# SchoolPool: A University Carpool App

**Problem:**

The rising costs of transportation have become a significant barrier for students seeking affordable and convenient means to commute to and from their educational institutions. Many students experience strain due to increasing fuel and parking costs, inconvenient transit routes, or the high costs of owning and maintaining a personal vehicle. In 2022, a petition was signed by over 1700 members of UVic as a response to the removal of annual parking passes with a monthly pass of $75 (Levy, 2022). The same article also mentioned that options are limited when finding sustainable ways to get to campus and that it is encouraged to look for alternatives. Moreover, Haughton (2023) stated gasoline prices are still fluctuating high, especially as we head into summer, where numbers could increase by 15-35 cents per liter in Victoria.

The lack of a robust carpooling system specifically designed for students often results in missed opportunities for cost-sharing and reduced carbon emissions, and it is the problem we aim to address with SchoolPool.

**Motivation:**

Our motivation stems from the need to address the transportation challenges faced by students and provide them with an affordable, sustainable, and efficient solution. By developing an app that connects students living nearby and facilitates carpooling to campus, we aim to provide students with a reliable and cost-effective means of transportation.

For example, SchoolPool can reduce the financial burden on students by sharing fuel and university parking costs among users. As mentioned in an article by Weston (2022) regarding the increasing university parking fees, it should be encouraged to look for transportation alternatives to promote sustainability not only on campus but also in the community.

This app not only aims to alleviate the financial burden on students, but also reduce traffic congestion and environmental impact by promoting carpooling. By giving students more options for sustainable transport, we strive to create a platform that increases accessibility to education and contributes to a greener future. Through our solution, we envision a seamless and convenient transportation system that streamlines the way students commute, creating a positive impact on their academic journeys and the wider community.

**Solution:**

Our solution is an app that connects students and generates an efficient route for these users to carpool to campus. SchoolPool is a university carpool initiative app that enables students from the University of Victoria direct, affordable, and convenient transportation from their homes to the university. In addition, SchoolPool allows verified university students with vehicles to offer their services to students who seek to carpool directly to campus.

Each user creates a profile with information such as their pickup location, preferred arrival and departure time from campus, and their availability to drive. The app's matching algorithm then provides a list of matches for both drivers and passengers to select from, and determines the most efficient route for pickup, travel to campus, and return to a dropoff location.
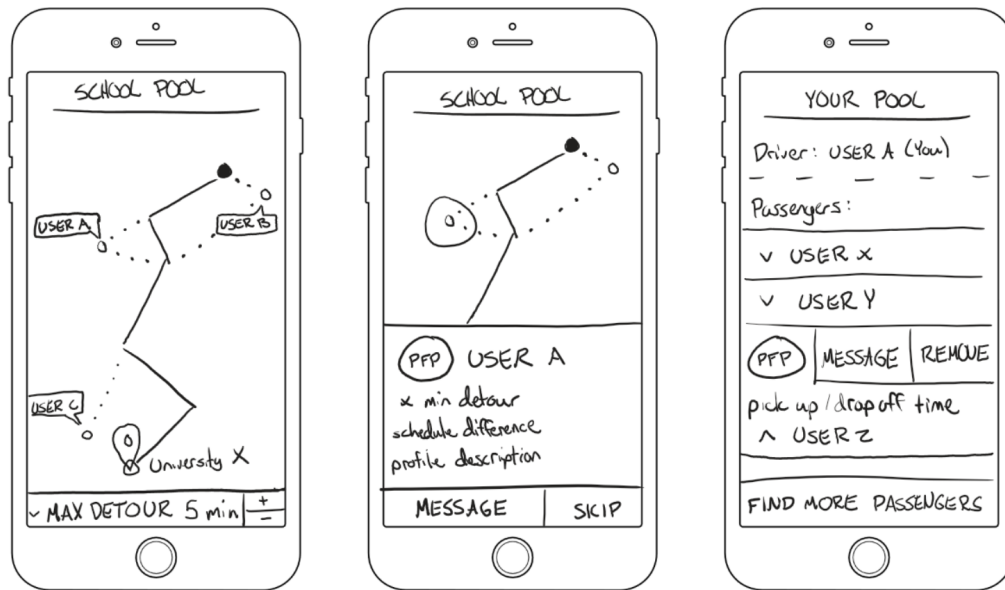
**Figure 1**: UI App Layout for iPhone

