# Abstract

Crude oil has an important role in the financial indicators of global markets and economies. The price of crude oil influences the income of a country, both directly and indirectly. This includes affecting the prices of basic needs, transportation, commodities, and many more. Therefore, understanding the future price of crude oil is essential in helping to budgeting and planning for a better economy. The contribution of this research is in finding the best hyperparameters and using early stopping methods in the LSTM model to predict oil prices. This research implemented Long Short-Term Memory (LSTM), an artificial neural network that can handle long-term dependencies and the problems of time series data. The LSTM method will be used to predict Brent oil prices on daily and weekly time frames. The experiment has been conducted by tuning some parameters to obtain the best result. From the daily time frame experiment, the model obtained RMSE and MAE of 1.27055 and 0.92827, respectively, while the weekly time frame has RMSE and MAE of 3.37817 and 2.60603, respectively. The results show that the LSTM model can improve to the trends that occur in the original data.

**Keywords**: Brent Oil, Forecasting, LSTM, MAE, RMSE