



A remix IDE: smart contract-based framework for the healthcare sector by using Blockchain technology

Rana M. Amir Latif¹ · Khalid Hussain² · N. Z. Jhanjhi³ · Anand Nayyar⁴ · Osama Rizwan¹

Received: 5 April 2020 / Revised: 8 September 2020 / Accepted: 15 October 2020

Published online: 10 November 2020

© Springer Science+Business Media, LLC, part of Springer Nature 2020

Abstract

Technology is continually evolving, and Blockchain development in recent years has shown tremendous adaptability. Blockchain's emphasis lies mainly in the finance sector, but some latent fields such as healthcare still grow and transform the future. In this paper, we introduced a smart contract-based framework for Blockchain-based healthcare system. According to our hypotheses, the proposed framework in the healthcare system will be changed by leveraging the principles and technologies of a public ledger, which will change the healthcare industry's vision based on Blockchain. Health records, laboratory evaluation results, doctoral perceptions, and precise information about health care can be decentralized in the form of blocks in the form of transactions. These blocks can be linked in Blockchain as distributed ledgers according to the series of events. It can eliminate a highly complex process and manual intervention. Through adding an Identity Manager, fully open and secure applications can be based on Blockchain technologies. Based on the expected outcomes, we are optimistic that the proposed Blockchain-based framework will be helpful in the healthcare context; to evaluate the maturity level of our proposed framework we map the framework on Ethereum-based application and evaluated in the hospital setting, for the evaluation of the proposed framework. At the initial stage, we are confident that the proposed framework will be helpful in the hospital environment and contribute to enhancing the performance of the healthcare environment.

Keywords Blockchain · Healthcare distributed ledger · Health information management · Patient data · Remix IDE

✉ N. Z. Jhanjhi
noorzaman.jhanjhi@taylors.edu.my