

Smart Contracts

Live Demo



Use Cases Examples

ICO

Digital Identity

Public Records

International Trade

**Securities
Settlement**

**Insurance
Contracts
& Claims**

Supply Chain

Land Title

Smart Power Grids

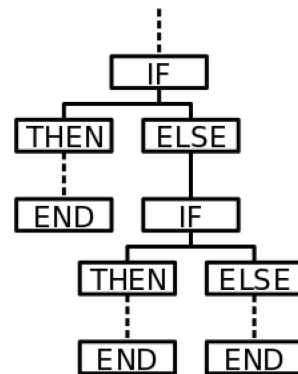
What are Smart Contracts?

Blockchain

Private, or
Public



(Dumb?)
Code



Smart Contract



“Paper” contract

1. The **Property** is situated at _____ and the legal description of the Property is as follows: Lot ____, Block ____, ____ Addition, City of ____, ____ County, Alabama, which includes fixtures and improvements located on the Property and all rights, privileges and appurtenances associated with it, including but not limited to permits, easements, and cooperative and association memberships (the “Property”).

2. The **Seller** agrees to sell and convey to the **Buyer** and the Buyer agrees to purchase from the Seller the Property.

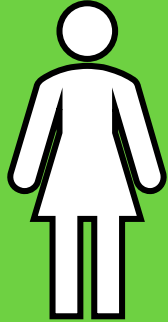
Smart contract

```
enum Status { Listed, UnderContract, Sold, Delisted }  
enum TransactionStatus { Inactive, Locked, Approved }
```

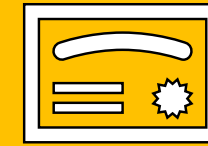
```
struct Property {  
    uint id; address seller; address buyer; address broker;  
    Status status; bytes16 mls; string location;  
    uint year; string description; uint256 price;  
}
```

```
struct Transaction {  
    uint256 amount;  
    address seller;  
    address buyer;  
    TransactionStatus txStatus;  
    bool deedReceived;  
    bool moneyReceived;  
}
```

Home buying transaction (simplified)



Buyer



Seller

Smart Contract

- 👍 Condition 1
- ...
- 👍 Condition n



Relax, it's not so new... at least for technologists

- For past 25 years: digitization for HR, financial systems, etc.
- HR or finance people didn't have to become developers.
- But had to change auditing, collaboration with technologists.

So what is different?

	“Paper” Contract	Smart Contract
Logic	Room for interpretation (by design)	Boolean logic (no shade of gray)
Predictability	Flexible	Rigid (even in case of bug)
Dispute resolution & Maturity	Well established	Emerging
Trust	Required, but not a given	Mathematically built-in



Attention: “Regular” laws and Smart Contract can be combined

What *is* new, even for technologists

1. Decentralized, no central point of failure (high resilience)
2. Cryptographically stored, possibly on thousands of public computers (blockchain)
3. Immutable, permanent
4. **Oracles** can provide access of external data to Smart Contracts

What about smart contract security?



- Hackable?
- Sensitive data is secure by default?
- Enhanced transparency?

