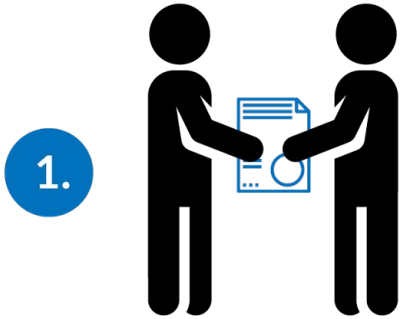
What are Smart Contracts?

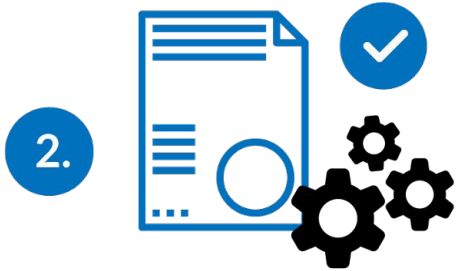
Smart Contracts

- A smart contract is a term used to describe computer program code that is capable of facilitating, executing, and enforcing the terms or performance of an agreement using Blockchain technology.
- In general, smart contracts help you exchange assets on decentralized network in a transparent, conflict-free way with conditions and terms coded into them while avoiding the services of a middleman.
- Smart contract can be compared to a preconditioned vending machine in which you can transfer your assets to activate the functionality and transact under contract conditions.
- Once deployed on the blockchain, smart contracts are immutable and run automatically when activated. This makes it possible for them to run without third party intervention while also guaranteeing security.

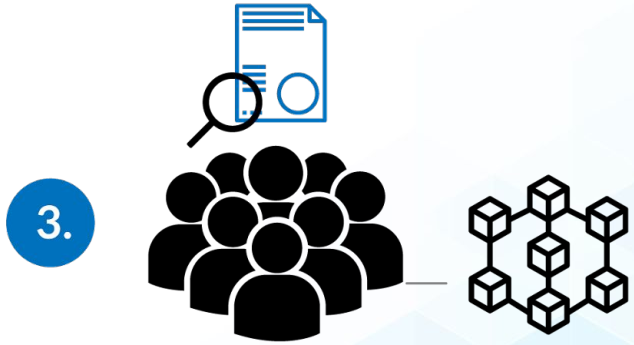
Smart Contracts



A contract between the parties is written as code and published into the blockchain. Individuals involved are anonymous, but the contract is visible in a public ledger.



A triggering event like an expiration date or strike price is hit, and the contract executed itself according to the coded terms.



Regulators can use the blockchain to check the transaction and validity while maintaining the privacy of individual actors.

Traditional Contract Vs Smart Contract

- Traditional physical contracts are created by legal professionals.
- These contracts are written between 2 parties with conditions defined on printed documents.
- Apart from the parties in the contract, the contract includes a guarantor and enforcer like bank or legal company to oversee the process.
- This requires the parties involved to pay the overseeing body fees in order for its services.

- Smart contracts, often created using programing language, and smart contract development tools.
- The contract conditions are coded on the smart contract for involved parties to check.
- Code defines the rules and consequences, stating the obligations, benefits, and penalties that may be due to either party in various different circumstances.
- The code is deployed on the blockchain, making it immutable, and can be executed when the conditions are met.

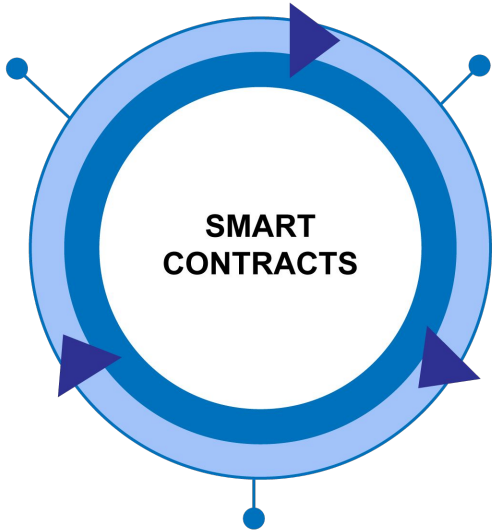
How Smart Contracts Work

STEP 1: CODING

Smart Contracts are mostly written in Solidity. It is imperative that they do precisely what the parties want them to do.

This is achieved by inputting the proper logic when writing your smart contract.

The code behaves in predefined ways and, once deployed, cannot be changed, making it more important to write proper logic and check for vulnerabilities and bugs.



STEP 3: EXECUTION

One of the computers in this network of distributed ledgers receives the code, and then each node comes to an individual agreement on the results of the code.

The network would then update the distributed ledgers to record the execution of the contract, and then monitor for compliance with the terms of the smart contract.

STEP 2: DISTRIBUTED LEDGER

The code is encrypted and sent out to other computers via a distributed network of ledgers.

Components of Smart Contract

Smart Contract Code: The code that is stored, verified and executed on a blockchain.

Smart Legal Contracts: A smart contract that articulates and is capable of self-executing on a legally-enforceable basis.

- Smart contracts are written and then compiled to get the Bytecode, and this bytecode is deployed on the blockchain.
- Blockchain stores the smart contract corresponding to the contract address. Whenever a transaction is made to this address, the smart contract starts executing according to the pre-set conditions.

Blockchain Council

THANK YOU!

Any Questions?

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