

What is Cryptocurrency

What is a cryptocurrency

Digital currencies are currencies that exist in digital form. They function as a means of payment. Some are available to the public, others to a closed group.

When a digital currency uses cryptography as a security mechanism, it is called cryptocurrency. The main characteristic of cryptocurrencies is that they are difficult to counterfeit. In addition, as they are not issued by any central institution, they are, at least theoretically, void of government interferences.

However, their anonymous nature make them useful for other illegal activities such as money laundering and tax evasion.

The best known cryptocurrency is Bitcoin, which was created in 2009 by someone using the pseudo Satoshi Nakamoto. Its success prompted the creation of other cryptocurrencies such as Litecoin. Today there are many cryptocurrencies available. Not all of them survive the test of time.

How it works

The technology behind Bitcoin is called blockchain. It was also created by Satoshi Nakamoto in 2009, as a mechanism of sending a payment from one party to another, without the need of a third party or of verification mechanisms.

Basically blockchain is a shared database, whose records are confirmed and encrypted. Thus, it offers a very secure way to log activities that provides transparency and auditability.

The database is based on a P2P technology that has a protocol for validating new blocks. Once created, a block cannot be altered without the modification of all subsequent blocks, which requires the agreement of many participants.

Transactions are stored in blocks by people called “miners”. They cannot change the transaction’s data, but they can profit by “mining” and getting a reward in Bitcoins.

Basically, a transaction occurs as follows:

1 – Person A declares that she wants to send N Bitcoins to person B, and sends the transaction information to the miners.

2 - The miners verify A’s identity and approve the transaction by recording it on the blocks they have mined.

3 – Person B gets N Bitcoins

The website blockchain.info provides information about all transactions and Bitcoin blocks.

The screenshot shows the Blockchain Luxembourg website. At the top, there is a navigation bar with 'BLOCKCHAIN' and links for 'WALLET', 'DATA', 'API', and 'ABOUT'. A search bar is also present. Below the navigation, there is a section titled 'LATEST BLOCKS' with a 'SEE MORE' link. The table below lists the most recent blocks with their height, age, number of transactions, total sent, relayed by, size, and weight.

Height	Age	Transactions	Total Sent	Relayed By	Size (kB)	Weight (kWU)
492803	6 minutes	2177	5,741.33 BTC	AntiPool	1,025.18	3,996.82
492802	10 minutes	1935	11,631.85 BTC	BTC.TOP	1,045.13	3,996.87
492801	13 minutes	1709	2,503.88 BTC	AntiPool	1,022.23	3,996.84
492800	14 minutes	2142	6,967.01 BTC	AntiPool	999.21	3,838.83

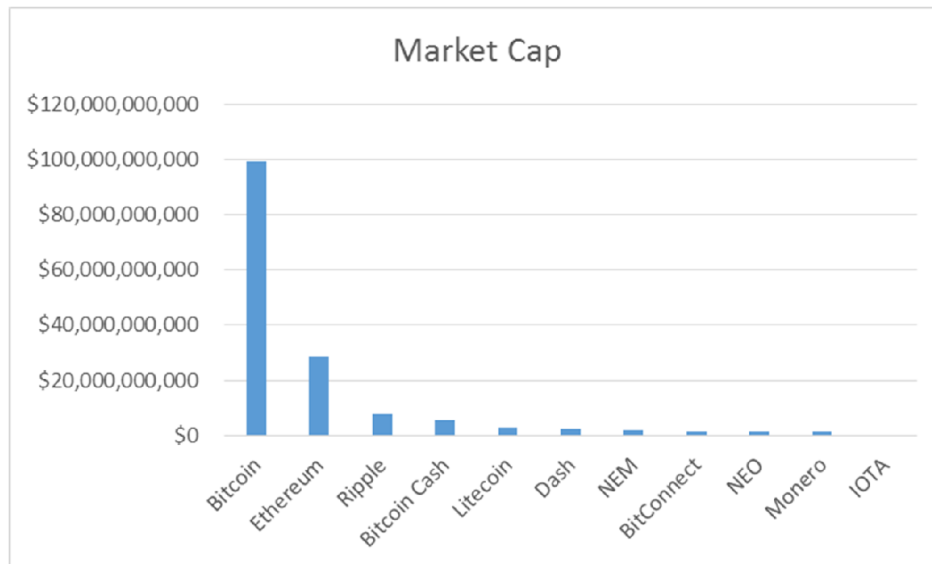
Below the table, there is a section 'NEW TO DIGITAL CURRENCIES?' with a short paragraph explaining digital currencies. To the right, there is a 'SEARCH' section with a search bar and a 'Search' button.

