

Abstract

The value of stock prices is always changing and fluctuate every day. To deal with problems regarding uncertainty in stock prices, a time series forecasting is needed to predict stock prices in the future. In this study, the method used to predict stock prices is the Autoregressive Moving Average (ARIMA) method. To improve the accuracy of stock price predictions, the Genetic Algorithm (GA) will be implemented in the best ARIMA model obtained from the ARIMA process. The results of this study indicate that stock price predictions of PT Bank Central Asia Tbk using the ARIMA (1,1,1) model have a Root Mean Square Error (RMSE) value of 418.1314. Whereas the results of stock price prediction of PT Bank Central Asia Tbk by implementing GA on ARIMA (1,1,1) model with 600 generations, 1200 generations, 1800 generations, 2400 generations, and 3000 generations each have RMSE values of 5827.378, 1319.903, 1080.704, 563.7984, and 371.0107 respectively. The results obtained indicate that the implementation of GA on ARIMA with 3000 generations can improve the accuracy of stock price predictions of PT Bank Central Asia Tbk, that is having a RMSE value of 371.0107.

Keywords: ARIMA Model, GA, Prediction, RMSE, Stock Price