

WHAT ARE SMART CONTRACTS?



SMART CONTRACTS

- Smart contract is a term used to describe computer program code that is capable of facilitating, executing, and enforcing the negotiation or performance of an agreement (i.e. contract) using Blockchain technology.
- The entire process is automated can act as a complement, or substitute, for legal contracts, where the terms of the smart contract are recorded in a computer language as a set of instructions.
- In general, Smart contracts help you exchange money, property, shares, or anything of value in a transparent, conflict-free way while avoiding the services of a middleman.

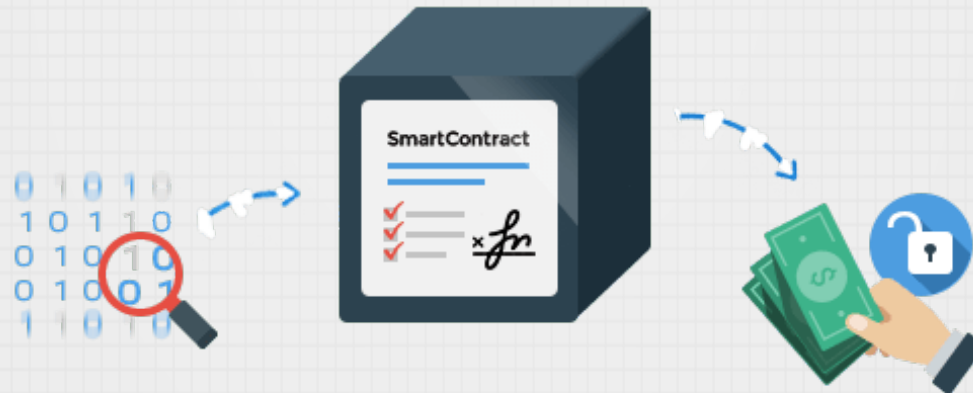


Image Source: SmartContratcs

SMART CONTRACTS - EXAMPLE

1



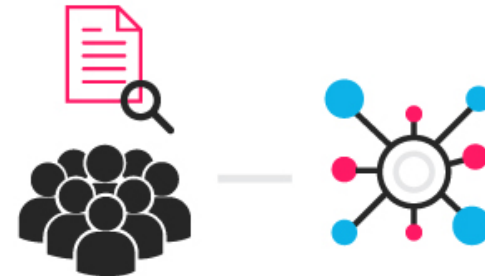
An option contract between parties is written as code into the blockchain. The individuals involved are anonymous, but the contract is the public ledger.

2



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

3



Regulators can use the blockchain to understand the activity in the market while maintaining the privacy of individual actors' positions

Image Source: Blockgeeks.com

SMART CONTRACTS - CODE EXAMPLE

```
/* Allow another contract to spend some tokens in your behalf */
function approve(address _spender, uint256 _value)
    returns (bool success) {
    allowance[msg.sender][_spender] = _value;
    return true;
}

/* Approve and then communicate the approved contract in a single tx */
function approveAndCall(address _spender, uint256 _value, bytes _extraData)
    returns (bool success) {
    tokenRecipient spender = tokenRecipient(_spender);
    if (approve(_spender, _value)) {
        spender.receiveApproval(msg.sender, _value, this, _extraData);
        return true;
    }
}

/* A contract attempts to get the coins */
function transferFrom(address _from, address _to, uint256 _value) returns (bool success) {
    if (balanceOf[_from] < _value) throw; // Check if the sender has enough
    if (balanceOf[_to] + _value < balanceOf[_to]) throw; // Check for overflows
    if (_value > allowance[_from][msg.sender]) throw; // Check allowance
    balanceOf[_from] -= _value; // Subtract from the sender
    balanceOf[_to] += _value; // Add the same to the recipient
    allowance[_from][msg.sender] -= _value;
    Transfer(_from, _to, _value);
    return true;
}

/* This unnamed function is called whenever someone tries to send ether to it */
function () {
    throw; // Prevents accidental sending of ether
}
```

Image Source: Blockgeeks.com

TRADITIONAL VS SMART CONTRACTS

- Traditional physical contracts, such as those created by legal professionals today, contain legal language on a vast amounts of printed documents and heavily rely on third parties for enforcement.
- This type of enforcement is not only very time consuming, but also very ambiguous. If things go astray, contract parties often must rely on the public judicial system to remedy the situation, which can be very costly and time consuming.
- Smart contracts, often created by computer programmers through the help of smart contract development tools, are entirely digital and written using programming code languages such as C++, Go, Python, Java.
- This code defines the rules and consequences in the same way a traditional legal document would, stating the obligations, benefits and penalties which may be due to either party in various different circumstances. This code can then be automatically executed by a distributed ledger system.

OUR CONTACT DETAILS

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THANK YOU FOR YOUR TIME