Abstract

Data forecasting, especially index movements, is a method used to assist decision making in investing in financial markets. Own stock investment is carried out to increase assets in the future. In investment must also consider the results obtained or commonly called return. To be able to know the movements and relationships in the future, we need a model to help predict stock price movements. In this final project will discuss about, how to predict the direction of the rise in sectoral indices on the Indonesia Stock Exchange (IDX) using the Bayesian Network and Naïve Bayes Algorithm. The sectoral index used is weekly historical data from 2000 to 2018, with each sector totaling 984 weeks, namely 2 January 2000 to 27 December 2015 totaling 828 weeks as training data and testing data between 3 January 2016 and 30 December 2018, totaling 156 Sunday. The method used to determine the movement of each index is using the Discrete and Continuous Naïve Bayes Algorithm. Each index is assumed to be independent and only relates to the value of the US dollar exchange rate. From this connection Bayesian Network is used to describe the topology. After that, determine the best method for calculating predictions by looking at the accuracy of each method with the confusion matrix. Related indexes include JKAGRI, JKCONS, JKFINA, JKINFA, JKMING, JKPROP, and JKTRAD against the US Dollar Exchange Rate (USD / IDR). The average accuracy in the Discrete Naïve Bayes is 60.71% for training data and 55.43% for testing data. While the average value of accuracy in Continuous Naïve Bayes is 51.28% for testing data. The USD / IDR exchange rate sector has more influence on JKINFA in Data Training, while in Data Testing it has more influence on JKAGRI and JKCONS.

Keywords: Sectoral Indices, Bayesian Networks, Naïve Bayes Discrete, Naive Bayes Continuous, Historical Data