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CSE 403
Project Proposal

Dawg Carpool

Vision

Carpooling has the advantage of rapidness of being able to drive in the HOV lanes, as well as lower parking/driving expenses. The latter is further noted on campus where carpool parking tends to be much cheaper compared to parking alone. Dawg Carpool, inspired by these benefits of carpooling, is a mobile application that allows college students to share or search for a ride with others.

The target customers are students, who could perform as two roles:
1. The ride sharers: The students who own vehicles and want to split the parking fee and fuel costs with peers on occasions. The app allows them to post the time, starting location, destination and additional comments (eg. Fuel cost).
2. The ride takers: The students looking for a ride, which could be fairly common for this user group. When they need a means of transportation that is faster than buses and cheaper than Uber/taxi, they can use this app to search for nearby fellow student drivers going to a desirable destination and communicate with them through the app.

Although there seems to be many alternatives in the market for rideshares, for example, Uber, there has never been an App that targets to students in the same university. The similarity of schedules and destinations of students makes it easier for them to share a ride. Also, the identity of students provides a reliable safety guarantee and trust among both the drivers and passengers.

Software Architecture

Mobile devices suffice the need for convenience and portability of this app. Therefore we chose to develop it on the Android platform which we think requires:
- Android SDK with Java and XML for the core modules and interface (Eclipse/IntelliJ)
  Implements the controller and view aspect of the applications. Enables visualizations of rides & locations information and interactions with users.
- SQLite on Android / MySQL on web server for the database
  Stores user information such as account name/password, search history, existing/previous postings

To achieve basic functionalities, the app needs:
- Device system resources such as GPS

- Integration with the Google Map API for maps and directions
- Server-side email client using SMTP or EWS for email services(confirmation, notifications, etc.)

Challenges and Risks

- There might be many challenges during developing process. One challenge is that we need to be familiar with Android programming environment in a short time. Since we have never created an Android application before, time consumption on learning could become a concern. Another challenge is to incorporate third party APIs (eg. Google Map API, Facebook API) into our application. Developers in the team will likely need to learn the API's and lifecycles of Android SDK and take time to get used to the tools and environment.
To mitigate this risk, we consider the strategy to limit our development of the app in a smaller and simpler scope initially and progressively advance to stronger implementations, to ensure that our framework stays stable and manageable.
- We think there are certain underlying risks for this application to be successful:
  - The willingness for the user to offer rides. Hence we chose to target students in the same college, since they tend to express greater willingness to communicate with and help each other.
  - The loyalty and activeness of users.
  - Possible safety concerns. This risk is notably weakened with our specific choice of target users.