

## **ABSTRACT**

Time series is a collection of data sorted by time. In the use of time series, many data processing models have been developed such as the ARIMA (Autoregressive Integrated Moving Average) variation and the use of this model has been used in various kinds of problems, one of which is weather temperature prediction. One of the time series models that is often used in predictions is the ARIMA model. In recent times, the development of new methods and models such as BATS (Box-Cox, ARMA error, Trend, and Seasonality) has begun to be used in several studies regarding predictions related to seasonality. However, the use of the BATS model is still small in the field of weather and climate which has a relationship with seasonality. In this study, a comparison was made between the ARIMA and BATS time series models to find out which model can predict which temperature data changes according to the season. The predicted results of temperature data found in the ARIMA model produce a MAPE value of 2.7%. While the results of the prediction of temperature data used in the BATS model produce a MAPE value of 3.52%. From the prediction results of temperature data in Jakarta, it is determined that the better time series prediction model is the ARIMA model.

**Keywords: prediction, time series, ARIMA, BATS, temperature**