Ghaslah: Car wash application

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Abstract:

It is known in Oman and many countries that technological devices and artificial intelligence have become a part of daily life. People use them to complete daily tasks and communicate among themselves, as well as facilitating some tasks that require time and effort. Therefore, there are many phone applications that have been developed to serve people, and they were created and developed by Omanis. These applications facilitate the promotion of the tourism, economic, and commercial sectors. Some of them support tourism by showing tourist places and introducing them to tourists, and some show important events in the Sultanate. Which tourists love to go to and supports the economy through the financial returns that result from this trade through these applications. In this project, we proposed creating a mobile application titled Ghaslah. It is an application concerned with car washes. It supports the customer and the owners of car wash companies. It enables the customer to choose the appropriate car wash company and choose the best services that the customer needs. It also supports segments of society, including women, the elderly, and people with special needs in particular. It supports car wash companies by displaying the services provided by the companies at the lowest costs in terms of advertising and other things, enabling companies to provide their services such as reservations and home services. This application will enhance the economic aspect in Oman and the owners of car wash companies and satisfy the customers with services that suit their needs.

Keywords : Artificial Intelligence , Application , Car Wash , Technology , Oman.

Problem Statement:

The industry and trade sectors are two of the essential aspects of economic prosperity in the Sultanate of Oman. It plays an essential role in this. It is one of the most important things that citizens are looking for, and that supports and enhances this sector from a technological

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standpoint, as everyone is moving towards the electronic side and looking for a source of comfort. Reduce time and effort. On the other hand, there is a significant increase in the number of vehicles "Increasing the number of vehicles makes a great business opportunity for car wash services [10] . Also, climate changes, including rain and dust carried by the wind, which cause these vehicles to become dirty. as everyone knows. The climate of the Sultanate of Oman is hot in most seasons, but for coastal areas, humidity is the prevailing thing and affects the dirtiness of cars because humidity forms a layer of water on the surfaces of cars, which leads to their dirtiness. Also, dust and dirt are among the factors that lead to car dirtiness because they are in the air. With dust, it creates a lot of dirt and damages cars. According to [9] , "For most of the year, this region has high air temperatures and large amounts of dust in the atmosphere, for the majority of the year, Oman's coastal regions are distinguished by high relative humidity". The application will serve the tourism aspect, as tourists who want to wash their cars will be able to find a nearby car wash company that meets their needs. Investments that serve this aspect are in the industrial and commercial sectors. Ghaslah application will provide its services to those interested in car washing companies. The customer can search for the car wash company he wants or show the nearest to his home and place of residence, with information about each of them, the value, its types, services, and other things provided. Car washing companies can also determine the extent of customer satisfaction with the services. They also have high flexibility in booking washing appointments. There will also be another aspect where we expect the presence of companies interested in washing cars and their tools so that these companies can deliver their services to customers in their places of residence. The application will serve the tourism aspect, as tourists who want to wash their cars will be able to find a nearby car wash company that meets their needs.

LITERATURES REVIEW:

Domestic android app is an application created by Sheetal Bandekar Department of Master of Computer Applications KLS' Gogte institute of Technology Udyambag, Belagavi – Karnataka. It provides a different home service for the client. According to [2] , ""Domestic Android Application for Home Services" is a mobile application designed for Android users that connects users and service providers to meet the needs of a customer looking to offer domestic home services online. "[2]. This application has a similar feature that our application which is the home service, but the difference is our application focuses on car washing service only. Domestic application provides multiple home services.

According to [3], "Car Bath is the network for car servicing. This program allows users to schedule a time for auto maintenance. It boosts efficiency and decreases the need for human labor. The mobile automotive bath service's straightforward idea is to take advantage of homeowners' idle parking time when they leave their autos to put off other activities like studying, working, shopping, or diversion. This application frees up human labor and time. Customers can schedule the services anywhere, at any time. " [3]. This application is different from our application. The Car Bath application focuses only on their own service, but our application provides information about different car washing places so that the user will

decide what is suitable for him. In the other hand, Ghaslah application and Car Bath application focus on the same objective which is provide a quality service and saving human time.

