ABSTRACT

Electricity is a very important energy for humans, because electricity can be converted into other energies as needed. The energy change process must have costs according to the amount of each use, especially in places that require large amounts of electrical energy such as large buildings, including campus. The need for a monitoring system for electricity usage in Telkom University building is important so that the logistics team can easily manage electricity usage.

This web-based monitoring system is divided into virtual sensors/API, local database and monitoring website that are connected to each other and form an electrical monitoring system. This study uses a clustering algorithm through an unsupervised learning approach, namely "Density-Based Spatial Clustering Application with Noise" (DBSCAN) to clustering.

In this study, a website was produced to monitor electricity usage data in buildings at Telkom University. With this research, it is hoped that it will make it easier for campus logistics to monitor and manage electricity data usage in Telkom University buildings. The results of this research using the DBSCAN algorithm produce a Silhouette Coefficient value for testing data per month using real data and virtual device data of 1.0, testing data per day of 1.0 for real data and 0.86 for virtual device data and testing data per building of 0.86.

***Keywords*:** *Clustering, Webiste Monitoring, DBSCAN, Electricity Usage.*