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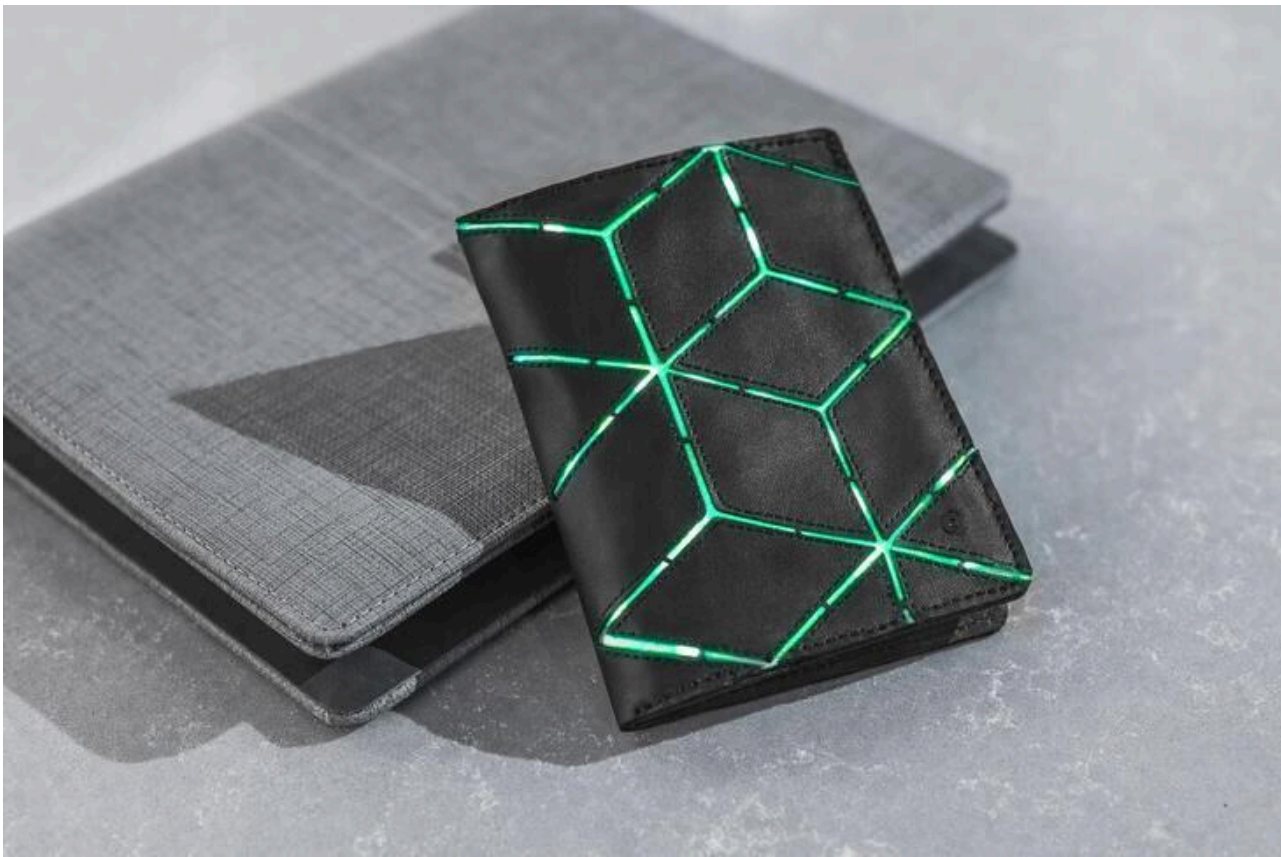
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How do crypto-wallets work?

There are two primary types of wallets: hot wallets, which are connected to the internet, and cold wallets, which are not.



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In the context of blockchains, a wallet is a tool (hardware or software) that allows you to interact with a blockchain using public and private keys.

Unlike a traditional physical wallet that actually holds currency (notes and coins), a blockchain wallet does not hold tokens. Rather, you use it to perform transactions with tokens on a blockchain. Transactions could involve buying goods or services, swapping tokens on an exchange, borrowing or lending tokens, and so on. In what follows, 'wallet' refers to a blockchain wallet.

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a wallet, consider a traditional bank account. To make things really simple, suppose we look at bank accounts before electronic banking became the norm (though the analogy can be carried over to electronic banking as well). The address generated by a public key in a blockchain is similar to a bank account number, so it can be shared with others in order to receive funds. Balances of funds in a bank account are recorded in a ledger maintained by the bank. In a similar fashion, a blockchain serves as a ledger to record transactions and maintain balances of tokens associated with addresses.

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Other functions

But a bank account can incorporate other functions as well. The bank can store a record of an individual's signature, which can then be used in cheques to authorize transfers of funds to others. The bank can issue a 'passbook' to the account holder to provide a record of the balance of funds in an account. A wallet performs all the functions of a cheque and a passbook. It stores the public and private key associated with an account on the blockchain. It allows the private key to be used to authorize transactions, like a signature on a cheque. It provides a record of the balance of tokens in an address, like a passbook.

A wallet is capable of maintaining balances of multiple tokens at the same time. So, a single wallet can be used to transact in ETH, UNI, DAI and so on, all of which meet standards for compatibility with the Ethereum blockchain. This is a very useful feature for DeFi, where agents may wish to hold multiple tokens and swap across them. But wallets are even more sophisticated than that. For example, they allow users to trade non-fungible tokens (NFTs). NFTs are essentially certificates of authenticity for unique digital objects, like a digital painting.

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Types of wallet

There are two primary types of wallets: **hot wallets**, which are connected to the internet, and **cold wallets**, which are not.

By virtue of being connected to the internet, hot wallets are convenient for performing transactions. However, as hot wallets are exposed to the internet, they are relatively more prone to attacks and security is an issue. Hot wallets may be stored online on a server or downloaded as an extension to a web browser (like Chrome) on a desktop or mobile device.

A cold wallet is not linked to the internet and can be used to store private and public keys. Since cold wallets are held offline, they are more cumbersome for performing transactions as they need to be specifically reconnected to the internet to complete a transaction. However, they are more secure. There are a number of alternative hardware and software solutions available for cold storage.

It is quite common for a user to own both hot and cold wallets. The former accesses tokens that are required for transactions, and the latter acts as a storage device for tokens that are not immediately required. As such, hot wallets may bear some resemblance to a traditional physical wallet where you carry currency to perform transactions, while a cold wallet is more like a safety deposit box or a vault.

Ethereum is by far the most common platform for DeFi applications and there exist a number of different wallets available for connecting to the Ethereum network. Examples include Metamask, Trust Wallet, Coinbase Wallet, MyEtherWallet, and so on. The most widely used wallet on the Ethereum chain is Metamask, which works as a browser extension. Having access to a wallet and gaining some familiarity with its usage is a prerequisite for entering the world of DeFi.

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