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Blockchain Enabled Healthcare Secure Data Storage System

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Abstract: Data security or secure storage of medical information is usually asignificant concern for the bulk of the population. An efficient healthcare system needs a technology platform tospeak firmly and seamlessly. Block chain has beenemerging technology for a few years now. The key options of block chain which attract most developers are its immutableness, decentralization, transparency, distributed ledger. We tend to propose a Healthcare Secure Information Storage System (Life Care) that firmly manages personal medical records and creates an interaction between Doctors and Patients. The Life Care system is meant to improve the current systems because it provides interoperable, secure, and effective access for medical records by patients. It provides timed-based smart contract for governing transactions and dominant access to electronic medical records. The security is ensured by using SHA-256 encryption technique with Blockchain to store hash data for providing security, new incentive mechanism that leverages the degree of health suppliers concerning their efforts in maintaining medical records and making new blocks.

Keywords: Blockchain, Health information exchange, Data Security, Healthcare.

REFERENCES

- [1]. A. R. Rajput, Q. Li, M. T. Ahvanooey, and I. Masood, ``EACMS: Emergency access control management system for personal health record based on blockchain," IEEE Access, vol. 7, pp. 8430484317, 2019.
- [2]. R. Guo, H. Shi, Q. Zhao, and D. Zheng, ``Secure attribute-based signature scheme with multiple authorities for blockchain in electronic health records systems," IEEE Access, vol. 6, pp.1167611686, 2018.
- [3]. L. X. Chen, W.-K. Lee, C.-C. Chang, K.-K. R. Choo, and N. Zhang,"Blockchain based searchable encryption for electronic healthrecord sharing," Future Gener. Comput. Syst., vol. 95, pp. 420429, Jun. 2019.
- [4]. L. A. Linn and M. B. Koo, "Blockchain for health data and its potential use in health IT and health care related research," in Proc. ONC/NIST Blockchain Healthcare Res. Workshop., Gaithersburg, MD, USA, 2016, pp. 110.
- [5]. D. Ivan, ``Moving toward a block chain-based method for the secure storage of patient records," in Proc. ONC/NIST Blockchain Healthcare Res.Workshop, Gaithersburg, MD, USA, 2016, pp. 111.
- [6]. Lanxiang Chen, W. Lee, Chinchen Chang, Kim-Kwang Raymond Choo, N. Zhang "Block chain based for searchable encryption for an electronic health and sharing" DOI:<u>10.1016/J.FUTURE.2019.01.018</u>,June-2019.
- [7]. A. Azaria, A. Ekblaw, T. Vieira, and A. Lippman, "MedRec: Using blockchain for medical data access and permission management," in Proc.2nd Int. Conf. Open Big Data, Aug. 2016, pp. 2530.
- [8]. Q. I. Xia, E. B. Sifah, K. O. Asamoah, J. Gao, X. Du, and M. Guizani, "MeDShare: Trust-less medical data sharing among cloud service providers via block chain," IEEE Access, vol. 5, pp. 1475714767, 2017.
- [9]. S. Amofa, E. B. Sifah, K. O.-B. O. Agyekum, S. Abla, Q. Xia, C. Gee, and J. Gao, "A blockchain-based architecture framework for secure sharing of personal health data," in Proc. IEEE 20th Int. Conf. e-Health Netw., Appl. Services (Healthcom), Ostrava, Czech Republic, Sep. 2018, pp. 16.
- [10]. G.Yang and C. Li, "A design of blockchain-based architecture for the security of electronic health record (EHR) systems," in Proc. IEEE Int. Conf.Cloud Comput. Technol. Sci. (CloudCom), Nicosia, Cyprus, Dec. 2018,pp. 261265.
- [11]. G. G. Dagher, J. Mohler, M. Milojkovic, and P. B. Marella, "Ancile:Privacy-preserving framework for access control and interoperability of electronic health records using blockchain technology," Sustain. CitiesSoc., vol. 39, pp. 283297, May 2018.

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- [12]. X. Zhang, S. Poslad, and Z. Ma, "Block-based access control for blockchain-based electronic medical records (EMRs) query ineHealth,"in Proc. IEEE Global Commun. Conf. (GLOBECOM), AbuDhabi, United Arab Emirates, Dec. 2018, pp. 17.
- [13]. S. Rahman, ``Privacy-friendly platform for healthcare data in cloud based on blockchain environment," Future Gener. Comput. Syst., vol. 95, pp. 511521, Jun. 2019.
- [14]. L. Hang, E. Choi, and D.-H. Kim, "A novel EMR integrity management based on a medical block chain platform in hospital," Electronics, vol. 8, no. 4, p. 467, Apr. 2019.
- [15]. [Sandi Rahmadika and Kyung-Hyune Rhee," Toward Privacy- Preserving Shared Storage in Untrusted Block chain P2P Networks", DOI:<u>10.1155/2019/6219868</u>, May-2019.
- [16]. Erikson Julio de Aguiar and Bruno S. Faical, Bhaskar krishnamachari and Jo ueyama,"A Survey of Blockchain-Based Strategies for Healthcare", Vol. 53, No. 2, Article 27, March-2020.