According to [4]," The ability to schedule appointments online for the car wash center is the primary driving force for the development of this project. To properly set up an appointment, the user only needs to choose a few options and enter some information. It saves a great deal of time because the user does not have to go to the car wash center or phone to confirm an appointment" [4] . Their project provides one service, which is setting an appointment for a car wash, which the customer chooses and provides the information he needs without having to go to the car wash site. Compared to our application Ghaslah, the service of booking car wash appointments is one of the services provided by our application and many other services that give our application a new and different character from the aforementioned project. Among these services, learn about the services available at each car wash, their prices, working hours, and the home washing services of the car washes that provide this service.

"The goal of this research is how to create an application for booking a car wash in terms of the strategies mentioned in this research that help in creating the application. The report also presents the methodology for developing the application. The research provides with use case diagram that help to understand how it is to e application can run between the customer and the admin. Also, it includes the user interface for login, home page, booking, history page, profile page and admin" [1]. The difference between the research and our project is that the research only depends on booking the request in one car wash only and does not use location identification. As for our project, it shows users all the available car washes in relation to their geographical location. Also, any car wash can be reserved compared to the search because it only uses one car wash, and our project also shows the rating and information for the car wash. Such as phone number and car wash rating.

METHODS AND METHODOLOGY:

Our application starts with searching for information about programming and application development. To gain more experience in applications and how to develop applications, we start to determine the best tools for developing apps that can be compatible with both Android and iOS. Flutter is the best app we found after searching, and we used the Dart language to develop the application. After determining the development software for our application, we searched for database software that we could easily manage and control, and we found Firebase. Firebase is one of the famous cloud databases that can manage the database of the application easily. It is also a real-time database, so if any bug in the application can be found at the same time as the problem, it helps us to fix the bug's issues in the application quickly.

IMPLEMENTATION:

We will provide some diagrams.

Entity Relation Diagram:

ERD, it shows the relations between each entity in the application. It has different relations which are: (One-to-many), (one-to-one).
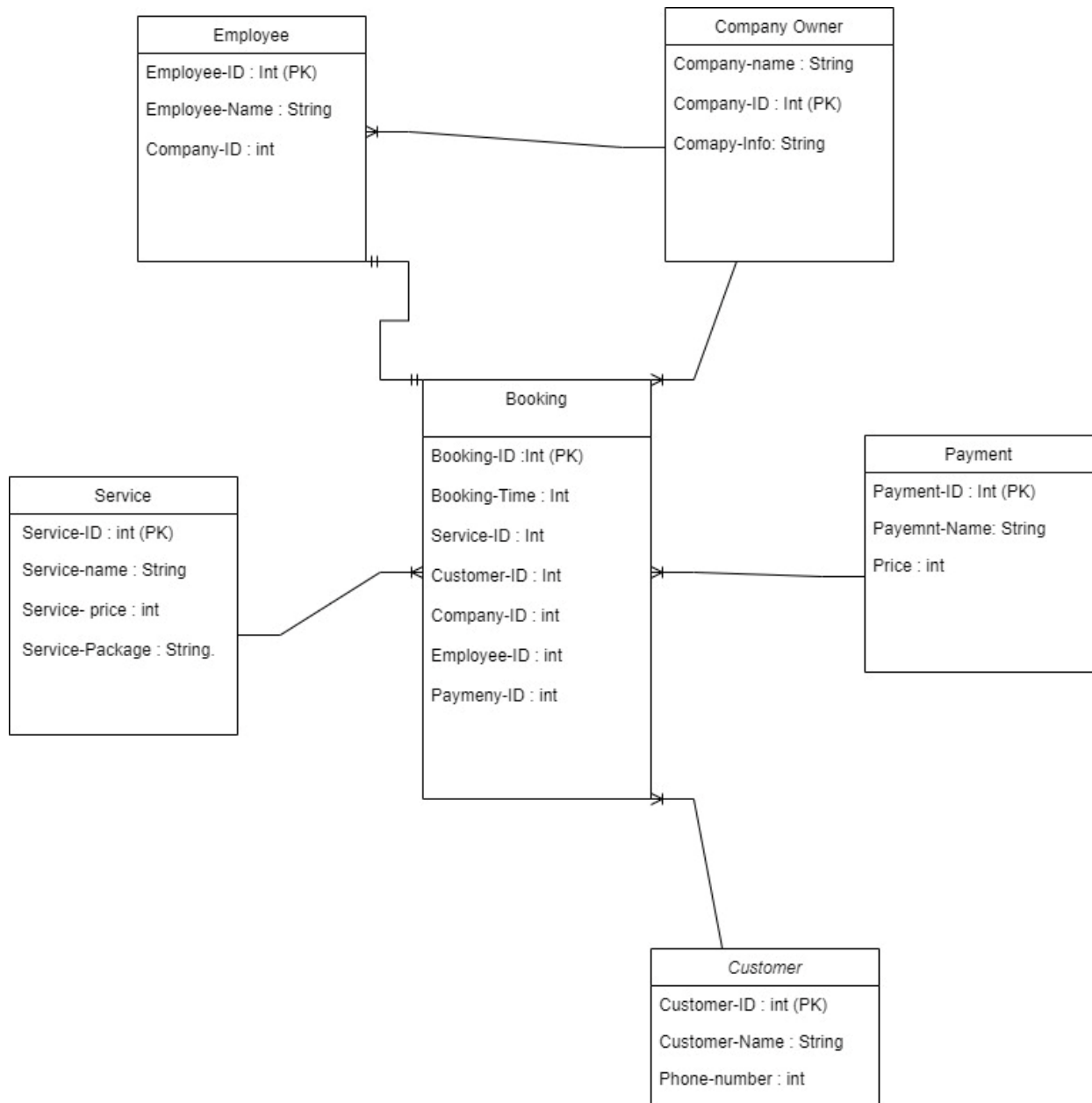

