School of Computing  
CA326 Year 3 Project Proposal Form

**SECTION A**

**Project Title:** Student Carpooling

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**Staff Member Consulted:** Brian Stone

**Project Description (1-2 pages):**

1. **Description:**

Our project idea is an exclusive student carpooling android application. This application takes a twist on conventional ride sharing. It will be designed to help students with commuting to college.

The main function of this app is to aid the organisation of traveling via shared vehicles to various colleges, among students. Whilst using the app, the student must firstly establish themselves as either a driver or a passenger. When registering, in order to ensure student exclusivity, the user must provide their student ID card. We plan to utilise NFC to read the student card and the student must verify their college email address. This information will then be saved to our database. Through the implementation of google maps within the app, drivers can set their route in advance from their starting location to their college, along with their departure time and ideal arrival time. Those looking for lifts can search for drivers near their location or if they’re along a driver’s route, can send a request for a lift. The driver will have the option to accept or decline each request. If accepted, the location of the passenger will be made visible to the specific driver by showing a location pointer and the passenger will be able to locate the driver. In addition to this the app will allow both parties to access basic information on each other, informing them of who they will be traveling with. We hope to implement instant messaging within the app, among the users, so alternative arrangements can be made also.

The app will be focused for those who live in places where public transportation may be limited and associated transport costs may be substantially higher. The concept of lift sharing can make traveling more affordable for users, where payment to help in contributing to fuel costs is voluntary. In addition, this app will create a pathway for an easier way to make friends and can enhance the quality of the journey better for the driver. Our aim is to provide a method to offer a helping hand to fellow students and contribute to the college community. Encouraging carpooling has been demonstrated to have a positive environmental impact.

1. **Programming Language(s):**

* Java - We plan to build the application entirely on Java, as it’s the official language for android development and a language that we’re already familiar with also.
* XML - We’ll use XML in order to design the user interface of our app.
* SQL - It’ll be used into order to organised the database within our app, allowing us to write to or retrieve data.

1. **Programming tool(s):**

* Android Studio - official IDE for android development, it’ll be what we use to write, edit and compile our project using its provided tools.
* Android Emulator - this tool enables us to run and test our app on a virtual android device.
* Gitlab - for updating and maintaining our project files on our shared repository.
* SQL Database - We plan to implement a SQL database within our app in order to store and maintain the important information on each student driver and passenger.

1. **Learning Challenges:**

* Android App Development - We’re both completely new to android application development so it could be a challenge for us both to understand and learn thoroughly.
* Implementing the database within our app.
* Creating a NFC reader for student cards.
* Learn XML - in order to design the user interface layout and implement effective navigation.
* Git- to helps us manage our project files.
* How to implement efficient testing for our app.

1. **Hardware/software platform:**

* Android
* PC - MacOS X, Windows 10.

1. **Special hardware/software requirements:**

* Android device for testing.