



An-Najah National University

Faculty of Engineering and Information Technology

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Graduation Project I

## **Carmate**



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**Presented in partial fulfillment of the requirement for Bachelor degree in  
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## Acknowledgments

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## **Disclaimer**

This report was written by a team consisting of two students at An-Najah National University, Department of Computer Engineering, Momen Ramadan and Abdallah Daher, we continue our studies at An-Najah National University. The authors acknowledge full responsibility for any errors identified within. The ideas, suggestions, findings, and opinions expressed in this paper solely belong to the authors and do not reflect the viewpoint of An-Najah National University.

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## **Abstract**

CarMate is an extensive and creative platform aimed at revolutionizing the conventional auto repair process by catering to the requirements of both clients and workshop supervisors. It seeks to boost transparency, enhance communication, and simplify operations to provide a smooth and effective experience.

CarMate offers customers a range of features designed to make vehicle maintenance and repair easier. Users can view comprehensive maintenance records, encompassing previous repairs, expenses, and parts utilized, providing full insight into their vehicle's service history. The platform features an AI-driven assistant that enables users to articulate their vehicle issues, examines the problem with historical data, and offers estimated repair expenses, advice on troubleshooting, and possible solutions. Tracking repair status in real-time keeps customers updated on their vehicles' progress, while online service scheduling and combined delivery choices provide unparalleled convenience. A unified map function allows users to discover local workshops, check ratings, and select services based on customer reviews, enhancing the overall user experience.

CarMate provides workshop managers with robust tools to oversee and enhance repair operations. A centralized dashboard aids in monitoring service requests, tracking repair progress, and managing costs. The system facilitates digital invoicing and provides flexible payment methods, such as cash and app points, improving convenience for customers. Workshop managers can take advantage of enhanced capabilities like scheduling appointments, overseeing inventory, and generating performance reports, aiding them in enhancing operational efficiency. Data analysis tools help workshop owners recognize trends in repairs, facilitating improved planning and resource management. CarMate features a cost estimator designed to deliver precise repair quotes, promoting trust and openness between workshops and their clients.

Utilizing advanced technology, CarMate connects customers with workshop managers, facilitating a seamless and clear auto repair experience. Its user-focused design, AI-powered insights, and operational management features make it a holistic solution for updating auto repair services and enhancing satisfaction for all parties involved.

# Chapter 1: Introduction

## 1.1 General Background

The car repair industry is an essential field that guarantees vehicles stay functional and safe for operation. Nonetheless, conventional repair procedures frequently suffer from inefficiencies, such as inadequate communication between clients and workshops, a lack of clarity regarding expenses and repairs, and cumbersome management practices in the workshops. These issues lead to customer discontent and operational inefficiencies for workshop owners.

In the current digital era, there is an increasing need for tech solutions to optimize workflows and enhance customer satisfaction. Platforms utilizing AI, data analysis, and digital communication tools are revolutionizing industries, enhancing service accessibility, efficiency, and user experience. Acknowledging this trend, CarMate was created as a contemporary answer to tackle the enduring issues in the auto repair sector.

## 1.2 Objective

The main aim of this project is to create an all-inclusive platform that improves the auto repair experience for customers and workshop supervisors alike. Particular objectives encompass:

- A) Enhancing clarity in the repair procedure by offering clients live updates and comprehensive service records.
- B) Enabling customers to make knowledgeable choices with AI-powered insights, expense estimation, and problem-solving assistance.
- C) Streamlining workshop management for owners through the integration of tools for scheduling services, tracking inventory, reporting performance, and electronic billing.
- D) Connecting customers and workshops via efficient communication and feedback channels.
- E) Utilizing data analysis to offer insights that improve decision-making for workshop supervisors.

### **1.3 Significance of the Work**

CarMate is a remedy that tackles urgent requirements in the multi-billion-dollar auto repair industry. As per industry reports, the worldwide automotive repair and maintenance sector is anticipated to experience substantial growth in the upcoming years due to a surge in vehicle ownership and an increasing need for effective repair solutions. Consumers are progressively pursuing clarity and ease, while workshop supervisors need tools to manage rising service requirements and competition.

CarMate's cutting-edge strategy, fusing AI-enhanced functionalities, data-informed analysis, and intuitive designs, establishes it as an essential resource in updating the repair sector. Through enhancing customer satisfaction and operational efficiency, CarMate aids in the overall development and competitiveness of the automotive repair industry.

### **1.4 Organization of the report**

This report provides a comprehensive overview of the project's development journey, beginning with an exploration of the constraints encountered and their strategic resolutions. It proceeds to detail the standards and technologies adopted, followed by a thorough exposition of the project's processes and features. The report then analyzes the outcomes achieved before culminating in a conclusive summary that encapsulates the entirety of the work undertaken.

## **Chapter 2: Theoretical Background and Previous Work**

### **2.1 Theoretical Background**

The automotive repair sector has historically been a crucial service industry, keeping vehicles functional, safe, and efficient. Although it plays a crucial role, conventional auto repair methods frequently encounter problems like inefficiency, insufficient transparency, and restricted communication between clients and workshop operators. With the swift advancement of technology, the incorporation of digital tools has demonstrated to be transformative, improving how repair services are provided and overseen.

#### **Digitization in Automotive Repair**

Digitalization involves implementing technology to enhance conventional processes. In the car repair industry, digital tools seek to:

1-Improve Transparency: Offering comprehensive service records and up-to-date information on repair status.

2-Enhance Communication: Enabling direct engagement between clients and workshop supervisors for improved service coordination.

3-Enhance Efficiency: Automating repair management activities like scheduling, invoicing, and inventory tracking to lessen manual labor.

## **AI and Data Analysis in Vehicle Repairs**

Artificial intelligence (AI) and data analytics are being utilized more frequently to offer sophisticated solutions in vehicle repairs. Systems powered by AI facilitate predictive maintenance, help diagnose problems based on customer feedback, and provide cost estimates utilizing historical information. Conversely, data analytics assists workshop managers in recognizing trends, predicting service needs, and enhancing resource distribution.

## **2.2 Previous Work**

**Current Platforms and Tools** Various systems and platforms have been developed to tackle particular challenges in the automotive repair sector. Here are instances of significant solutions:

**1- RepairPal:** Emphasizes cost clarity by offering repair cost predictions according to location and vehicle model. Nonetheless, it is missing functionalities like real-time monitoring and thorough workshop administration.

**2-YourMechanic:** Allows clients to schedule mechanics for in-person vehicle repairs. Although it is convenient, it lacks tools for overseeing workshop operations or sophisticated AI-driven diagnostics.

**3-Workshop Management Software:** Platforms like AutoShop and GaragePlug provide features for overseeing workshop operations, such as invoicing, appointment management, and inventory monitoring. Nonetheless, they frequently neglect customer-facing requirements such as service tracking or communication.

### **Difficulties in Current Systems**

Even though they are beneficial, existing systems face constraints:

1-The majority of solutions concentrate on either customers or workshop managers but neglect to provide a cohesive platform that serves both.

2-Only a limited number of systems employ AI for problem-solving or cost assessment, restricting their capacity to provide sophisticated and effective diagnostics.

3-Lack of transparency in the repair process and real-time updates frequently results in customer dissatisfaction.

## **2.3 How CarMate Addresses the Gaps**

CarMate aims to address the shortcomings found in current solutions by providing a comprehensive platform that serves both clients and workshop managers. Its main advancements comprise:

**AI-Driven Support:** Enabling customers to articulate problems and obtain possible remedies, price assessments, and diagnostic advice.

**Instant Service Updates:** Ensuring clarity with repair monitoring and service alerts.

**All-inclusive Workshop Tools:** Enabling managers with dashboards for scheduling, inventory oversight, and performance analysis.

**Customer Interaction:** Allowing for online reservations, reviews, and access to comprehensive service records.

By integrating cutting-edge technology with a focus on user needs, CarMate transforms the automotive repair experience, providing a creative answer to contemporary issues in the sector. This chapter emphasizes the basis and reasoning for CarMate’s creation, preparing for the following conversation on its design and execution.

## **Chapter 3: Methodology**

In this section, we will outline the features designed for both regular users, who are the intended audience of our application, and business Owner, who are the primary audience of our website.

### **3.1 CarMate Application (User Interface)**

#### **1- Authentication Screens**

Our Authentication Screens include three fundamental functions: signing up for new users, signing in for registered users, and password recovery for those who have forgotten their credentials.

## ❖ Sign-Up of User Screens

This is the registration screen (Step 1) for inputting personal details. Users must provide the following information:

- **Name:** A space to enter the complete name of the user.
- **Email:** A space to input their email address.
- **Mobile Number:** A section for entering their phone number.
- **Role Choice:** An opportunity to select either being a User or an Owner.
- **Gender:** A dropdown or selection option to choose between Male or Female.
- **Date of Birth:** A field to enter the user's date of birth in the format (e.g., DD/MM/YYYY).

This stage aims to collect crucial personal information, including basic contact details, gender, and date of birth, for setting up an account tailored to the user's profile.

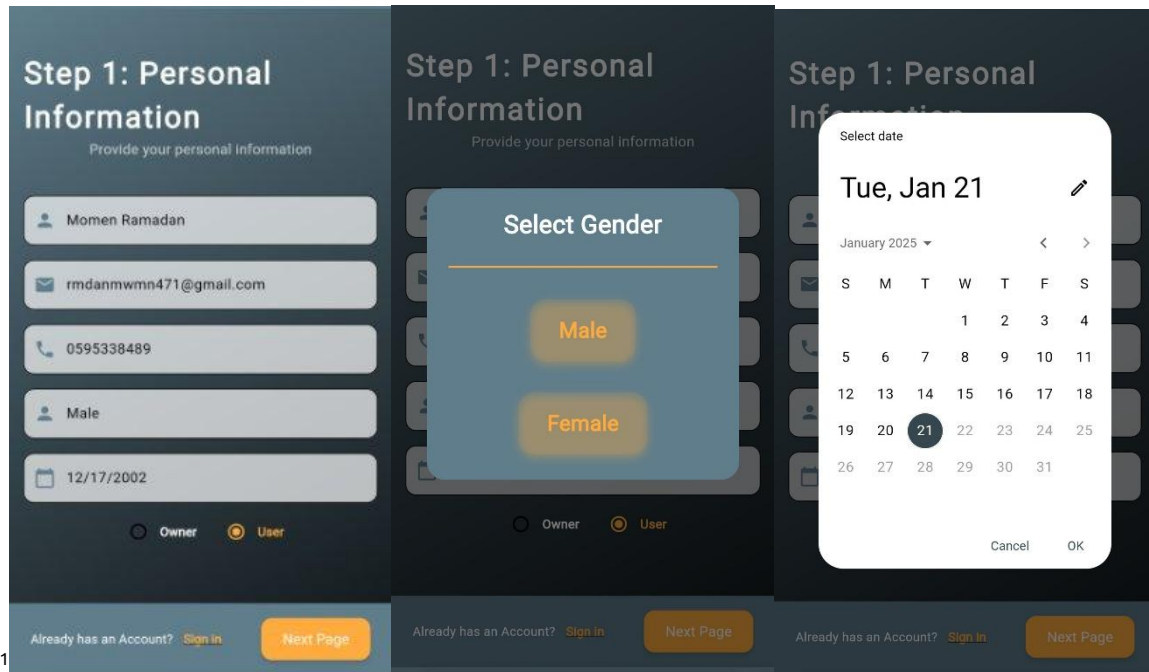


Figure 1 fill the birth date and the gender

This is the registration page (Step 2) where users must enter further information:

- Description: An area to provide a short description of oneself.
- Address: A section to enter their personal or business address.
- Navigation Option: Users can return to the previous page (Step 1) to make changes to their information if necessary.

This stage verifies that the user's profile is thorough and correct prior to moving forward with the registration process.

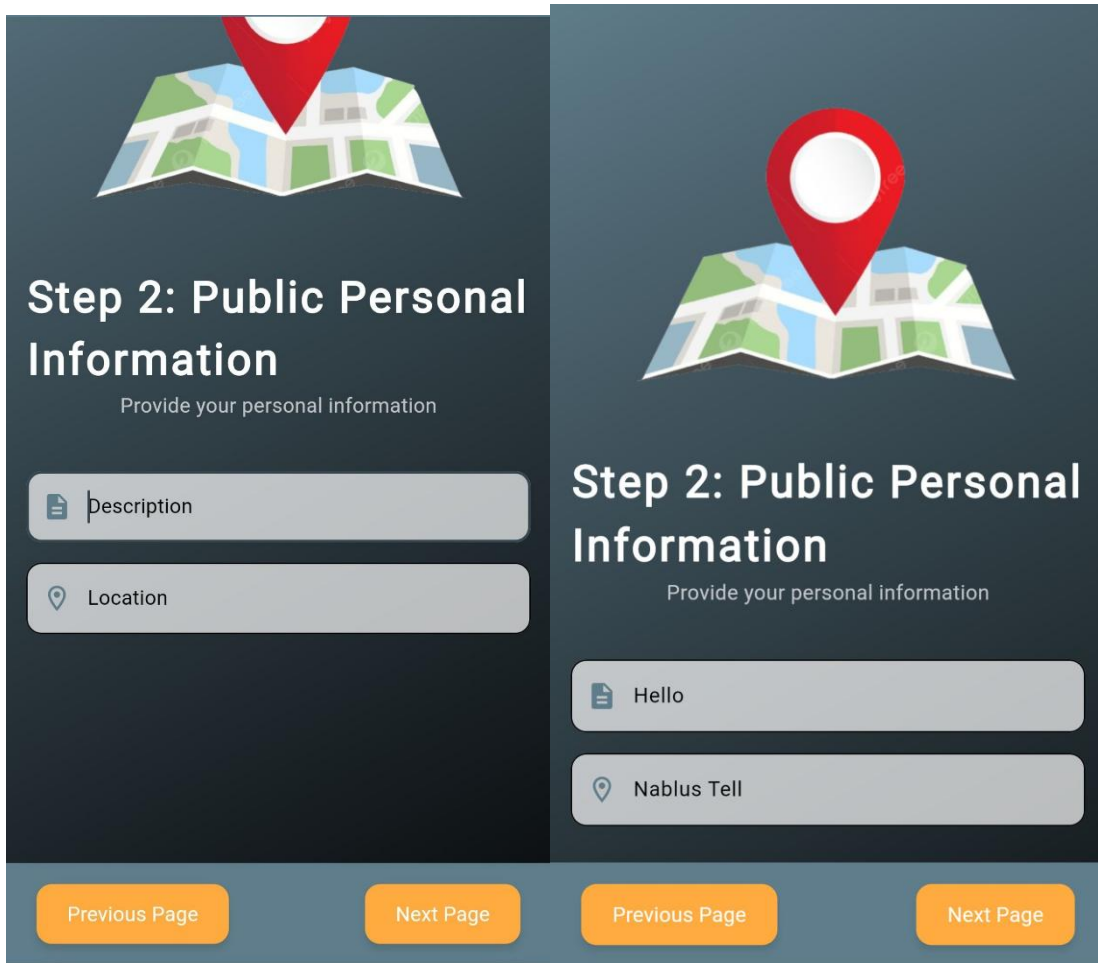


Figure 2 fill the description and location for a user

This page is for registration (Step 3) where users must create their login details:

- Password: A space to establish a strong password for the account.
- Confirm Password: An area to input the password again for verification.
- Plate Number: A field to input the vehicle's plate number for identification.

This step guarantees that the account is secured with a robust and validated password prior to finishing the registration process.

The figure displays three sequential screenshots of a web registration form titled "Step 3: Account Security Information". Each screenshot features a background image of car parts and the instruction "Provide your personal information".

- First Screenshot:** Shows three empty input fields: "Password", "Confirm Password", and "Car Plate Number".
- Second Screenshot:** Shows the same form with the "Password" and "Confirm Password" fields filled with "....." and the "Car Plate Number" field filled with "909694".
- Third Screenshot:** Shows the form with a red error message "Passwords are not the same!" displayed below the "Confirm Password" field.

At the bottom of each screenshot, there are two orange buttons: "Previous Page" and "Next Page".

Figure 3 fill the password and confirm it and the plane number for the user and owner

In Step 4, users must agree to all the application's terms and conditions.