Figure 3.2.1 ERD Diagram

Use-case diagram:

Figure 3.3.1 shows the Customer can log into the Ghaslah application system using two main methods. Customers can register or log in to the system. The customer can then choose the type of service he wants and choose car wash companies and choose services and prices. they can know the status of the car wash company (closed/open). Give high feedback on the car wash of your choice.
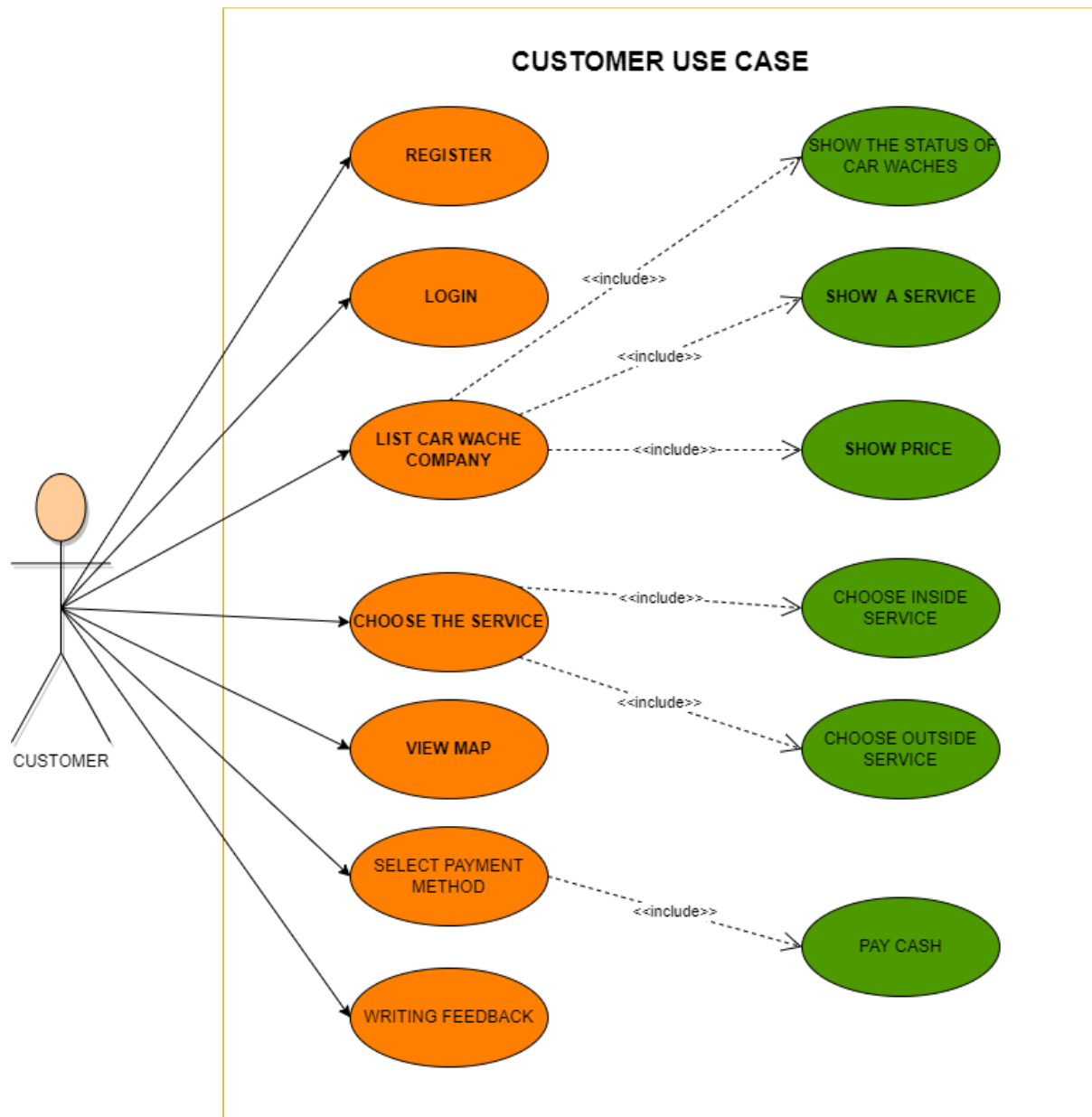
Figure 3.3.1 customer Use case Diagram

