Abstract

Cases of electricity theft is still rife. Various attempts were made to stop the theft of electricity, such as cater (*itinerant officer) and postpaid electricity usage.However, until 2013, PLN still suffered a huge losses because of this case. Thus, in this final project will be made a system that can help to detects PLN's electricity theft.*

System will be made using one of data mining's function, which is classification. Classification is a process of finding patterns in the data that would state that the data is entered into a pre-defined classes. One popular method of classification is decision tree, and algorithm used is C4.5.

C4.5 uses the concept of entropy to determine the distribution of data variability and Information Gain to select the root and internal node based on the value of the highest gain. The benefit of C4.5 algorithm is the pruning process. Pruning will remove the node which is the noise, resulting a more simple decision tree. Pruning algorithm used is Error Based Pruning, these algorithm allow the splut of the subtree with one of its leaf nodes to create a more simple decision tree.

Based on the implementation result, C4.5 *algorithm and Error Based Pruning can be used to detect electricity theft with 98.64% accuracy.*

Keywords: *Electricity theft, classification,* C4.5 *algorithm, error based pruning* (EBP)