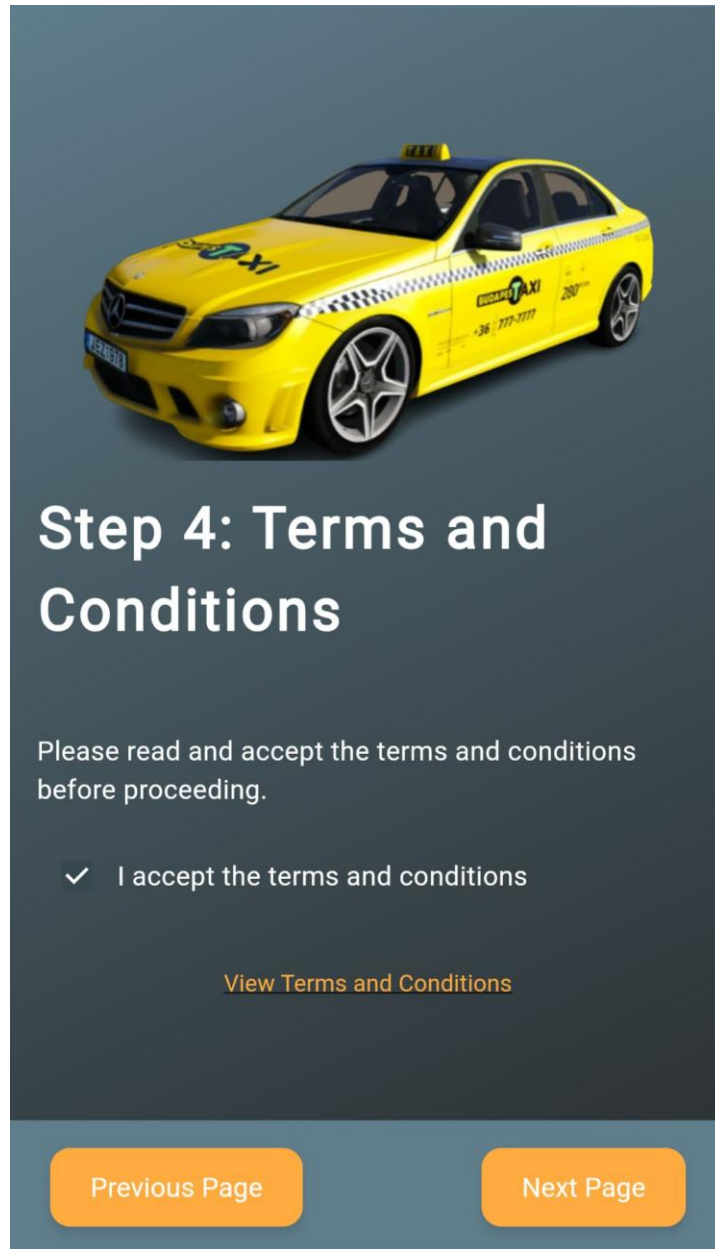
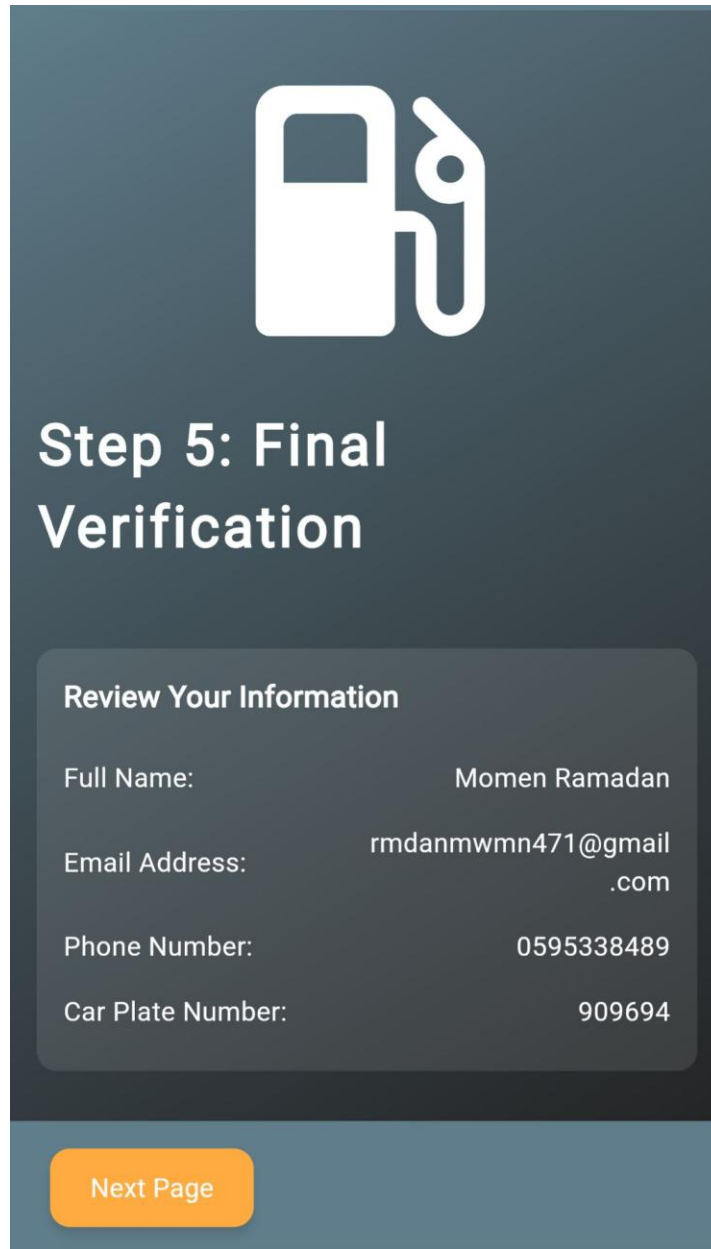


Figure 4 accepting the terms and conditions for a user


In Step 5, the last step, users must confirm that all the information they have submitted is accurate.



The image shows a mobile application screen for the final verification step. At the top, there is a white icon of a gas pump nozzle on a dark blue background. Below the icon, the text "Step 5: Final Verification" is displayed in a large, bold, white font. Underneath, a dark grey rounded rectangle contains the heading "Review Your Information" in white. Below this heading, four lines of user information are listed in white text: "Full Name: Momen Ramadan", "Email Address: rmdanmwmn471@gmail.com", "Phone Number: 0595338489", and "Car Plate Number: 909694". At the bottom of the screen, there is a blue bar with an orange rounded button labeled "Next Page" in white text.

*Figure 5 ensuring the data of the user*

In Step 6, the last step, users must confirm their registration by checking the email sent to their registered email address.



## Step 6: Notifications

**Registration Complete!**

A confirmation email has been sent to your provided email address. Please check your inbox (and spam folder) for further instructions.

User added successfully!

[Previous Page](#)

[Go to Home](#)

*Figure 6 Registration completed*

## ❖ Sign-UP of Owner Screens

The registration procedure for an owner resembles that of a typical user, but it has one extra step:

- Provide a Photo: The proprietor must submit a photo of their workshop site.
- Admin Authorization: After the owner finishes the registration, a request is sent to the admin for authorization. The administrator checks if the individual is truly the owner of the workshop before accepting or declining the registration.

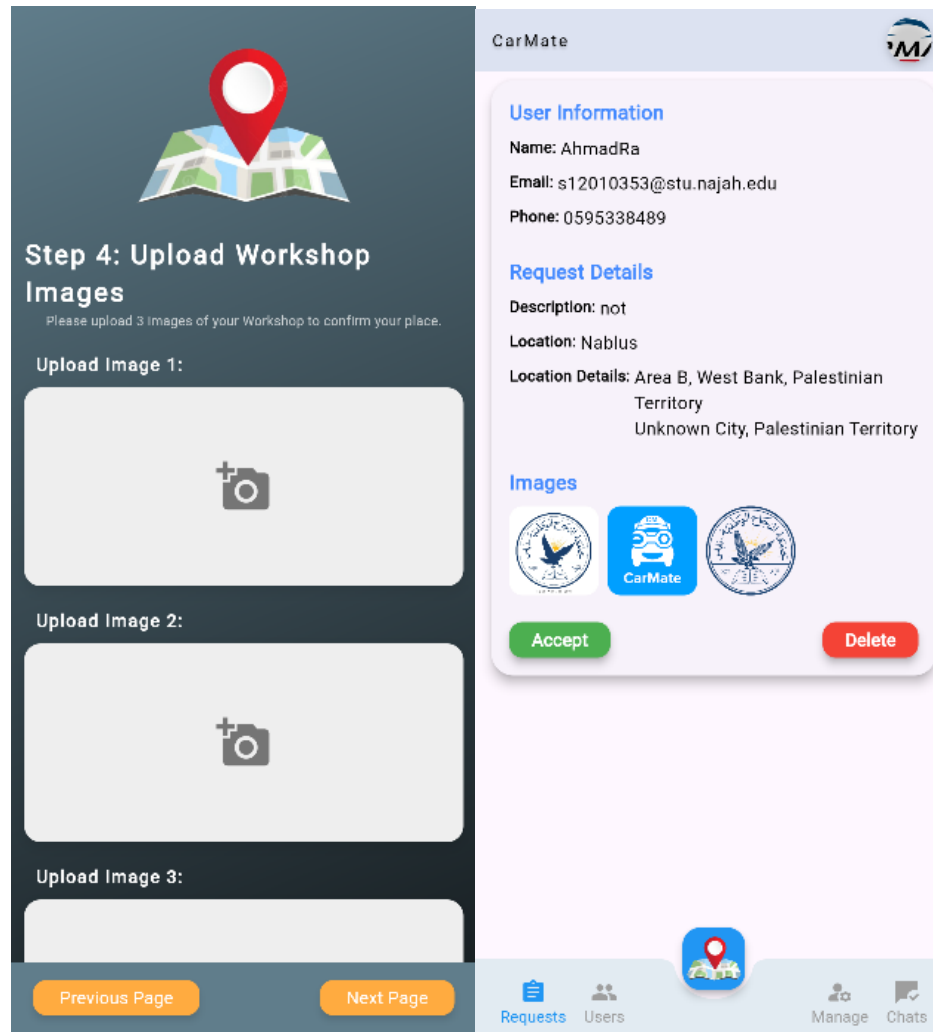


Figure 7 owner chooses images for his workshop

## ❖ Sign-In Screens(User and Owner)

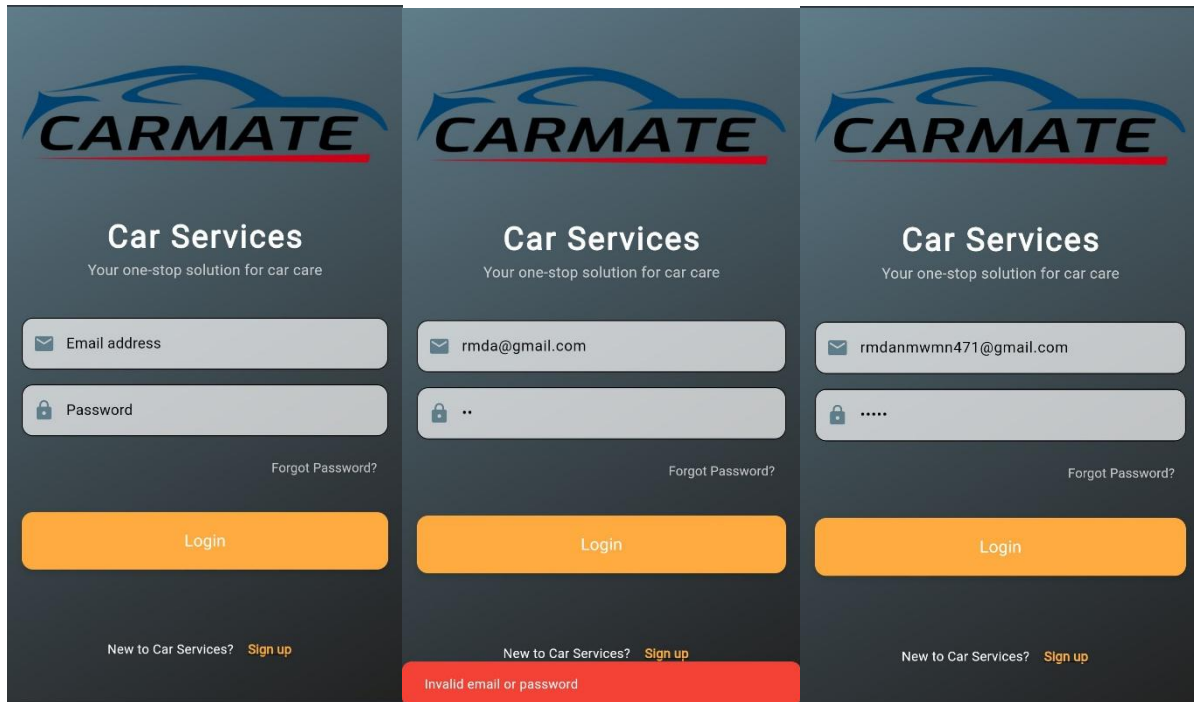


Figure 8 log in screen

The sign-in screen prompts users to enter their Email and password. If they enter an incorrect Email or password, they will receive a warning message and won't be able to sign in

## ❖ **Forgot Password Screens**

When resetting their password if they forget it, users are directed to enter their email address. The email input field undergoes validation; if the user enters an email that is not registered in our database, they receive a war

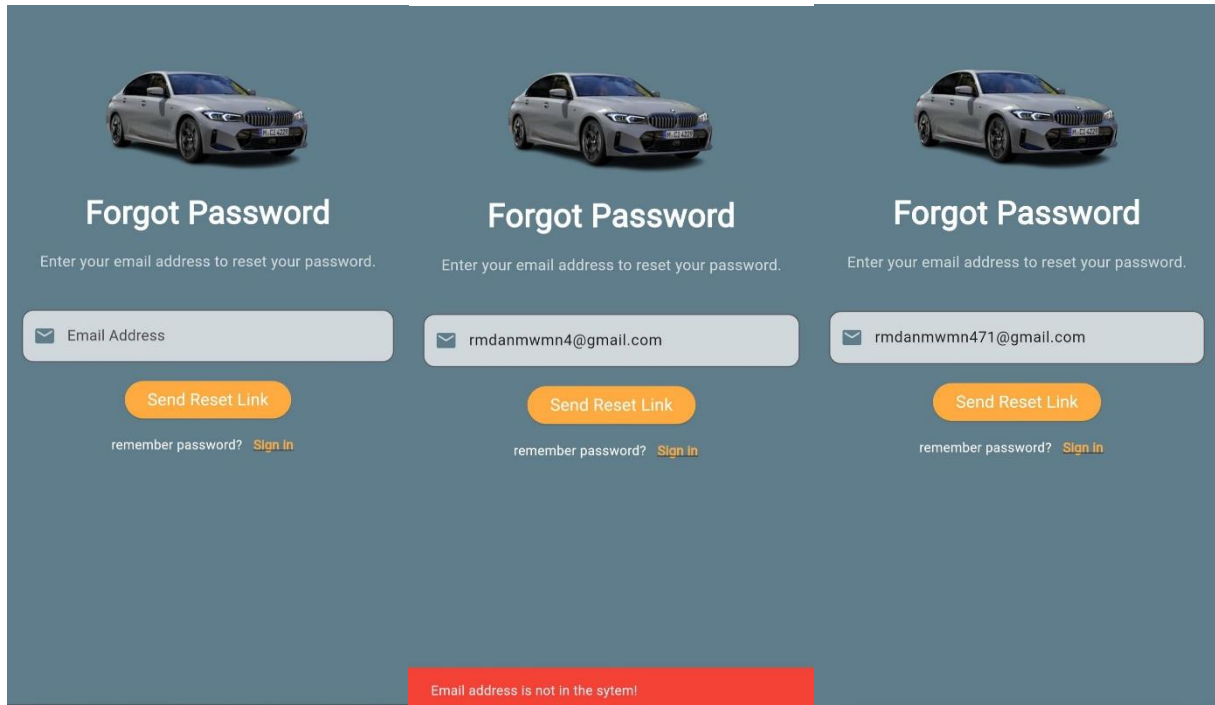


Figure 9 images when a user forgets the password and enter email

If the email exists in our database, the user will receive an to their email account and be redirected to the code entry screen.

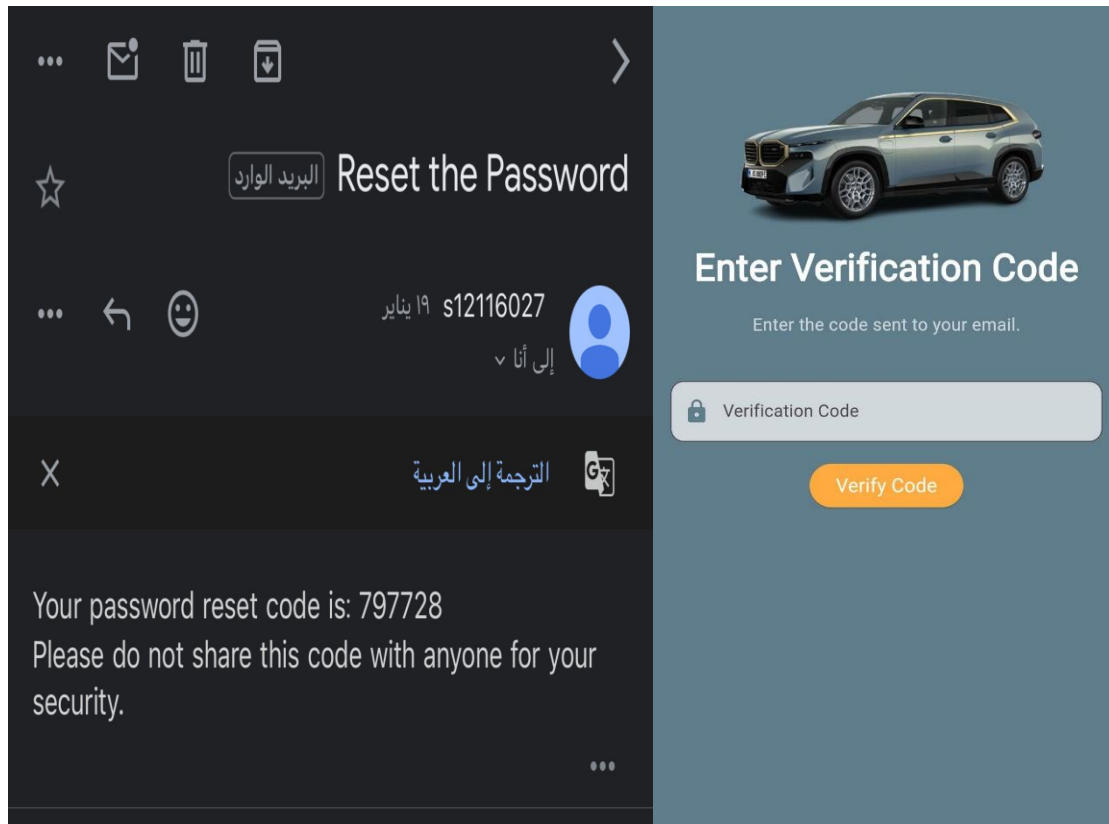
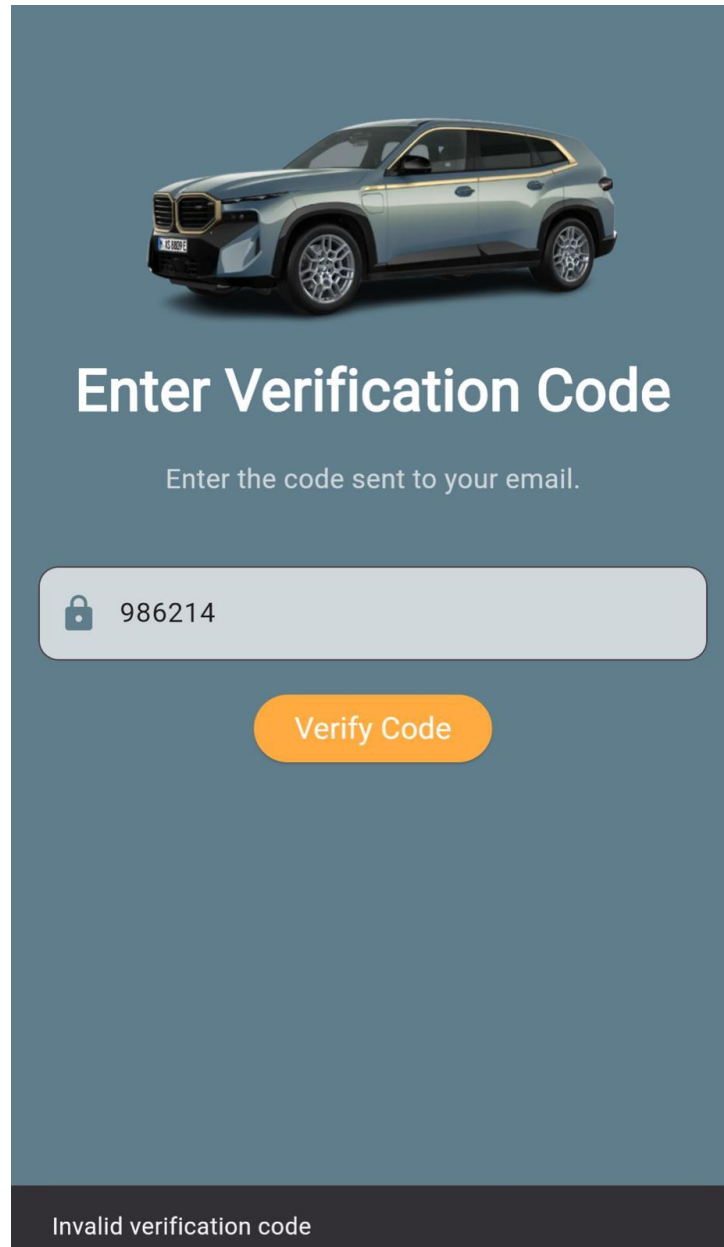



Figure 10 sending code the verify the user to change the password

If they enter the wrong code, they will receive a warning and won't be able to reset their password.