Sequence Diagram:

Figure 3.5.2 The diagram shows the interaction between company owners and the Ghaslah Company application. The company owner logs into the application immediately. Otherwise, they must request to register with a new password and username to be able login and use the services in the application. It displays the user interface that serves companies and enables them to provide their services to users, including adding advertisement, adding and deleting services, changing the companies' profile, and see and reply to customer feedback.
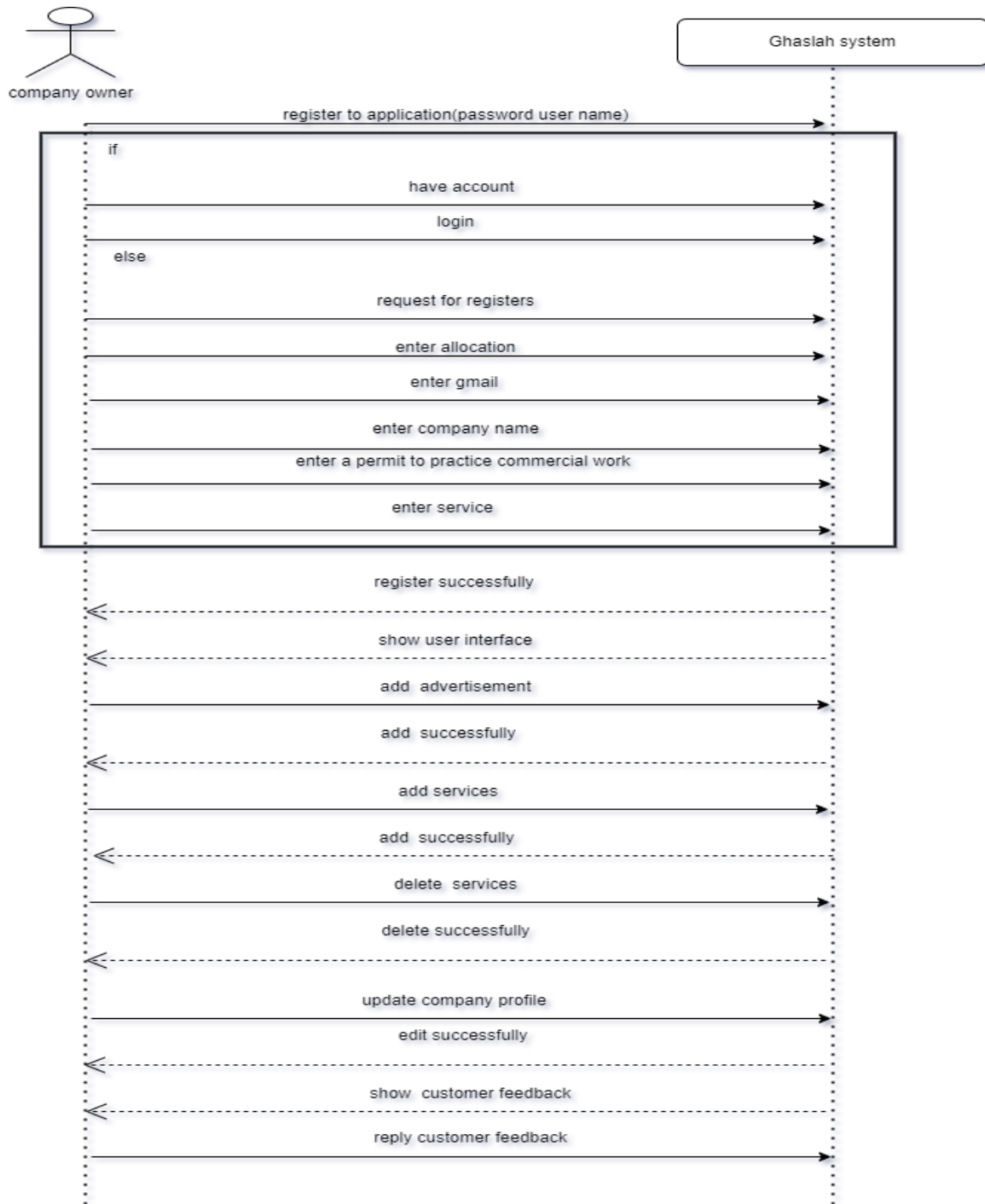
Figure 3.5.2 Sequence Diagram (Company and Ghaslah system)

