CS446/646 1st Status Report: BUF - CarLoop

Team Info

Team Name: BUF Project Name: CarLoop Members: Lingyun Li, Yongqi An, Xin Jin, Zijin Li

1. Progress

While implementing our project, we have made these progress:

1) started learning developing Android applications and have built a project which can be found on GitHub: https://github.com/lzljzys/CarLoop.git
2) discussed and refined the functional details of each module
3) decided general UI/UX Style, as well as figured out specific elements on each layout
4) decided to build our app on Google Cloud Platform by creating restful services and making them access to our Android application.
5) completed designing of all database tables

We have also made a comparison between our current work and the original schedule:

UI/UX design	Jan 20 - 27	100%
Server selection	Jan 20 - 27	100%
Back-end development (server & database) Driver & Passenger profile module Carpool creation & demand & search module	Jan 25 - Feb 25	30%
Google Map module Carpool match algorithm Chat module back-end & front-end Carpool confirmation module During-trip navigation module Review module	Feb 25 - Mar 21	0%
Testing and QA Survey and improvement	Mar 21 - Mar 28	0%

2. Problems & Solutions

2.1 Learning Curve

The biggest problem for our team right now is that the majority of team members have no experience of Android development before. The lack of Android App architecture knowledge became a huge obstacle when we were trying to design the UI/UX and functions of our app. Also, dividing tasks to each team member became difficult as we are not aware of the implementation details of Android App. Although all of us are doing our best to learn Android development as fast as we can, the progress seems to be slower than we expected.

Solution: Instead of assigning each member with independent tasks, we divided the team into two pairs of two people with one person in charge of front-end development and the other person in charge of back-end development, and we assigned independent modules to each pair. As a result, each team member can focus on learning one side of the development process instead of learning both front and back-end development. We hope this can improve our learning curve.

2.2 Assigning & Switching Users' Identities

All users of CarLoop are passengers as default, but only those who provided their vehicle information can add driver to their identities. Since passengers and drivers have different functions within this app, assigning and switching users' identities are two major problems in our design.

Solution: When users are signing up, they can choose if they are going to use this app as both passenger and driver. If so, they will have an extra step in the signing up process which is providing their vehicle information. If users didn't choose to add the driver identity when signing up, they can become drivers by providing vehicle information in the app settings. For users who are both passenger and driver, the app will provide a switch button in the settings for them to switch identities. The app will have two sets of UI for driver and passenger functions, the switch button will change the UI accordingly so that users can access different functions.

2.3 Chat module

The purpose of chat module is to provide a platform where the driver who created a specific carpool and passengers who are interested in that carpool can discuss the detail of the trip conveniently. For example, when is the appropriate departure time that suits most passengers, whether the driver is able to pick up passengers along the way so that passengers do not need to walk to the departure location, what is the idea price for both passengers and the driver. We initially intend to build this platform using an online chat function, but this has two problems: 1. information that is discussed and confirmed is invisible to passengers who just joined the chat, however, these information can affect a passenger's decision greatly; 2. if we want to display the chat history for each newly joined passenger, the module will be difficult to implement.

Solution: We will try our best to achieve this goal using online chat function should we come up with a better solution and have time to implement it. Otherwise, we will implement this platform as a message board so that all the messages can be stored in the database and can be displayed to passengers.