

ABSTRACT

This time many people have started to switch from physical documents to documents digitally. Physical documents may only be needed when taking care of administrative matters and require a copy of the document as physical evidence. At this time digital documents are widely implemented on various kinds of things such as certificates, award certificates, and even diplomas. However, this is prone to counterfeiting and if this is done through data collection, it will be difficult to detect if in the database someone changes the data or information about the data due to lack of transparency.

Therefore, blockchain can be one of the means or solutions to overcoming this. Because blockchain excels in terms of data transparency the data will be maintained validity. In addition, because the blockchain only uses a read and write system for each transaction, the transactions that have been made will remain and not change.

This final project gets the result of a website-based application built on the polygon mumbai blockchain network by utilizing smart contracts to execute transactions on the system. Based on white box testing, it was found that the application can interact with the Polygon Mumbai network and the smart contract can run the traction properly. Furthermore, in the performance test, the results were obtained that the average time to execute transactions was 42.96 seconds. The amount of time generated depends on the ongoing transaction activities on the Polygon Mumbai network. Furthermore, in testing the validity of the data, the results were obtained that the hash of the data stored on the blockchain was the same as the CID hash in IPFS. Finally, there is a data duplication test found that metadata modifications can be identified as unique files even if they have the same content

Keywords: Blockchain, Dokumen Digital, Tracking, Polygon Mumbai, IPFS