Activity Diagram:

A set of actions are displayed and described in the application using an activity diagram. The diagram shows the interaction between the user, the administrator, car wash companies and Ghaslah. The following diagram shows the interaction between the user and Ghaslah. The user can log in immediately if he has previously registered. Otherwise, he must register in Ghaslah. To be able to use the services in the application, such as choosing the type of service (book/home), adding a comment, view the map, and show company car wash and the services they provide. That shows in Figure 3.6.1
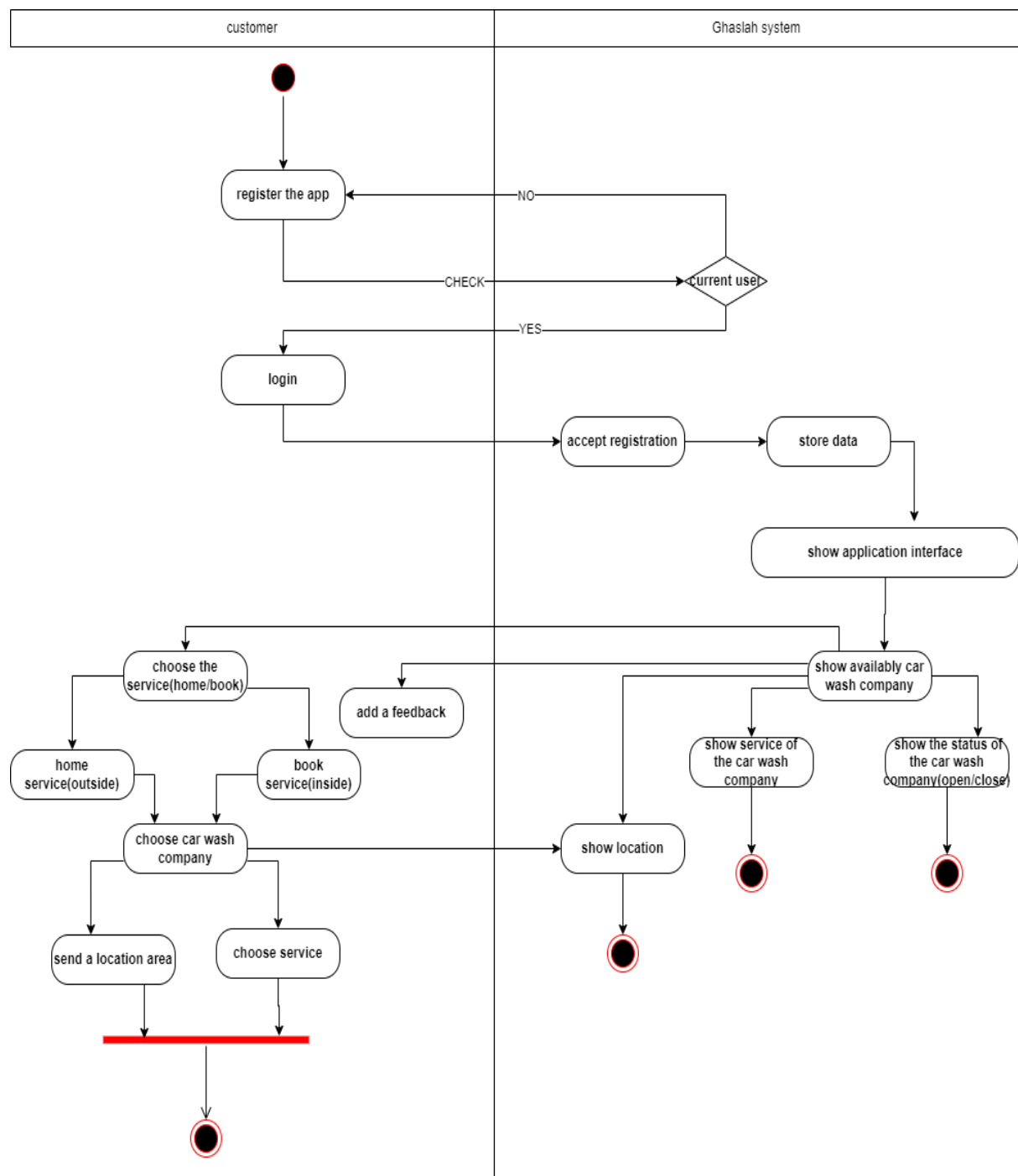
Figure 3.6.1 Activity Diagram (customer and ghaslah)

