

Smart Contract, Blockchain and Web 3.0

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What is a Smart Contract

Smart contract is a programmed contract stored on a blockchain which is self-executing once predetermined conditions are met.

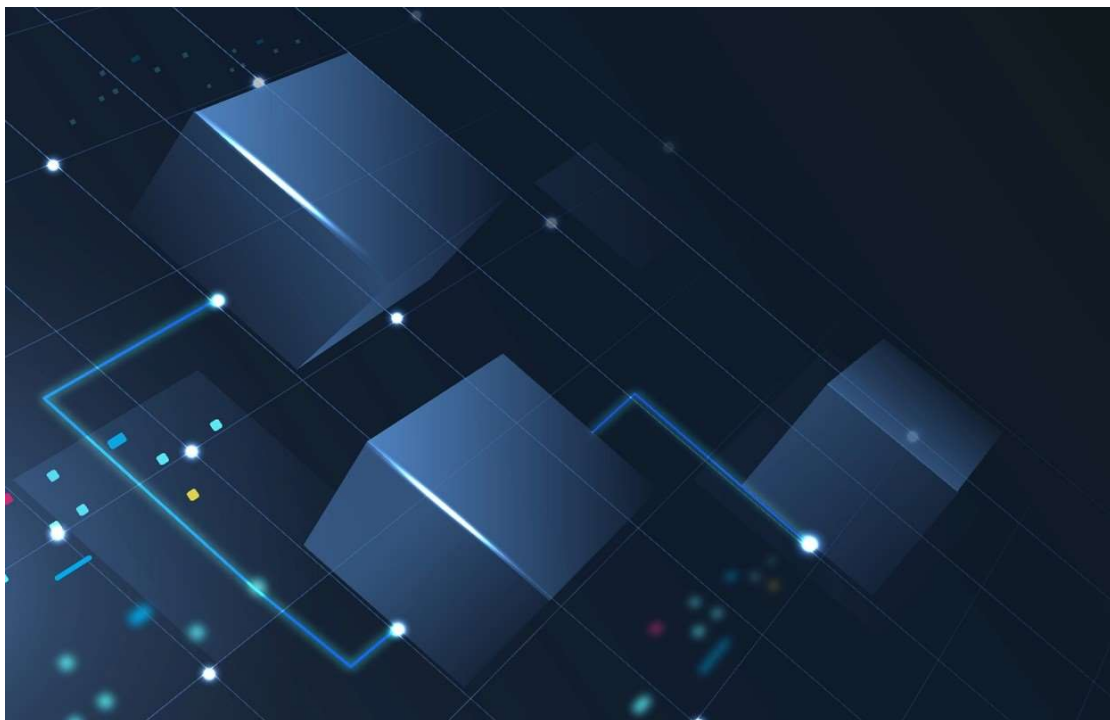
It is used to automate the execution of an agreement without any intermediary's participation and the parties to a smart contract could predict the outcome. Thus, a smart contract is more cost-effective and timesaving in comparison with the traditional contract.

Smart contracts were first introduced by Nick Szabo in 1994, who invented a virtual currency called "Bit Gold" in 1998. Bitcoin was introduced 10 years later. Smart contract consists of computerized transaction codes that execute the terms of a contract. Contrary to traditional contract, no legal language or terms are comprised of in a smart contract. Rather, the language of smart contract is programming language (e.g. JavaScript) and the terms thereof are embedded into lines of the codes.



Smart Contract and Blockchain

The blockchain technology, as a peer-to-peer network, is established to records all the transactions that may be concluded in the network by way of a decentralized and distributed ledger. Therefore, the crux of the blockchain technology is decentralization. A distributed ledger instead of central ledger is a database shared by the users to the network in which each user maintains and updates a synchronized copy of the data. The distributed ledger permits users to securely verify execute and record their own transactions without any intermediary (e.g. legal adviser acting for a contracting party).



The blockchain has permitted users to the network to transfer securely cryptocurrencies without a centralized party (e.g. a clearing house). For example, Ethereum is proposed as blockchain-based network used for the cryptocurrency. Blockchain technology overlaps traditional contracts by including the terms of agreements between the contracting parties and surpasses them to smart contracts by automating the execution of agreements in a distributed environment when conditions are satisfied. Thus, smart contracts run on top of the blockchain to facilitate, execute, and enforce an agreement between the users to the network. For the purpose of preventing contract tampering, smart contracts are copied to each node of the blockchain network.

Blockchain and Web 3.0

Web 3.0 is long-awaited and decentralized by running decentralized protocols. It is a peer-to-peer internet and has no centralized party to able content creators to take full ownership of the data to which they have a private key. As a result, a few large technology companies (e.g. facebook) may be kept away from controlling the core capabilities of the internet.

Web 3.0 will enable users to track their data and look over the source code of the platforms they decide to utilize. All the users of Web 3.0 will always be aware of the value and commerce they are associated with.

Given Web 3.0 would run on decentralized protocols, it is important to find a possible convergence of blockchain in Web 3.0. Since Web 3.0 exhibits interoperability, automation by leveraging smart contracts, seamless integration, and censorship-resistant storage of peer-to-peer data files, it is quite clear that blockchain would serve as a key driving force for Web 3.0.

With support of the blockchain technology, Web 3.0 will enable new blockchain-based applications and services in active use today. Those applications and services include: (i) Non-fungible tokens (also known as “**NFTs**”); (ii) Decentralized finance (also known as “**DeFi**”); (iii) Cryptocurrencies (e.g. Bitcoin); (iv) Decentralized applications (also known as “**dApps**”); (v) Smart contracts; and (vi) Decentralised Autonomous Organisations (also known as “**DAOs**”).

It is worth noting that with rise of Web 3.0, the decentralized autonomous organizations have come up with a groundbreaking decentralized social protocol which allows user to collaborate to create one social network that is decentralized, like email.