ABSTRACT

Generally, patient medical record storage systems in hospitals use a manual data storage system or centralized data. This is vulnerable to data errors resulting in server downtime or loss of data due to the absence of backups. Therefore the authors conducted research by implementing the bodkchain database system on a medical record storage system, where data will be stored decentralized and distributed to all registered nodes on the network. When a system failure occurs at one of the nodes, it will not affect the system at the other nodes.

In this research scheme, the author uses the Ethereum *framework* and uses a web server as the data input user interface. Creating a private *blockchain* system with *Proof-of-Work* (PoW) konsensus by connecting system one to node 1 and system two to node II. Using postman as a testing ground for maximum accuracy.

The test result show that a blockchain system with *Proof-of-Work* consensus takes quite a long time to retrieve data compares to a conventional postgresql database. Conventional databases are more effective in handling sets or add data because they do not require going through the data mining process and are required to go through signature verification, consensus and redundancy mechanicms. The blockchain system continues to receive and accommodate input data even though only one node is running.

Keyword: *Blockchain, Proof-of-Work, Electronic Medical Record.*