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Aug 1 · 17 tweets · [SalomonCrypto/status/1553982842232717313](https://twitter.com/SalomonCrypto/status/1553982842232717313)

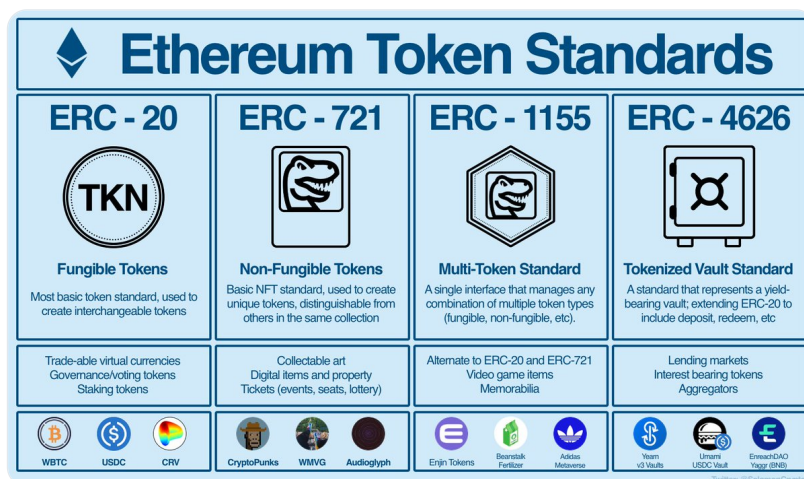
(1/15) Token Standards and Composability

ERC-20, ERC-721, ERC-1155, ERC-4626...

ETC - WTF

Confused what [@ethereum](https://twitter.com/ethereum) token standards are and why they matter? Interested in knowing which tokens are for what purpose? Want to understand the big picture?

This is the thread for you!



(2/15) [@ethereum](#) is The World Computer. It's a shared resource upheld by a network of anonymous, untrusted nodes; aligned by consensus and economically secured

The Ethereum Network provides credible neutrality upon which anyone can build... both independently and collaboratively



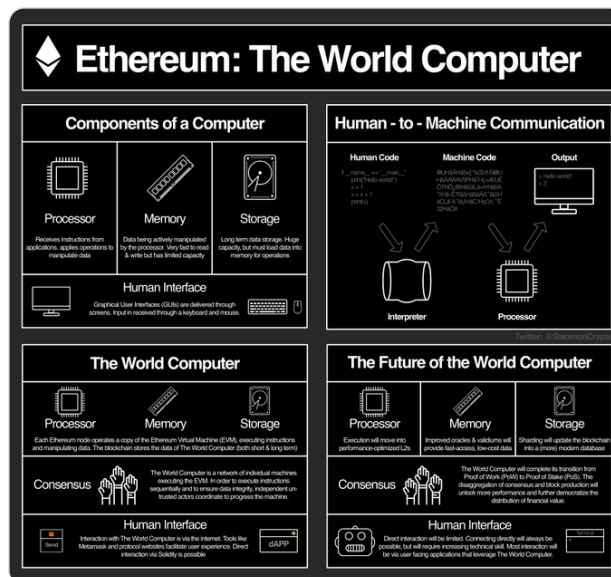
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(1/18) [@ethereum](#): The World Computer

A guide to the foundational principles and technologies of Ethereum.

If you have ever wondered “what’s the big deal about **\$ETH**?” This is the thread for you!



2:18 AM · Jul 9, 2022



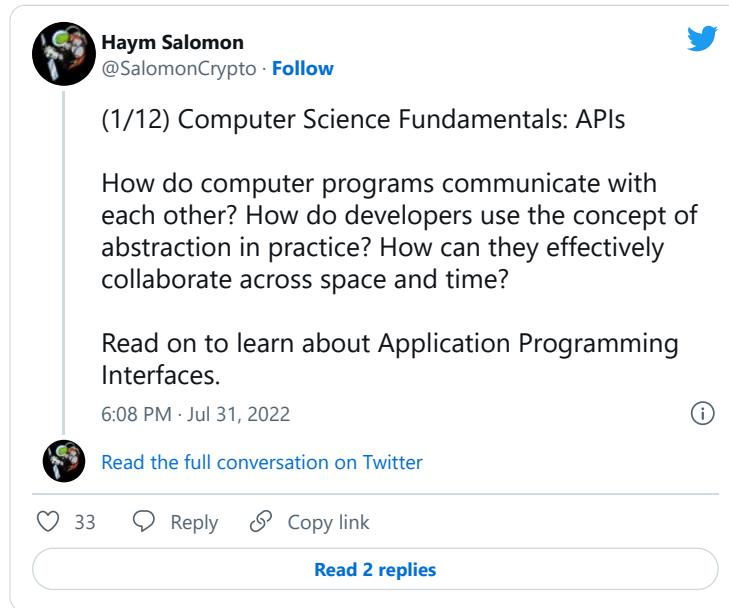
[Read the full conversation on Twitter](#)

