Team Members

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LUMS CAR POOL SYSTEM

We are interested in developing a car and cab pool system for LUMS, inspired by Joomla car pool based software. Such a system aims to provide a platform where car owners with space in their cars willing to offer a lift can facilitate those who need a ride, provided their routes are similar.

The system would employ a LUMS identity verification mechanism to ensure the safety of users. It would first prompt the user to declare his/her gender and whether he/she is a lift-taker or a lift-provider. Given this, it takes user departure and destination locations as well as the time of travel as input. If the user is a lift-provider, the application determines all possible routes to the destination via main junction locations across the city and displays these routes to the driver. The driver then picks the desired route to take, stored by the system that keeps track of all routes being entered by available lift-providers. If the user is a lift-taker, he/she is required to enter the route to take in order to provide him with a list of candidate lift-providers available.

To implement this, the general idea is to create a graph of nodes where each node represents the terminal junctions of the city and each edge represents the connection between the two locations. Tree traversal algorithms are used to find the paths that coincide between the lift-providers and lift-takers. An automated text message could be generated to send a lift-request and receive its confirmation between users. Some factors to be taken into account to provide this service include the number of seats available in the car or cab and timely updates to the database of lift-takers and lift-providers.

If implemented properly, such a system could prove to be invaluable as it would not only be a source of convenience for many but would also help save resources. There is also a lot of potential for optimization in such a system, which can be considered later once the framework has been established.