Data Flow Diagram:

This DFD shows how the admin interacts with the system by giving the system the services and the system offering the services. Also, it shows how the user interacts with the system by giving the information and the system gives the services to the user. The diagram also shows how the car wash manager interacts with the system, the manager sends the information about his car washes and the system gives the services. (Figure 3.7.1)
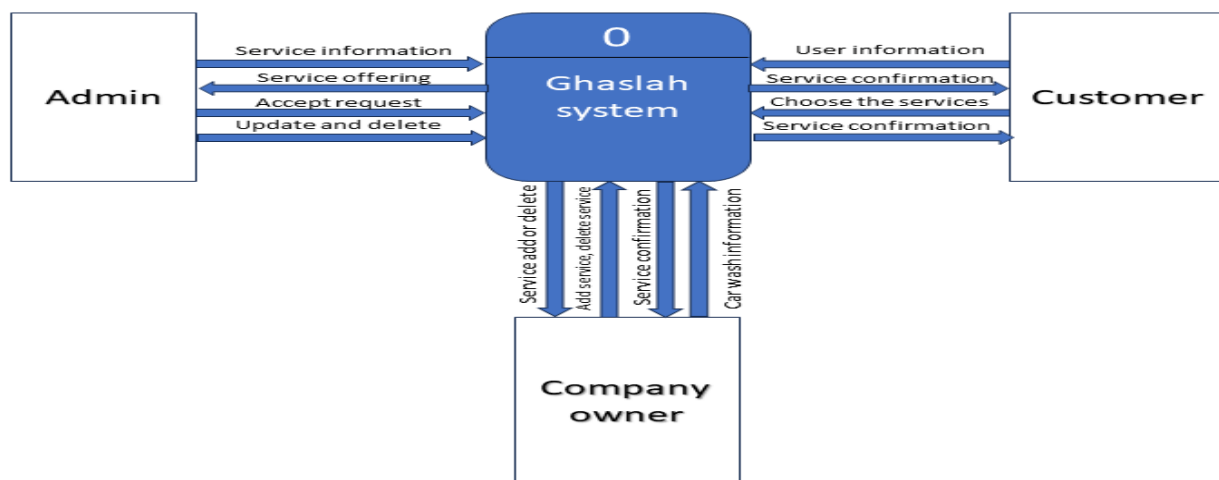

Figure 3.7.1 Admin data flow.