4.8K Reply Copy link

[Read 145 replies](#)

(3/15) Application Programming Interfaces (APIs) are the mechanism by which programs communicate and developers coordinate.

A developer will camouflage as much of the inner workings of their program as much as possible. Communication is maximally simplified and streamlined.

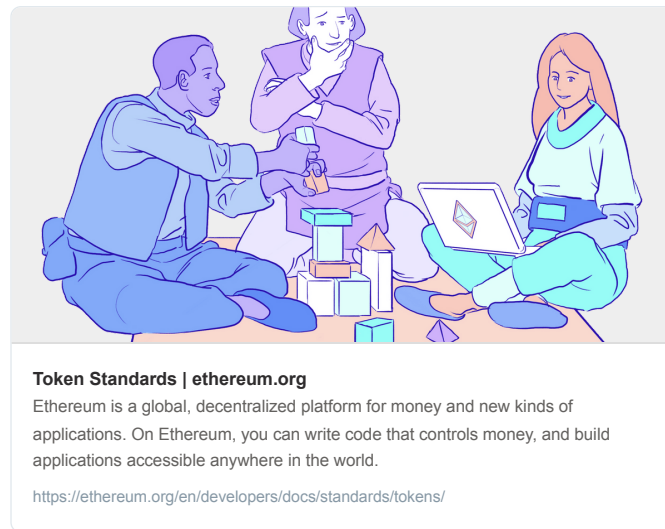


(4/15) On The World Computer, we use APIs all over the place:

- to integrate protocols
- to transfer assets
- to build composable investments
- to borrow, lend and collateralize assets

Basically anything that happens on chain is either an API or is directly summarized by an API

(5/15) In fact, tokens you can think of the different token types as a piece of code that conforms to an API template. If a smart contract adheres to a specific template, it is that kind of token.



(6/15) This is the template for an ERC-20 token. In order to create an ERC-20, a developer has to create code to be executed for all of the following methods and events

All ERC-20s support these functions; a (different) developer can count on having these when using any ERC-20

```
Methods

1  function name() public view returns (string)
2  function symbol() public view returns (string)
3  function decimals() public view returns (uint8)
4  function totalSupply() public view returns (uint256)
5  function balanceOf(address _owner) public view returns (uint256 balance)
6  function transfer(address _to, uint256 _value) public returns (bool success)
7  function transferFrom(address _from, address _to, uint256 _value) public returns (bool
   success)
8  function approve(address _spender, uint256 _value) public returns (bool success)
9  function allowance(address _owner, address _spender) public view returns (uint256 remaining)
10

Events

1  event Transfer(address indexed _from, address indexed _to, uint256 _value)
2  event Approval(address indexed _owner, address indexed _spender, uint256 _value)
3
```

(7/15) ERC-20 tokens are the most basic token standard, representing the vast majority of tokens available today. This includes everything from governance tokens, ve-tokens, stablecoins, etc.

(\$ETH is not an ERC-20 token)



(8/15) ERC-721 tokens are most commonly referred to as NFTs (Non-Fungible Tokens). These tokens represent unique or identifiable items (usually) within a collection. This includes PFPs, collectable art, property, etc.

ERC - 721



Non-Fungible Tokens

Basic NFT standard, used to create unique tokens, distinguishable from others in the same collection

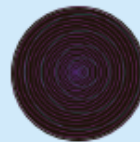
Collectable art
Digital items and property
Tickets (events, seats, lottery)



CryptoPunks



WMVG



Audioglyph

(9/15) ERC-1155 tokens combine properties of both ERC-20 and ERC-721 tokens, providing a single interface that manages any combination of these token types. This can be used as a more modern alternative for ERC-20 or ERC-721, and has unique properties optimized for gaming.

