Software Requirements Specification Template

Software Engineering

Acknowledgements:
Sections of this document are based upon the IEEE Guide to Software Requirements Specification (ANSI/IEEE Std. 830-1984). The SRS templates of Dr. Orest Pilskalns (WSU, Vancover) and Jack Hagemeister (WSU, Pullman) have also be used as guides in developing this template for the Foundation of Software Engineering Summer Course.

Ride-hailing app

Software Requirements Specification

1.0

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1.1 Purpose

The SRS written to describe what the Awslak application does.

1.2 Scope

Awslak offers many benefits and objectives, including:
1-The application cares about the customer's satisfaction, safety and safe ride to her destination safely.
2-The application is interested in the speed of response to customer requests and can be used without the Internet by making a call to the customer service number.
Awslak application will provide many services, the most important of which are:
a-The possibility of choosing the car according to the customer's desire.
b-The possibility of choosing the driver according to the customer's desire.
c-The application provides online payment service and cash payment.

2. General Description

Awslak is a Saudi smartphone app targeting women. The application is easy to use and flexible, and it also provides convenient and safe ride services. Passengers review descriptions of nearby drivers and their vehicles. The passenger can locate the driver of his choice on his way to him using GPS. The passenger can choose the car he wants to ride, and the application also provides an online payment service in addition to cash payment. The application includes ride service within Makkah only.

2.1 Product Perspective

Awsalak database system stores the following information.

•driver description:

It includes the driver name, phone number, address, car details.

• Customer description:

It includes customer name, phone number, address.

• Reservation description:

It includes customer details, driver details, car details of travel.

2.2 Product Functions

- Identify and display nearby drivers using GPS.
- Allow passengers to select their preferred driver and vehicle.
- Enable real-time tracking of the selected driver's location using GPS.
- Facilitate communication between drivers and passengers within the application.
- Process secure payment transactions.
- Allow users to rate and provide feedback on their ride experience.
- Provide a ride service limited to the Makkah area.
- Ensure driver verification and monitoring for passenger safety.

2.3 User Characteristics

Drivers:
- Ability to see the customer’s location and the location he wants to reach
-Communicating with customers
-Managing ride requests (the ability to reject or accept the request)
-The counter and the required amount
- View customer reviews of the service
Client:
- Ability to see the list of available drivers
- Ability to choose from the list of available cars and see their characteristics
- Ability to cancel the order
- Choose the appropriate payment method
- Possibility of evaluating the service

2.4 General Constraints

- Legal and regulatory compliance: The system requires the licenses from the drivers.

- Age Restriction: The system requires the user’s age is at least 18 years old to create an account in the Awsalak application.

- Share account: Account sharing is not allowed. You must have your account registered and activated. Do not allow anyone else to use your account, and do not share your personal information used in your account with anyone else.

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3. Specific Requirements

This will be the largest and most important section of the SRS. The customer requirements will be embodied within Section 2, but this section will give the D-requirements that are used to guide the project's software design, implementation, and testing.

Each requirement in this section should be:

- *Correct*
- *Traceable (both forward and backward to prior/future artifacts)*
- *Unambiguous*
- *Verifiable (i.e., testable)*
- *Prioritized (with respect to importance and/or stability)*
- *Complete*
- *Consistent*
- *Uniquely identifiable (usually via numbering like 3.4.5.6)*

Attention should be paid to the carefuly organize the requirements presented in this section so that they may easily accessed and understood. Furthermore, this SRS is not the software design document, therefore one should avoid the tendency to over-constrain (and therefore design) the software project within this SRS.

