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A blockchain is a unique type of database run by those who use it instead of a middle man. Blockchain databases are secure as they are set up as chains of data, making data altering very noticeable. Smart contracts are a transparent, third partyless automatic contract which is only used when certain conditions are met. Smart contracts used in blockchain databases allow for an efficient, secure transport of data.

What is Blockchain?

Blockchain is a type of database or a collection of information stored electronically on a computer system (Conway, 2021). However, blockchain differs from a typical database in the way it stores and structures information. Blockchain holds information into chunks that are chained together. Due to the way blockchain holds data, it creates a timeline of secured data which is less susceptible to security issues.

History and Uses of Blockchain

Blockchain as it is used now was originally laid out in 2009 by the developer of Bitcoin, Satoshi Nakamoto for the cryptocurrency (Reiff, 2021). Blockchain itself is used by all types of cryptocurrencies due to the security measures it provides. Due to the nature of how information is stored in a blockchain, it makes it significantly more difficult to hack, or cheat the system. Blockchain data is stored in a way where if one chunk of data is altered, it would be immediately apparent it was tampered with. Blockchain itself is made in a way to build trust in consumers who would use newer cryptocurrencies, due to no one truly being in charge of a blockchain rather than a normal database like an SQL (Euromoney, 2021). Due to this nature, cryptocurrencies under this system can't be faked, hacked, or used twice. Blockchain is not only used for cryptocurrencies however, as any type of data can be secured on a blockchain.

What are Smart Contracts?

A smart contract is not like a normal contract typically created from two entities, but rather a simple program of computer code stored on a blockchain to run when predetermined conditions are met (IBM, 2021). A smart contract is typically used to automate an execution of an agreement so all participants can know the outcome of the action. A smart contract in layman's terms is much like an automatic bank transfer, which will only proceed under certain conditions such as a date, or an amount of money.

History and Uses of Smart Contracts

Smart contracts were originally created in 1994 by a cryptographer named Nick Szabo, but were not widely used until the creations of blockchains in 2009 (Bitdegree, 2021). Smart contracts are used to facilitate an agreement without the use of a third party. These smart contracts will only fulfill when certain conditions are present and met, and have been agreed on by all participants. Smart contracts can also be used to automate a workflow by constantly triggering new actions when conditions are met (IBM, 2021). Smart contracts can be used for speed and efficiency as they are nearly automatic. Smart contracts are also used to build trust between a supplier and a consumer as all conditions are laid out to both parties without the use of a third party.

Use of Blockchain Technology on Smart Contract Data Integrity

The main flaws of smart contracts are trustworthiness and data integrity. These are both void under blockchain technology. The nature of blockchain technology allows it to be very secure against those looking to abuse or cheat the system. All blockchain transactions are encrypted, secure, and set on a specific timeline history making them extremely hard to hack. Blockchain also has no real man in charge, as they are run by everyone who uses the chain instead of a single person at the top. This allows smart contracts to be used securely as no person could realistically alter the data without the original participants knowing.

Conclusion

A blockchain is a unique type of database run by those who use it instead of a middle man. Blockchain databases are secure as they are set up as chains of data, making data altering very noticeable. Smart contracts are a transparent, third partyless automatic contract which is only used when certain conditions are met. Smart contracts used in blockchain databases allow for an efficient, secure transport of data. The only real issue in a blockchain environment is scalability, but that is constantly being voided as time goes on. Blockchain environments are perfect for securing data or currencies in an encrypted environment safe from any meddling, while smart contracts allow for the whole process to go by efficiently and automatically.

<u>References</u>

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