Software Requirements Specification

For

Mobi_Garage

Version 1.1

Prepared by

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Contents

Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1.1	1. Mooli Brian 2. Yiga Gilbert 3. Kayanja Emmy William 4. Kyagulanyi Deo 5. Kibirango Kennan	Information about the revision. This table does not need to be filled in whenever a document is touched, only when the version is being upgraded.	01/02/2022

1 Introduction

The MobiGarage project is a mobile application that is aimed at linking drivers to Oriental Motors garage in order to get attention and be worked upon. This document consists of the parties involved in the system and how they interact to solve the intended problem.

1.1 Document Purpose

This document is intended to give a clear description of the MobiGarage project, the users involved and how it helps to solve the existing challenge in everyday life. It also consists of how the system has been structured to provide a friendly and workable environment to the users.
The interfaces, responses and guidelines on how the users should interact with the system have also been included in this document. The details of the users involved in the system have also been captured to enable proper linking up with the intended users.
All in all, this document is collectively intended to direct all users, readers and all those who may be interested in taking on this project to understand what exactly this project is, what problem it solves and how it solves the problem.

1.2 Product Scope

This project is aimed at helping stranded drivers to receive mechanical attention on time. It also helps to reduce on waste of time that is caused by delays in case there is mechanical break down along the way most especially during transit.

It is also possible that the mechanics can be contacted to attend to the drivers at the places where they have been stranded other than towing the damaged vehicle to the garage. This helps to reduce on further damages on the vehicles in the process of transportation.
The main objective of this project is to ensure that drivers are not exploited innocently in case they do not know the prices of spare parts and have access to better and timely mechanical services.

1.3 Intended Audience and Document Overview

This document is intended for the drivers, the mechanics and manager or garage owner of Oriental Motors Garage, the entire public and all concerned members of the community who are interested in modernising the transport and mechanical maintenance system. The ministry of works and transport can also take on this to ensure smooth running of ministry activities especially in checking for the mechanical conditions of the vehicles in the transport system.

1.4 Definitions, Acronyms and Abbreviations

FAQ: Frequently Asked Questions.

1.5 Document Conventions

This document has been written in Arial font size 12 for all its contents unlike the headings that have been written in Arial, font size 14 and bold. This has been done so for proper visibility and easier reading in order to avoid eyestrain and make reading easier. Comments have been italicised, document content is single spaced and 1 inch margined.

1.6 References and Acknowledgments

This document depicts the existence of the MobiGarage project, its aims and objectives together with its functionality and how it is capable to solve the existing problem faced by most road users especially motorists and drivers.
Great appreciation goes to all team members of **Group 11** who have diligently worked together to ensure we attain this success. In addition to that, we appreciate our supervisors Professor Engineer Bainomugisha who doubles as our Head of Department Computer Science and Mr. Paddy Junior Asiimwe who gave us the guidance on how to manoeuvre through all this. Our facilitator Mr. Denish Azamuke also played a significant role in training us how to deal with flutter as a tool of Mobile Application development.
Some references to writing this document were got through the link below;
URL http://www.ieee.org/documents/ieeecitationref.pdf

