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Original:
https://www.btcc.com/en-US/academy/crypto-basics/a-brief-glance-at-erc-20-ethereum-token-standard

A Brief Glance at ERC-20 Ethereum Token Standard

The ERC-20 token standard is revolutionary for creating interoperability between tokens based on the Ethereum network.

The ERC-20 Ethereum Token Standard is a blueprint for creating alternative tokens that are compatible with the broader Ethereum network. Ethereum, or ether, is a cryptocurrency that allows the creation of a variety of applications, including tokens, that, unlike most traditional applications, do not require intermediary services to run.

The ERC-20 standard has penetrated almost every corner of the crypto ecosystem. A large number of popular tokens, such as the stablecoin Tether and the leading prophecy machine service Chainlink, are actually ERC-20 tokens.

ERC-20 tokens are digital assets that can be created by anyone but are mostly made by organizations and tech-focused companies. Each token has its own specific utility, such as granting users the right to vote on decisions impacting the future of a project, or rewarding customers for performing certain tasks. ERC-20 tokens are typically sold via a variety of different offerings as a way to raise early-stage capital for the underlying project. In the past, however, critics have argued that crypto tokens have drawn too much hype, becoming a vehicle for sour investments or straight-up scams. Many of the projects that raised money in the initial coin offering boom of 2017 reportedly failed to provide any returns for their investors.

ERC-20 standardizes the core functionality of each token, meaning that all tokens created using this framework are interoperable with each other as well as all ERC-20 compatible services like MyEtherWallet and MetaMask.

To understand how this is useful, here are some of the problems token creators encounter when they build projects from scratch:

- **Smart contract creation:**Smart contracts play a vital role in determining what the token's total supply will be, how that supply is circulated, what the issuance schedule is, etc. They also handle key functions like querying holder balances and facilitating the transfer of tokens. Writing these smart contracts is a complicated and time-consuming process, and usually requires a team of expert developers. This can be very expensive and have devastating effects if the smart contracts are not coded correctly.
- **Support from wallets and exchanges:**Creating tokens without using a well-integrated standard like the ERC-20 framework means extra work is needed in order to make them compatible with third-party services such as wallets and exchange platforms.

ERC-20 Frequently Asked Questions

What Are The Features Of ERC-20?

At a high level:

- **Ethereum:**Each ERC-20 token is deployed on the Ethereum network.
- **Smart contracts:**Every token function is governed by a set of smart contracts, ensuring that no person or entity needs to be trusted for the crypto token to operate. The code executes automatically when rules or conditions are met. For example, when transferring a token to someone else, the user doesn't have to trust anyone to pass it along to the recipient.

Every ERC-20 has several required features for developers to implement. The main elements include:

- **totalSupply:**a function that outlines the total supply of a token.
- **balanceOf:**shows how many tokens a particular address has.
- **transfer:**transfers ownership of a token to another user.

What Can Users Do With Tokens?

- **Crowdfunding:**Sometimes Ethereum app builders decide to raise money for their projects via crowdfunding. In return, investors receive newly minted tokens prior to the official launch at wholesale prices.
- **Voting rights:** Tokens can be used for voting on project decisions. In this instance, the more tokens users have the more influence they have over each election.
- **Represent physical objects:**A token can represent ownership of assets, such as gold.
- **Transaction fees:**Each Ethereum transaction (including token transactions) includes the option to pay a fee. If the network is congested, a fee – known as gas – can help push through a transaction faster. The fee is chipped off from the user's total tokens.
- **New features:**Sometimes builders need a token for paying for the functionality of their

projects, but the native token on Ethereum, ether, is not enough for them. So, they create a new token with the functionality they need.

What Is The Way Forward For The Ethereum Token Standard?

Despite its many benefits, the ERC-20 standard is far from perfect. “Critical problems” with the standard have been used to steal at least US$3 million, and during periods of high Ethereum congestion transactions can take long periods of time to process.

Developers need to code around this and other issues with ERC-20. Developers have also long been experimenting with alternative standards, such as ERC223 and ERC777, which may eventually replace ERC-20. However, ERC-20 is currently the most popular standard.

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