*Figure 11 invalid code entered*

Upon entering the correct code, they will proceed to reset their password by entering and confirming a new password. Each field undergoes validation. After successfully resetting their password, they will be directed to a success page and then redirected to the sign-in page.



## Set New Password

Enter your new password and confirm it.

Set New Password

*Figure 12 change the password after code verification*

## 2-Owner home page

This page shows all the articles that have been released by the owner. Only owners have the authority to create and publish posts on the platform. Regular users cannot publish posts; they are limited to viewing posts shared by the owner. This functionality guarantees that content is exclusively managed and controlled by the owners.

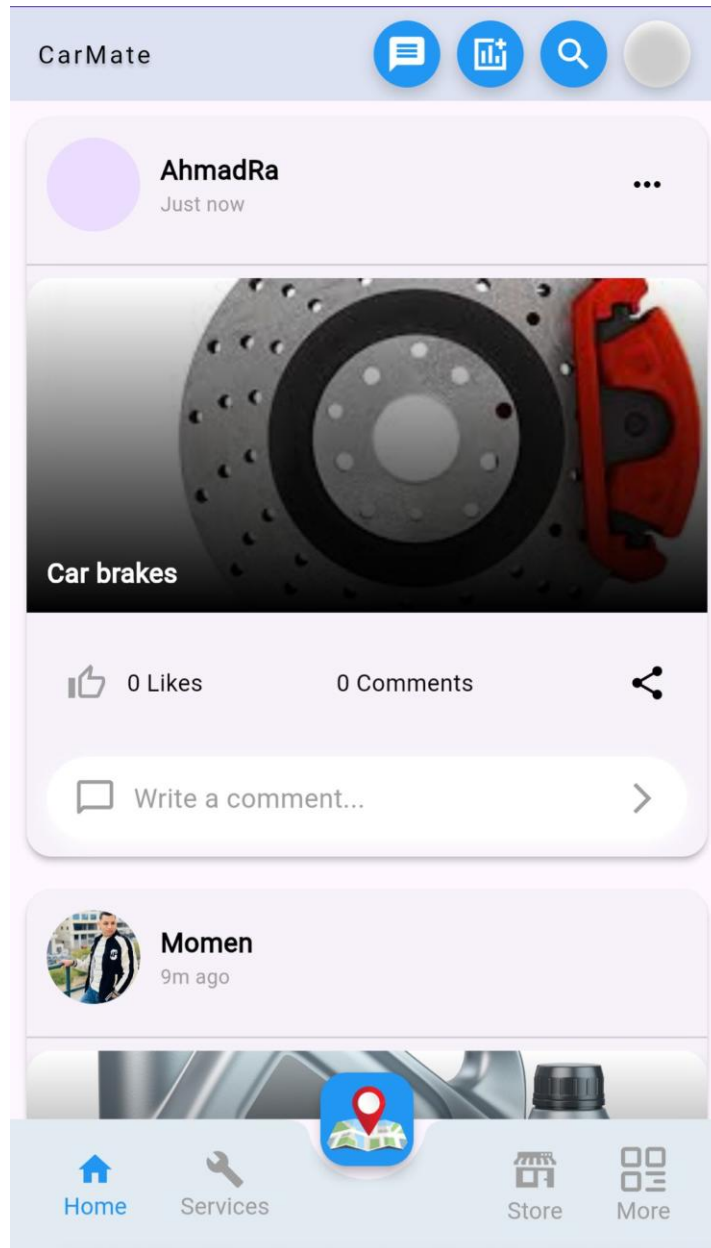


Figure 13 Home page of owner

The owner is able to engage with the published posts by liking and leaving comments on them. Moreover, the owner can distribute these posts across multiple platforms, facilitating outreach to a broader audience.

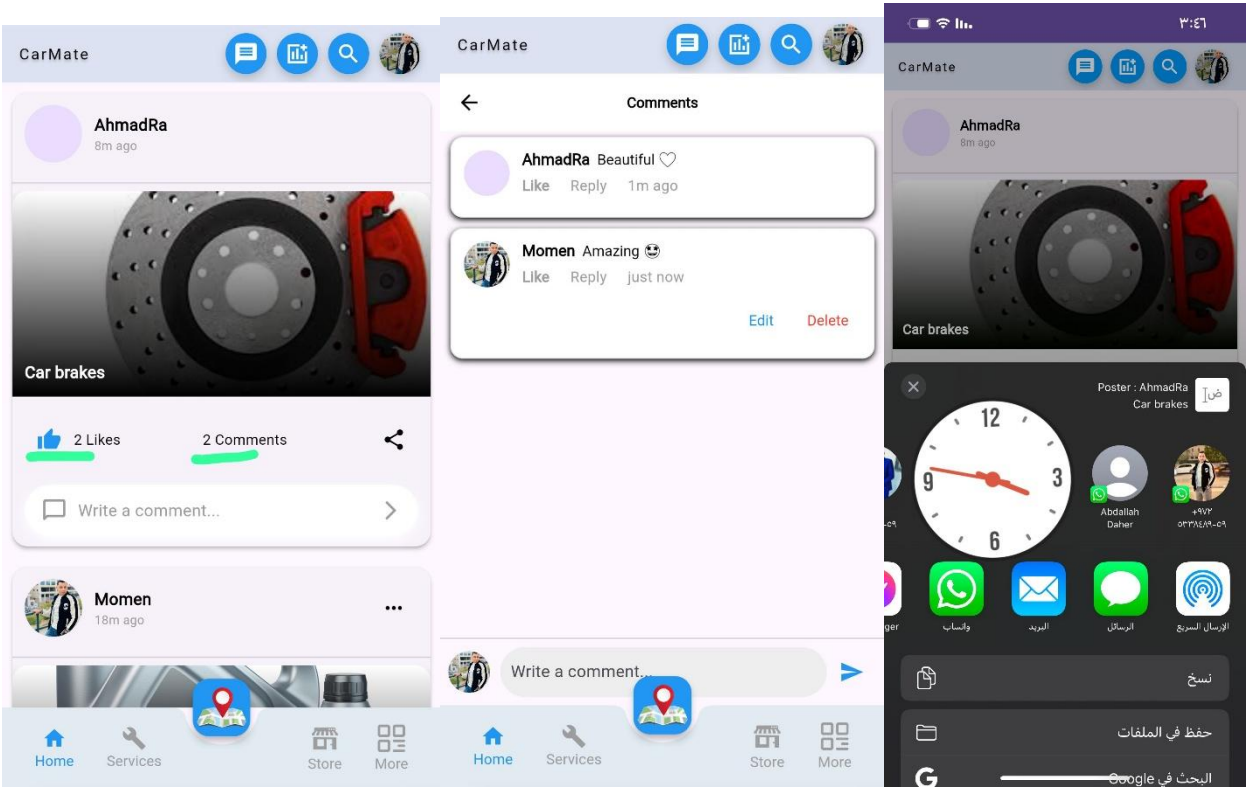


Figure 14 like , comment and share for a post

You can also respond to comments on the posts, enabling direct engagement. Moreover, have the option to interact with comments by liking them, promoting increased interaction and engagement on the platform.

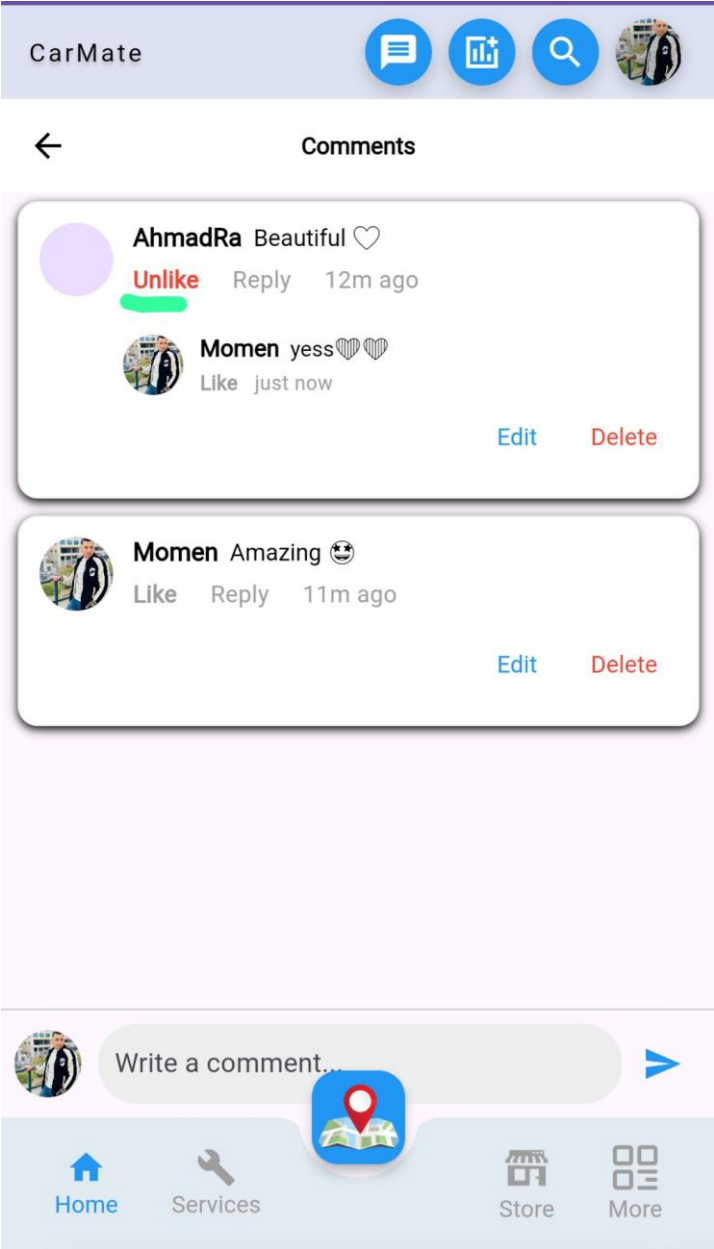


Figure 15 adding a reply to a comment and like it

also edit or remove comments, providing them with enhanced control over their interactions and making sure the content stays accurate and suitable

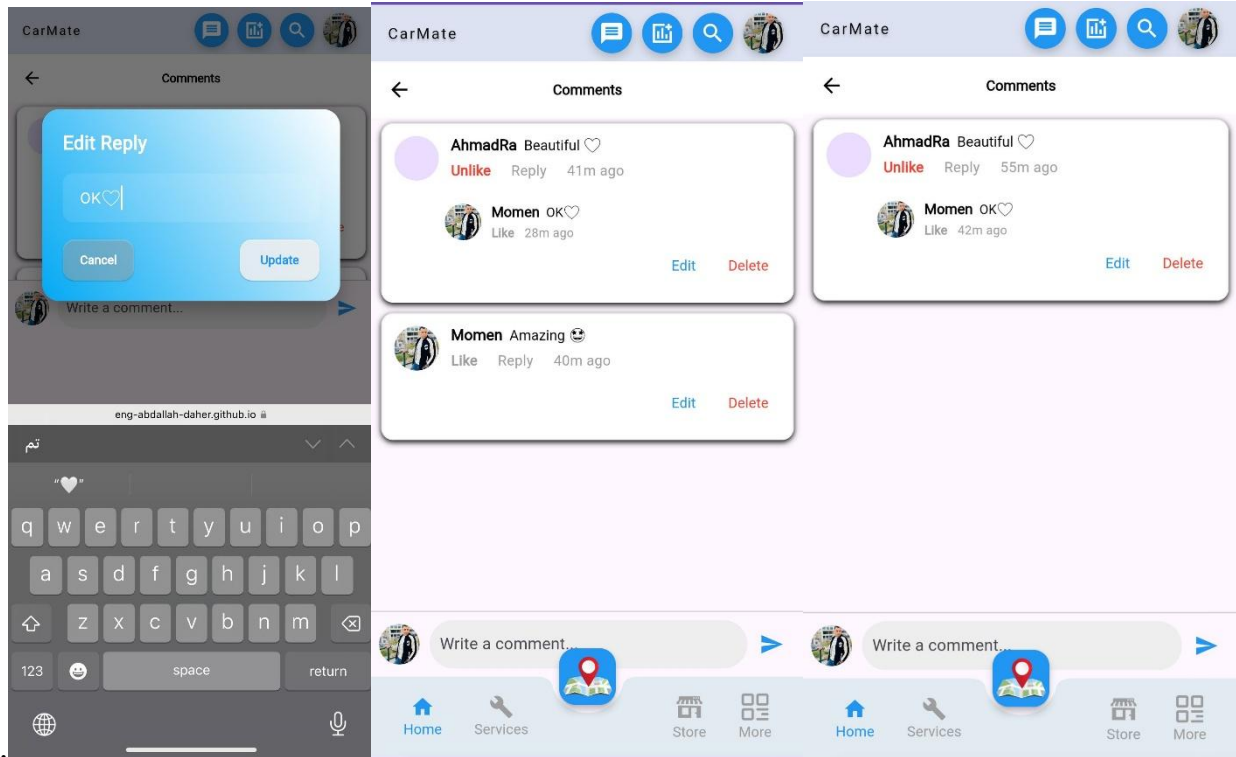


Figure 16 editing a reply and deleting comment

The owner can create a post by uploading an image, either by choosing a suggested image from the app or by uploading one from their personal device. Furthermore, the owner has the option to craft a description that accompanies the image, providing additional context or details to the post.

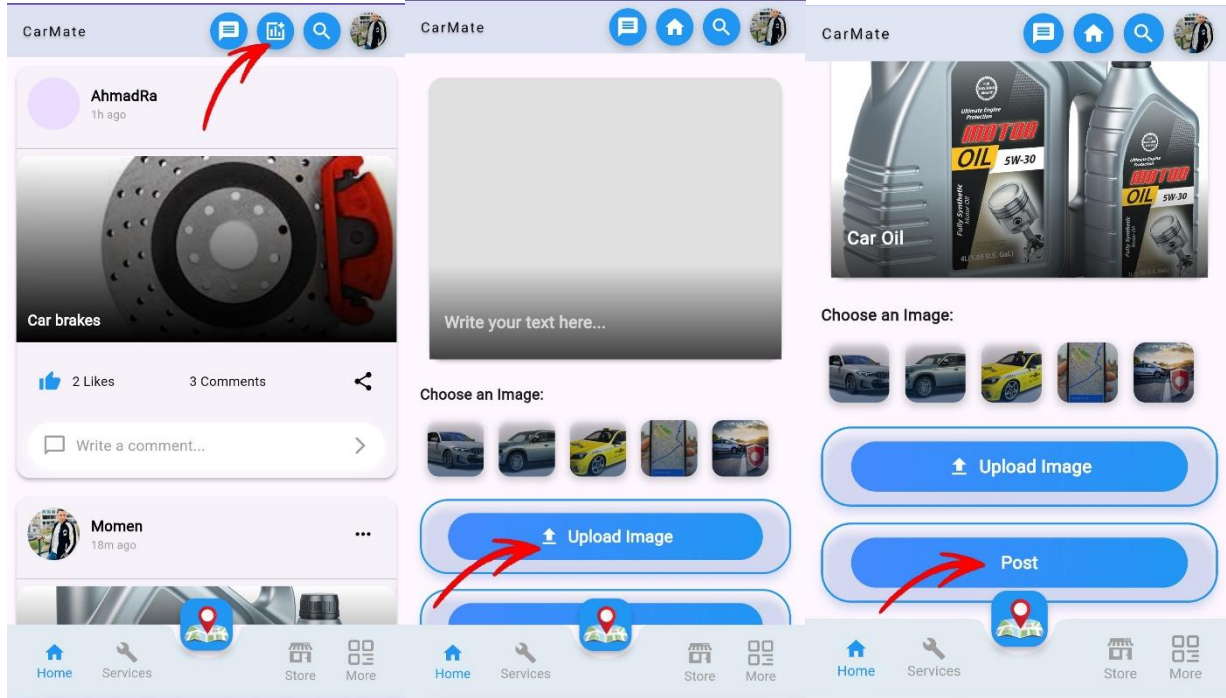


Figure 17 adding post

The entries on the main page are arranged in chronological sequence, with the latest posts listed first, and older ones following. This guarantees that the most recent content is consistently shown at the top for enhanced visibility.

