

## 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.*