ABSTRACT

Smart contract is an agreement between two entities as outlined in the program code. All smart contract transactions are stored on the Blockchain. Blockchain *is a distributed peer-to-peer technology for storing and distributing digital data such as cryptocurrency and smart contracts with the confidentiality, integrity and authenticity of data. However,* Blockchain *is not suitable for storing large amounts of data, so many developers now make a* DApp *(Decentralized Application) that integrates* IPFS *on Smart contract* Ethereum. *Files will be stored on* IPFS *while the* Blockchain *only stores the hashes of files stored on* IPFS *to be able to access them again. In this study, memory usage measurements were carried out when running* DApp *through the file upload process. The test results prove that the increase in* RAM *usage in each file upload process is influenced by file size and the number of nodes that interact with the system. The memory usage test results will be used as a benchmark in the capacity planning process so that the* DApp *web system can work properly according to its needs.*

Keywords:
Blockchain, Ethereum, *Smart Contract* , IPFS, RAM *Usage*.