3.1 External Interface Requirements

3.1.1 User Interfaces

Figure 1

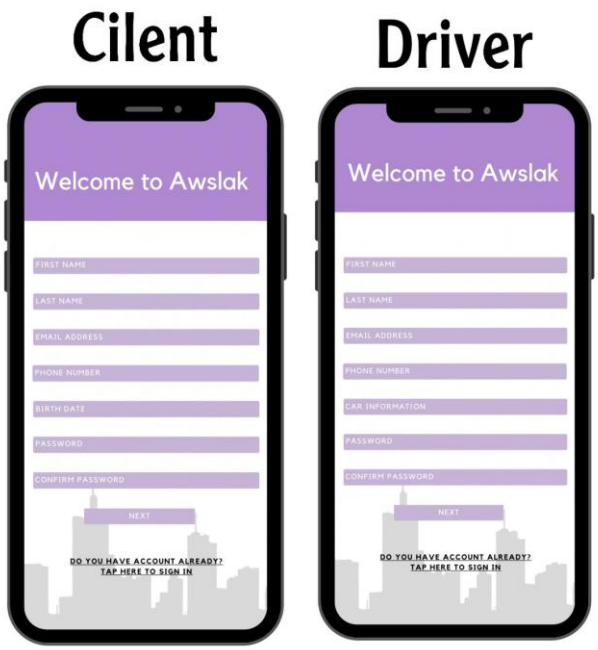

Figure 2 Sign up

Figure 3 Sign in

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Figure 4 Identify location

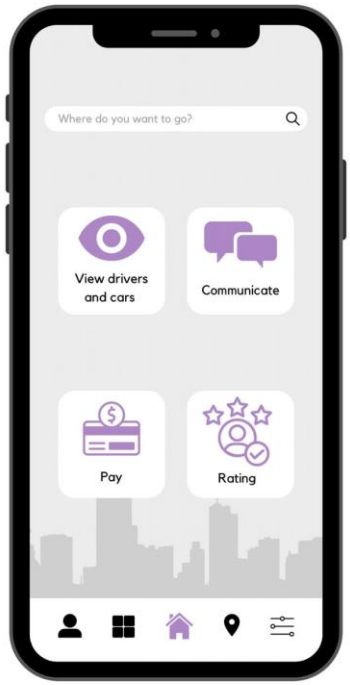

Figure 5 General Functional

Figure 6 View drivers and cars

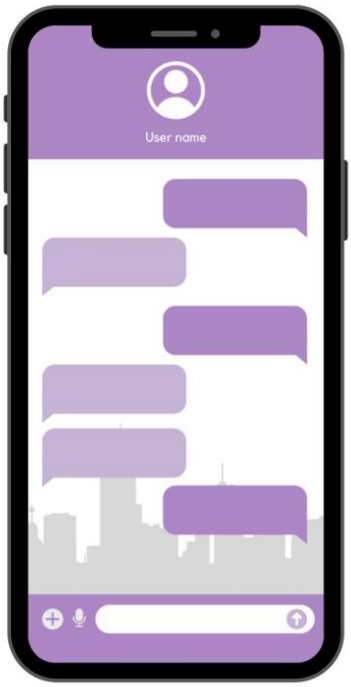

Figure 7 Communicate

Figure 8 Pay

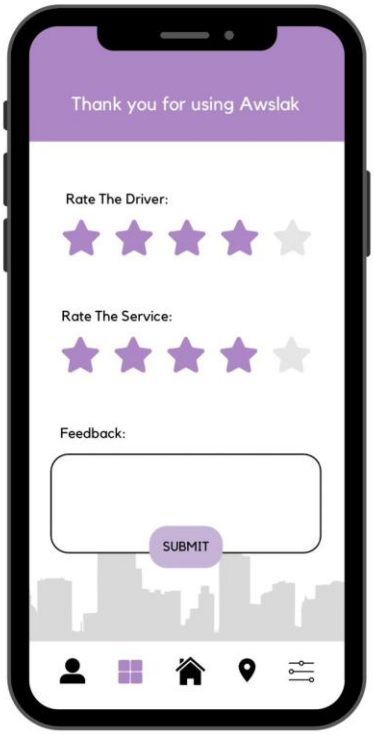

Figure 9 Rating

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3.1.2 Hardware Interfaces

This application works on Android and IOS.

3.1.3 Software Interfaces

Operations systems: Android and IOS.
Integration: GPS – Database.

3.1.4 Communications Interfaces

The system will use the WIFI.

3.2 Functional Requirements

3.2.1 <Sign up>

Introduction: In this system, users are presented with the choice of registering as a "Driver" or a "Customer," each with its own set of specific details required for registration. Users must provide accurate and validated information to create their accounts.

Rationale: User registration is a fundamental feature of the system, and the success of the product depends on the successful onboarding of both drivers and customers.

Inputs:

- For Drivers: Name, Phone Number, Car Information, Email Address, Password (entered twice).
- For Customers: Name, Phone Number, Birthday Date, Email Address, Password (entered twice).

Description:
The system shall allow the user to choose whether he is a driver or a customer.

For the driver :
- The system shall be able to allow the driver to enter her name.
- The system shall be able to allow the driver to enter her number.
- The system shall be able to allow the driver to enter her car information.
- The system shall be able to allow the driver to enter her email address.
- The system shall be able to allow the driver to enter her password two times.

For the customer :
- The system shall be able to allow the customer to enter her name.
- The system shall be able to allow the customer to enter her number.
- The system shall be able to allow the customer to enter her birthday date.
- The system shall be able to allow the customer to enter her email address.
- The system shall be able to allow the customer to enter her password two times.

