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An approach for securing organizational data using blockchain and cryptography

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Abstract

Confidential data protection and trust management both work hand in hand, the organization who is managing the data must make sure they take all the required steps to maintain the integrity of the data and to gain trust from their end-users. The major sector where the organization has to take care is to give the right access control, any wrong doing from the employee will directly impact the organization. The paper proposes 2 level security frame work which will keep the data handling within the organization crystal clear. The paper proposes a system in which super-party (the person who runs the organization), grants permission to its sup-parties (employees) to add, update the data and restrict from deleting the data. The sub-party should also add the crypto hash on the Ethereum Blockchain to finish the add / update of the data. Every sub-party will have its own account which will be the signature. The data in its whole will be stored on the cloud and its crypto hash will be generated and this crypto hash along with the signature will be stored on the root tier of the EthereumBlockchain. The signature along with the data hash stored on the blocks will help the organization track the person responsible for any tampering or mishandling the confidential data.

Keywords:

Blockchain data security, Cryptography, Smart contracts, Cryptocurrency, Privacy Database

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