Prototype Design:

Figure 3.8.1 Login and registration.

Figure 3.8.1 shows the login and registration page. The login page contains the email and password. For registration page it contains the name of the user, email, and the address to identify the car wash companies that are near to their home.

Figure 3.8.2 Registration company and location.

Figure 3.8.2 is for the manager of the car wash companies to register his car wash in the app, and it contains the name of car wash, email of the manager, password for account, and the address of the car wash to shows in the map to the users. Figure 3.8.2 is for the users to choose their location and then they can see what the car is washes available and near to them.
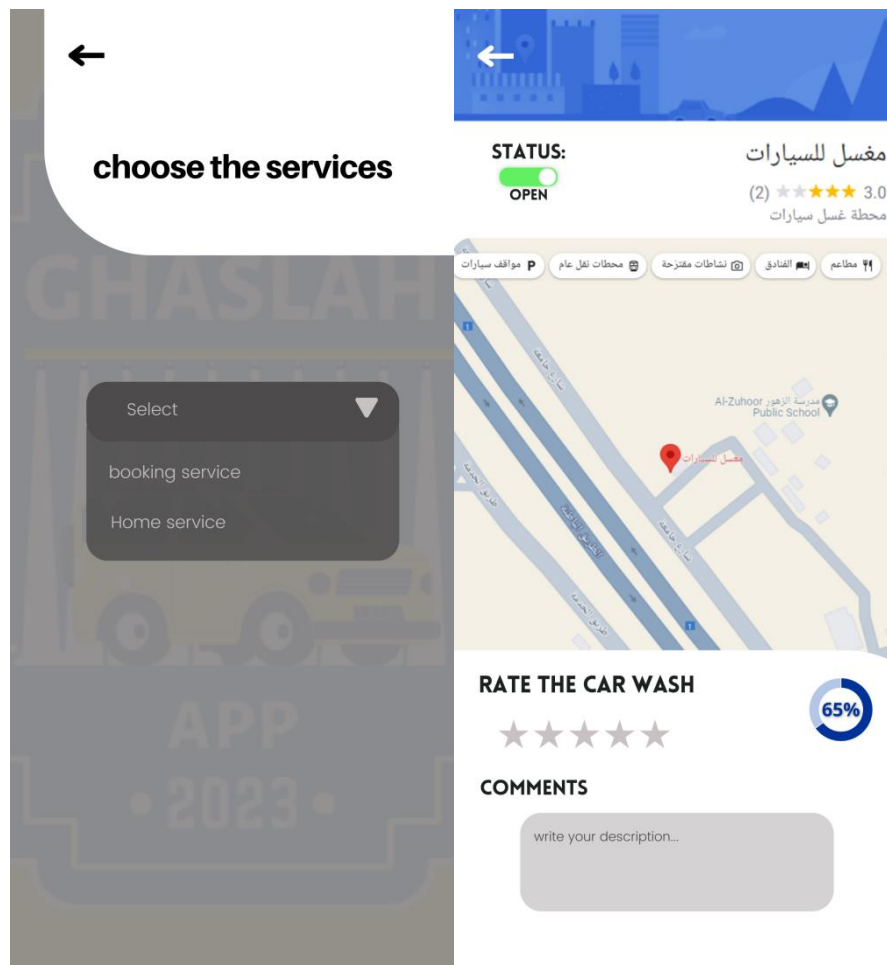
Figure 3.8.3 Service and status.

Figure 3.8.3 shows the services that the application can do. The user selects the services. Picture 6 enables the user to see the car washing company in detail and the status of it. Also, the user can see the rate of the car washes that people rate it before and they can rate the company and write any comments regarding their experience.

CONCLUSION:

In conclusion, The Ghaslah application is a new and practical idea in the field of car washing. It serves the customer and the car wash companies in Oman. It allows the customer to choose their best services for washing his car, including reservation services and home washing services. It is considered an effective platform for owners of car wash companies to attract customers in a quick and easy way. Without many costs such as advertisements and others, the Ghaslah application seeks to be an effective and useful experience in increasing the economy of Oman, and serves different segments of society, including women, the elderly, and people with special needs.

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