Outputs:

- Confirmation Message: The system provides a confirmation message to the New User, informing them that their registration was successful.

- User Account: A user account is created and registered in the system, allowing the user to log in and use the system's services.

3.2.2 <Sign in>

Introduction: The "Sign in" functionality is a fundamental aspect of the system that allows registered users to access their accounts by providing their registered email and password.

Rationale: The success of the product is intrinsically tied to the ability of registered users to access their accounts securely.

Inputs:

- Registered email: The email address associated with the user's account.
- Password: The password linked to the user's account.

Description:

- The system shall be able to let the user to enter the registered email and password.
- The system shall be able to display an error message if either the email or the password is incorrect or not registered in the system.

Outputs:

- Successful Sign-In: When a user enters the correct email and password, the system grants access to the user's account, allowing them to use the system's services.

- Error Message: If either the entered email or password is incorrect or not registered in the system, the system displays an error message to the user.

- User Account Access: When the sign-in is successful, the user gains access to their account, where they can use the system's services and interact with their personal data and setting

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3.2.3 <Identify location>

Introduction: the essential function in the Awslak application is the identify location.

Rationale : identify location is actually the basis for the rest of the process.

Inputs: Location

Description: The customer shall be able to identify the location.
identify shall be allowed if and only if:
The location is allowed to access.
if identify is allowed, the services available near his location shall be displayed.

Outputs: List of services near her/his location.

3.2.4 <View drivers and cars>

Introduction: The functionality of view drivers and cars is essential action in Awslak application.

Rationale: View available drivers and cars information is important for customers to select the most suitable driver and car leading to successful ride requests and higher customer satisfaction.

Inputs: driver availability status.

Description: The customer shall be able to view available drivers and cars information, while drivers shall be able to update their availability status.
View shall be allowed if and only if:
- Driver's status is "Available"
If view is allowed, drivers and cars information shall be displayed to the customer.

Outputs: List of available drivers and cars.

3.2.5 <Communicate >

Introduction: This is an essential function. Awslak application must support this functionality.

Rationale: Facilitating communication between driver and customer depends on this function. The success of the product hinges in successful communicate.

Inputs: Text, voice or photo messages.

Description: The driver and customer shall be able to send text and voice messages as well as pictures.
Sending photos and voice shall be allowed if and only if:
- They agreed to access the camera, studio, and microphone.

Outputs: For the driver: The message sent by the customer. For the customer: the message sent by the driver.

3.2.6 <Pay>

Introduction: The important action that performed in the application is pay. The application must support this functionality.

Rationale: the pay is very important in the application. The success of the product hinges on successful payment.

inputs: Card number, PIN, ride requests.

Description: The customer shall be able to pay in the application.
The pay shall be allowed if and only if:
The Card Number can be validated.
The PIN is valid for the card.
The funds in the card account exceeds the requested amount in the pay
If pay is allowed, the requested order shall be executed.

Outputs: Customer Receipt, ride requests.

Persistent Changes: The purchase amount will be deducted from the customer account.

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3.2.7 <Rating>

Introduction: The most common action performed at a ride application is rating. Awslak must support this functionality.

Rationale: Collecting ratings from customers provides valuable insight into driver performance as well as aspects needing improvement**.**

Inputs: Rating score (1-5 stars), Text feedback.

Description:
The customer shall be able to rate the driver and service.
Rating shall be allowed if and only if:
- Trip is completed.
If rating is allowed, driver's rating data shall be updated.

Outputs: Updated driver rating.

Persistent Changes : Driver's average rating.

