UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

FINDING THE SHORTEST ROUTE USING DIJKSTRA'S ALGORITHM WITH APPLICATION TO RIDE HAILING IN UiTM CAWANGAN NEGERI SEMBILAN KAMPUS SEREMBAN (P26M22)

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

Ride hailing is a good facility to the community. The use of ride hailing can help make people's lives easier. In fact, a ride hailing can save in terms of time to a place, money like car loan payments and fuel back and forth, and energy to drive a vehicle. In this case, the time measurement for the distance from the starting point to the end point should be considered in the use of the ride hailing. Networks need to be developed to achieve the goal of finding the shortest route with minimum time. Thus, a network of ride hailing will be created within a 10-kilometers radius of the study area. Therefore, to find the shortest route with minimum time, Dijkstra's Algorithm will be used. Apart from that, the Dijkstra's Algorithm used in this study will allow us to find the smallest weight path for all permanently labelled Nod once it has been run. The Dijkstra's Algorithm is expected to be able to complete the study for the shortest path with a minimum of time. In this study, data for the shortest routes with the amount of travel time were collected and obtained through Google Maps. Moreover, using the Dijkstra's Algorithm can minimize the time taken, which indirectly reduces the distance of the travel route for ride hailing. The Dijkstra's Algorithm will find the shortest route with the minimum time from the starting node to the end node, which is from one node to another node until it finds its solution. Other than that, the calculations to find the shortest route with minimum time was performed using Microsoft Excel. Finally, the results indicate that selected routes that have the least amount of travel time for ride hailing use have been achieved. Overall, the use of the Dijkstra's Algorithm has the potential to improve the efficiency of ride hailing in terms of time.