Universiti Teknologi MARA

Estimation of Train Arrival Punctuality Using Fuzzy Logic Approach

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Report submitted in fulfillment of the requirements for Bachelor of Science (Hons.) Management Mathematics Faculty of Computer and Mathematical Sciences

November 2018

STUDENT'S DECLARATION

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

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NOVEMBER 30, 2018

ABSTRACT

Public transport plays a significant role in society. Nowadays, many people use public transport to save time and costs. KTM Commuter is one of the favourite public transport that people prefer to use. However, the punctuality of the train gives difficulties to KTM user. Any delays and disruptions would give bad consequences to its users. This research focuses on a commuter train that departs from Bukit Mertajam at 16:36 and arrive at Arau at 17:57. The objective of this study is to estimate the punctuality of the train arrival using fuzzy logic approach and MATLAB software was used for data analysis. There are three variables were considered to achieve the objective which is condition of the train, time of the train departure and total time the train travelled. Six linguistic variables are used which is punctual, late, too late, good, moderate and poor to interpret all the parameters. The result obtained from the MATLAB software was compared with the actual data based on TRUE or FALSE statement with accuracy rate is 87%. The result shows punctuality of the train arrival can be estimated by using fuzzy logic approach. Therefore, the model develop in this study has provided an advance method in estimating train punctuality.

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