INDUSTRIAL TRAINING REPORT

AT

PEJABAT KESIHATAN DAERAH

PENGKALAN CHEPA

16100 KOTA BHARU

KELANTAN

BY

SITI NURZILA BT AB RAHIM

(2012514511)

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REPORT

SUBMITTED TO

FACULTY OF COMPUTER AND MATHEMATICAL SCIENCES

UNIVERSITI TEKNOLOGI MARA

AS PART OF REQUIREMENT

FOR

BACHELOR OF SCIENCE (HONOURS) (STATISTICS)

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FORECASTING THE NUMBERS OF DENGUE CASES IN KOTA BHARU FROM JANUARY 2006 TO OCTOBER 2015

ACKNOWLEDGEMENT

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

"In the name of Allah SWT, the Merciful and Beneficent"

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ABSTRACT

Dengue fever is an illness caused by infection with a virus transmitted by the Aedes mosquito. The mosquito is most active during daylight, for approximately two hours after sunrise and several hours before sunset. Dengue symptoms range from mild and flu like high fever, rash, vomiting, pain behind the eyes, loss appetite, muscle and joint pain and headache. Dengue is becoming an intimidating disease since there is no specific treatment for it. Severe dengue is leading in the number of illness and death reported among children (Nugaliyadde et al., 2015). These data consist of 10 years total dengue cases that be collected around Kota Bharu every month starting year 2006 until 2015 which included 118 months. The purpose of this research is to identify the pattern of component and the best model for Dengue data in Kota Bharu starting January 2006 until October 2015. The data series shows that the irregularity and trend component in the graph. Irregularity was obviously detected because of the highest rainfall in the year 2014. Based on the Univariate modeling technique, the Single Exponential Smoothing equal to 23631 and Box-Jenkins model is ARIMA(1,1,1) equal to 359215. The lowest MSE value of the evaluation part is compared to choose the best model. Single Exponential Smoothing will be used to forecast the time series of dengue cases in Kota Bharu.

Keywords:Dengue, Forecasting, Univariate model, Box-Jenkins.