

Abstract

This study propose a prototype for prevention and authentication of diploma documents and transcripts in Indonesia to resolve the case fake diplomas and transcripts based on uploaded files using smart contract ethereum on public blockchain networks. Ethereum is one of the oldest examples of blockchain technology provides a system that converts centralized storage to distributed and records transactions by way of decentralized and not by a centralized system and can be verified by each node, therefore it is suitable for storing fingerprints from official diploma documents and transcripts that are published. Smart contract is needed for making contract transactions to ethereum with programming code, so contracts such as diplomas and transcripts uploaded on the ethereum blockchain can distribute and produce diploma validation and the authenticity of transcripts with transaction hash, consensus, and comply with ERC-721 token standardization. The results showed that a sample of 5 electronic documents in pdf format with a transaction speed of 1 second on each file that were published and secured with ethereum blockchain technology can be easily verified for authenticity, the system proposed and developed by us takes in consideration invalid and failure cases by giving the necessary feedback to the user.