2 Overall Description

2.1 Product Perspective

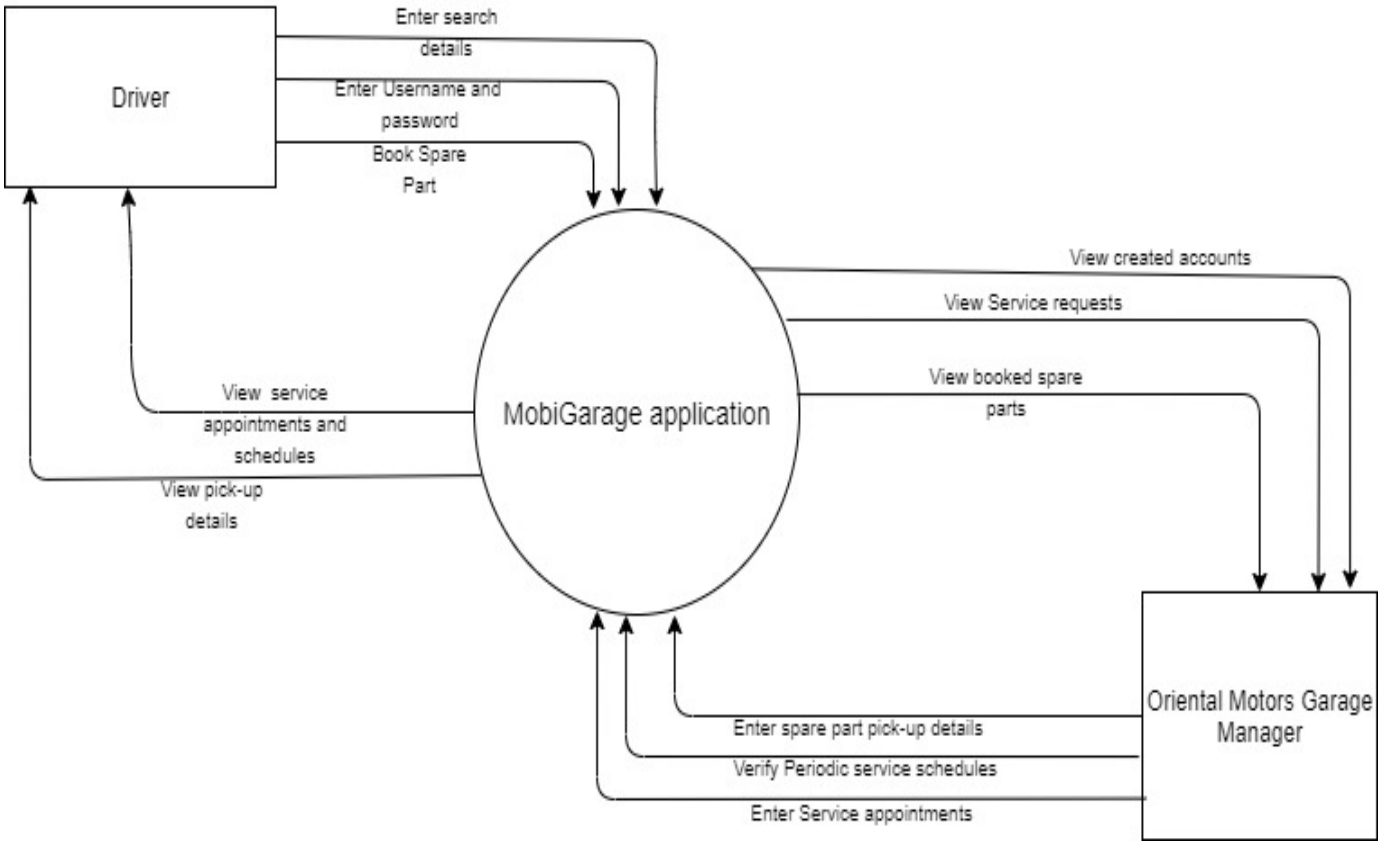
The MobiGarage project provides a safe and efficient transport network system and environment by ensuring that the transport means being used are fit and suitable to be on the road. This is achieved through acquiring the best mechanical services on time before, during and after transit. Vehicles during transportation can be checked, repaired and serviced to avoid accidents and delays in case of breakdown and failure.
The MobiGarage project was invented by a group of five computer science students of Makerere University who belonged to Group 11 during their End of Year one Recess term.
This idea was got after a constant survey that was carried out in various parts of the country through phone calls, inquiries from people of different parts of the country and consultations made from most drivers and mechanics in some places of Kampala. This created a strong ground for the team to think about how best they could handle the identified problem and address the challenges involved. The team thereafter visited Oriental Motors Garage in Wandegeya and interacted with some of the mechanics, which helped them narrow down their project scope.

~~2.2~~ Product Functionality

The MobiGarage project major functionalities are to;

- Enable drivers easily locate and contact Oriental Motors garage most especially in times of emergencies.
- Enable drivers book for car services
- Enable drivers order for spare parts
- Give drivers access to mechanical advice through FAQs

Data flow diagram



2.3 Users and Characteristics

Driver:
The driver must have basic knowledge about how to use the internet, make requests, complaints, rate the services rendered. The driver should also have some knowledge on how to use electronic components like smartphones and laptops.

