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Enhanced route searching and suggesting method for carpooling system

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Declaration

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Abstract

Carpooling is considered as a solution to address the current problems in travelling, in a context of high fuel cost, vehicular traffic congestion, which leads to air pollution, health hazard, vehicle parking problems and wasting of valuable time resulted in high opportunity cost. Carpooling is the process of utilizing a pool of passengers into matching vehicles, when there are freely available vacant seats in passenger vehicles, which could be made use of by needy passengers, minimizing the per head cost of travelling in a macroeconomic sense. The matching of drivers and passengers by maintaining a set of data, can be implemented by developing information and communication technology based applications. The drivers can post the availability of the vehicles and the number of vacant seats in their vehicles in this application and the passengers can search and contact the relevant drivers on a preferred route. By matching these needs of two parties through the proposed system, it is expected to address the above mentioned issues with a satisfactory contribution towards the optimization process of cost of travelling in a macroeconomic context. There are many carpooling systems in application in different countries and also many research and development works were done in this field to improve the quality of the carpooling systems. However, developing a system to assist the passengers as well as the drivers, searching a best and ideal route(s) to reach their destinations, with their preferred parameters is a complex and challenging task.

This research presents an improved searching method, which makes sure that the resulting routes are most suitable and identical routes, considering the route information entered by the passenger. This system will also generate and suggest alternative routes to the driver, after analyzing the lift request data entered by the passengers, for his consideration and then him to decide on the preferred route.

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