What is ERC-20?

It is a standard that must be followed for issuing tokens on the Ethereum blockchain. It describes a common set of rules that should be followed for a token to function properly within the Ethereum ecosystem and makes it easier for contracts to interact.
It provides an easier route for companies to develop blockchain products instead of building their own cryptocurrency.

The ERC-20 standard defines six mandatory functions and three optional functions that developers must include in their smart contract code to create an ERC-20 token.
These functions include:
totalSupply: This function returns the total supply of tokens that have been created for a particular project.
balanceOf: This function returns the balance of tokens held by a particular address.
transfer: This function allows an address to send tokens to another address.
approve: This function allows an address to approve another address to spend tokens on their behalf.
transferFrom: This function allows an address to transfer tokens from another address that has approved them to do so.
allowance: This function returns the amount of tokens that an approved address can spend on behalf of another address.

The three optional functions that developers can include in their ERC-20 token contract code are:

name: This function returns the name of the token.
symbol: This function returns the symbol of the token (usually a few letters or characters that represent the token).
decimals: This function returns the number of decimal places that the token can be divided into (for example, a token with 18 decimal places can be divided into 10^18 units).

Developers can also add additional functions and features to their ERC-20 token contracts beyond the six mandatory and three optional functions. These additional features can include things like time-based restrictions on token transfers or special bonus structures for early adopters.

What are ERC-20 Tokens?

ERC-20 tokens are the utility tokens of the Ethereum blockchain and are created on Ethereum network using smart contracts. They can be stored in most ETH wallets and sent to any Ethereum wallet address. ERC-20 tokens represent ownership of any fungible asset.They may be used for paying for functions and can also be used to pay for goods and services.

Some of its properties are:

Fungible - Each token is the same as any other, though transaction histories can be used to identify and separate out the tokens involved.
Transferable - They can be sent from one address to another.
Fixed supply - A fixed number of tokens must be created so that developers cannot issue more tokens and raise the supply.

Some famous ERC-20 Tokens are Tether(USDT), Binance(BNB), Uniswap(UNI), etc

ERC-20 tokens have enabled the creation of decentralized applications (dApps) on the Ethereum network. It allows holders to take part in blockchain gaming or trading non fungible tokens (NFTs).

Advantages Of ERC20

- ERC-20 tokens are interoperable, that is, they all follow the same standard and can be easily exchanged with one another.
- They provide security as they are built on the Ethereum Blockchain, hence they inherit the security features of the Blockchain itself such as immutability, transparency, and decentralization.
- ERC-20 tokens are highly customizable. Developers can create their own ERC-20 tokens and customize them to their specific needs and define any additional functionality that is needed.
- These tokens offer a high degree of transparency and it is possible to track the movement of tokens from one address to another which makes it easy to verify the authenticity of a transaction.
- ERC-20 tokens are also highly liquid, meaning they can be easily bought and sold on cryptocurrency exchanges. This liquidity makes them a popular choice for investors and traders who are looking to profit from the volatility of the cryptocurrency market.

Disadvantages of ERC-20

- ERC20 tokens cannot be used for more complex and advanced purposes, such as creating smart contracts with more complicated conditions which can be a significant disadvantage for businesses that require more flexibility and customization in their token design.
- As ERC20 tokens are built on the Ethereum Blockchain, they inherit the same security vulnerabilities that exist on the Ethereum network like the risk of hacking, exploitation of smart contract bugs, and network congestion. While we can mitigate these risks by audits and the implementation of security protocols, they do not completely eliminate the potential for security breaches.
- The gas fees associated with ERC20 tokens can be a significant expense for investors and can result in unexpected expenses. Smaller investors may not have the financial resources to pay high gas fees, which can limit their ability to participate in the token economy.
- While ERC20 is a widely accepted standard, there are still exchanges that do not support ERC20 tokens. This can limit the liquidity of the token and make it harder for investors to trade on different platforms.
- ERC20 tokens can suffer from poor governance and a lack of transparency which may lead to token dumping, insider trading, etc.