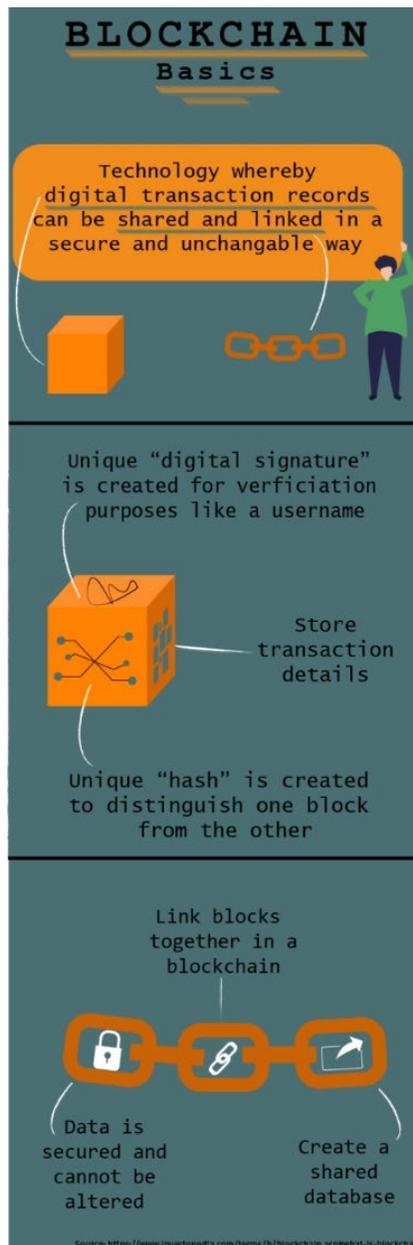


Blockchain Basics

You have probably heard this big "B" word before, but do you know what it is and what it does? If your answer is "yes, I know all about it", skip this article.

If it is "no, tell me all about it", you have come to the right place. We have read the relevant sources (*so you do not have to*) and consolidated the facts into this article for easy reading.

So, what is blockchain exactly?



The infographic above gives a basic idea of the elements of blockchain. Still, confused? Don't worry, it will all make sense as you read on.

"Technology whereby digital transaction records can be shared and linked in a secure and unchangeable way". Imagine a physical block and a chain attached to it.

Think of blockchain technology as a collection of data inside a database and network. Anything inside blockchain can be distributed or shared with others. Essentially, this technology is a literal block + chain.

The block stores the digital transaction records in the form of digital assets. Besides that, there are 3 elements that make up a block.

1. Like signing an agreement, a **"digital signature"** binds the user who inputs the digital information into the data itself. This allows the information in the data to be as genuine and authentic as possible. Like a username, **this is how the data is identified to its user and receiver** as each "digital signature" is unique to its own user.
2. Imagine making a purchase online; **the block will store all the transaction details inside of it**. Aside from the price of the product you bought, it also stores the time that you bought it, the online shop you bought it from, your payment method, and so on. Besides actual transactions, the block can store other information as well. It can store text conversations, medical records, loyalty programs, and much more. The block also stores the information of the previous block it is attached to.
3. Each block has huge storage for data. The "digital signature" differentiates each data in the single block. However, the blockchain network is made up of many blocks; so how does one distinguish between different blocks? This is where a "hash" comes into place. **A "hash" is created using mathematical algorithms to generate unique codes that allow each block to be identifiable.** Hence, a unique "hash" will be attached to each block. One interesting fact about a "hash" is that whenever data inside a block is altered, the "hash" will change into a different unique code. This will also affect the previous block it is attached to because this block contains the information of the previous block (*as mentioned in point #2*).

Now we move onto the chain, which is what holds this blockchain network together. Besides linking the blocks together, the chain has other uses as well.

1. Once a chain is attached to a block, it will be incredibly difficult for the data to be altered. This is because when this happens, a new block is added to the other end of the chain. If someone wants to alter the data, they would have to not just alter the data in that specific block, they would have to alter the data in the previous blocks that are attached to it (*also, don't forget the "hash" will change every time blocks are altered so it would be very easy to identify an altered block*). Hence, **this creates a very safe and secure database.**
2. **The chain creates a public database that is easily accessible.** Because of this, the data in the blocks can be distributed in a shared network. Blockchain is also decentralized, meaning that there is no single entity that controls the entire blockchain technology. To put this into perspective, this is unlike a bank, which is centralized. A bank is a single entity that controls all the customers' money going in and out of the bank.

Now that you know the basics of how blockchain works, it is clearly a technological innovation that has many possibilities for almost every industry imaginable. In the next article, we will explain more about how blockchain is used in real life through its applications in different industries.

Sources:

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