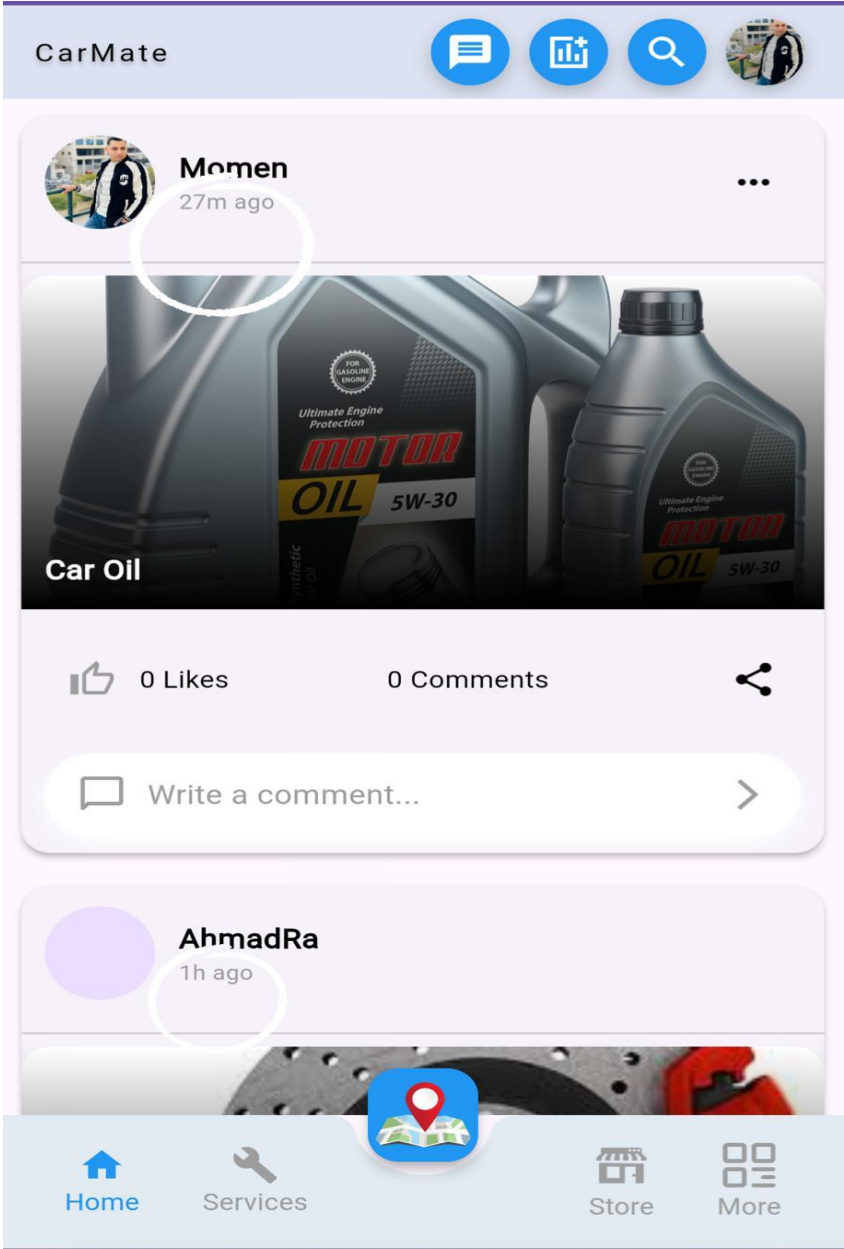


Figure 18 time stamp of a most recent post

The Owner can alter the posts they have published by changing the written content. This function enables them to modify, rectify, or enhance the content of their posts as required.

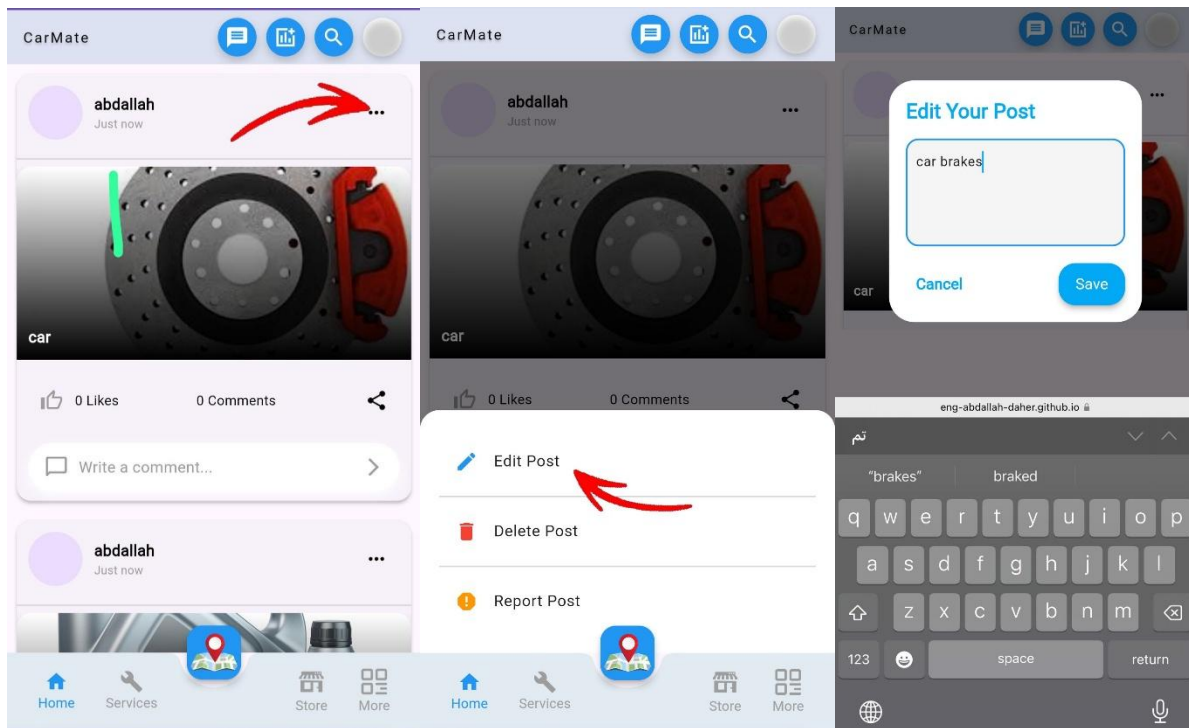


Figure 19 editing the description of a post

The Owner is also able to remove the posts they have shared. When the delete option is chosen, a confirmation prompt will show up, requesting the owner to verify if they truly wish to remove the post. This guarantees that posts are not deleted unintentionally.

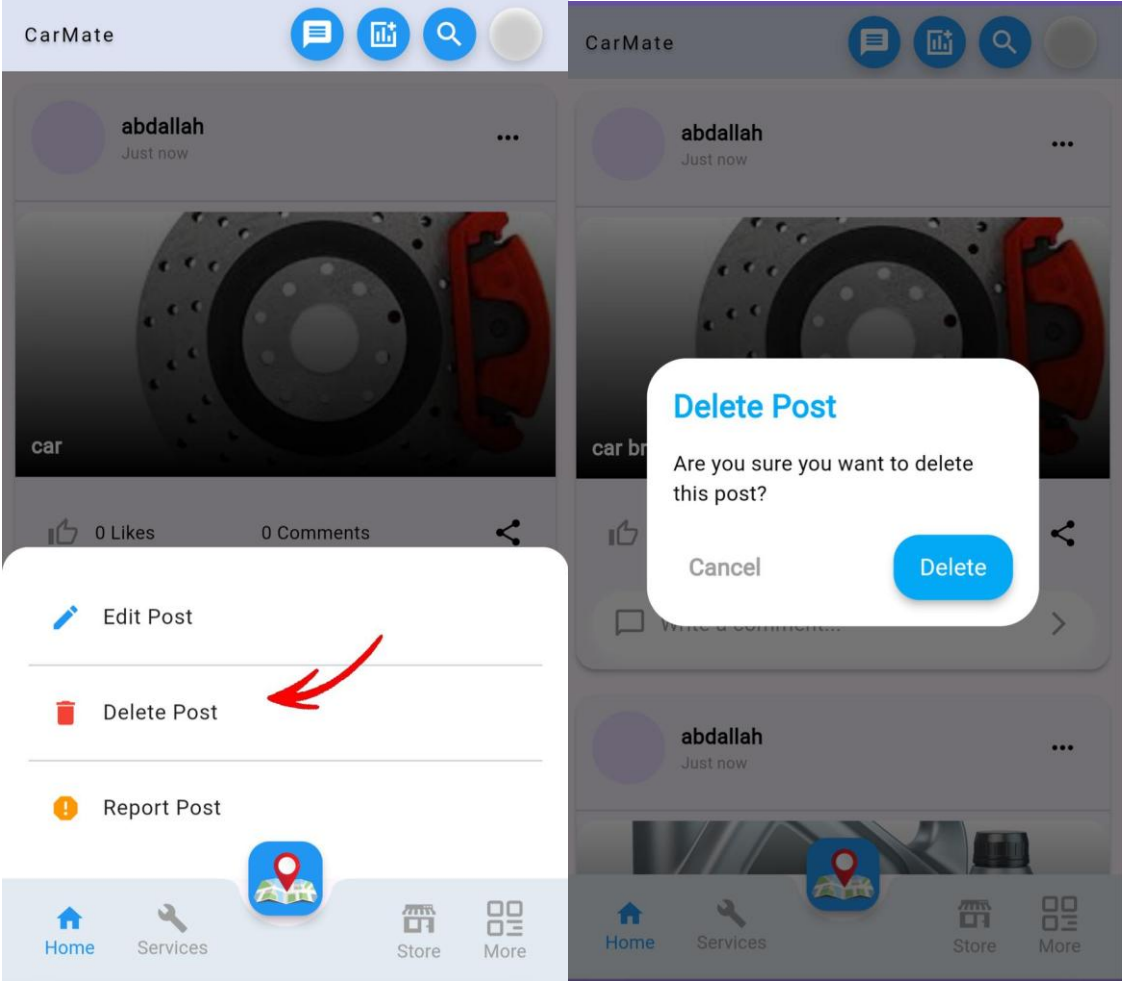


Figure 20 deleting post

The Owner is also capable of reporting posts that have been published. These reports are forwarded to the Admin, who will examine them and determine if the post should be removed or allowed to stay. This function supports keeping a secure and suitable atmosphere by enabling the admin team to address concerns.

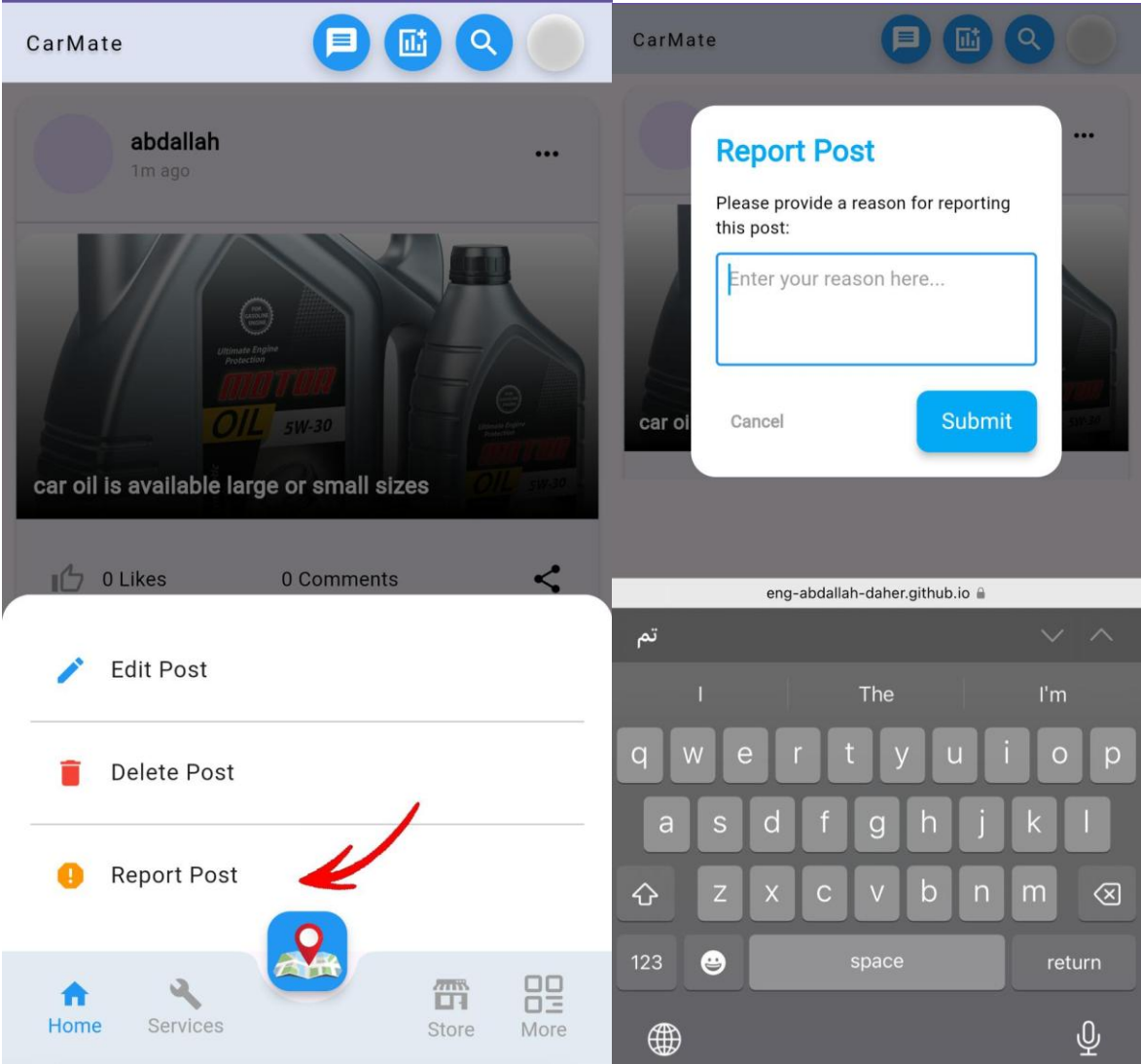


Figure 21 reporting a post

When a user or owner files a report about a post, it goes to the program administrator, who evaluates it to see if the report is legitimate and if the post breaches the program's rules or policies. If the report is considered valid, the administrator removes the post. If the report is deemed inaccurate or unwarranted, the post stays, and the report is rejected.

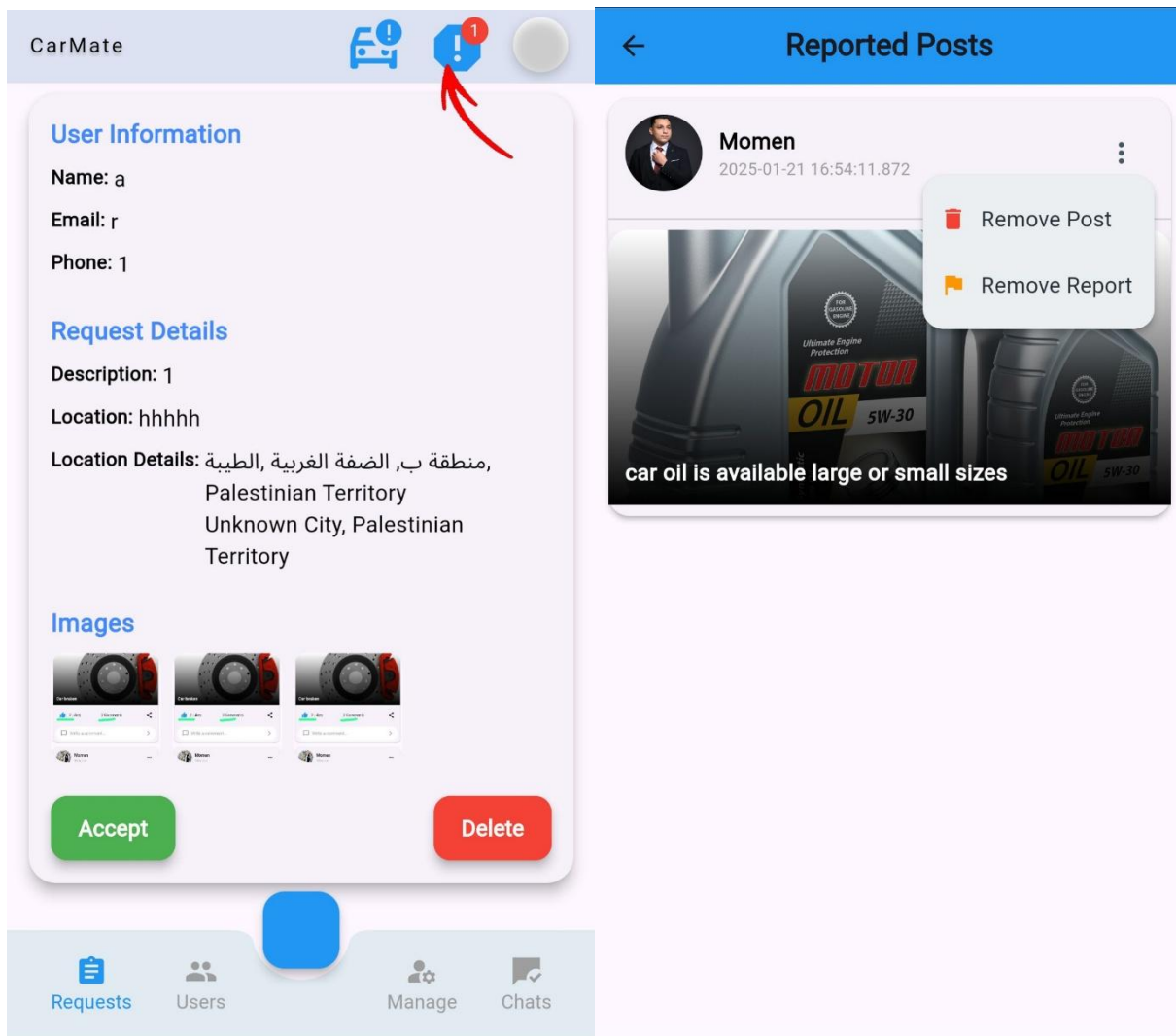


Figure 22 seeing users reports for posts

### 3-User home page

The user's main page resembles the owner's main page, with the primary distinction being that the user cannot publish posts. Nevertheless, the user has the ability to engage with posts by commenting, liking, and taking actions like editing or removing their own comments, in addition to replying to and liking comments from others. Additionally, the user can report posts they find inappropriate or concerning, with these reports being sent to the admin for review and action.

