名称	比特币 Bitcoin	以太坊 Ethereum	EOS
所属阶段	区块链 1.0	区块链 2.0	区块链 3.0
主要功能	数字货币	智能合约（通证）	去中心化应用
共识机制	工作量证明（POW）	现在 POW，未来 POW + POS	委托权益证明（DPOS）
性能（TPS） 系统的交易处理速度	< 10	≈ 15	≈ 4000
开发语言	比特币脚本 UTXO	图灵完备的脚本语言 Solidity	C++
开发支持	—	智能合约	支持账户、存储等
主要价值	提出区块链和数字货币的概念	将区块链的应用边界从货币和支付扩大到了智能合约领域	全面支持使用区块链技术开发各种应用程序

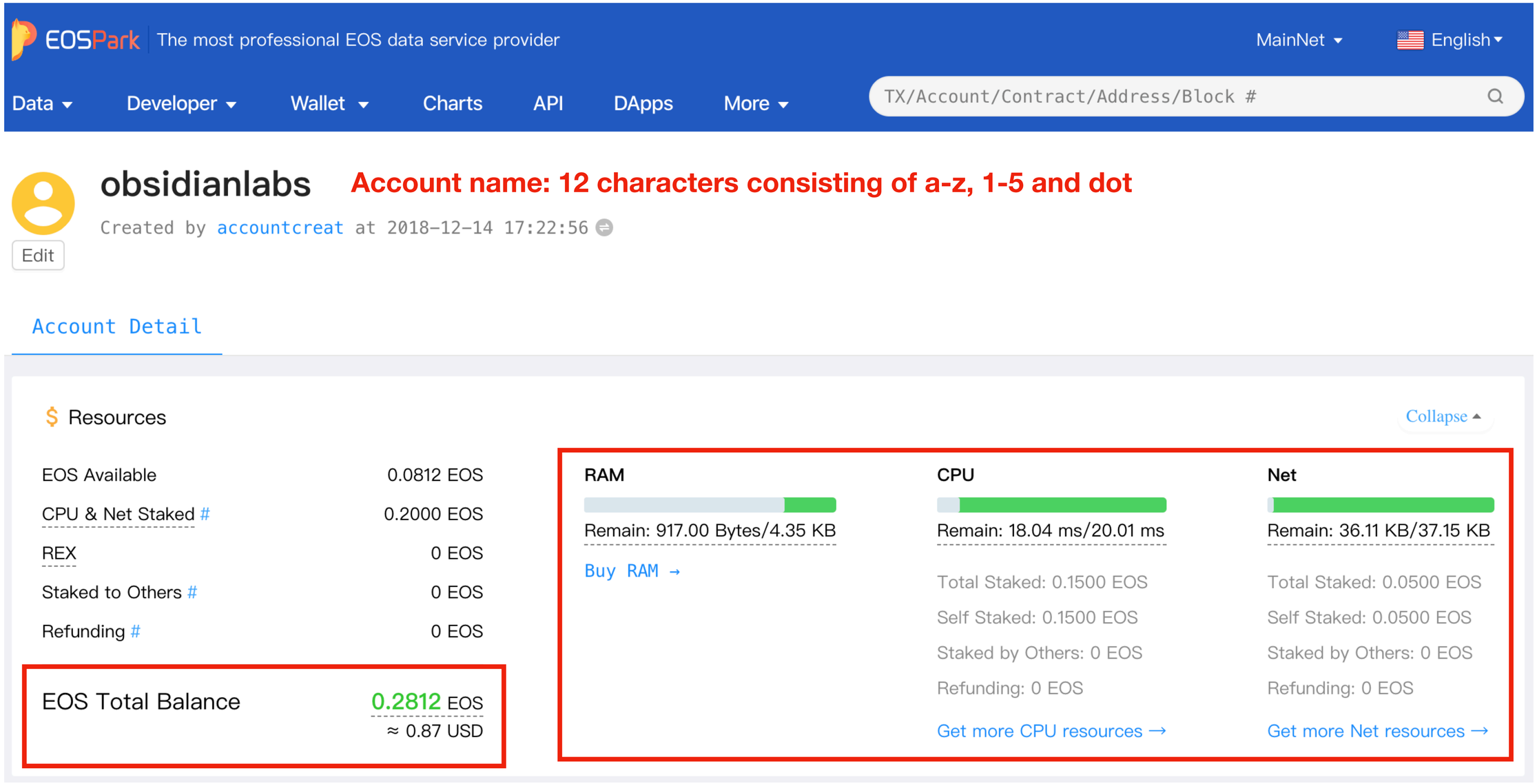
EOSIO vs EOS

- **EOSIO**: name of the software that runs the blockchain
    - Powers EOSIO-based networks: EOS Mainnet & many side-chains
    - Open source & free to use
- **EOS**: name of the token on EOS Mainnet
    - Hosted by block producers
    - EOS token is valuable

