Universiti Teknologi MARA

Optimization of Parking Capacities at Railway Station Using Firefly Algorithm

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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

In present years, many cities face way more challenges than before especially those related to the mobility of people and land usage. Parking management which links transportation and land use is one of the most challenging problems to encounter. Parking can be a nuisance when there is shortage of available of parking spaces, especially during peak hours. The main challenge is the scarcity and management of parking spaces. This is because of the unmet demand due to lack of parking spaces and ineffective use of available facilities. It is a common issue in overcrowding area where drivers need to face this crucial situation as the parking spaces provided are not enough to support the increasing number of the automobile on roads due to economic growth. KTMB Ipoh faced the same situation especially during peak hours where the parking area is always congested with drivers who drive in circles to find parking. The average time spent by drivers to find parking is estimated to be half an hour. Thus, this research is done to help the parking management team to improvise the efficiency of parking space provided to optimize the parking area. The purpose of this study is to maximize the number of parking. A firefly algorithm method is used to find the maximum number of the parking lot that can optimize the parking area. It is shown that with the current parking area, the number of parking can be increased by 48 lanes which can optimize the parking spaces to the fullest.

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