

# ONLINE CARPOOLING SERVICE

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# PROJECT OUTLINE

## DESCRIPTION

The aim of this project is to produce an online service that enables users to share journeys they are partaking in across the country. The scenarios users may be involved with that I intend to provide a service for are:

- If a user is planning to travel from location A to location B in his or her own vehicle and wishes to share the cost of the ride with another person wishing to make a similar journey.
- If a user does not have a mode of transport and needs to share a ride with another user offering a spare seat on a similar journey.

The main substance of the project is how the system will deal with sharing rides, and altering journeys depending on the driver and passenger needs. For example, if a User was driving from A to B and wished to share that journey to cut the cost, they would post that journey on the website, and a route would be calculated between the two locations by the system. Other users who had posted their intent to 'Hitch' a ride between locations A and B (or similar) will be prompted to request sharing that ride, at which point they driver and the hitcher would liaise about a possible deal. The hitcher however, could be located at location C, some way in between locations A and B and needs to reach location B. Depending on the driver's preferences as to how far out of their original route they are willing to go, the journey may be offered to the hitcher, where they and the driver would liaise as to exact details of the trip and would amend the route. Similarly, the hitcher at location C, may need to get to location D, also roughly along the original route of the driver. Again, the preferences of the driver would be taken into account by the system and possibly offer the spare seat(s) to the hitcher.

When users log into the site, they will be presented with a dashboard similar to that of the Facebook 'New Feed'. Journeys will be displayed on the dashboard that the system deems relevant to that user depending on their details and preferences. In addition to the suggested rides that the system will provide, there will be a search function for users attempting to find journeys. This function will be needed if a user is travelling to places outside of their preferences, which the system would not suggest otherwise.

## PROPOSED TASKS

Online mapping and routing APIs will need to be researched to carry out this project. The Google Maps API [1], Marble Maps API [2] and TomTom [3] are some of the APIs I will be looking at in order to gain a grasp of the routing applications I will be using.

Existing carpool-type sites offer similar services to the ones I am proposing, but do not offer the amount of re-routing decision features that are included in my project. A website called Carpooling.co.uk [4] allows users to add journeys, which other users search for separately to obtain a lift. Their search is restricted to exact matches to journeys i.e. Origin: Aberystwyth, Destination: Cardiff will only find journeys which begin in Aberystwyth and end in Cardiff. I am proposing that the manual search step is skipped; enabling the user to choose from journeys suggested by my service that they may want to be a part of. Additionally, I am proposing that partial waypoints for pickups and drop offs are incorporated into each journey depending on the preferences of each user, not simply point to point, but rather multiple points and passengers.

The system will be aimed at students in higher education in the UK. I will need to gather a list of all the higher education institutes in the UK for users to enter as their current university. The Higher Education Statistics Agency [5] will provide a list of these institutions.

## PROJECT DELIVERABLES

Server Side System – A server side system which deals with all of the data sent from the website, stores it on a server and performs calculations and predictions according to user's preferences. This includes route manipulation and calculation depending on driver and passenger preferences.

Website – The website will be the front end to the entire system. It will allow users to operate the service easily. Maps and routes will be embedded within the site for efficient usability. Each user will have access to their account management and a 'News Feed' like page. The News Feed page will prompt the user with suggested journeys, reminders of journeys and interactions with other users about journeys.

Final Working System – The website, working in tandem with the server side system enabling a streamlined application in which users are prompted with suggested articles and can manage their account

Documentation – Features list, Development plans.

Mid-Term Demo – A presentation of current features developed and features in development.

Final Report – Detailed report outlining the entire process of development, input and output of the system, testing and documentation.

## INITIAL ANNOTATED BIBLIOGRAPHY

1. *Google Maps JavaScript API v3*.  
<https://developers.google.com/maps/documentation/javascript/> (Accessed 05/02/2014)
2. *Marble KDE API Reference*. <http://api.kde.org/stable/kdeedu-apidocs/marble/html/> (Accessed 05/02/2014)
3. *TomTom API*. <http://developer.tomtom.com/> (Accessed 07/02/2014)
4. *Carpooling*. <http://www.carpooling.co.uk/> (Accessed 05/02/2014)
5. *Higher Education Statistics Agency*.  
[http://www.hesa.ac.uk/index.php?option=com\\_heicontacts&Itemid=87](http://www.hesa.ac.uk/index.php?option=com_heicontacts&Itemid=87) Higher Education Institution Contacts(Accessed 07/02/2014)