Basic Concepts

- Account
- Resource (CPU, NET, RAM)
- Permission keys
- Smart contracts

Accounts


EOSPark
The most professional EOS data service provider
MainNet
English
Data
Developer
Wallet
Charts
API
DApps
More
TX/Account/Contract/Address/Block #
obsidianlabs
Account name: 12 characters consisting of a-z, 1-5 and dot
Created by accountcreat at 2018-12-14 17:22:56
Edit
Account Detail
Resources
Collapse
EOS Available 0.0812 EOS
CPU & Net Staked # 0.2000 EOS
REX 0 EOS
Staked to Others # 0 EOS
Refunding # 0 EOS
EOS Total Balance 0.2812 EOS
≈ 0.87 USD
RAM
Remain: 917.00 Bytes/4.35 KB
Buy RAM →
CPU
Remain: 18.04 ms/20.01 ms
Total Staked: 0.1500 EOS
Self Staked: 0.1500 EOS
Staked by Others: 0 EOS
Refunding: 0 EOS
Get more CPU resources →
Net
Remain: 36.11 KB/37.15 KB
Total Staked: 0.0500 EOS
Self Staked: 0.0500 EOS
Staked by Others: 0 EOS
Refunding: 0 EOS
Get more Net resources →

Account Transactions

obsidianlabs

Created by accountcreat at 2018-12-14 17:22:56

Edit

Account Detail

Actions | Created | Stake Detail

All Actions | Token Transfers | Contract Calls | RAM/CPU/NET | Votes | Account Bids | Claim Rewards | updateauth

Refresh

28 Records in Total

Trx ID	Time	Data	
3877f...	2019-10-14 18:28:00	Token Transfer	defindadv124 → obsidianlabs 0.0001 EOS:eosio.token MEMO 全球第一家去中心化的EOS共同基金，10月15号上线Newdex交易所，最后1次上车机会，所有EOS钱包发现中输入m.defind.io均可参与，客服微信：defindinvest
5a47f...	2019-10-13 01:42:46	Token Transfer	defindadv113 → obsidianlabs 0.0001 EOS:eosio.token MEMO 全球第一家去中心化的EOS基金，10月15号上线Newdex交易所，上线前代币抢到即赚到，更有月化20%以上的静态收益，真正的区块链项目，所有EOS钱包中输入m.defind.io均可参与
5fead...	2019-10-12 14:59:13	Token Transfer	defindadv113 → obsidianlabs 0.0001 EOS:eosio.token MEMO 刚刚开盘的EOS智能合约项目，15号上线Newdex交易所，带人参与享受直属20%的EOS提成＋无限代10%的EOS提成，提成全部基于智能合约实时到账，若在EOS领域有推广能力，请加微信guerdan0128详谈

Resources

- **CPU** - Computation
    - Process transactions, execute smart contract codes
- **NET** - Bandwidth
    - Network requests
- **RAM** - Memory
    - Save data in blockchain database (token balance, etc.)

Resource allocation

- CPU & NET
    - Stake in EOS tokens in exchange for usage right
    - Usage is counted for each 24-hour
    - Can be refunded (wait 3 days)
- RAM
    - Buy/sell in the RAM market
    - Price are determined by total supply/demand (Bancor algorithm)
    - Total supply = 64GB + 1kb * block number

Asymmetric Cryptography

- Private key -> Public key
- Private key + Transaction message -> Signature
- Transaction message + Signature + Public key -> Can verify authenticity
- Private key + public key = keypair

