

ABSTRACT

At this time the rapid development of technology has entered all aspects of life. Technology has been widely applied in the field of education, one of which is collecting data on student grades. This data is generally used as a report on student learning outcomes at school. The student score data that has been collected is not only data that is stored and reported, but the data can be used to identify student learning abilities which can be used by teachers in monitoring student learning abilities at school. Hierarchical Clustering is a method in Machine Learning that can be used to help teachers group data. The Hierarchical Clustering method groups data based on the closeness of the distance between the data. Grouping student learning abilities can be done using the Hierarchical Clustering method using student grade data that has been collected in a database, this is because data grouping is based on the closeness of student grades. The data that has been collected is processed using Data Preprocessing to reduce outliers and noise in the data. The data grouping process is carried out using the Euclidean distance matrix and the average linkage technique by presenting the results visually via a Dendrogram graph. Grouping data using this method produces the best Silhouette Score value of 0.373 with a number of clusters of 2.

Keywords : Student Grades, Machine Learning, Hierarchical Clustering, Silhouette Score