Project Draft

Mobile Application Project

Draft: 03/04/15

Marymount Honor Pledge

I acknowledge that the Capstone Project is an independent study project to be completed individually. On my honor, I have not received aid on my Capstone Project other than what was provided by my faculty mentor and any persons explicitly cited in my work. I further acknowledge that if I have given any aid to another student in this course, the instructor of this course was made aware of my contributions.

Contents

Objective

The objective of this project is to create a simple and intuitive mobile IOS application that helps to find economical cheap rides from point A to point B. This project focuses on developing an application that can calculate the estimates costs of taking more traditional services such bus and taxi vs. personal cars services like Uber, Lyft, Side Car. This application will help users track the most efficient and cost effective way to get to their destination. This application will not require users to sign in or make an account. Since there is no login requirements, user to have more control over their personal information. It also makes finding a cheap ride a breeze. As a commuter, I'm constantly trying to find a cheap ride to my destination. Feedback from my faculty member suggests that this project can be completed. This mobile application will be extremely simple and easy to use. The user interface will present a dynamic yet easy to use display Mobile application testing is the process of finding all functional and performance issues before being shipped off.

This project is important because it helps users find an appropriate method of travel depending on their time and financial needs. This application will display the results on a tableview and then graph the comparisons. Using Google Maps API, the application will map out the user travel methods. Google Maps API allows for multiple functions including transit services, bus services, location markers, location highlighter and much more. This application is being developed using Xcode and Swift 2.0.

Client

This mobile application helps individuals find the most economical route. If the user wants to go from point A to point B the application should have display all possible options for the user to select from. This project serves a purpose because it compares travel options and displays the relevant information to the user including type of vehicle, price of travel, and time to destination. My starting assumptions for this project are that it involves using open source API's, consuming web services, and processing that data. I will measure how quick the information is delivered to the user, the accuracy of the information (standard prices and price surges), and the visual display of the content

Content Advisor

My faculty advisor Dr. Narock has a wide array of experiences in mobile development, web development, and data science. Dr. Narock has taught several classes which focused on Mobile Development for Android products and is familiar with the process of developing a mobile application. He has experience solving real world problems and has previously worked as a research scientist for NASA. Dr. Narock can help guide the project in the right direction.

Project Plan (including schedule)

In order to complete the research project in one semester all major tasks are to be completed within the allotted time. The main tasks that will be involved in completing this project and time allotted for the completion of the tasks are presented in table below

Table

Tasks	Dates
Topic Selection and approval	1/20-2/2
Literature review on topic	2/3-2/12
Project proposal writing	2/13-3/04
Research on the topic	3/04-3/30
Compiling information	3/31-4/6
Report writing(Draft & Final)	4/7-4/27
Project submission	4/29

Resources

Requirements	Development	Resources (Free, Personal, Still Need)
Mac (version OSX Yosemite <)	Development	Personal
Xcode 7	Development	Free
Swift 2.0	Development	Free
Iphone IOS 8 <	Development/Final release	Still Need
Developer account ($100)	Final release	Still Need
Apple approval (security standards)	Final release	Still Need

Risk

Risk can occur at any point of the development plan of the online graduation petition. Managing and minimizing the risks is critical to the overall success of the project.

· Unclear understanding of requirements: The project has a risk of failure if the requirements of the project are not understood. To mitigate risk, the team holds weekly meeting to discuss the requirements with the client and the development team. This will help keep the team on task and on schedule.

· Delaying of the schedule: A detailed breakdown of tasks along with time allocation was made and will be adhered to. Tasks will be reassigned before the project schedule slipped as necessary.

Project Details

This project has been broken down to the following components the Home Page View Controller, Trip Info View Controller, and the Map View Controller. In the Home View Controller you are presented with the Home Screen, which displays two search bars for the user to input the starting location and the destination. When the user taps on the search bars Google Auto Complete is enabled. Google Auto Complete displays location results from the users inputs. This feature is widely used within the mobile development field. Using Google API, the user can search from a wide array of locations when inputting the address markers. Once the user has completed searching for their locations they can press the "Estimate Fare" button, which navigates the user to the Trip Info View Controller. In the Trip Info View Controller there is a table view controller will currently displays the results for an Uber X, Uber XL, and Uber SUV. Currently, I have managed to connect Uber API and receive GET results from their services. The Map View Controller is still in development but should display a map with drop down pins from point A to point B. In order to display Lyft and Side Car results, the application must conform to

their protocols which are harder to translate. Currently, the project only shows Uber results for the route given. Uber API does not calculate fare if route is more than 100 miles.