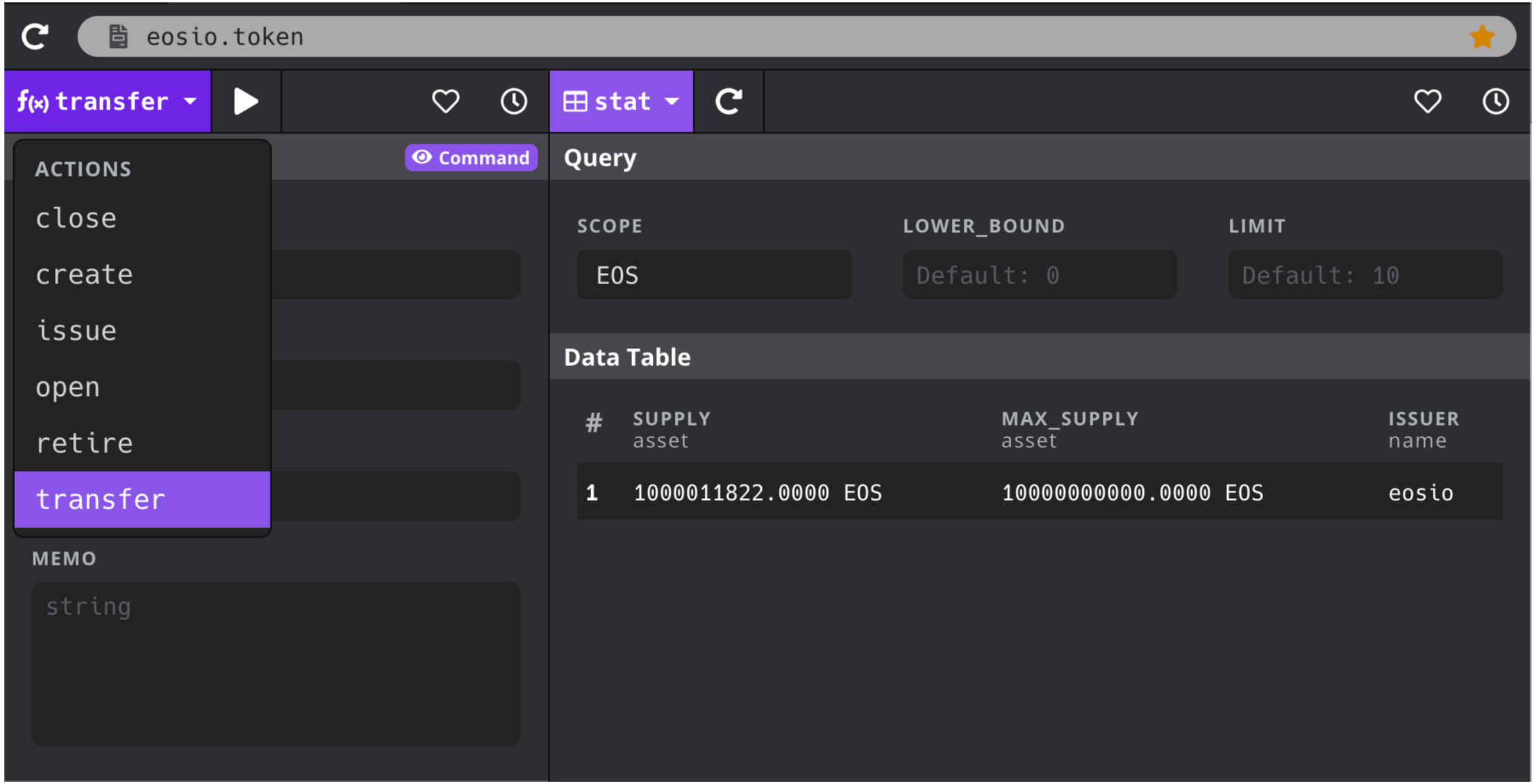
Permission System

- An account can have many permissions
- Each permission has its own keypair (could be different)
- **owner** and **active** are built-in permissions

