# Group 1 project report

## TransportAI project overview

### Project objectives

TransportAI is a system that aims to replace conventional means of transport. TransportAI is an application developed for android phones allowing users to book a trip with an autonomous vehicle to get from point A to B. The user can pay for the trip within the app, allowing for a cash-free transaction. The accompanying TransportAI Administrator Web Panel allows TransportAI admins to track the location of the autonomous vehicles, using GPS. Administrators can manage, and see the status of the autonomous cars.

## Overview of implemented mobile app features

Users can register an email address to create an account with TransportAI. The email must be a valid address in order for the users to apply. The account details are securely stored on a Google Firebase used by the application.

The autonomous vehicles are equipped with an Arduino board which allows Administrators to track their locations from the Web Panel, using Google Maps. Users can book a trip with a vehicle via the Passenger app. In this prototype, the Arduino boards serve as the “autonomous car” – which is meant to drive towards the user. The passenger app tells the car what the quickest route is, using Google Maps. Once the user starts their trip, they can communicate with an administrator via the app; functions included are being able to select a destination, and a rating and payment system.

## Overview of implemented admin panel features

Administrators of the TransportAI company will be able to approve which vehicles can start working, and also be able to keep track of their status – in transit, off-duty, available. Administrators use a web client panel to approve or deny user’s requests for a trip based on the circumstances, and can view reviews left by previous users. The web panel will show an administrator the route a user is taking via Google Maps, and if problems arise a user can communicate with an admin who will be able to provide support on the spot.

## Difficulties, and possible enhancements

Some of the suggestions from the specification of the program were difficult; using Google Maps with Firebase required developers to provide their credit card details, and PayPal is no longer supported in developing smartphone applications.

Being able to read data and parse json objects from the Google Firebase was a difficult process.

Possible enhancements could be that the user can stop a trip during transit, if some were to happen. This could possibly be done via the application or a button in the autonomous vehicle.