Source: www.blockchain.info

Also, anyone interested in the original paper “A Peer-to-Peer Electronic Cash System”, can find it at <https://bitcoin.org/bitcoin.pdf>

The cryptocurrency market

There are hundreds of different cryptocurrencies. Any person can actually create one and offer it to the public, or use it in a closed group. Among the most important ones according to market capitalization and technological innovations are:



Source: Data from <https://coinmarketcap.com/all/views/all/>

Bitcoin

Using this technology, Bitcoin was created by Nakamoto, who secured that there will always be a maximum of 21 million bitcoins, making it partially immune to inflation.

Bitcoins can be discovered or “mined”. Every four years, the number of Bitcoins released is reduced by 50% compared to the previous cycle.

Nakamoto is believed to own a million Bitcoins.

The popularity of this cryptocurrency has grown over time, and it is now used and accepted in many real-world transactions all over the world.

The website is <https://bitcoin.org/en/>

Ethereum

Ethereum is an open source, blockchain-based, distributed computing platform that has smart contract programming capacity.

It evolved into a cryptocurrency with a proposal by Vitalik Buterin in 2013, and released in 2015. In 2016, it was split into Ethereum and Ethereum Classic.

Although not as popular as Bitcoin, it has the backup of several corporate giants such as JPMorgan Chase, Microsoft and Intel, grouped under the name Enterprise Ethereum Alliance.

According to market capitalization, it runs second to Bitcoin.

The website is <https://www.ethereum.org/>

Ripple

Ripple is a real-time gross settlement system based on blockchain technology, which has been adopted by many important banks, such as RBC, Santander, UBS, Standard Chartered, among others. The main reason behind its wide adoption, is that its technology enables the direct communication between systems of different financial institutions. It was released in 2012.

The way Ripple works is by creating payment transactions between users, which are cryptographically secured. The transactions can be done either in fiat currencies or Ripple's own cryptocurrency XRP.

The transactions are not legally secured, and therefore, are based on trust. However, Ripple has created a trust system based on a network of trusted members, which copies the money transfer hawala system. In addition, Ripple is integrated with various banks.

The website is <https://ripple.com/>

Litecoin

This is also based on blockchain technology. It was created as an open source project under the MIT/X11 license, by Charlie Lee, a former Google employee, in 2011.

Litecoin has basically no transaction costs, and it's faster than Bitcoin.

The website is <https://litecoin.org/>

Dash

Dash is an open source P2P cryptocurrency system, which offers instant, secure and private transactions.

Its main difference is its organization, which is based on self-governing. This fact has allowed Dash to create a self-funding model that provides for the system's development.

The currency is accepted by a network of stores and several online casinos.

The website is <https://www.dash.org/>

NEM

NEM is a P2P, blockchain-based platform. The software is based in the client-server model. The client part is open source, but the server side is closed source. It was launched in 2015.

The platform is written in Java and has some interesting technological features, such as its Proof-of-Importance (POI) algorithm, the EigenTrust++ reputation management algorithm, and multi-signature.

The NEM software is being used by a Mijin, which is a private blockchain group in Japan.

The website is <https://nem.io/>

BitConnect

BitConnect is an investment program that follows a Ponzi-type scheme. It uses its own currency named BitConnect Coin. It was launched in 2016.

The transactions take place directly, without the need of an intermediary. They are recorded in a distributed ledger, and uses Proof of Work and Proof of Stake algorithms.

BitConnect claims to be an investment. However, the BadBitCoin organization has placed BitConnect as being a fraud (<http://www.badbitcoin.org/>).

The website is <https://bitconnect.com/>

Monero

Monero, which means money in Esperanto, is an open source cryptocurrency with focus on security, privacy and untraceability.

In 2016, it was used by darknet online market AlphaBay, which operated via the Tor network. This fact led to an important increase in transaction volumes. AlphaBay was closed by law enforcement in July 2017.

Monero has implemented a new confidential transactions technology, which uses a commitment scheme that hides the amount of the transactions.

The website is <https://getmonero.org/>

Countries accepting Bitcoins

Although there is no official acceptance of Bitcoins by any country, some of them have shown a friendly approach towards the cryptocurrency. Among them, the US, Canada, and some countries of the EU.

Bitcoin has been widely adopted in countries like Zimbabwe, where the local currency has almost completely collapsed.

Other countries have shown negative sentiments towards the cryptocurrency. Among them are China, Vietnam, Bolivia, Ecuador and Russia.

Wrapping up

Cryptocurrencies are a new thing. They are somehow uncontrollable by governments, which make them attractive to many. However, they have proliferated into many different ones, not all of them reliable. Bitcoin, the starter, remains the strongest player.