

## ABSTRACT

Nowadays lot of people switch from physical document to digital document. Maybe people only use physical document only for administrative matters and need the copy from the document as physical evidence. Digital document implemented in various ways like certificate, certificate of merit, even diploma. But those things vulnerable to counterfeit and if we do data collection, it will be hard to detect if someone do any changes about the information of document at database because of less of transparency.

Therefore, blockchain can be the way out to overcome this problem. Because blockchain excellent in data transparency so the validity is maintained. Because blockchain only using read and write for the transaction, then the transaction has been done will stay and cannot change.

Henceforth, result obtained from this thesis is, creatin web application blockchain based use Ethereum blockchain also connected with Rinkeby Test Network as blockchain network. This blockchain application can do input, retrieve, update, and delete with 100% black box testing, and 100% white box testing. Performance testing for all transaction have slowest time 6.04 second and fastest time 93.32 second.

**Key Word:** *blockchain, database, transparency*