3.3 Use Cases

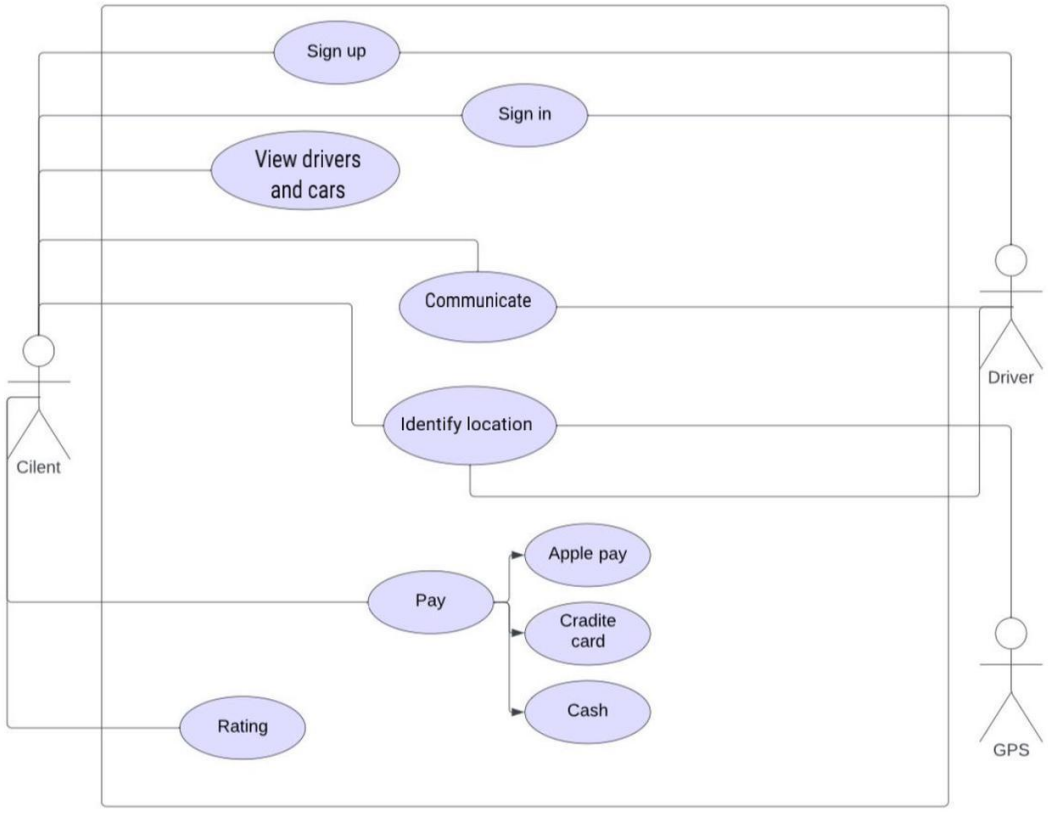

Figure 10 General use case

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3.3.1 Sign up #1

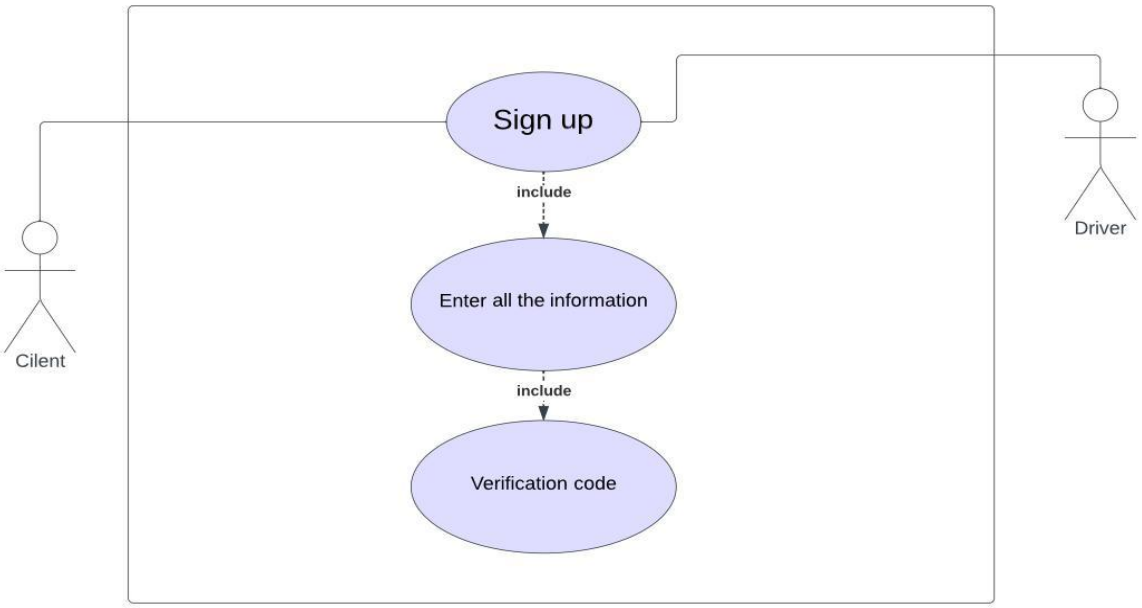

Figure 11 Sign up use case

Title	**Sign up**
Actor	Driver – Client
Scenario	1- Customer opens the application 2- Customer select whether it's driver or client 3- Customer fills out all the required information 4- System verifies the validity of the information 5- System registers the new account in the database
Extension	Email already exists