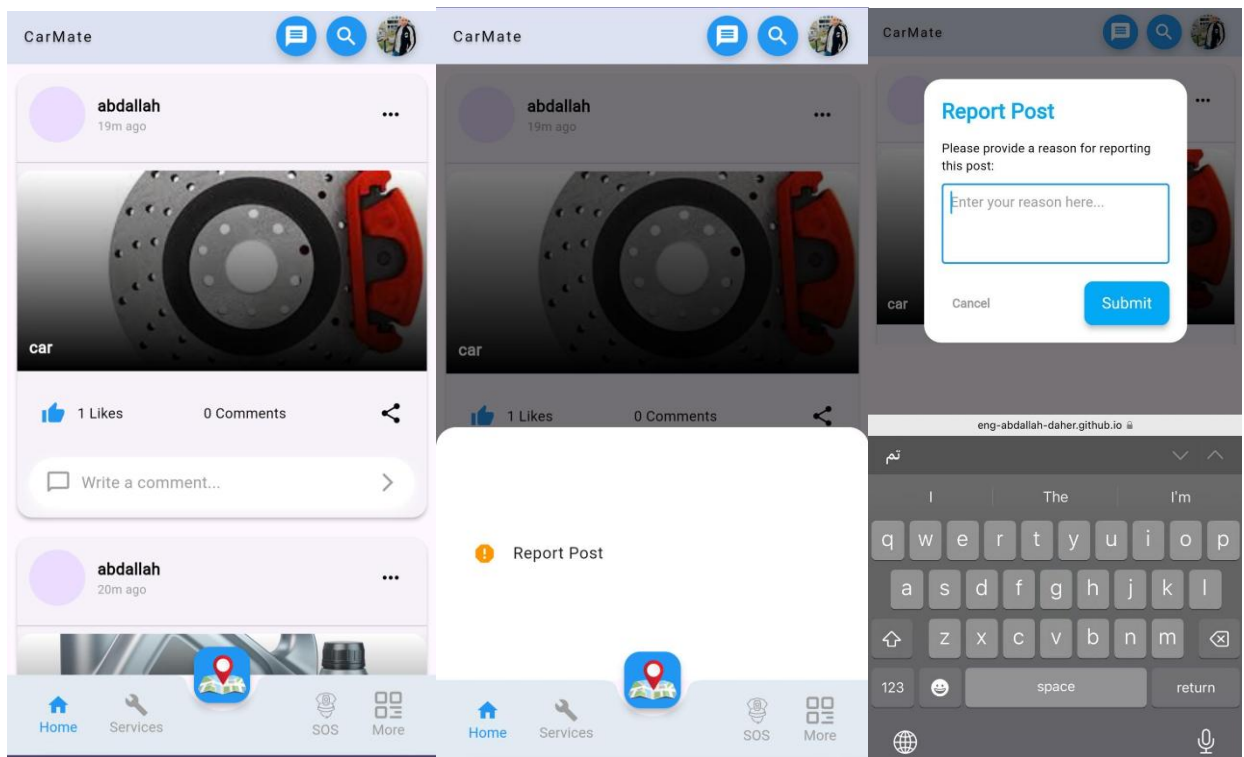


Figure 23 User home page

#### **4-Profile Page**

The Profile Page offers an in-depth summary of your personal details and engagement on the platform. It consists of your personal profile, allowing you to provide a short biography about yourself. Your registered email address appears alongside your date of birth and the gender you chose during registration.

Furthermore, the profile page displays the overall count of posts you have made, providing insight into your engagement on the platform. If you've uploaded a profile photo, it will be displayed here too. Additionally, your residence is shown, letting others view the location you've opted to share. This page is intended to provide a comprehensive overview of your account and its information in a single location.

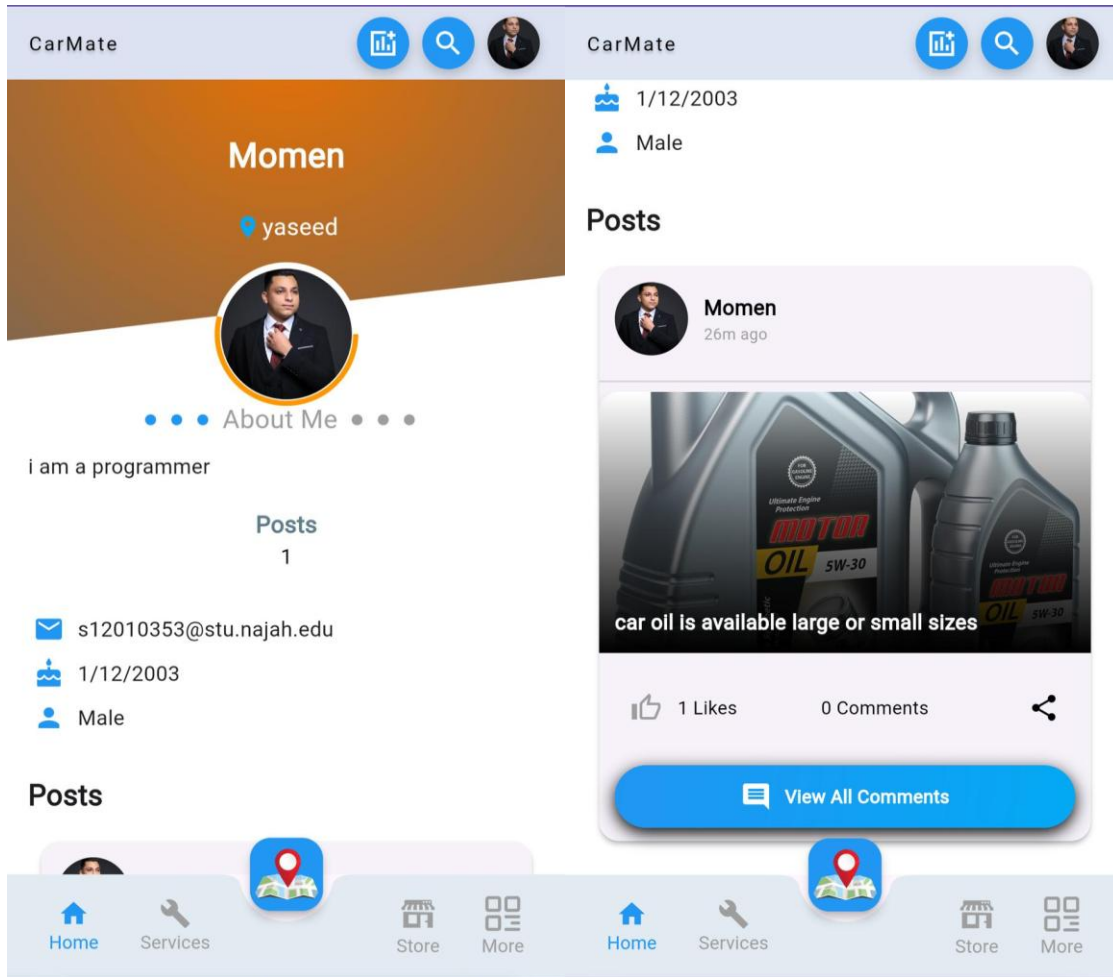


Figure 24 profile page and posts for an owner

## 5-Service Page (User)

The Service Page provides a variety of essential features for users. It features a Maintenance Reminder that alerts you when it's time for servicing your vehicle. Submitting a Maintenance Request for your vehicle is simple. The page additionally displays your Maintenance History, highlighting all past services completed on your vehicle. You can purchase parts online and check reviews of various workshops to assist you in selecting the best option.

You will also get Offer Notifications regarding discounts and promotions, and you can Monitor Repair Status to keep up with your vehicle's repair status in real-time. Moreover, you can ask for Car Delivery once the repairs are complete. Finally, the page provides a

Repair Estimate to give you an idea of the expense prior to the commencement of any work.

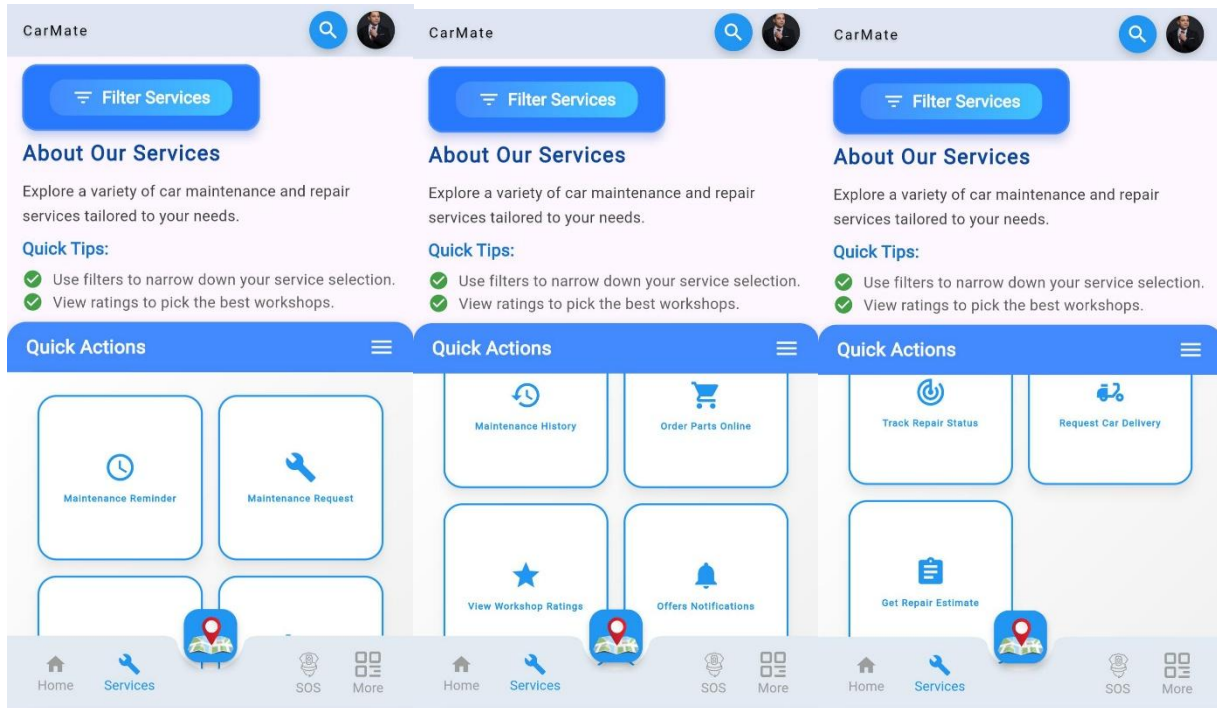


Figure 25 service page for the user

### ❖ Filter Service

The Service Filter function enables users to organize and refine services according to their preferences. Users can choose particular categories to concentrate on their greatest needs, and it also allows for multiple selections at once. For instance, users have the option to select both Shopping and Ratings to examine services connected to buying car parts while also taking into account customer reviews and evaluations.

The filter choices that can be selected consist of:

**Maintenance:** Shows services pertaining to vehicle upkeep and repairs.

**Shopping:** Concentrates on services for acquiring car components or accessories.

**Alerts:** Displays updates and notifications, including promotions or reminders.

**Ratings:** Sorts services according to customer ratings and reviews, assisting users in discovering the top choices.

Delivery: Enables users to schedule a technician to visit and fix their vehicle on location.

This adaptable filtering system allows users to tailor their searches and swiftly locate the particular services they require.

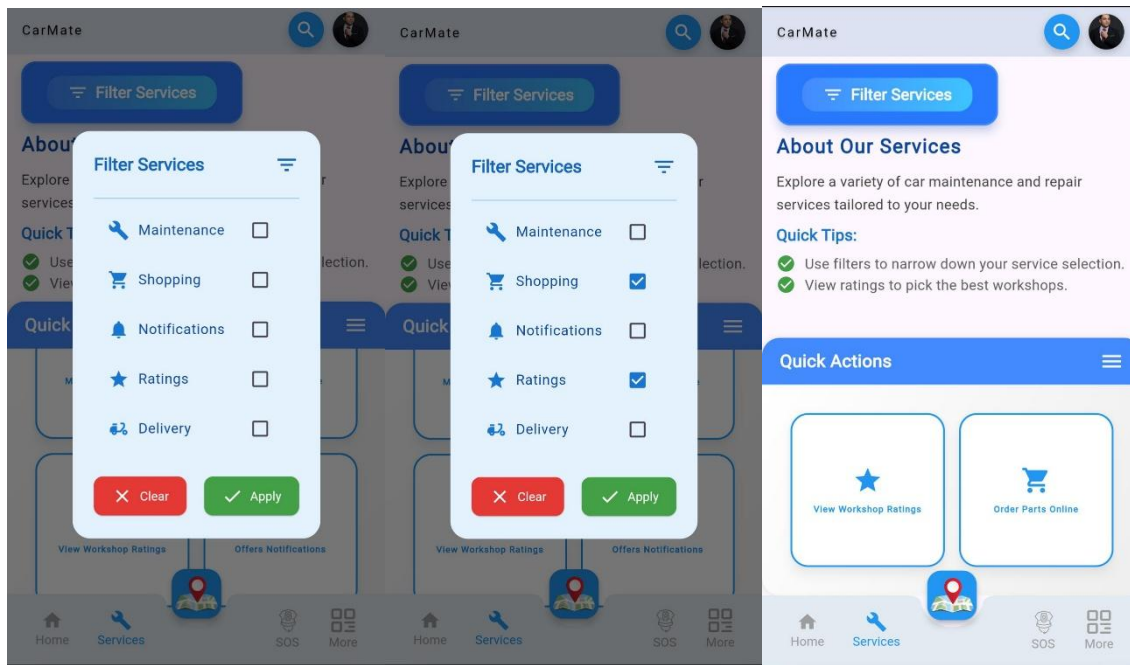


Figure 26 service filter in user

## ❖ Maintenance Reminder

To schedule a particular task for your vehicle, you can visit the Maintenance Reminder page. In that location, you can indicate your intended action and choose the specific date on which you aim to finish it. This tool aids in keeping you organized and makes sure your car maintenance is completed punctually.

The screenshot shows a mobile application interface for setting a maintenance reminder. At the top is a blue header bar with a back arrow and the title "Maintenance Reminder". Below the header is the main heading "Set Up Your Maintenance Reminder". The interface consists of several light blue rounded rectangular input fields. The first field is labeled "Last Maintenance Date" and contains a calendar icon and the date "30-1-2025". The second field is labeled "Maintenance Miledescription" and contains a pencil icon and the text "I want oil change". Below these fields is a summary bar showing "Next Reminder: 2025-01-26" with a calendar icon. At the bottom of the form is a larger rounded rectangle with a clock icon and the text "Next Maintenance Reminder: 2025-01-26". At the very bottom is a prominent blue button with a white checkmark icon and the text "Set Maintenance Reminder".

Figure 27 Maintenance Reminder

### ❖ Maintenance History

Any tasks you include will automatically show up on the Maintenance History page. This function allows you to monitor your car's maintenance tasks, such as when services were carried out and what was done, simplifying the process of overseeing your vehicle's care.

Maintaining this record is beneficial for monitoring your vehicle's status, scheduling upcoming maintenance, and confirming that all essential repairs have been carried out. It can also be beneficial if you choose to sell the vehicle, as it provides a clear history of its maintenance.

