PROJECT REPORT

ANALYSIS OF THE DOUBLE EXPONENTIAL SMOOTHING HOLT ALGORITHM FOR EARTHQUAKE PREDICTION ON THE ISLANDS OF JAVA, SUMATERA, AND BALI

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declare that this work, titled "Analysis Of The Double Exponential Smoothing Holt Algorithm For Earthquake Prediction On The Islands Of Java, Sumatera, And Bali", and the work presented in it is my own. I confirm that:

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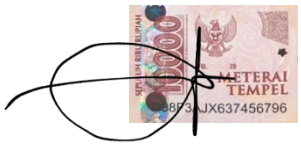

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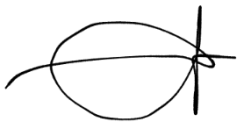

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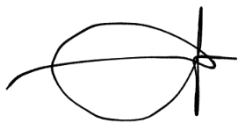
The author realizes that there are still many shortcomings in the preparation of this final project report, for that the author hopes for suggestions and input for improvement so that this final project report can be completed optimally. Hopefully this final project report can be useful for both the writer and the readers.

Semarang, July, 15, 2022



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ABSTRACT

Indonesia is an area that is often affected by earthquakes, because Indonesia is at the confluence of three tectonic plates of the earth. There are three provinces in Indonesia that frequently experience earthquakes, namely Sumatra Island, Java Island, and Bali Island. Forecasting techniques can be used as a strategy to deal with natural disasters.

One method that can be used for forecasting is Double Exponential Smoothing Holt. This method uses the value from the previous history to predict the next period. Double Exponential Smoothing Holt is very good for long term, medium term and short-term use. The data that will be used is the magnitude of the island of Sumatra, Java and Bali from 2016 to 2020, which is taken from repobmkg.go.id and grouped on a weekly basis.

The results got from this study are the analysis of the Double Exponential Smoothing method to get earthquake prediction information and the level of accuracy based on MAPE to get the smallest error value.

Keyword: Forecasting, Magnitudo, Double Exponential Smoothing, MAPE

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