Garage Manager:
The garage manager should have some basic knowledge about how to connect to the internet and how to use electronic components like smartphones and laptops. This is because the manager needs to keep updating information about the garage to the external customers by uploading things like new specialists, spare parts, and change in the administrative board, among others.

The drivers and garage managers are paramount in this application because they are the linking users with direct interaction and determine how the application works.

2.4 Operating Environment

This system functions in an environment that is connected to the internet so that all users can get into the system and have interactions. There is also need for google maps application on the device used so that drivers are able to locate the garage and reach there easily. It also works best with literates who know how to use the internet, read, interpret, write and respond to any forms of communication made by any other users within the system. This system also requires devices like smartphones, iPads, iPhones or computers to fully operate.

2.5 Design and Implementation Constraints

Design
The design of this application was entirely based on flutter paradigm using dart programming language in designing interfaces, pages, buttons and adding all the necessities for better functionality of the application to suit the desired needs of the users.
Constraints:

- Hardware limitations: This is entirely an android application, which functions only on android devices so, not all users without android devices will be able to use this application.
- Interfaces to other applications: This application interacts with other android applications like the phone app.
- Security considerations: The application uses email and passwords to secure users' accounts.
- Design conventions or programming standards: The garage management and board is responsible for funding and facilitating the operations of the application and its maintenance.
- Internet Connection: This application can only be used when the devices connected to the internet.

2.6 User Documentation

The drivers and other users of this application need to have knowledge about the internet, how to use ICT electronic gadgets like tablets, laptops, smartphones, etc to effectively use this application.

2.7 Assumptions and Dependencies

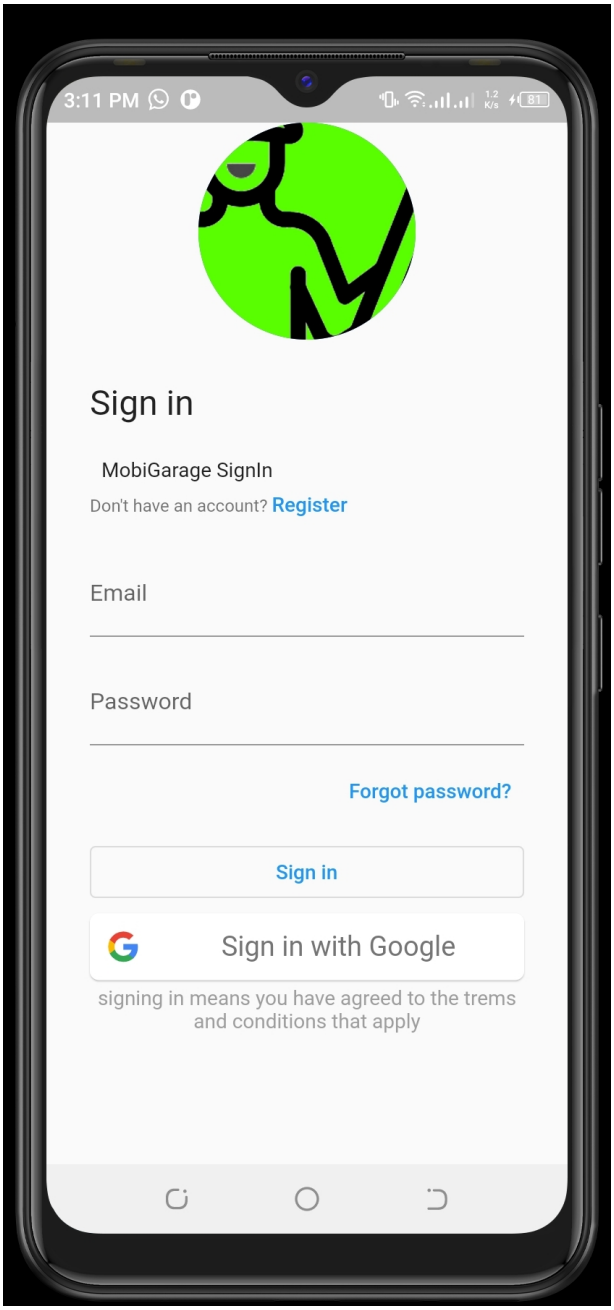
- Every user of this application has access to internet connection.
- Every user is literate, ie can read and write.
- Every user of this application has a smartphone.