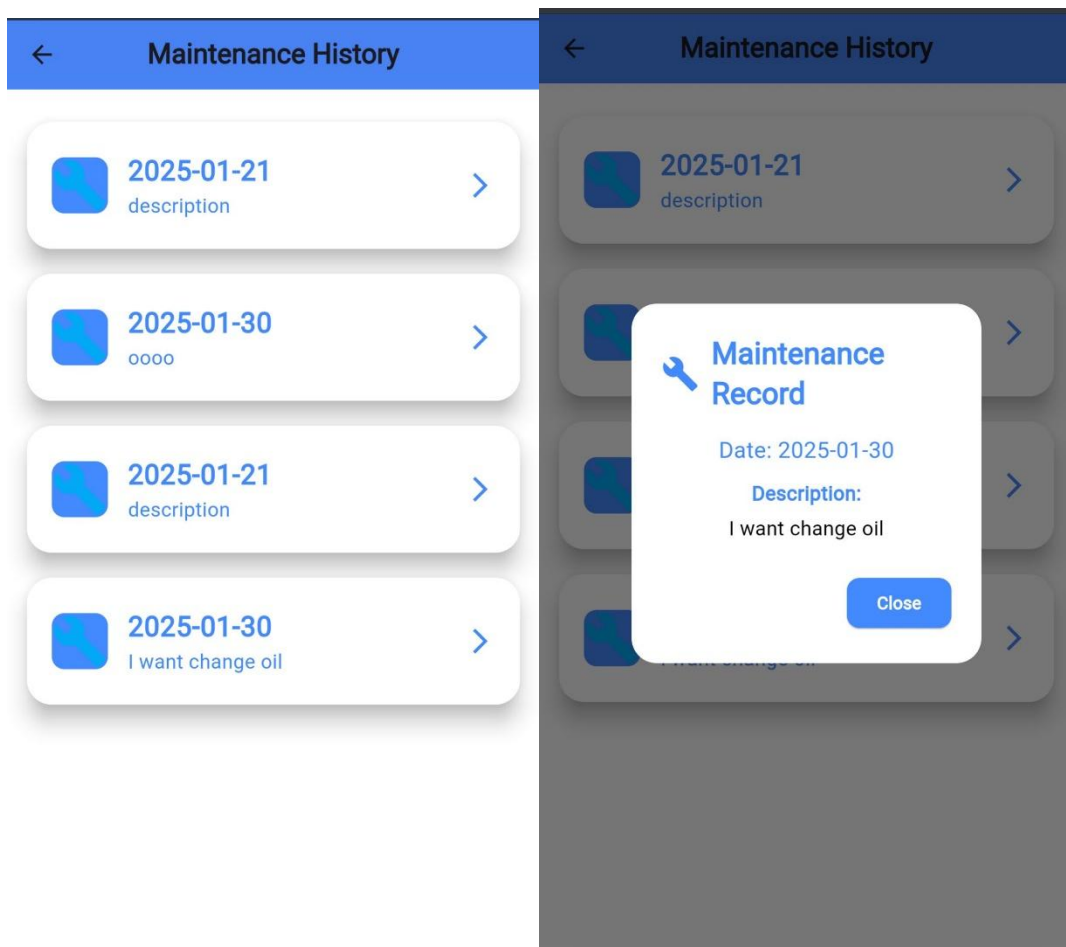


Figure 28 Maintenance History records

### ❖ Maintenance Request

The Maintenance Request enables you to schedule a repair service by selecting your preferred workshop. Once you have picked the workshop, you can select the date and time that suits you best for arranging the repair. This facilitates scheduling a repair whenever it suits you.

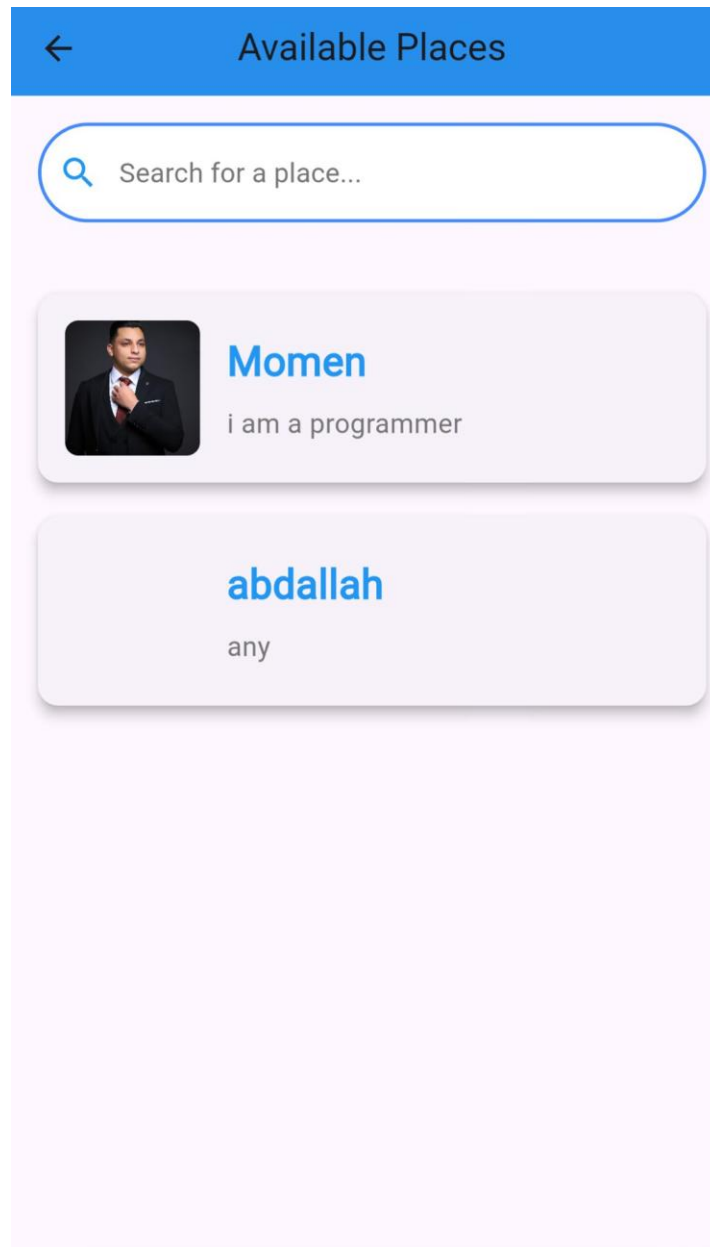


Figure 29 Maintenance Request

Once you choose the workshop for your car repairs, you will provide a description of the problem you are facing with the vehicle. You will also indicate the date and time you intend to come to the workshop for the repair.

The screenshot shows a mobile application interface for submitting a maintenance request. At the top, there is a blue header bar with a white left-pointing arrow and the text "Select Date & Time". Below the header, the name "abdallah" is displayed in a blue font, followed by the word "any" in a smaller, grey font. A text input field contains the text "I have a problem with the car's water due to". Below this, the text "Select Date & Time:" is followed by a blue button labeled "Choose Date & Time". Underneath, the text "Selected" is shown, followed by "Selected Time: 9:30 AM". At the bottom of the screen, there is a large blue button labeled "Submit Request".

Figure 30 applying Maintenance Request

When selecting the date and time, there are two choices for each: users can either pick the preferred date from a calendar display and the hour from a list, or they can enter both the date and time manually in the specified format.

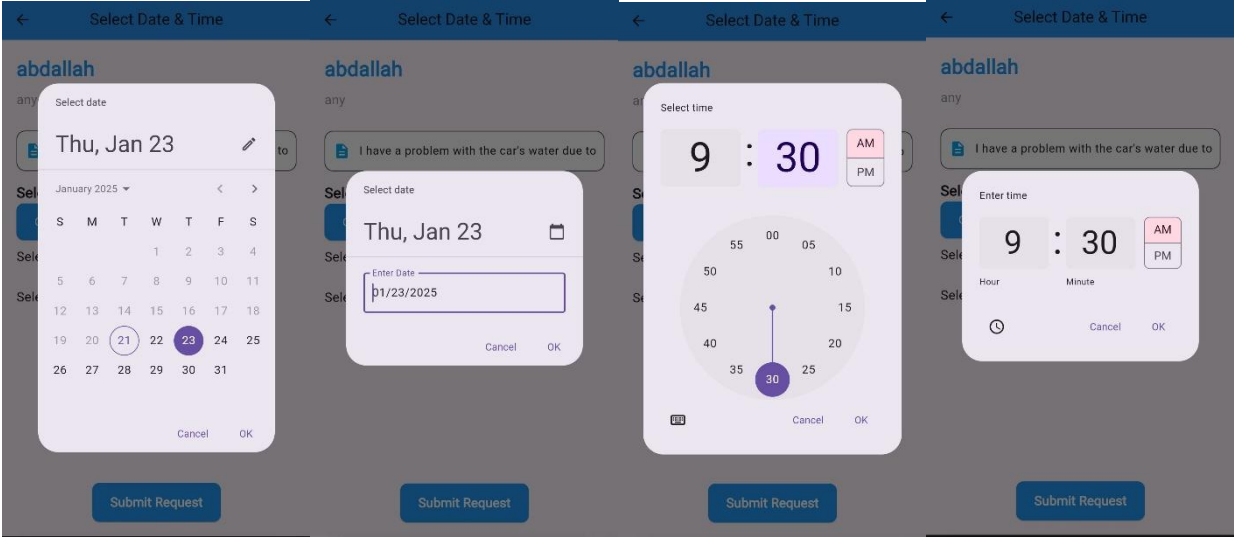
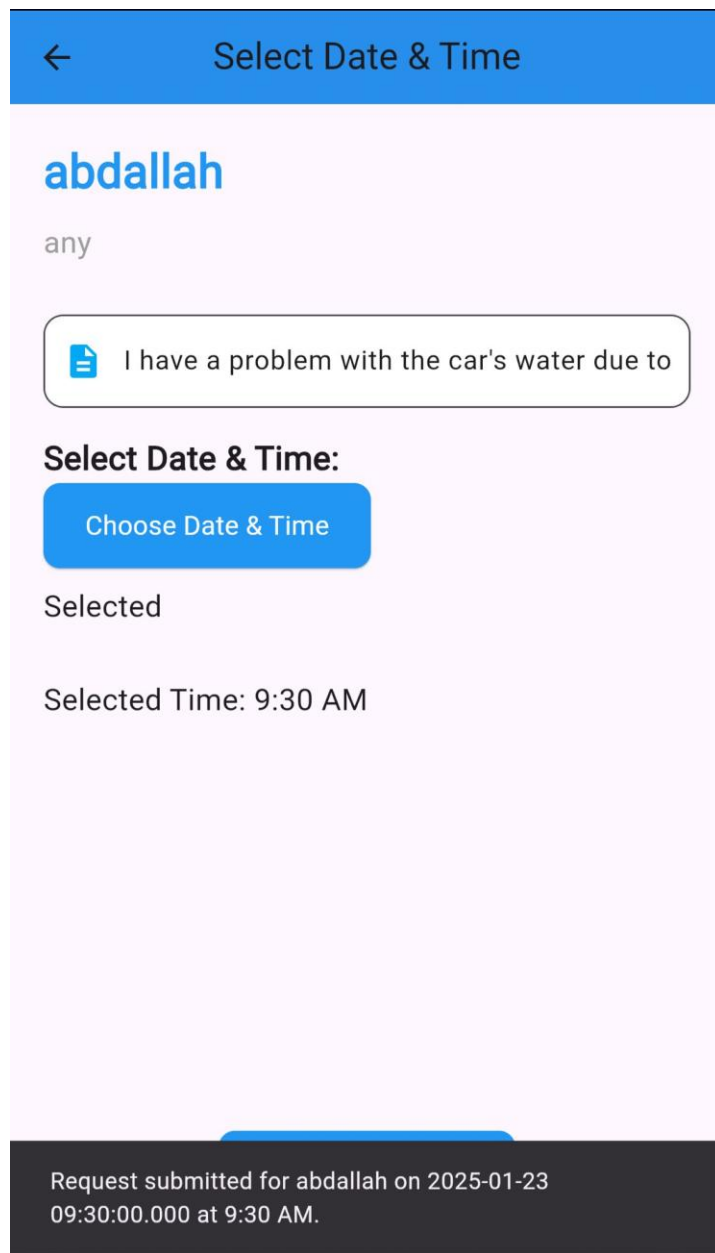


Figure 31 completing request of maintenance

Subsequently, a booking confirmation will be displayed, indicating the chosen date, time, and workshop you selected.



*Figure 32do the request*

This request is forwarded to the chosen workshop, and the owner has the option to accept or refuse it.

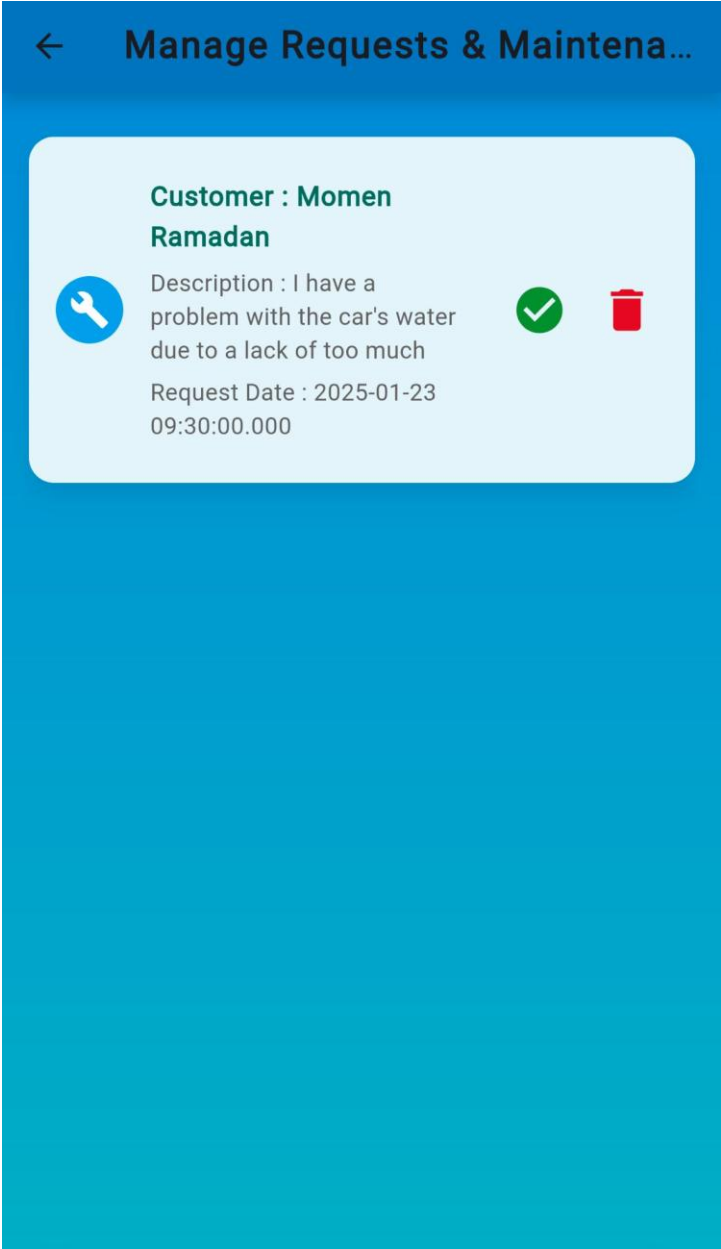


Figure 33 managing users maintenance requests

If the Owner denies the user's repair request, the user will get an email alert indicating that their request has been declined.

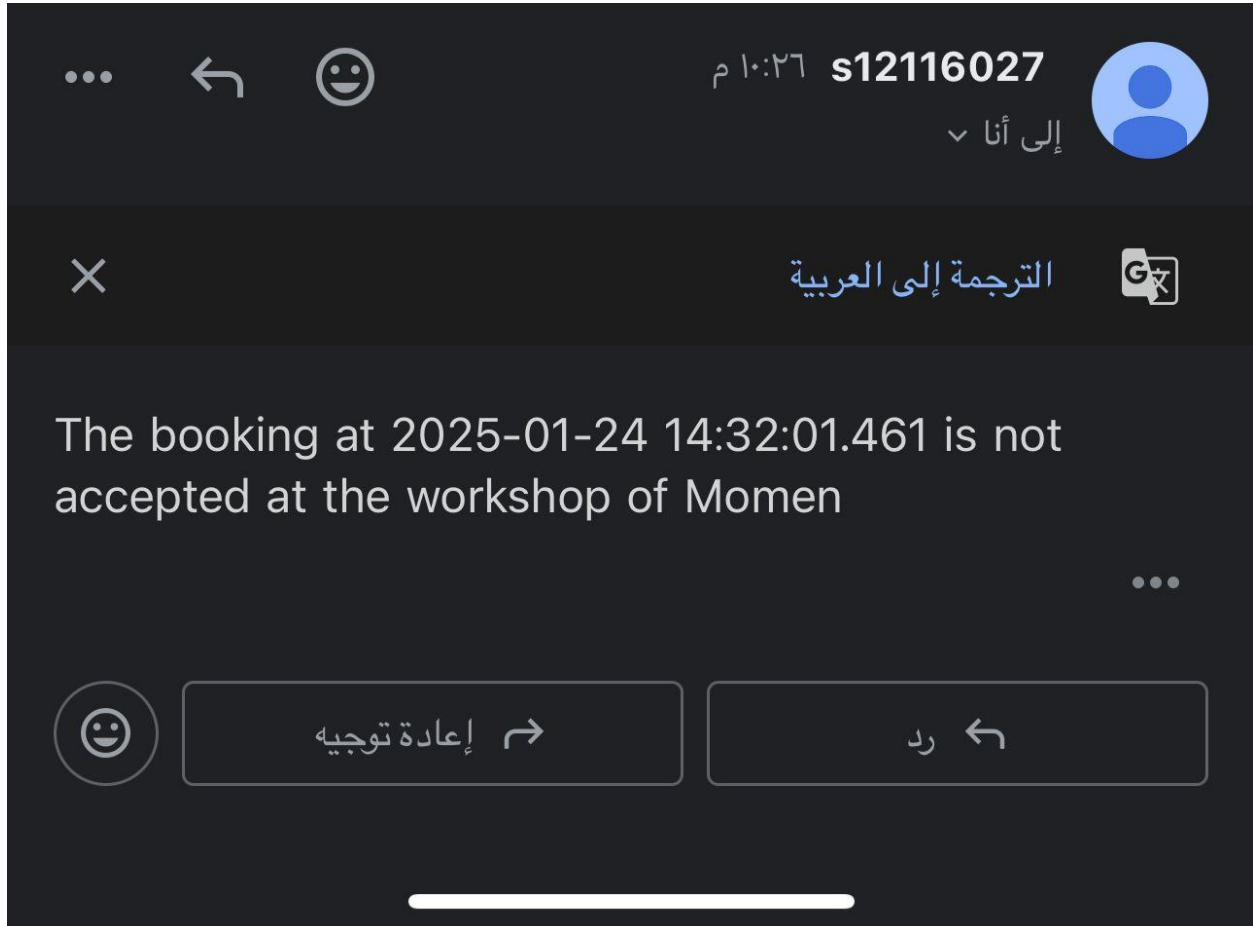


Figure 34 refusing notification

Once the workshop owner accepts the repair request, they will choose the estimated duration required to complete the repair. This time estimate helps you know how long the repair will take, allowing you to plan accordingly. The workshop owner may select a specific number of hours or days based on the complexity of the repair needed for your vehicle. This ensures transparency and helps you manage expectations for when the repair will be finished.

