The blockchain technology ensures secure digital ledgers to be publicly created and maintained.

Its token called Ether (ETH) is used to pay for gas fees.

Ethereum has similarities to Bitcoin but different long term visions and limitations.

Its blockchain technology uses a proof-of-stake transaction validation mechanism.

Ethereum functions as a base for many emerging technological advances (L2's) based on blockchain.

How Does Ethereum work?

Ethereum uses a blockchain, which is a distributed ledger.

Information is stored in blocks and each block stores encoded information from previous one and new data.

Identical blockchain copy is distributed amongst validators.

Validators are the participants who stake their ETH to validate the current block and propose a new one.

Once a block is proposed it is validated through automated programs and executed.

Enough validators have to show that they come up with the same result and the block is finalized.

What are Smart Contracts?

Smart Contracts are programs used on the blockchain.

They execute when triggered by a transaction from the user.

They are the flexible building blocks of Ethereum.

Examples - lending apps, insurance, decentralized trading exchanges, social networks and more…

Wallets

You receive a private key for each ether.

Users are using wallets to store their ether keys (private keys) that are used for transactions.

Ether is not stored in your wallet.

Future for Ethereum

Ethereum is continuing to develop a scalability solution called “ danksharding “.

Overall Ethereum will be improving for cheaper transactions, extra security, better user experiences and future-proofing.

History of Ethereum

The Ethereum platform was launched in 2015 by Vitalik Buterin and Joe Lubin (founder of ConsenSys).

“ A Historic Split ” - In 2016 a group of people gained control over smart contracts used by a project called The DAO thanks to a third party developer to steal around 50 million dollars worth of ETH.
Most of the community wanted to invalidate existing blockchain and approve blockchain with revised history which happened but a small part of the community chose to maintain the original version so it became Ethereum Classic.

Proof-of-Stake Transition - Firstly, Ethereum was using a proof-of-work validation mechanism similar to Bitcoin’s. After years of development it transitioned to proof-of-stake in 2022 for lower energy usage and much less processing power.

Dencun Upgrade - activated 13th May 2024, Ethereum’s step for future upgrades.