Table 1 Sign up

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3.3.2 Sign in #2

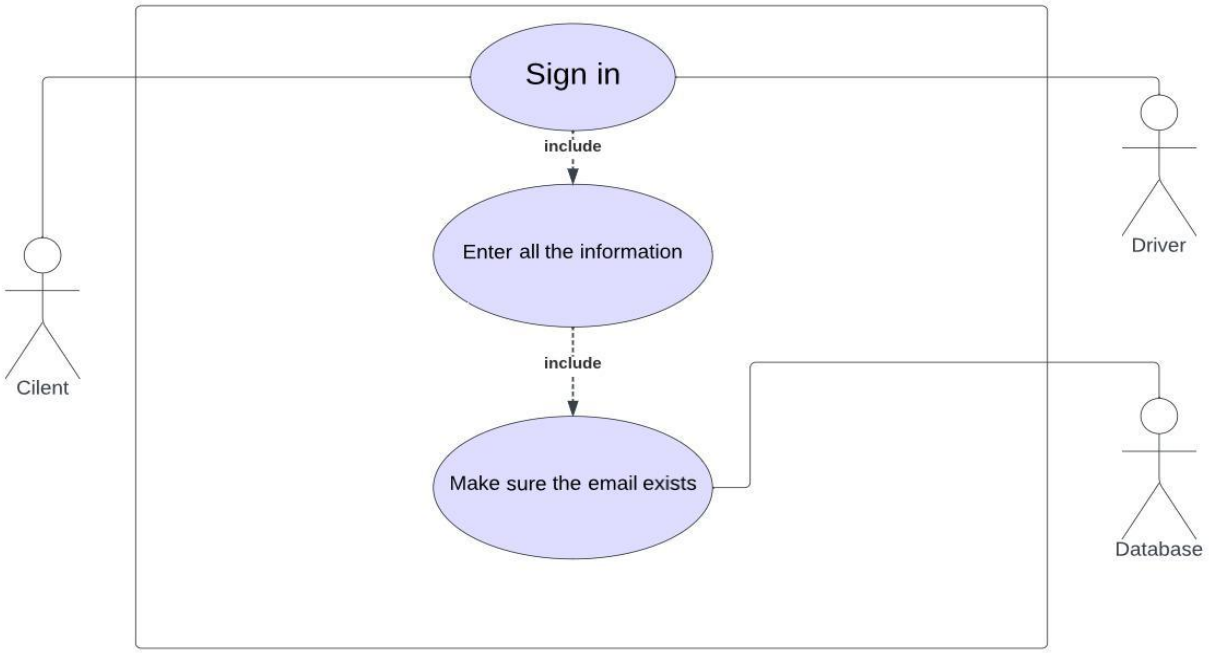

Figure 12 Sign in use case

Title	**Sign in**
Actor	Driver – Client – Database
Scenario	1- Customer opens the application 2- Customer fills out all the required information 3- Database verifies the validity of the information 4- System completes the customer sign in process
Extension	Email or password is incorrect

