# Universiti Teknologi MARA

# Forecasting Air Pollution Index of Klang, Selangor by Using Markov Chain

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## STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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# ABSTRACT

Air is a mixture comprising a group of almost continuous concentrations of gasses and a group of concentrations that differ in both space and time. The importance of tracking and regulating air quality is, in particular, mandatory in today's era of growth. Air pollution has created bad effects on many sides, particularly on living things. The Markov Chain model was proposed to forecast the Air Pollution Index, which is a stochastic model that relies on the previous state in time. It also contains the state transition matrix and the stationary probability distribution for model growth. Besides, the Linear Interpolation method was used to fill the incomplete Air Pollution Index data values that were obtained. The result revealed that the model had successfully established a valuable method for estimating potential states of the Air Pollution Index as the result was consistent and precise. The Markov Chain model is also the best choice for estimating air quality and very well determining the long-term spread of pollution.

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