CS300 – CSC13002 – Introduction to Software Engineering

Project Assignment 0 (PA0)

GROUP 12

I. INTRODUCTION

- VIVU is an essential app that acts as an intermediary platform, allowing you to easily search for and book cars from different car owners. You can also manage your reservations and track the location of your rental car. Whether you need a car for a business trip, a vacation, or a special occasion, VIVU can help you find the best car for your needs and budget.

- With VIVU, you can enjoy the following benefits:
  + Save time: You can check in and pick up your car quickly and easily without having to wait in line. You can also browse available vehicles, compare prices, and make a reservation from anywhere, at any time.
  + Save money: You can find the best deals on car rentals with no hidden fees. The price you see is the price you pay. You can also take advantage of discounts and promotions on car rentals.
  + Have more options: You can choose from a wide range of vehicles, from compact cars to luxury SUVs. You can also filter your search by car type, car model, car condition, and other criteria.
  + Have more convenience: You can access complete information about the car rental procedures and the car rental price in the most detail. You can also use features such as GPS navigation, online payment, and customer support to make your car rental experience more convenient and enjoyable.

II. TARGET USERS AND ENVIRONMENTS

Our VIVU app aims to serve 2 actors: car rental customers and car owners.

1. **Target users:**

   Car Rental Customers:

   - Characteristics: Individuals who are looking to rent cars for various purposes, such as travel, special occasions, or daily commuting.
   - Demographics: Our target customers include a wide range of age groups and backgrounds, including young professionals, tourists, and residents.
   - Needs and Objectives: Customers expect a user-friendly and reliable platform that allows them to easily browse available cars, compare prices, book rentals, and manage their reservations. They value convenience, affordability, and a seamless renting experience.

   Car Owners:

   - Characteristics: Individuals who own cars and are interested in generating income by renting out their vehicles.
   - Demographics: Our target car owners comprise private car owners, fleet operators, and rental agencies.
   - Needs and Objectives: Car owners seek a secure and efficient platform to list their vehicles, manage bookings, communicate with customers, and track rental activities. They value a streamlined process that maximizes their rental revenues while ensuring the safety and condition of their cars.

2. **Environments:**
   - Devices: Our mobile app will run on iOS and Android devices, supporting both smartphones and tablets, providing flexibility and convenience for users in accessing the app from their preferred devices.
   - Operating Systems: The app will be compatible with iOS (version X and above) and Android (version Y and above) to accommodate a wide range of users.
   - Internet Connectivity: Users will require an internet connection to access the app's features, browse available cars, make reservations, and communicate with car owners.
   - Geographical Coverage: Initially, our app will focus on serving users within a specific geographic region or city, with the potential to expand the coverage area based on demand and scale.

III. KEY FEATURES

1. **General features:**
    - *Sign up/ Log in: Allow users to create an account and log in to use the app.
    - Account authentication: Confirm user's information, ensure confidentiality and protection of users' data.
    - *View history: Allow users to view previous rental history.
    - Rate: After using the car, customers can rate the service. Also, the owners can rate customers.
    - Coupon: Vouchers that give customers a discount when booking if they satisfy the requirements.
    - Chat: Allow customers to communicate with owners regarding issues during the process of renting the car.
    - Locating: Using Google Maps to show the current location of the car.
    - Create user profile: After users have given their information, some will be displayed for others to view. Owners' profile will be seen by users and vice versa.

2. **Car Rental Customer’s exclusive features:**
    - *Book car: Allow customers to choose which car to rent right away or in advance.
    - Payment: Customers can choose which method to pay, either by cash or contactless payment like Momo, etc.
    - *Cancel order: Customers can choose to cancel orders if they change their mind after booking or no longer need to rent.
    - *View cars' information: Before deciding which car to rent, customers can see cars' information like which manufacturer, how many people can use it at once, etc. that are uploaded by the owners.

3. **Car Owner’s exclusive features:**
    - *Add cars' information: Allow owners to add cars' information for customers to know more detailed information about that car.
    - *Delete cars' information: Help owners delete unnecessary information about that car.
    - *Edit cars' information: Allow owners to edit incorrect information about that car.

Note: Features marked with * at the beginning are the main features.

IV. TOOLS SETUP

- Notion: we use Notion to manage the processes of our team project, the meeting notes, and the tasks of each member. Link
- Drive: we use Drive to store team members' opinions on projects, and report on our team's project progress reports. Link
- GitHub: we use Drive to manage and store our team's source code. Link
- Figma: Use the page design and basic functions of the app to get an overview to help us write programs and test more easily. Link
- Android Studio: allows us to test our application on a variety of devices and Android API levels without needing to have each physical device.
- Visual Studio Code: Visual Studio Code (VS Code) is a free and open-source code editor developed by Microsoft, used to execute VIVU applications.
- MySQL: used to store and manage user data for the VIVU app. used to create and manage a database system that can be used to retrieve data to handle requests of the VIVU app.

V. PROGRAMMING LANGUAGES

- Dart: Dart is used to develop web applications with Flutter, a web and mobile application development framework. Flutter uses Dart to create apps with responsive and high-performance user interfaces (UI). Dart can be compiled into native code for both platforms, helping Dart applications run quickly and efficiently.
- Python: uses the Flask framework to create a connection API, a communication port between the front-end and back-end and is used to store user information from the app to the database.