Table 2 Sign in

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3.3.3 Identify location #3

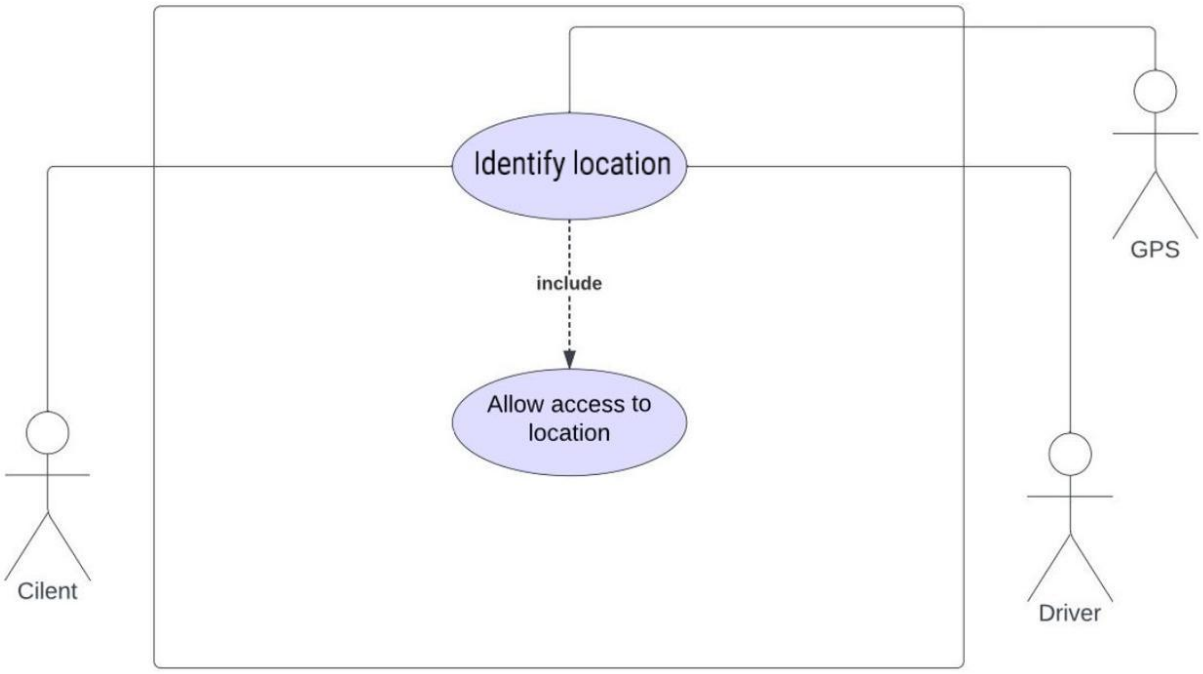

Figure 13 Identify location use case

Title	**Identify location**
Actor	Driver - Client - GPS
Scenario	1- Customer opens Detect location in the application 2- Customer allows to access her location 3- Application saves the customer location 4- Application display the available drivers near her area
Extension	Customer location not enabled

Table 3 Identify location

3.3.4 View drivers and cars #4

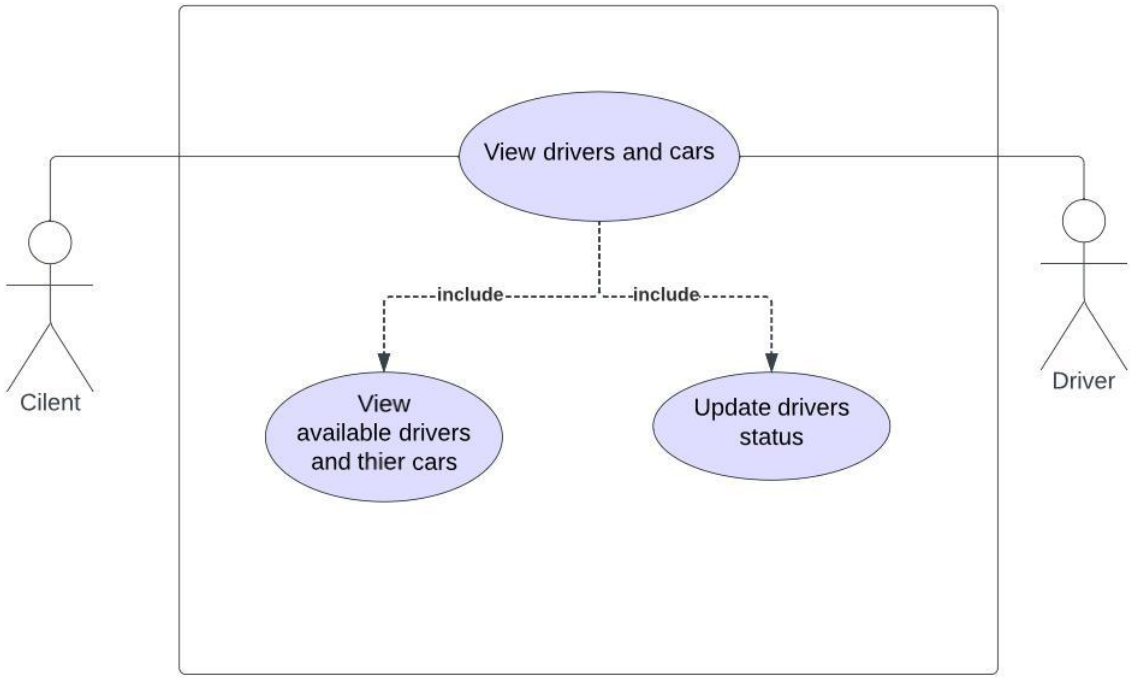

Figure 14 view drivers and cars use case

Title	**View drivers and cars**
Actor	Driver – Client
Scenario	1- The customer opens 'Display drivers and cars' in the Awslak application 2- The application retrieves a list of drivers who are currently 'available' and displays their information along with details about their cars 3- The customer selects the most suitable driver for their ride
Precondition	The driver is logged in with their status set as "available"