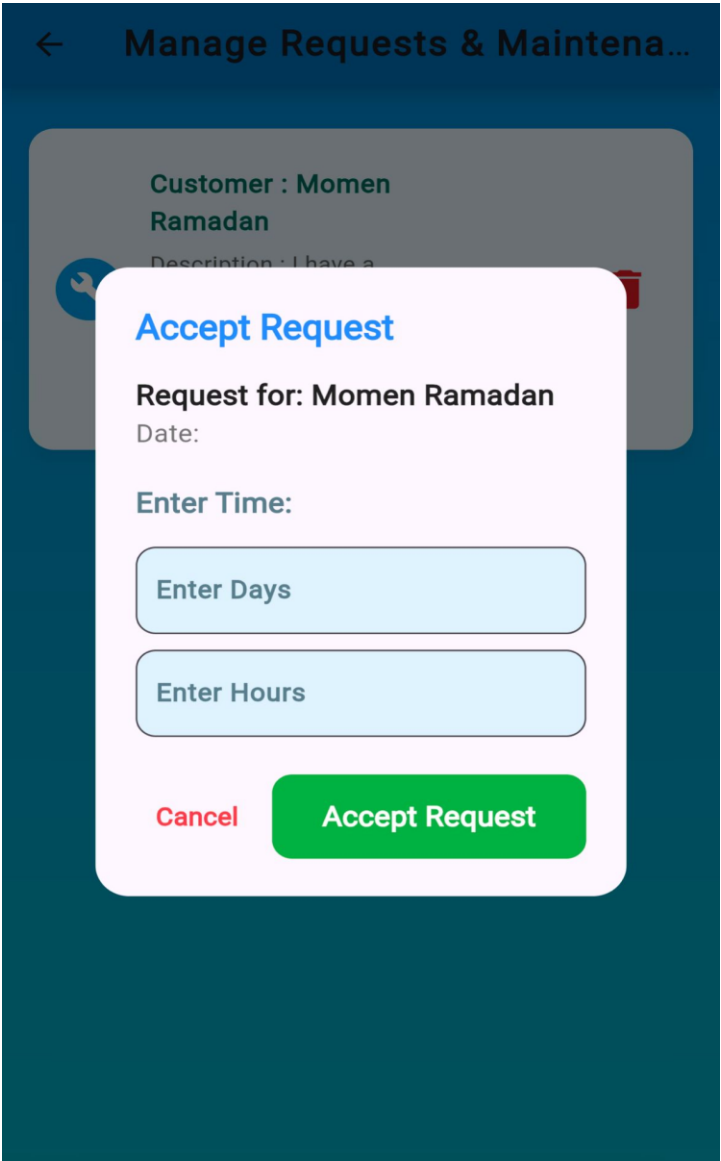


Figure 35 accepting a maintenance request

Once the workshop owner approves the repair request you provided, you will receive an email with the chosen date and time. This acts as a verification of your reservation.

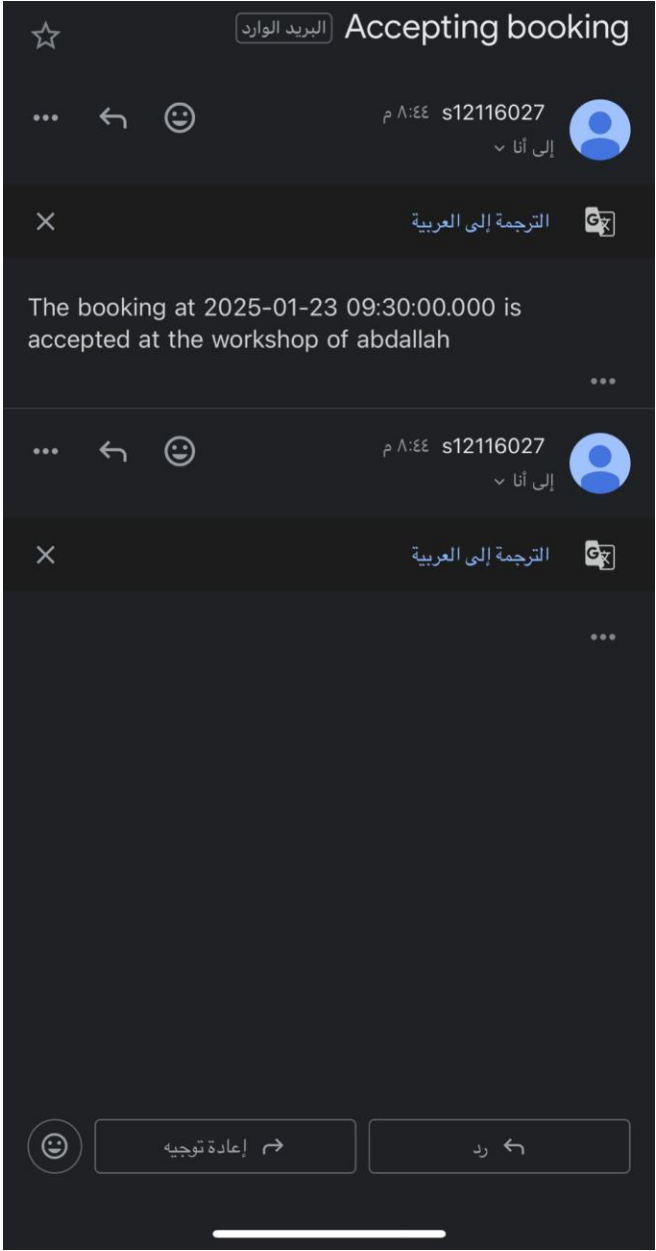
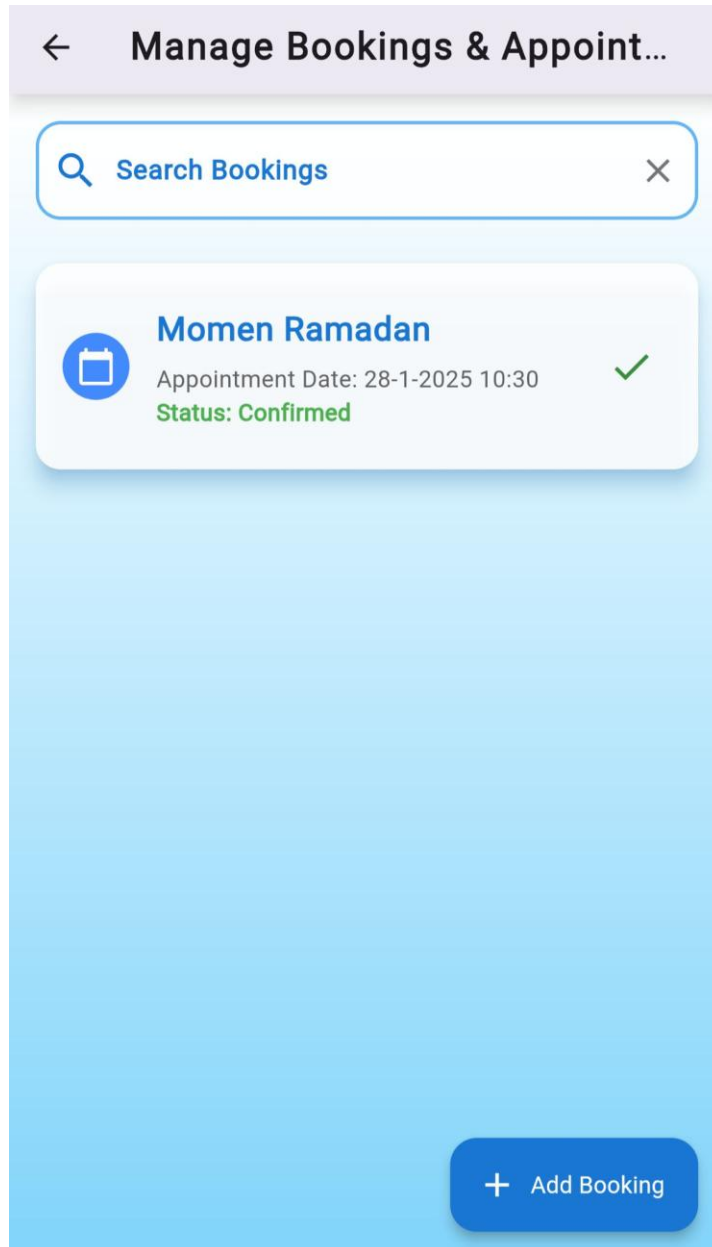


Figure 36 accepting request notification

❖ **Manage bookings & appointments**

The Manage Booking Page displays the authorized repair requests once the workshop owner has approved the repair. After the repair is finished, the owner can indicate the task is complete by selecting the checkmark icon and then entering the repair expense linked to the service. This assists in monitoring the finished repairs and the overall expenses for the user.



*Figure 37 managing bookings page*

Once the repair is done, select the checkmark icon to indicate the repair is finished, then input the actual cost incurred for the vehicle repair. This refreshes the status and gives the user the total repair expense.

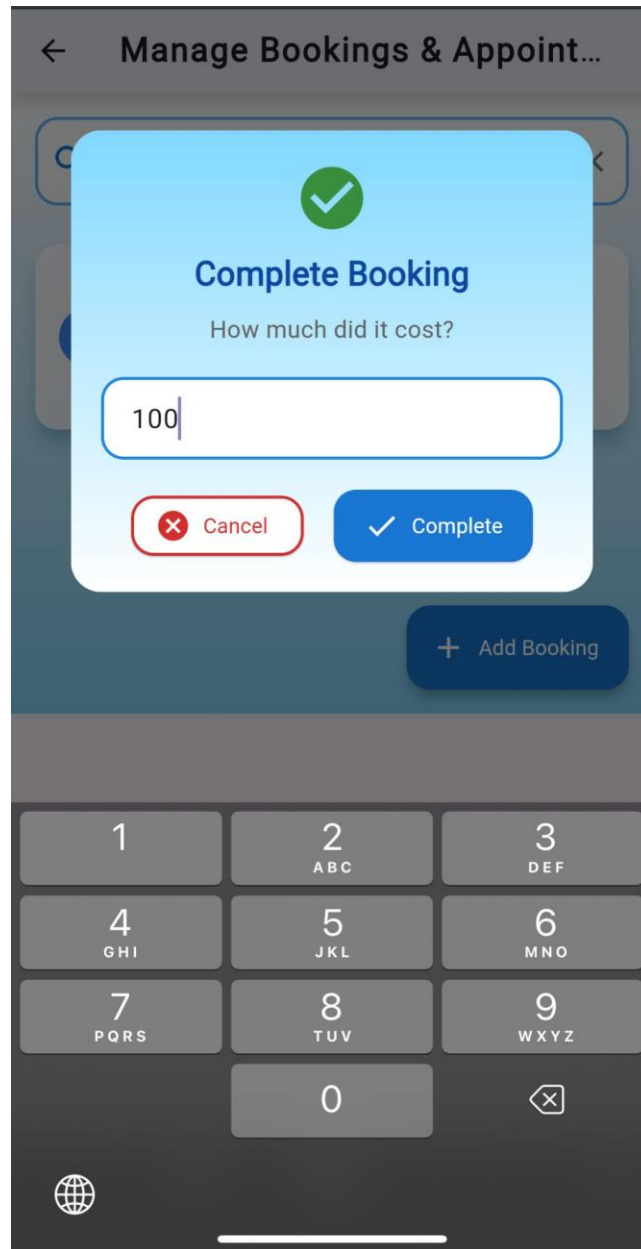


Figure 38 finish a car and enter the cost

After entering the repair cost, a credit card payment page appears. If the user has already saved their card information, this step is skipped. However, if it's the first time, the user will be prompted to fill in their card details.

The image shows a mobile application form titled "Enter Your Credit Card Details". The form is contained within a light blue rounded rectangle with a subtle drop shadow. It features four input fields, each with a light blue background and rounded corners. The first field is labeled "Cardholder Name" and includes a person icon. The second field is labeled "Card Number" and includes a card icon, with a character count "0/16" at the bottom right. The third field is labeled "Expiration Date (MM/YY)" and includes a calendar icon. The fourth field is labeled "CVV" and includes a lock icon, with a character count "0/3" at the bottom right. Below the input fields is a prominent blue "Submit" button with white text.

Following this, an email will be dispatched to the user, which will include a PDF invoice detailing the repair, along with the final cost and additional pertinent information regarding the service rendered.

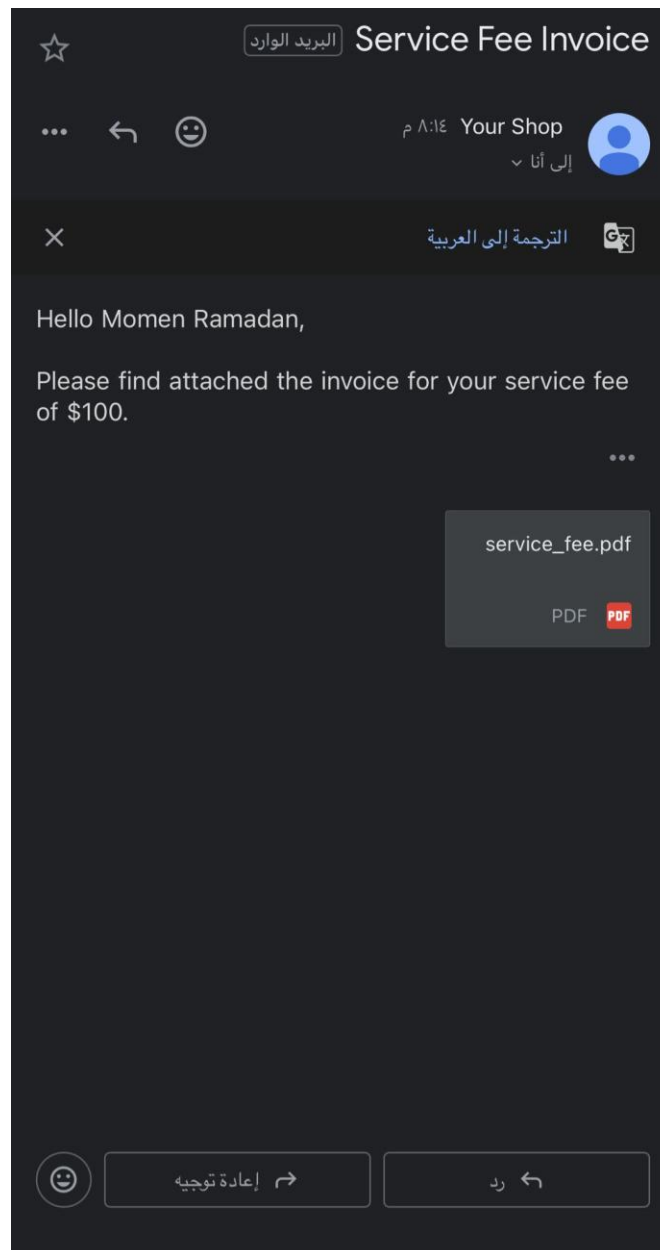



Figure 39 email notification for completed request

Pdf File



## Service Fee Receipt

1/25/2025, 6:14:39 PM

---

Shop Name:  
Momen

User Name:  
Momen  
Ramadan

Cost: \$100

Service Fee:  
\$100

---

Thank you for choosing our service!  
For any inquiries, contact [abdallahdaher205@gmail.com](mailto:abdallahdaher205@gmail.com)

*Figure 40 fee of a user*

❖ **Track Repair Status**

Once you get an email that confirms the Owner's agreement to your repair request, you may go to the Track Repair Status page. This page shows the time left for your car to be finished, counting from the day the request got approved to when the repair time is over. The leftover time is displayed as a live countdown clock, which diminishes in real-time, informing you about the repair status.

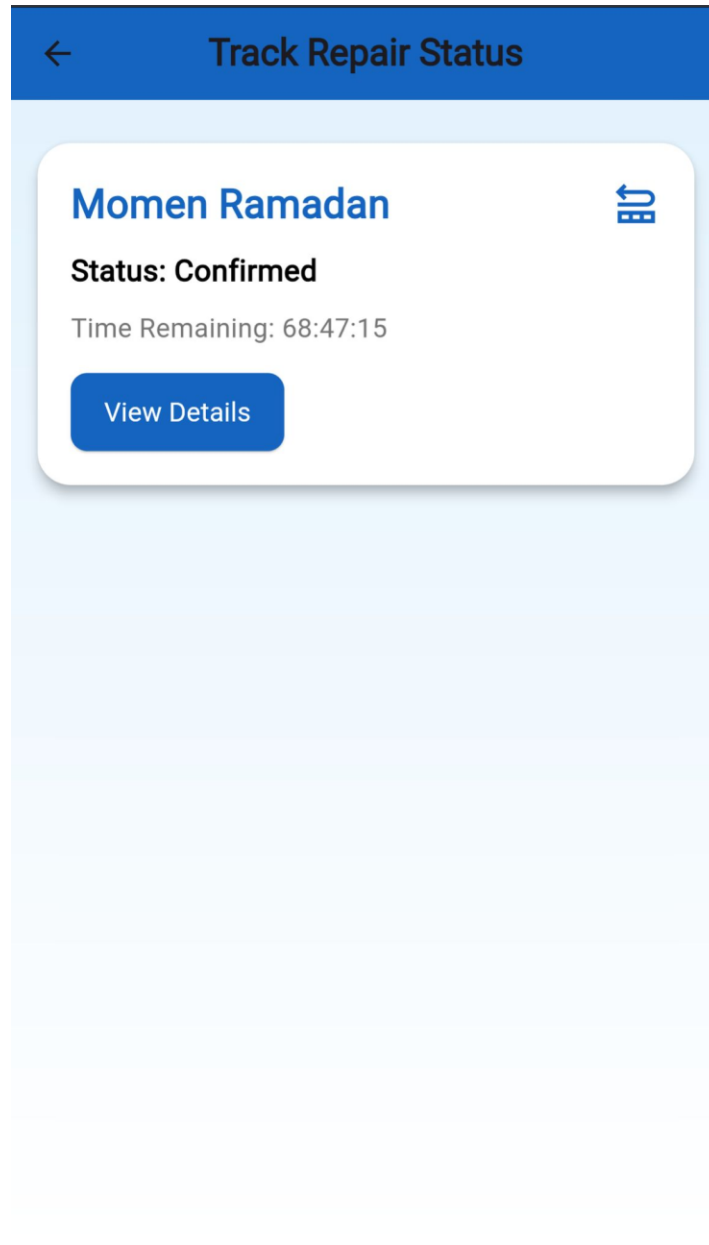


Figure 41 Track Repair Status page

By clicking the View Details button, you will find the date your car is projected to be finished, along with the explanation of the problem you shared during the repair request. This enables you to examine important information regarding your repair.