3 Specific Requirements

3.1 External Interface Requirements

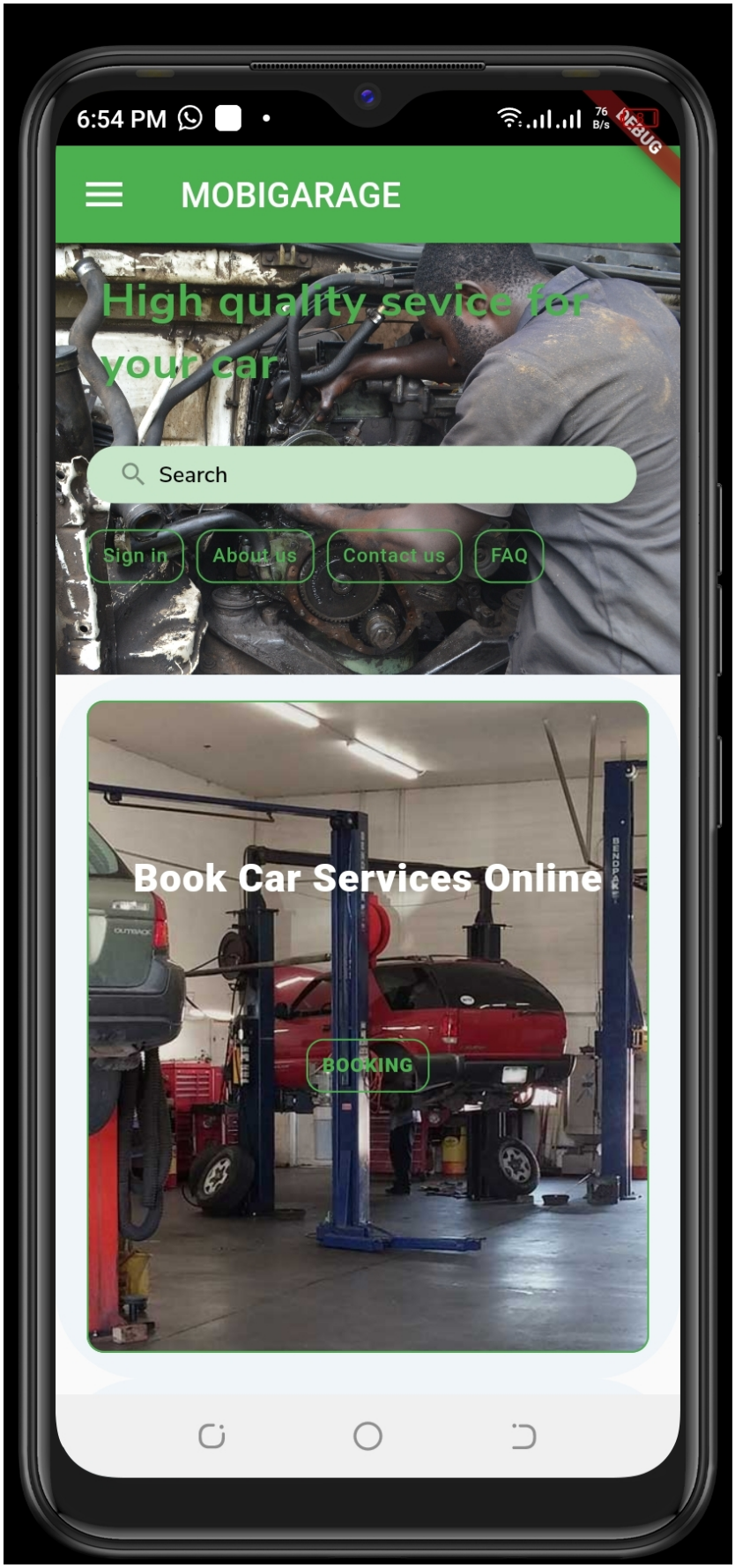
3.1.1 User Interfaces

The login interface.
This consists of page that has a provision to enter the email and password, asks whether the user forgot the password for password reset or whether the user has no account.
Users without accounts are also eligible to use the application butt can sign in in order to further sent to the sign in page where they are to first create accounts to access the services through this application.