Table 4 view drivers and cars

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3.3.5 Communicate #5

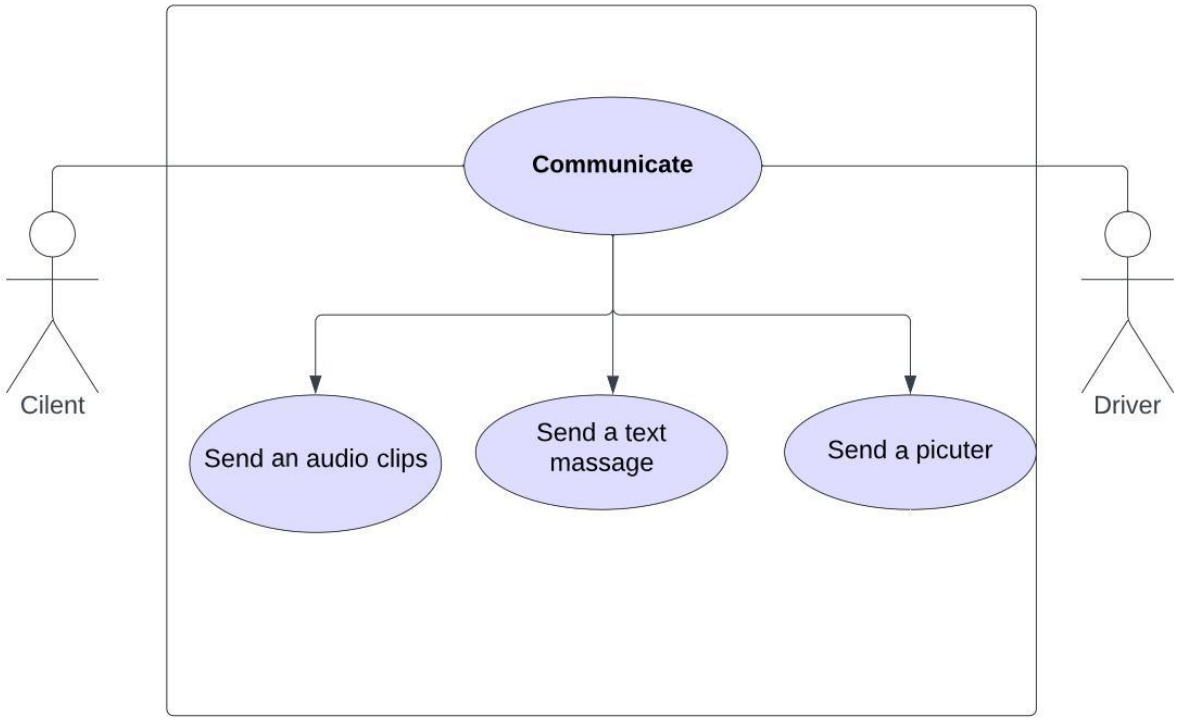

Figure 15 communicate use case

Title	**Communicate**
Actor	Driver – Client
Scenario	1- The Customer or the Driver open the chat 2- Driver asks the customer about some of her information 3- Customer choose to send a text message or a picture or an audio clip
Precondition	The Customer and the Driver must agree to access the microphone to record audio, camera and photo gallery to send photos