Fig. 1. (left) map interface for drivers; (center) passenger selection for drivers; (right) pool management for drivers
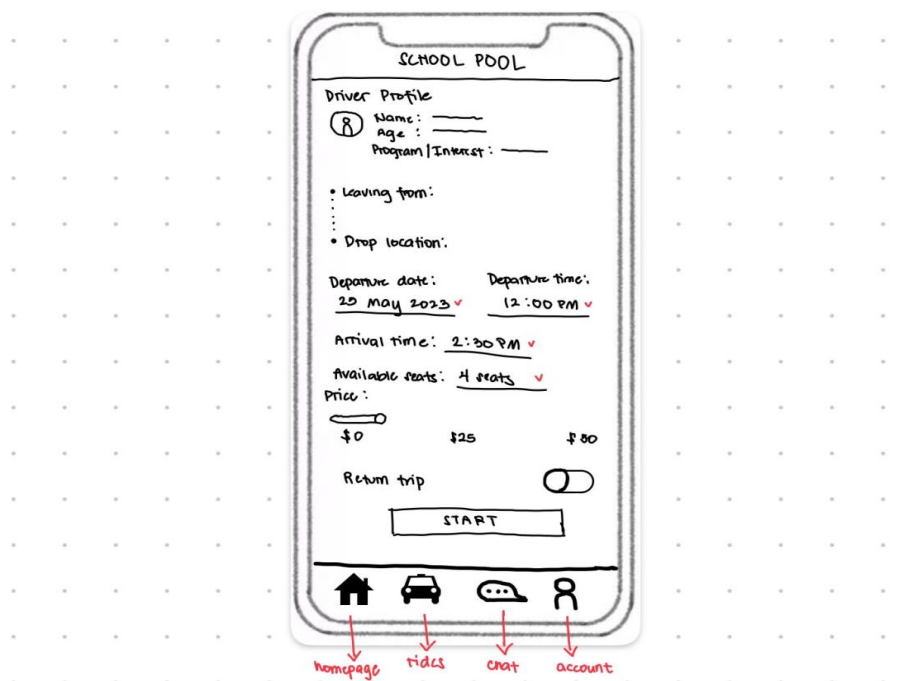


**Figure 2:** A sample interface of the driver's perspective before offering a ride

Fig. 2. Includes the driver's profile, start and drop off location, time and date of departure, arrival time, available seats, price range, and return trip option, all of which the driver provides before offering a ride. The details would then be launched for passengers to see and potentially match with.
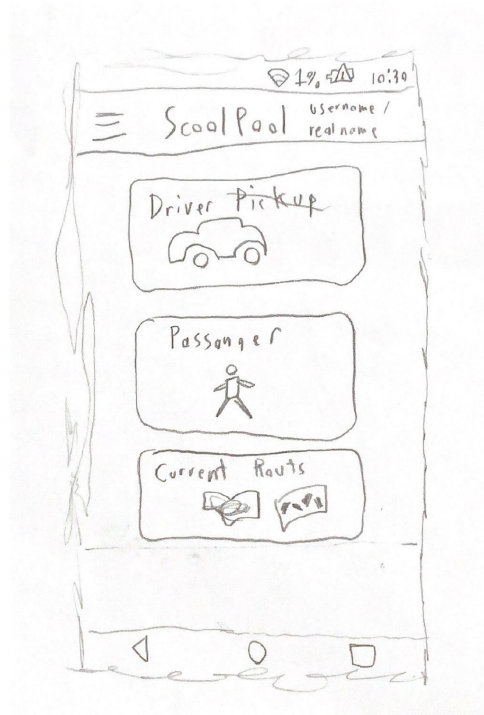


**Figure 3:** A potential home screen UI for Android Phones

Fig. 3. Shows a layout of a home screen which includes user information, and separate widgets for passengers and drivers. Current routes can be set which can later be edited as per needs.

**References**

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