ERC - 1155



Multi-Token Standard

A single interface that manages any combination of multiple token types (fungible, non-fungible, etc).

Alternate to ERC-20 and ERC-721
Video game items
Memorabilia



Enjin Tokens



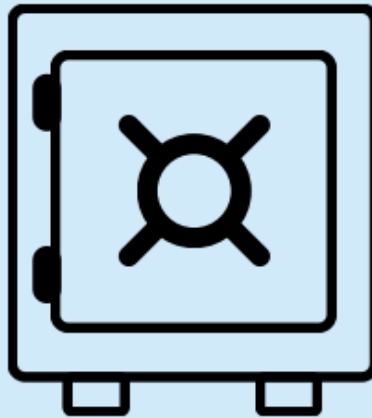
Beanstalk
Fertilizer



Adidas
Metaverse

(10/15) ERC-4626 is the newest token standard, describing yield-bearing vaults. The standard provides a common interface for ERC-20 tokens deposited in (or redeemed from) a vault to earn yield. This can include yield farming and aggregation, but can be generalized to much more.

ERC - 4626



Tokenized Vault Standard

A standard that represents a yield-bearing vault; extending ERC-20 to include deposit, redeem, etc

Lending markets
Interest bearing tokens
Aggregators



Yearn
v3 Vaults



Umami
USDC Vault



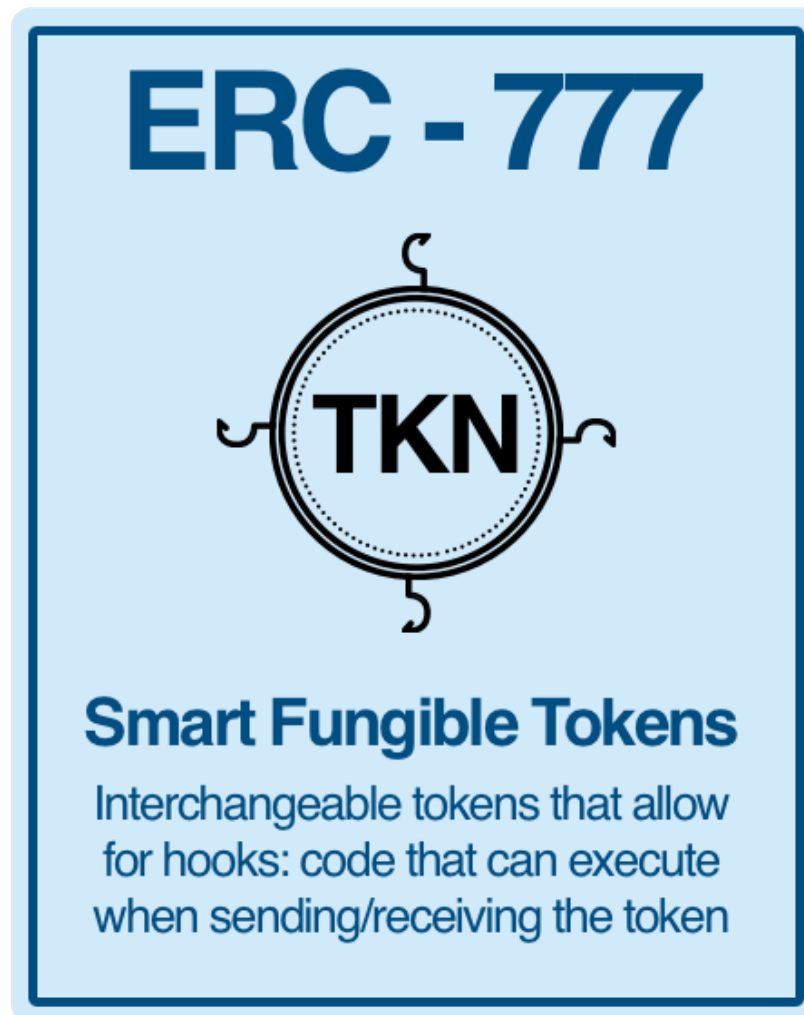
EnreachDAO
Yaggr (BNB)

(11/15) ERC-777 is a very configurable but rarely used token standard. It provides updates to ERC-20, allowing devs to attach code that runs when the token is sent and/or received.