Table 5 communicate

3.3.6 Pay #6

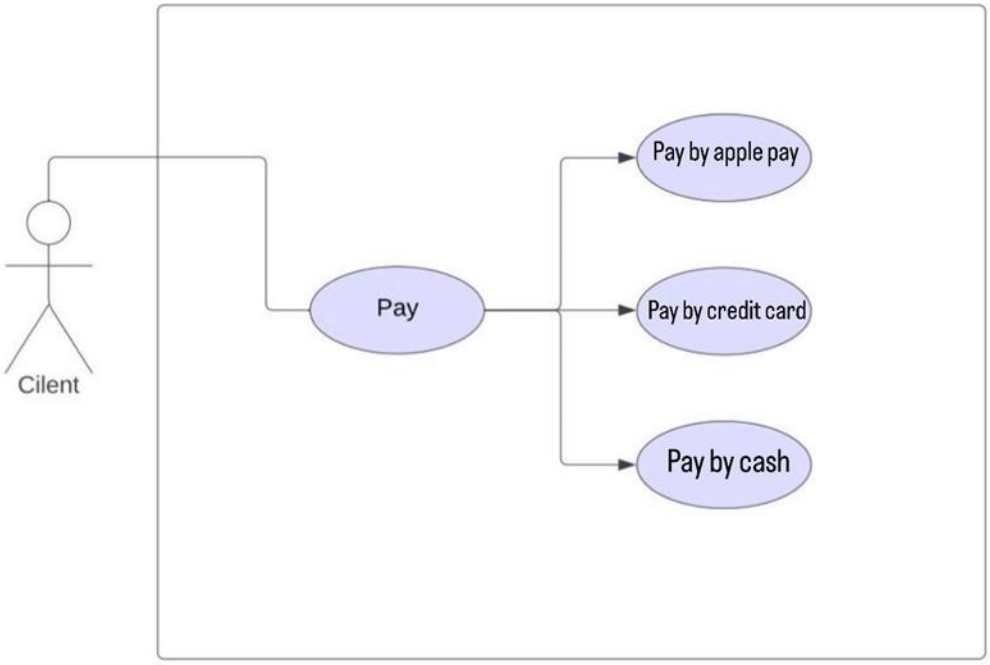

Figure 16 Pay use case

Title	**Pay**
Actor	Client
Scenario	1- Customer opens her order page 2- Customer provides payment information. 3- Application validates order. 4- Application sends payment confirmation and order number to customer by e-mail
Extension	Credit card declined

Table 6 Pay

3.3.7 Rating #7

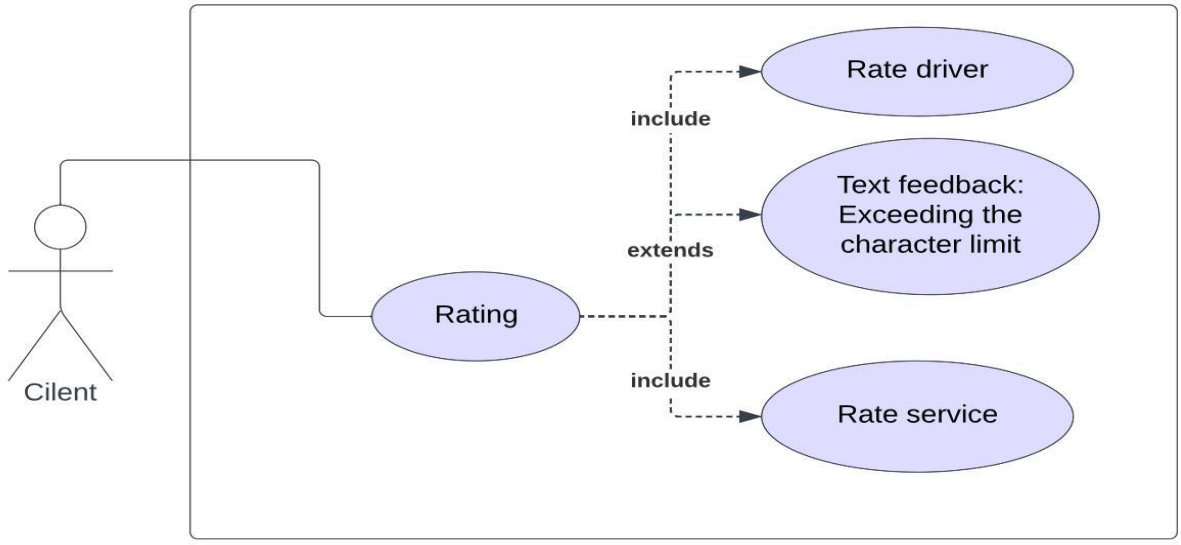

Figure 17 Rating use case

Title	**Rating**
Actor	Client
Scenario	1- The driver arrives at the customer's location, and the customer gets into the chosen car 2- After the ride, the customer has the option to rate the driver and the service 3- The customer rates the driver on a scale (e.g., 1 to 5 stars) 4- The customer can enter additional feedback in a text field 5- The system validates the rating and text feedback 6- The rating data for the respective driver is updated
Extension	The driver is logged in with their status set as "available"
Precondition	The customer or driver must indicate the completion of the ride by pressing the "Complete Trip" button, enabling the customer to provide a rating

Table 7 Rating

3.4 Non-Functional Requirements

3.4.1 Performance

- The system must respond to all prosses from the user in less than 5 seconds.
- The system should display error or verification messages to the user within 2 seconds.
- The system must respond in less than 30 minutes for user's order.
- The system works on IOS and Android operating systems.

3.4.2 Reliability and availability

- The system is available 24/7.
- Maintenance does not occur during peak times, and does not take more than 30 minutes.
- Make backup copies of data.
- Each section in the program is separate from the other section.
- The system compensates the client if an error occurs in implementation and returns the money to the wallet.
- The customer can cancel the order at any time.

3.4.3 Safety and security requirements

- The system must handle safe login and logout through session.
- System should be use Hashing technology to handle the secure login for users.
- The system could use app sweep ,certificates to secure the data being transmitted.
- The database should be secured from The Encrypting File System (EFS) to prevent leak or loss of information.

3.4.4 Useability

- The interface design should be user-friendly and consist of icons.
- The system should support both Arabic and English languages.
- The system should have the ability to change the font size and color themes.