Monnaies numériques

ESILV 2018/2019

Agenda

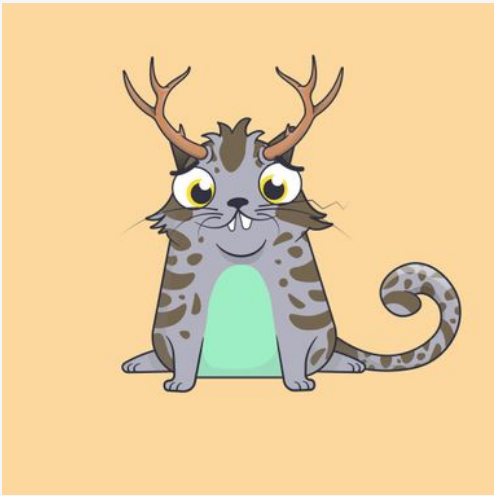
TD6: Ethereum

Creating an collectible token

Non fungible token

- A non fungible token (NFT) is an entry in a contract that represents ownership of an asset
- Most often, these are digital assets
- Non fungible means that each asset can have distinct properties, and therefore a distinct price
- These assets can be tradable

ERC721: In the beginning were the Kitties



- A standard for non fungible assets token (NFT)
- https://github.com/ethereum/EIPs/blob/master/EIPS/eip-721.md
- Started by AxiomD, the company behind Crypto Kitties

Registre d’élevage IFCE

- Tout propriétaire ou détenteur d’animaux, appartenant à des espèces dont la chair ou les produits peuvent être consommés, doit tenir un registre d’élevage, régulièrement mis à jour.
- Pour les chiens: LOF
- Chaque animal est un asset non fongible
- Votre travail aujourd’hui: Digitaliser ce registre

Tools

Truffle-hdwallet-provider + Infura

- A NPM package to manipulate wallets in truffle
- Lets you create, sign and broadcast transactions through hosted node providers
- Infura is a hosted node provider, that you can use for free for small scale deployment
- https://medium.com/coinmonks/deploy-your-smart-contract-directly-from-truffle-with-infura-ba1e1f1d40c2

Tasks list

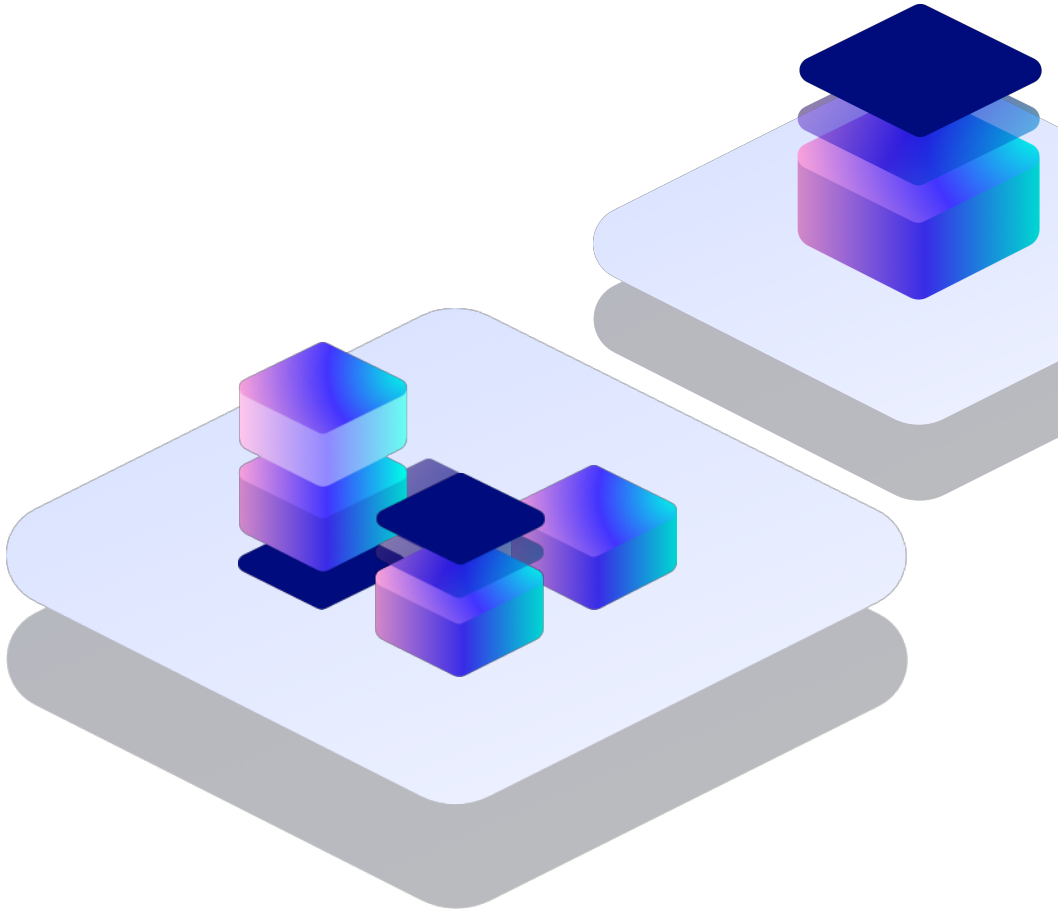
- Create a Git repository & share it with the teacher (2 pts)
- Create an ERC721 token contract (2 pts)
- Implement all ERC721 functions (2 pts)
- Implement a registerBreeder() function (2 pts)
    - Similar to whitelisting in ERC20
- Implement a declareAnimal() function (2 pts)
    - Specify what kind of animal
    - Chose 5 characteristics
- Implement a deadAnimal() function (2 pts)
- Implement a breedAnimal() function (2 pts)
    - Requires two breeders to be able to declare the offspring of two animals
    - At least 2 animal characteristics are deduced automatically

