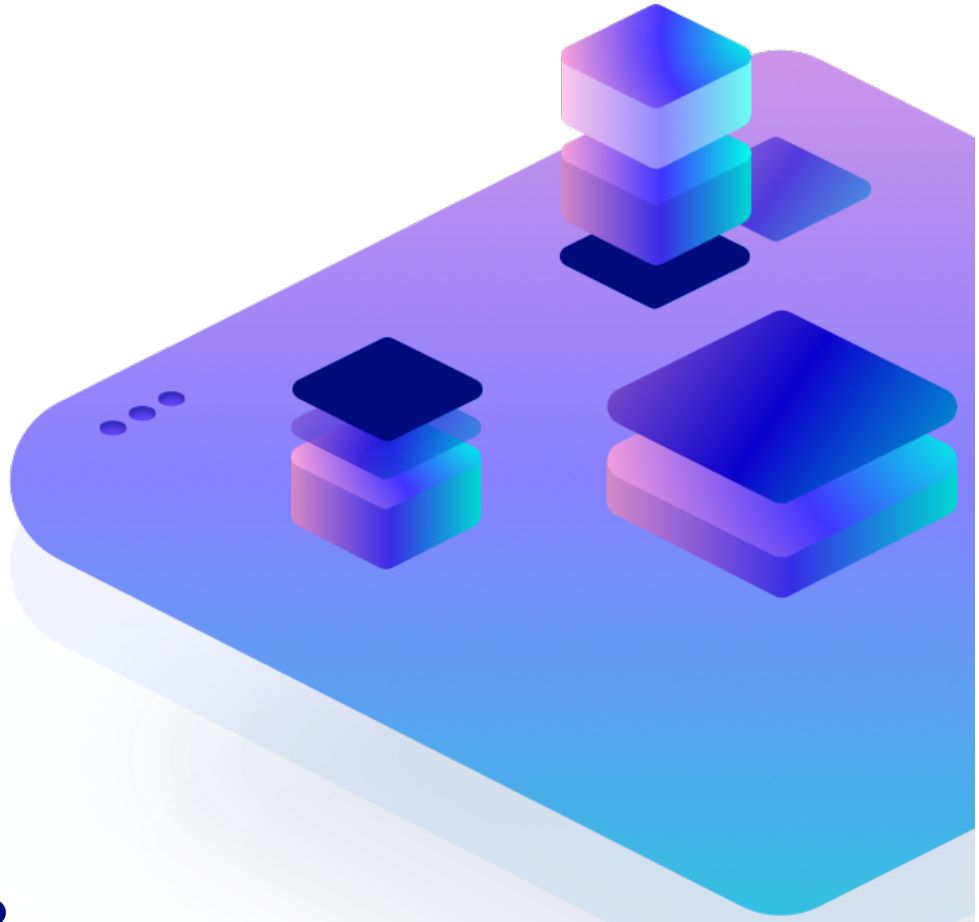


Monnaies numériques

ESILV 2018/2019

Agenda

TD5: Ethereum

Solidity

- TD#3 debriefing
- https://github.com/l-henri/solidity-101
- Important points:
  - Pragma compiler version
  - Contract declaration
  - Contract constructor
  - Contract inheritance
  - Public/private/internal/external functions
  - Structures
  - Types
  - Msg object
  - Payment management
  - Payment fallback functions
  - Importing contracts
  - Using contracts
  - Events

ERCs vs EIPs

- EIPs: Ethereum Improvement proposals
  - Similar to Bitcoin's BIPs
  - Related to network infrastructure and consensus
  - Usually proposed on Ethereum Github and associated channels
- ERCs: Ethereum Request for Comment
  - A proposed standard for Smart contracts
  - Related to deployed code, on chain
  - A way to standardize best practices in Smart Contract programmation

Creating an ICO

ERC20: Make money money

- A standard for token creation
- https://github.com/ethereum/EIPs/blob/master/EIPS/eip-20.md
- A simple interfacer to create, exchange and manipulate tokens
- Adopted by most ICOs
- Widely used to list tokens on exchanges

ICO

- "An initial coin offering (ICO) or initial currency offering is a type of funding using cryptocurrencies”
- Send in Ethers, receive tokens
- Different levels of contributors
- Different rewards
- KYC / AML

Truffle

- Integrated environment to write, test and deploy smart contracts
- Node package
- Folder architecture
- Functions:
  - Compiling
  - Testing
  - Migrating

Ganache

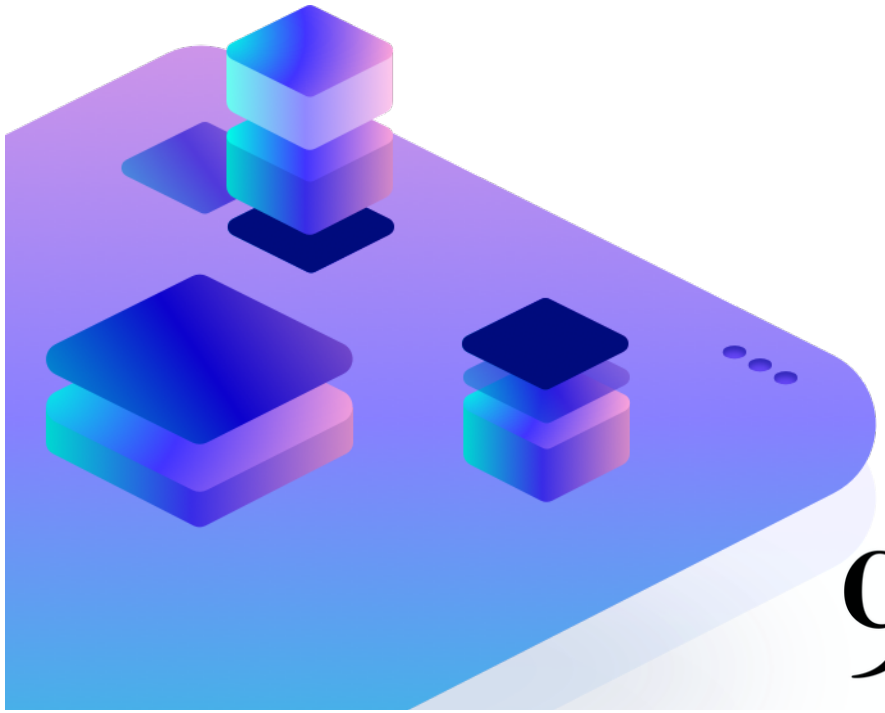
- Easy to use local blockchain
- Easy account management
- Usable with Metamask
- Fast bootup
- Fast transactions
- Easy to test on
- NOT useful to record transactions

Tasks list

- Create a Git repository & share it with the teacher (2 pts)
- Install Truffle & create a truffle project (2 pts)
    - Install truffle v4.1.15
- Create an ERC20 token contract (2 pts)
    - Chose a ticker
    - Chose a total supply
    - Chose a decimal number
- Implement all ERC20 functions (2 pts)
- Create a migration to deploy your contract(s) (2 pts)
    - Migrate to Ganache
- Implement customer white listing (3 pts)
- Implement multi level distribution (3 pts)
- Implement air drop functions (3 pts)
- Deploy to a testnet (2 pts)
    - Credit tokens to teacher
- Teacher Github: l-henri

Merci

pour votre attention !



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