ABSTRACT

Stock is an investment model that more popular and promising huge profits than the bonds and deposits at this time. The advantages of shares can be obtained from the difference between the selling price higher than the purchase price. Nevertheless, the stock also has risks that can make investors suffered losses when shares are bought very high but sold at a price that is too low. Therefore, investors need the help of the right analysis to maximize profits and avoid losses.

In stock trading, technical analysis is the approach most frequently used to predict stock prices. Technical analysis study the behavior of stock prices in the past to predict stock prices in the future. Grammatical Evolution method chosen to resolve this case by the data input in the form of stock prices that are time series. With representation in the form of chromosomes function or program, Grammatical Evolution may search predictive models are more varied. By building a comprehensive grammar in Backus Naur Form notation, grammatical Evolution can do a search for the very many possibilities predictive models both linear and non-linear so it can get results to more accurate prediction.

Results of testing by conducting training phase and testing phase, obtained the smallest average value of MAPE of training and testing that is 1,17639% with an accuracy of more than 98,8%. By using scenarios of training data and testing data that varied, it was found that scenario of 1000 period of training data and 250 periode of testing data are the scenario data that can produce the highest accuracy value. In predicting stock prices until the H+10, the system can generate 3,2011% value of MAPE with 96,8% accuracy.

Keywords : Technical analysis, Grammatical Evolution, Genetic Programming, Backus Naur Form, time series, Evolutionary Algorithms, MAPE