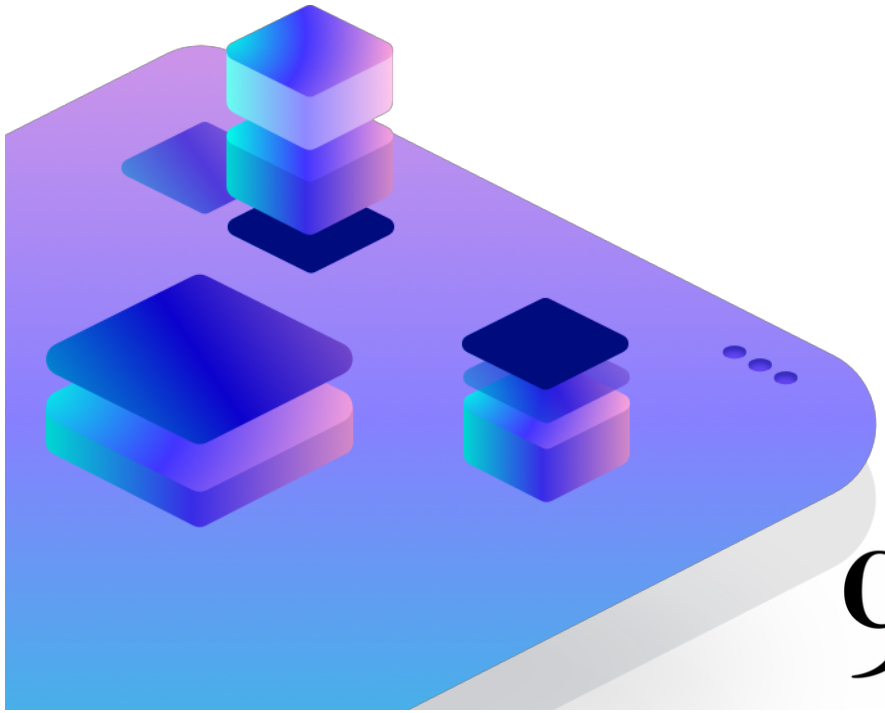
Tasks list

- Implement a createAuction() and bidOnAuction() function (3 pts)
  - Auctions run for 2 days
  - After it is completed, the new owner can call claimAuction() to collect his animal
- Implement a proposeToFight() function (3 pts)
  - Animal breeders can propose to fight against their animal, and stake money on the success of their animal
  - Other breeders can take up the challenge using agreeToFight() by staking a similar amount of money
  - Full 3 points if these functions are deployed in an external contract
- Deploy to the Rinkeby testnet (2 pts)
  - Offer token #3 to teacher
- Teacher Github: l-henri

Merci

pour votre attention !





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