Although it is included on



, we rarely see ERC - 777 tokens in practice.



(12/15) Quick history lesson:

First, The Before Time. Then... Alan Turing → mechanical computing → computers → networked computers → ARPANET → World Wide Web → Internet → [@Bitcoin](#) → [@ethereum](#)

That brings us to roughly 2014, when [@VitalikButerin](#) introduced us to \$ETH.

(13/15) This is the beginning of the story. [@ethereum](#) is just the infrastructure, now we must build on it. The more we set standards at the foundation, the higher we can go

Comp sci is the magic, the developers are the wizards, abstraction is the spell. Composability is the goal



(14/15) Native \$ETH... ERC-20... 721... 777... 1155... 4626... with each iteration, we are becoming more sophisticated. Each token type can have more functionality, each money Lego adding even more incremental value.

Each ERC-increment brings us closer to programmable money.



(15/15) Token standards is (one way) how composability manifests on [@ethereum](#).

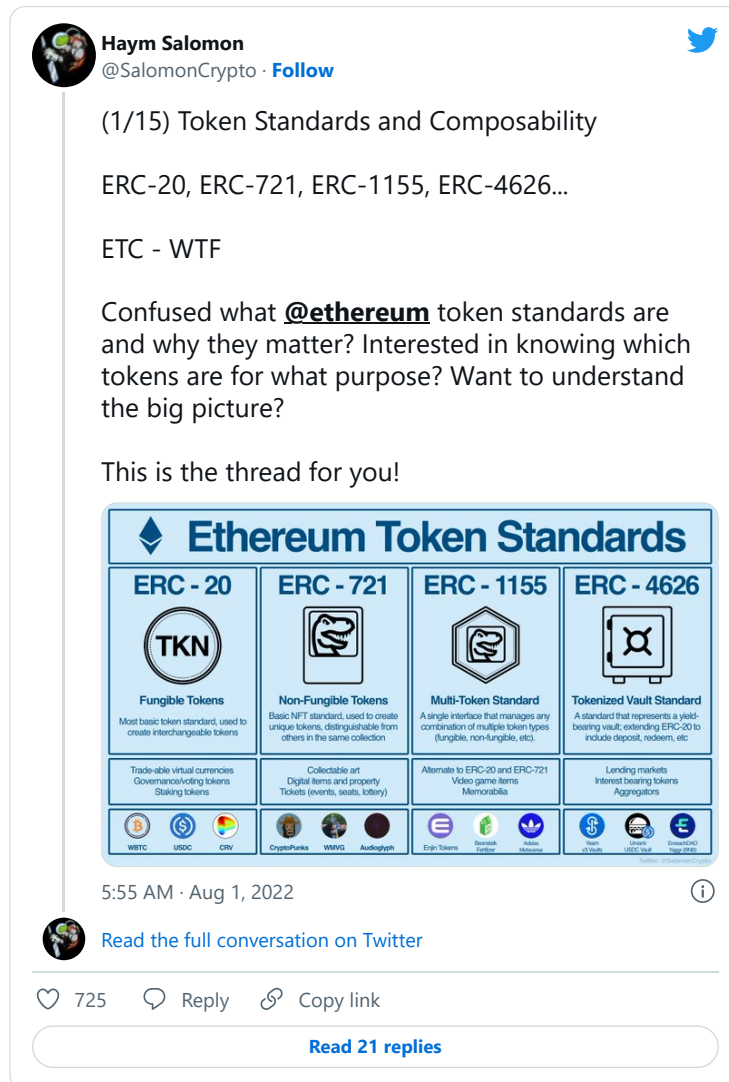
Why do we care about composability?

Well... we are builders! What do you think we are going to build with???



Like what you read? Help me spread the word by retweeting the thread (linked below).

Follow me for more explainers and as much alpha as I can possibly serve.



grrrr typos on the first tweet... one of those you notice the second after the thread posts.

The joke was ERC - WTF, not ETC. Oh well.

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