

Blockchain 101

What is Blockchain / Blockchain Technology?

Blockchain is a distributed/decentralized ledger of digital transactions. The transactions are recorded as completed blocks which are added in chronological order to form a chain. It eliminates the need for a centralized record repository and allows the concerned people to view cryptocurrency transactions. Each node in the network gets a copy of the whole chain and is updated every time a new block is added.

Blockchain technology is now popular for its use in verification of transactions. Whenever a transaction occurs, an ineradicable record is added to the chain. This record cannot be hampered and can be authenticated by all the nodes in the chain, unlike other systems in which there is a centralized authentication system.

A block can record multiple transactions too. After the completion of transactions, the block becomes a permanent part of a chain acting as a database. All blocks in a chain are connected to each other. Cryptography is also involved while creating records. This is what makes them indelible. With the rising rate of cryptocurrency transactions, a new block is added to the blockchain every few minutes!

What is Cryptocurrency / Digital Currency?

A cryptocurrency is a digital cash that relies on cryptography for security. The cryptography aspect of the cryptocurrency is what makes it difficult to be forged. But what makes it truly appealing is that it is decentralized and unaffected by government manipulation because it is not issued by any government authority. Also, on the downside, this makes it well suited for criminal activities. [Bitcoin](#) was the first cryptocurrency to be launched. It was launched in 2009 by an individual or a group called Satoshi Nakamoto. Today, there are millions of Bitcoins in circulation. Later, other cryptocurrencies, such as Ethereum, Litecoin, etc., came into being.

The Upside: Funds can be easily transferred using cryptocurrencies between two parties. The transactions involving cryptocurrencies are done using public and private keys. The processing fee for these transactions is quite low when compared to what is charged by most financial institutions. The blockchain technology is at the core of cryptocurrency which makes it immune to most of the cyber attacks. With this technology, an online ledger is maintained that holds details of all the Bitcoins transactions.

The downside: Since cryptocurrencies are digital in nature, they can be easily wiped out in case of a system crash if a copy isn't available. Also, the price of a cryptocurrency is determined by its supply and demand. This implies that the exchange rates between various cryptocurrencies keep fluctuating. Though cryptocurrency might be immune to most of the cyber attacks, it does not mean it's not at all vulnerable. Cryptocurrencies are generally used for online transactions that lie outside government institutions. Cryptocurrencies are still in the early stage of development and acceptance, but they hold great potential to challenge the existing traditional currency systems.

What is Bitcoin Mining / Cryptocurrency Mining?

Bitcoin mining OR Cryptocurrency/Crypto mining is the process of verifying transactions and adding them to the public ledger or the blockchain is called mining. New Bitcoins or other Cryptocurrencies (well known as Altcoins) are also released through this process. Any person with access to the internet can participate in mining. The process requires participants to compile recent transactions into blocks and solve a difficult puzzle. The one who solves it first is eligible for the reward and places the next block on the blockchain. These rewards are meant for incentivizing the mining process. For example, With each mined block an amount of Bitcoin is released called the “block reward”. The block reward is halved every four years i.e., the reward was 50 in 2009, 25 in 2014, 12.5 in 2017 and will again decrease in the coming years resulting in a full Bitcoin release.

How difficult are the Crypto mining puzzles?

The difficulty level of the puzzles depends on the combined mining effort across the network. The protocol adjusts the difficulty of the process every 2016 blocks. This re-adjustment is done to keep the block discovery rate constant. Thus, if the overall effort across the network is high, the difficulty level will also be high and vice versa.

What is ICO / Initial Coin Offering?

Initial coin offering (ICO) or initial public coin offering (IPCO) is an unregulated means to raise funds for a new venture or project through the use of cryptocurrency. ICO might be used by some startups to raise money bypassing the traditional regulated funding process. In this process, a percentage of cryptocurrency/tokens is given to individuals in exchange for legal tender or other cryptocurrencies such as Bitcoin, [Ethereum](#), etc.

Suppose a startup wants to raise money through ICO. It is required to create a whitepaper regarding the plan, purpose, and requirements of the project/business plan. It also needs to state the type of money/cryptocurrency that will be accepted and the duration of the ICO campaign. During the campaign, some of the cryptocurrency/tokens are bought by the supporters using fiat money or other cryptocurrencies/Altcoins. The coins bought are like the shares of a company which are given to the investors. If the company is unable to raise the required amount of funds, all the money thus collected is returned to the supporters and the campaign is declared unsuccessful. Investors are motivated to buy cryptocurrency/tokens in the hope that in the event of success, the value of cryptocurrency/tokens will also increase.

Check for Updates: <https://gusture.com/blockchain-101/>