Design patterns

cc32d9 / Europechain

Oracles

- Oracle is a server-side program that automatically pushes transactions, based on some external events.
- Examples: exchange rates, weather, environment conditions, building security.
- Oracles work well for certifying and timestamping a witnessing of an event or condition.

Timestamping

- **WordProof** implemented a very simple use case: anyone can hash a file and put a timestamp on the blockchain.
- Having such a timestamp, copyright claims are extremely simplified.
- The owner of intellectual property can always demonstrate that a specific content existed at specific time, and there’s author’s signature.

Deposit-and-spend

- EOSIO account deposits tokens on a smart contract, and then instructs it how the tokens should be spent.
- Spending can be limited in time.
- Spending can be delegated to another person.
- Tokens can be claimed by recipient at their convenience.

Escrow contracts

- An escrow contract locks up a deposit and releases it to the recipient if certain conditions are satisfied.
- Example: goods delivery. The seller gets the payment when buyer receives the goods.
- Example: partial payments. The work agreement specifies payment in multiple parts. The customer deposits the whole amount and the contract releases it in phases.

Atomic swap

- A smart contract can perform a token exchange: incoming payment in token X triggers an immediate payback in token Y at a fixed or dynamic price.
- Atomic swap can also operate with non-fungible tokens

Catalog

- A smart contract can store a list of items and their properties. Each item can have an owner that is only allowed to edit it.
- Examples:
  - accounts with reputation score
  - list of museums with visitor counters
  - price offerings on the market

Submit-and-approve

- Workers submit evidence of their work;
- Customer approves or rejects the evidence;
- Third party can overview and verify the process.

Non-fungible tokens

- Countable: each item has a unique ID, but they are equal in value and interchangeable (computers, cars, ...)
- Non-countable: each item is unique and not interchangeable (jewelry, art)
- Properties of NFT can be fixed or variable (e.g. counters, location, ...)

NFT use patterns

- Deposit, lock-up, transfer the ownership
- Rental
- Collateral
- Atomic swap between NFT
- Atomic trade of NFT for FT

Local currency

- Several business parties can use a fungible token for mutual real-time accounting, and adjust balances with fiat payments once a month.
- A small community can use a token for internal finances