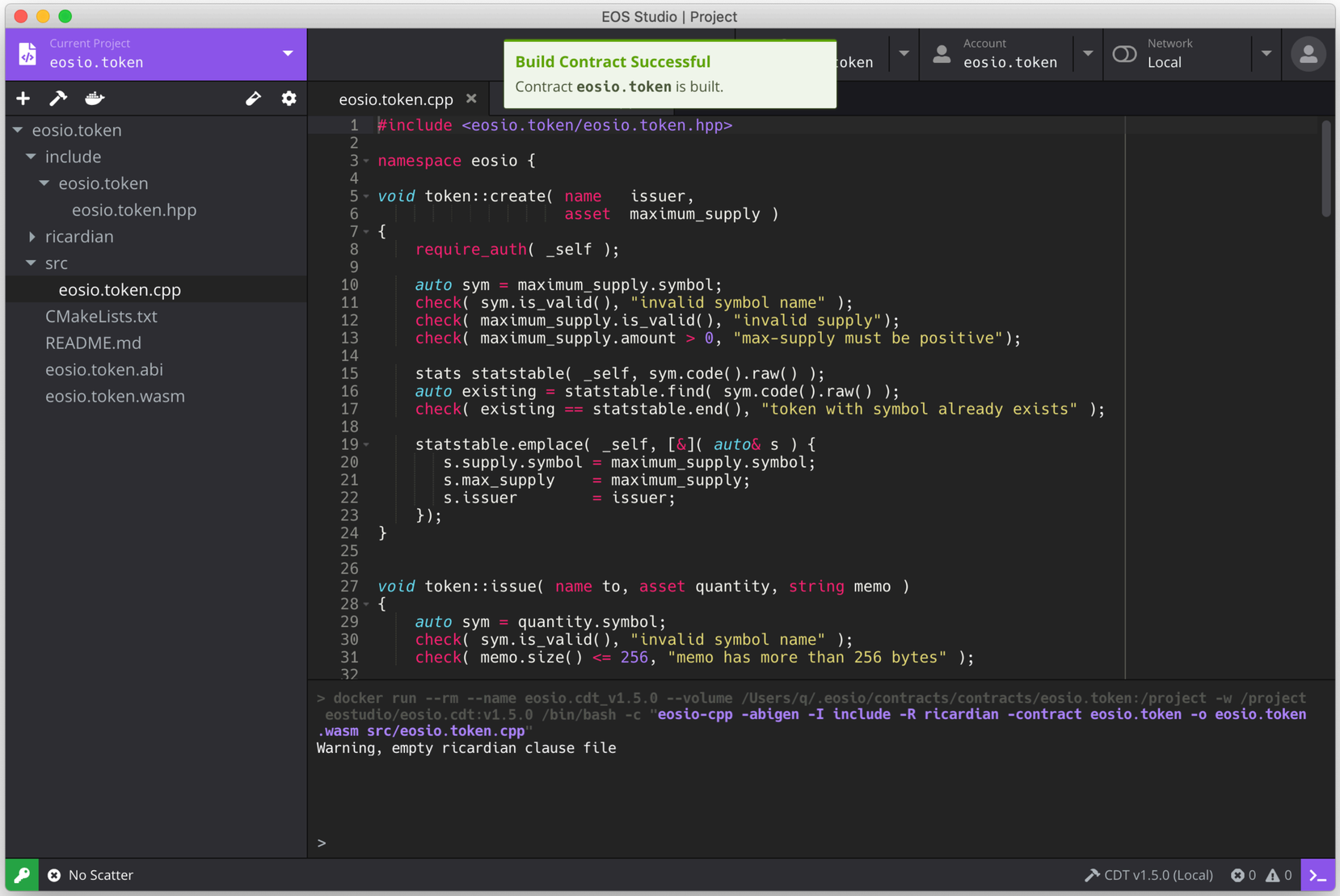
Smart Contract

- Codes that run on a blockchain (C++ for EOS)
- Execute in a manner that was defined in advance (called *actions*)
- Results are irreversible (saved in *tables*)
- Visible to all users

Smart Contract - example



EOS Studio



- Recommended by official documentation
- Support Mac, Windows, Linux & Web

How to use EOS Studio

- Download:
  - Mac: https://download.eosstudio.io/mac
  - Windows: https://download.eosstudio.io/win
  - Linux: https://download.eosstudio.io/linux
  - Web: https://app.eosstudio.io

How to use EOS Studio

- Example: **eosio.token** - the system contract in charge of token insurance and transfer
- Workflow:
  - Start EOSIO to run a local network
  - Account creation
  - Source code of **eosio.token** smart contract
  - Build & deploy the smart contract
  - Execute the smart contract (create token -> issue token -> transfer token)