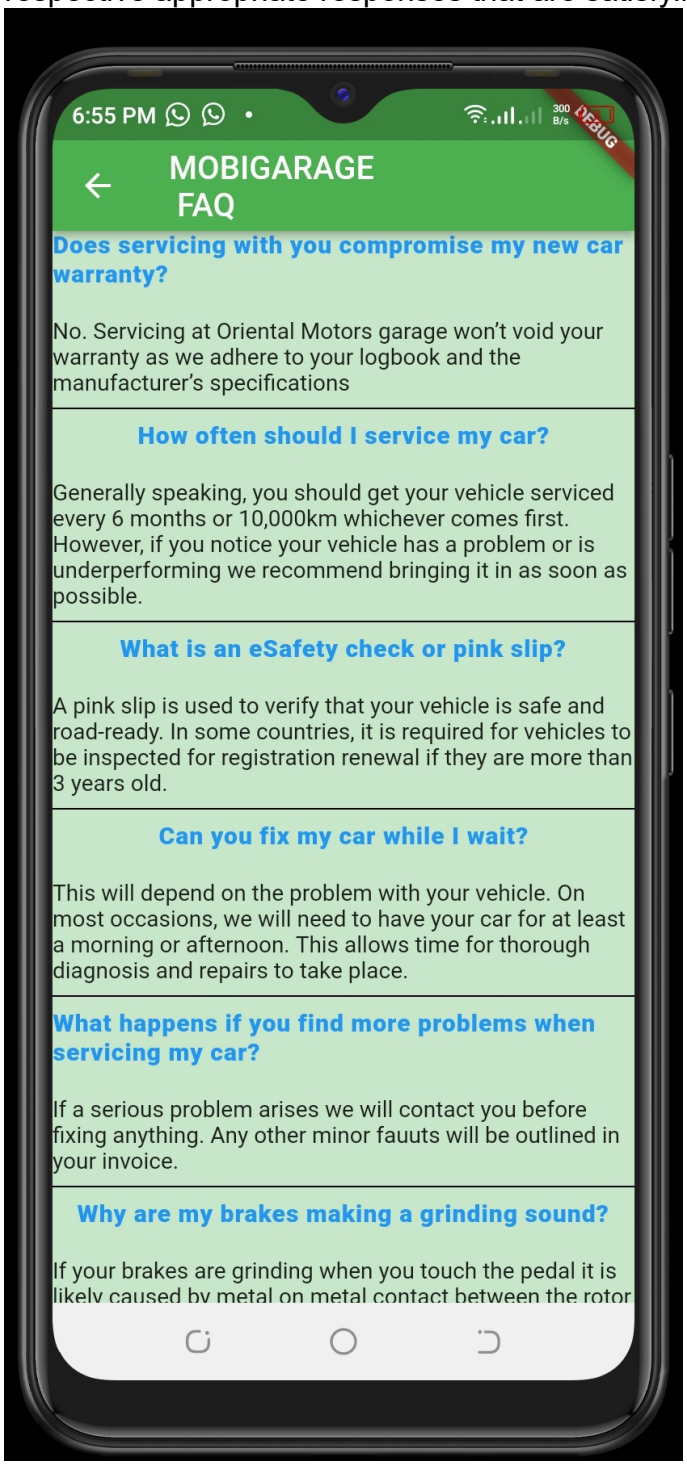
The homepage interface

This consists of a page having the search button, displays the spare parts in stock, the about us button that contains information about the garage and the contact us button which consists of all the contact lines to the garage and how the garage management can be reached and the FAQ button.


6:54 PM
76 B/s
DEBUG
MOBIGARAGE
High quality sevice for your car
Search
Sign in
About us
Contact us
FAQ
Book Car Services Online
BOOKING

The FAQ interface

This contains some of the commonly asked questions by the drivers with their respective appropriate responses that are satisfying to the drivers.



3.1.2 Hardware Interfaces

Hardware interfaces such as Ethernet cabals, USB cabals, etc are used to connect between devices in the system. The hardware devices to be used include the system unit, desktop and laptop computers, mouse, external drives, smartphones, iPads, iPhones, tablets, etc.