Knowledge Being Applied

During the course of this project I have learned the programming language known as Swift. I have learned how to apply third party API's onto an existing IOS project. I have also learned how to conceptualize a concept into an idea and turn it into a live project. I have become experienced with the Xcode platform and now can create an intuitive user interface. Using Xcode , I learned the basics of storyboard design, view manipulation, controller display, and model structure which are the building blocks to writing readable code. The mobile application development course at Marymount helped me grasp the fundamentals of mobile development such as model, view, controller which defines the how content is delivered to the user. My internship building a mobile application for Marymount has also helped me become more comfortable using the Xcode platform and starting projects from scratch.

Work Performed By Others

A list of open source works performed by others. These are referenced in the references and documentation section.

Project	Author
https://github.com/uber/rides-ios-sdk	No author
https://github.com/manavgabhawala/UberSDK	Manav Gabhawala
https://github.com/ozetadev/skedaddle	Philip Bernstein

References/Documentation

1. Google Developers Documentation IOS Swift

This documentation focuses on how to connect existing Google API onto an existing IOS application. It references sample code, which can be automatically copied to an existing IOS project. This documentation also references other features that can be used such as creating custom markers, street view, plotlines, camera, indoor and much more. This reference is extremely useful because it shows how to integrate Google features onto an IOS project. This documentation is extremely detailed.

https://developers.google.com/maps/documentation/ios-sdk/

2. Uber Developers Documentation

This documentation references how to receive GET and send POST requests to and form Uber API. This documentation is unique because Uber API is built on a Python platform which means we need a translating system which want to grab data extremely detailed focuses on how to connect existing Uber API onto an existing IOS application. It references sample code, which can be automatically copied to an existing IOS project. This documentation also references other features that can be used such as creating custom markers, street view, plotlines, camera, indoor and much more. This reference is extremely useful because it shows how to integrate Google features onto an IOS project.

https://developer.uber.com/docs

3. Smart smartphone development: iOS versus android

In this journal article the author investigates the development between IOS and android.

It researches the development of both devices and how mobile applications can be developed. This article references the basic requirements of IOS platforms, versions, and development tools.

http://dl.acm.org/citation.cfm?id=1953330

4. The Swift Programming Language

Swift is a new programming language for iOS, OS X, watchOS, and tvOS apps that builds on the best of C and Objective-C. This documentation provides details on how the swift language can be generated, used, and implemented.

https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/

5. Uber Rides SDK Documentation

This is an Uber developed open source project and the corresponding documentation. The documentation references Uber ‘s Open Source Rides SDK, which can be implemented in any existing IOS application. This open source SDK project is a reference to how you can import a button which directs you to Uber allowing your existing project to respond to Uber’s API.

https://github.com/uber/rides-ios-sdk

6. Introducing Google's Mobile Development Platform

This article details Google’s Advancements in the mobile development platform. It gives references to new features accessible for mobile developers such as transit routers, taxi services, and map routes.

http://dl.acm.org/citation.cfm?id=1816808

7. Trends in Mobile Application Development

This scholar article describes the trends associated with mobile applications. It references how mobile applications are tailored to user needs not just a customer base but to each individual user. The use of mobile application has grown within the last 10 years and now user are expecting more. Developers are expected to produce new features that invite user to use their applications.

http://link.springer.com/chapter/10.1007/978-3-642-03569-2_6

8. Comparison of cross-platform mobile development tools

This journal article investigates the cross development tools used to make cross platform applications, which involves creating a mobile application for two devices.

9. Uber SDK Xcode

This open source project shows how Uber SDK can be integrated and used to retrieve information.

https://github.com/manavgabhawala/UberSDK

10. Open Source Project Skeddale

This open source project shows how auto complete can be used to search for locations the user inputs into the text fields.

https://github.com/ozetadev/skedaddle