3.1.3 Software Interfaces

This application was developed using the flutter/dart language in designing the interfaces and all that effects the intentions of the application in running the garage activities and linking to the drivers.
The application is linked to the database that was developed using MySQL language. Information stored the database can be accessed and be used by the application in running activities for example information stored about the mechanics and their specialisations, mechanical advice given to drivers, garage future prospects, etc.

3.1.4 Communications Interfaces

This application can freely be installed on other devices like android phones, iPads, iPhones laptops, desktops, etc. It can easily be shared using serial ports like USB, can be shared via social media like WhatsApp, downloaded and installed, can also be sent from one device to the other using blue tooth wireless network.

3.2 Functional Requirements

The application will allow the users to log into the system and access the available services.

3.2.1 Drivers

Drivers will be able to get into the system and;

- Check for the services offered at the garage
- View spare parts available
- View the types of vehicles handled,
- Read the mechanical advice given by the garage management.
- Make orders of services required
- Give comments about their satisfaction of the services received.
- Raise complaints about the mechanics and the inconveniences encountered during their access of the services.

3.2.2 Garage Manager

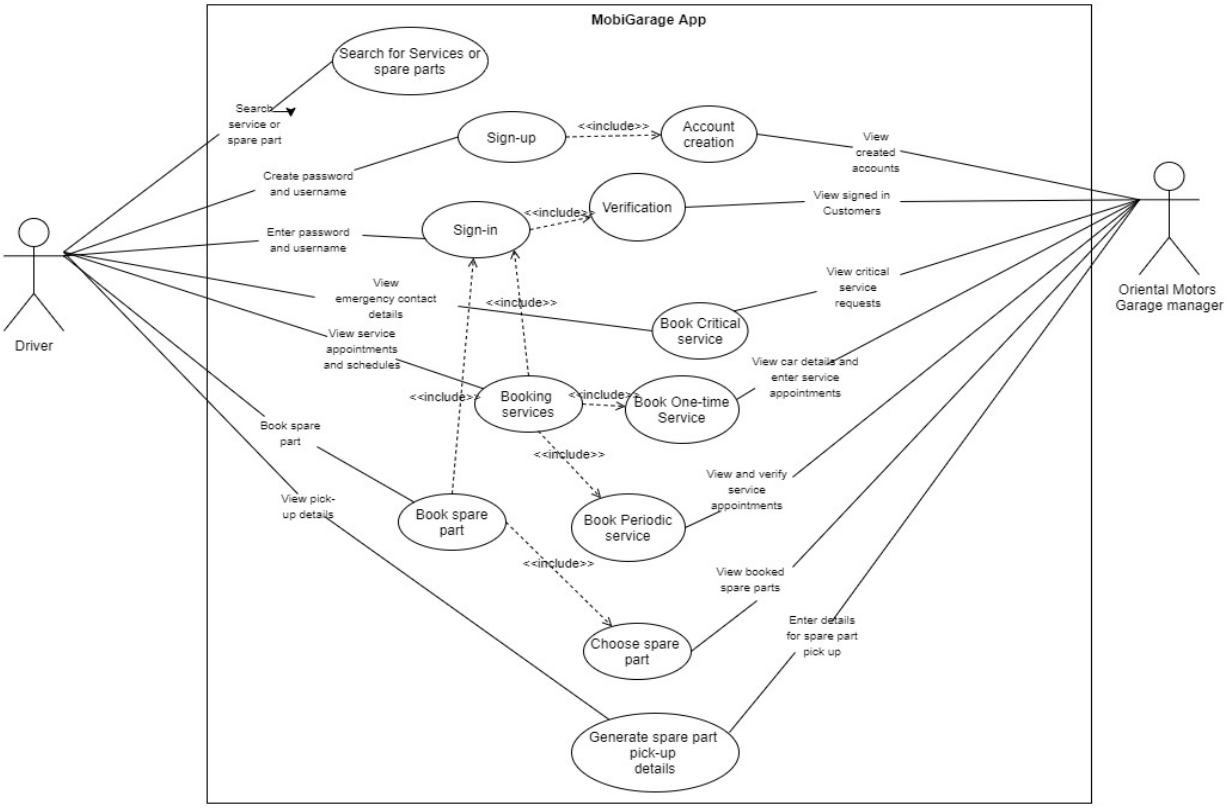
The Garage Manager is able to;

- View the orders made by drivers and allocate particular mechanics to handle the tasks,
- View the complaints made by the drivers and give appropriate responses
- Add information about the mechanical advice given to the drivers also
- Update the system in case of any changes for example change of mechanics, more spare parts added in stock, new vehicle types to work on, etc

3.3 Behaviour Requirements

3.3.1 Use Case View

The use case diagram consists of two actors, the drivers and Oriental Motors Garage manager.



4 Other Non-functional Requirements

4.1 Performance Requirements

- Every order made that needs movement of the mechanics to the scene should include transportation facilitation.
- All cars that are to be towed to the garage will incur more costs of breakdown.
- All mechanical parts that need replacement shall be purchased from the garage spare parts shop.
- All vehicles that take 24hours at the garage without response of the owner will pay for parking fee for the next days.
- All mechanical attention and services shall be offered on agreement of the amount to be paid for the service.
- There are no direct payments made to our staff members for work allocated by the manager. All payments are to be made to the garage cashier and a receipt for payment is issued upon payment.
- Any damages made in the process of repair will be at the cost of the individually assigned mechanic.
- Any damages made during transportation of the damaged vehicle to the garage will be at the cost of the garage management.

4.2 Safety and Security Requirements

Quality Assurance: This application is suitable and reliable to provide the intended services in assisting drivers to access the necessary services on time.
Quality Control: The Garage management has put in place all the necessary requirements needed to run and maintain the services offered that the application fully functionally supports and implements.

Configuration tool: All change requests, change proposals made by the intended users shall be put into consideration, discussed, and necessary changes will be made. Responses will be given to the proposals and requests that prove to be irrelevant as far as the functionality of this application is concerned.

- All drivers who make orders must present their identity by presenting their national IDs and valid driving permits to avoid conmen who can easily land the garage into trouble and uncalled for expenses.
- Mechanics who are assigned to go to the field to attend to drivers must also have identity and proof of assignment by the garage manager to avoid cases of impersonation, which may result into theft.

TODO:

- *Provide at least 3 different safety requirements based on your interview with the client or, on your research, and again you need to be creative here.*
- *Describe briefly what level of security is expected from this product by your client and provide a bulleted (or numbered) list of the major security requirements.>*

4.3 Software Quality Attributes

Adaptability.
This application is easily adaptable i.e. drivers can easily switch to the new online system from the other initial old system of physically looking for the garage to attain services.
Availability.
The application is readily available and can easily be installed on the device and be easily used as long as there is internet connection.
Correctness.
The application focusses on handling the intended problem as regards to the functionality requirements. There are no errors made in the establishment of this application but if any errors are cited, then rectification will be done immediately. In addition, the application conforms to the intended social standards therefore friendly and easy to use by all intended users.
Flexibility.
The application is flexible enough and can adjust with the substantial changes made to enhance functionality of the system.
Interoperability
The application is currently not able to connect to other applications and exchange information but this stands as our plan to connect to other applications like WhatsApp and Facebook to ease communication and information flow.
Maintainability.
In case of any failure, the application can be easily maintained to avoid delays in handling business programs. There are less maintenance costs required and less time needed to rectify the likely to be problems. There are more adjustments to be made in the application to allow drivers make payments via mobile money and banks.
Portability

The application is readily portable since it can be installed on the electronic gadgets like the smartphones, laptops, iPhones, iPad, tablets, etc. This makes it easily at any time and in any place since it is available on the devices that are portably carried by the intended users.

Reliability

The application is trustworthy and will constantly and consistently serve the intended users to the maximum of their expectation.

Reusability

Existing assets such as smartphones, garage tools, etc can still be used to continue using the application to run the daily activities. There is n need to buy new components to run the system since it is just an advance in how the operations have been running.

Robustness

Currently, the strength of this application is fit enough to handle the intended activities.

Testability

The application has been tested and its functionality is satisfying and therefore able to handle the intended activities.

Usability

The application is easy to use since it has user friendly, easier and communicating interface that favours users to freely interact with the system.

5 Other Requirements

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Appendix B - Group Log

<Please include here all the minutes from your group meetings and meetings with users, your group activities, and any other relevant information that will assist the Course Facilitator to determine the effort put forth to produce this document>