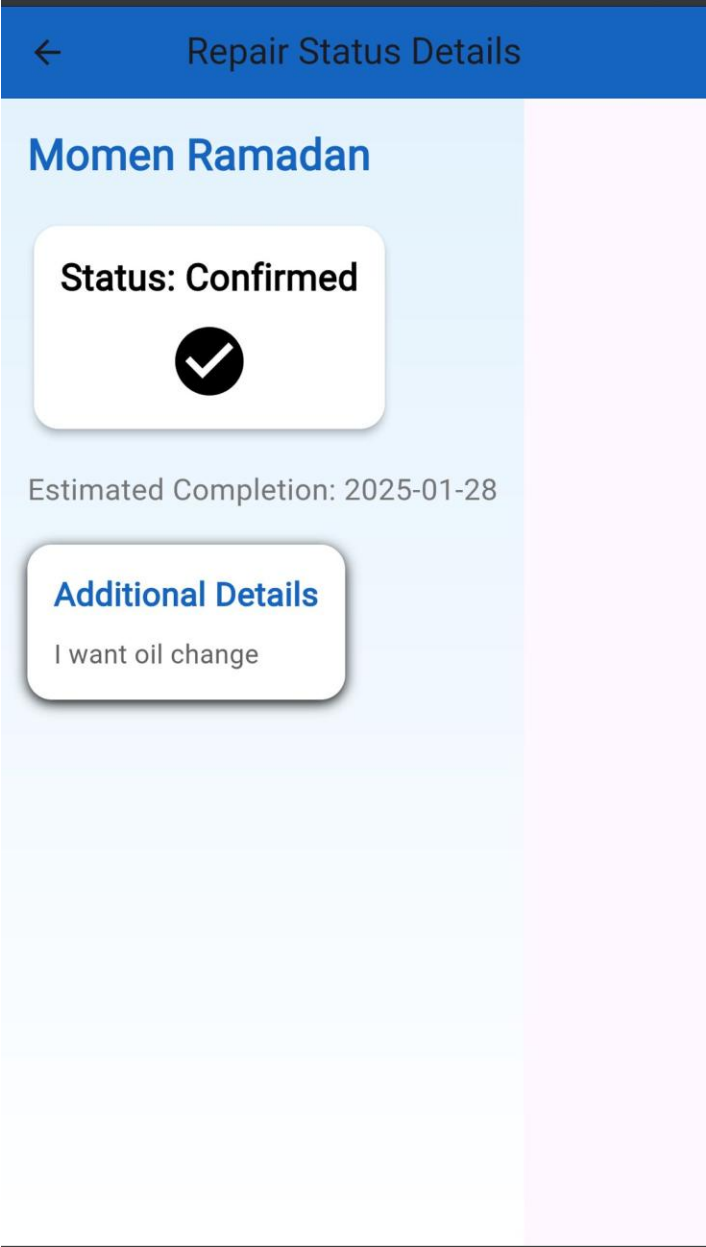


Figure 42 Repair status Details page

After the designated time has passed, the repair status automatically updates to Complete, signaling that the car is prepared for pickup or delivery.

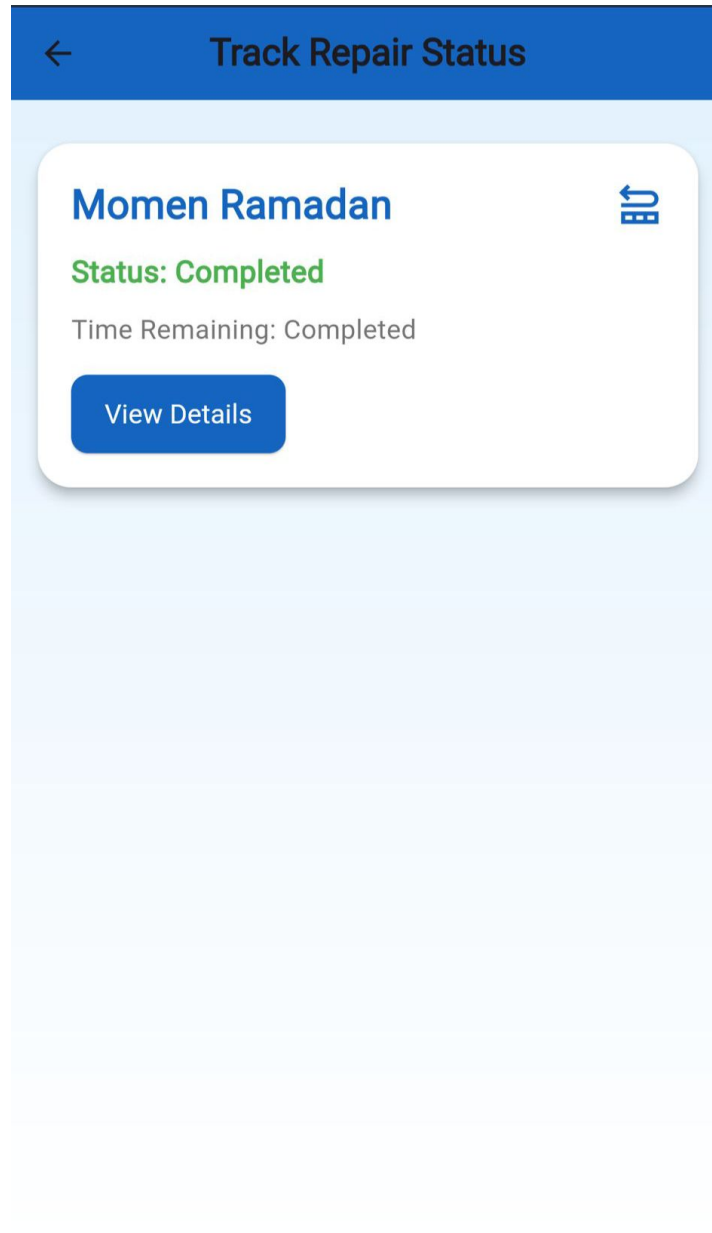


Figure 43 track repair status

❖ **Request Car Delivery**

Once the repair request gets approval and the Owner indicates the expected repair time, you can ask for delivery to have the vehicle brought straight to your location. To accomplish this, you just need to submit a delivery request by

entering your name, phone number, and choosing your location on the map. Furthermore, you may add any particular guidelines or remarks in the request to guarantee seamless delivery.

The screenshot displays a mobile application interface for requesting a car delivery. At the top, there is a back arrow and the title "Request Delivery". Below the title, the section "Fill in the details" is highlighted in blue. The form consists of four light blue rounded rectangular input fields: "Your Name", "Phone Number", "Delivery Address", and "Additional Instructions". At the bottom of the form, there are two prominent blue buttons with white text: "Submit Request" and "Show the Requests".

Figure 44 Request Car Delivery page

Should you ask for a delivery to bring your car to you when it is not being repaired, a notification will display: "Delivery cannot be requested because your car is not under repair."

← Request Delivery

Fill in the details

Your Name —  
momen

Phone Number —  
0595338489

Delivery Address —  
منطقة أ، الضفة الغربية, تـل, Palestinian Territory

Additional instructions —  
no

Submit Request

Show the Requests

You can not request when your car is with you!

Upon entering the necessary information and clicking Submit Request, a confirmation message will display indicating that your request has been sent successfully.

← Request Delivery

**Fill in the details**

Your Name —  
Ahmad

Phone Number —  
0595338489

Delivery Address —  
منطقة أ، الضفة الغربية, تـ, Palestinian Territory

Additional Instructions —  
not instruction

**Submit Request**

**Show the Requests**

Your delivery request has been submitted successfully!

Figure 45 Submitting delivery request

After you submit the request, an email is dispatched to the Owner, informing them that the specified user has asked for a delivery to move the car.

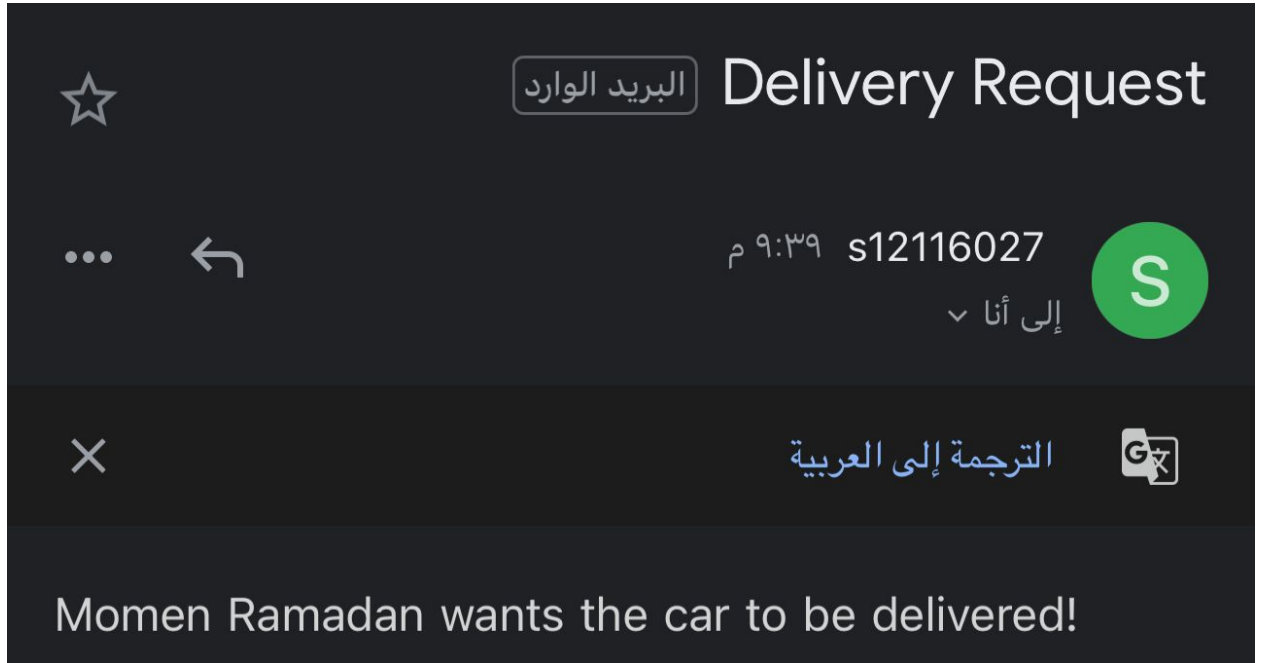


Figure 46 owner delivery request email notification

The Owner then reviews their account, where the delivery request status appears as Pending, indicating that the request is under review. If the Owner decides to approve the request, they update the status to Confirmed to proceed with the delivery.

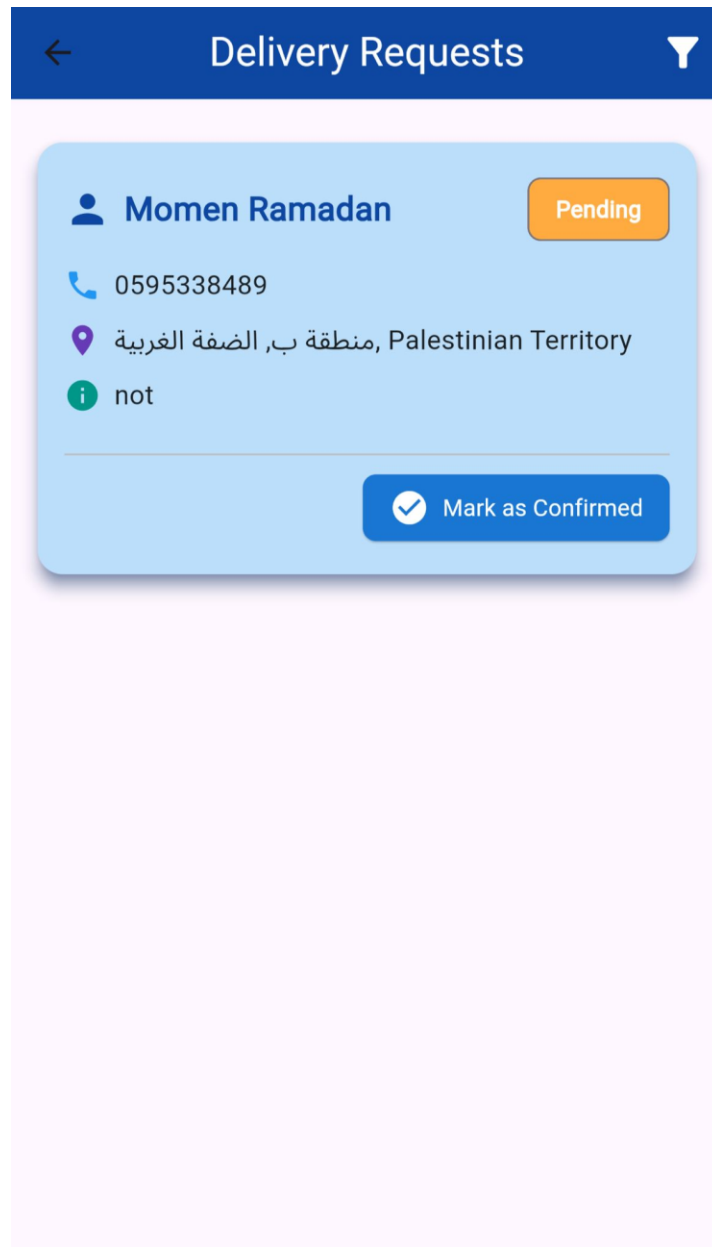


Figure 47 managing delivery requests

To approve the delivery request, you update the status to Confirmed.

The screenshot displays a mobile application interface for managing delivery requests. At the top, a dark blue header bar contains a back arrow on the left, the text "Delivery Requests" in the center, and a filter icon on the right. Below the header, two light blue rounded rectangular cards are shown. The first card represents a delivery request for "Momen Ramadan" with a green "Completed" status button. It lists the phone number "0595338489", the address "منطقة ب, الضفة الغربية, Palestinian Territory", and the note "not". The second card is identical in content but has a blue "Confirmed" status button. At the bottom right of this second card, there is a blue button with a checkmark icon and the text "Mark as Completed". A red arrow points from the bottom center towards this button.

Once the repair status is updated to confirmed, an email is dispatched to the user verifying that their delivery request has been authorized.

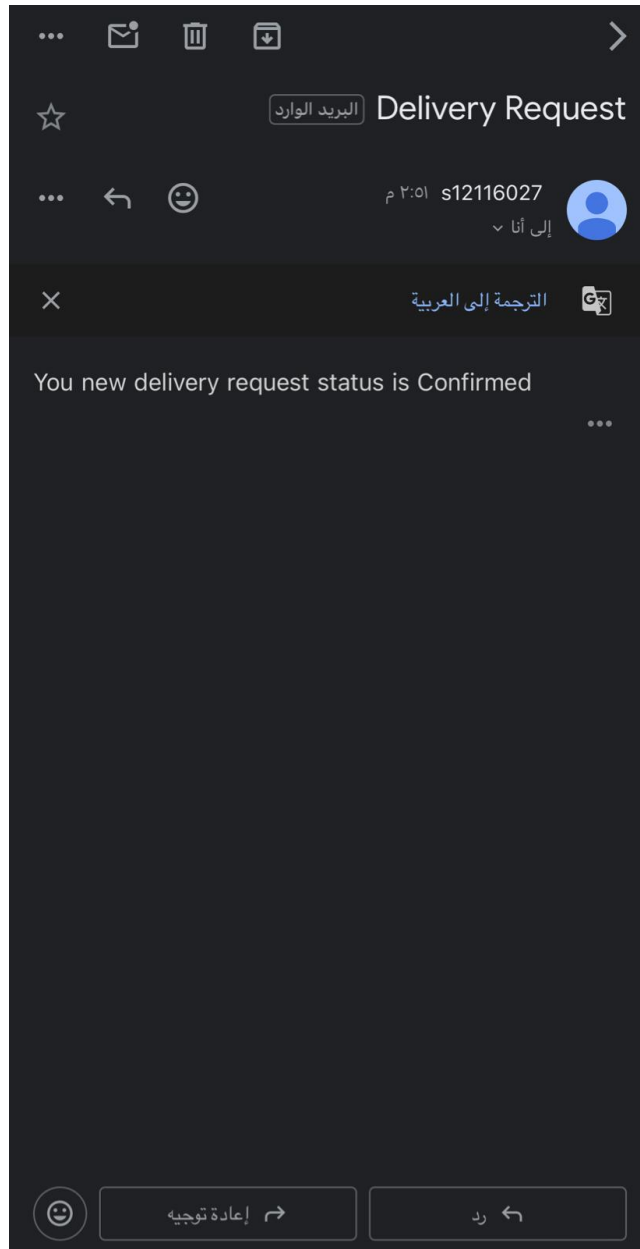
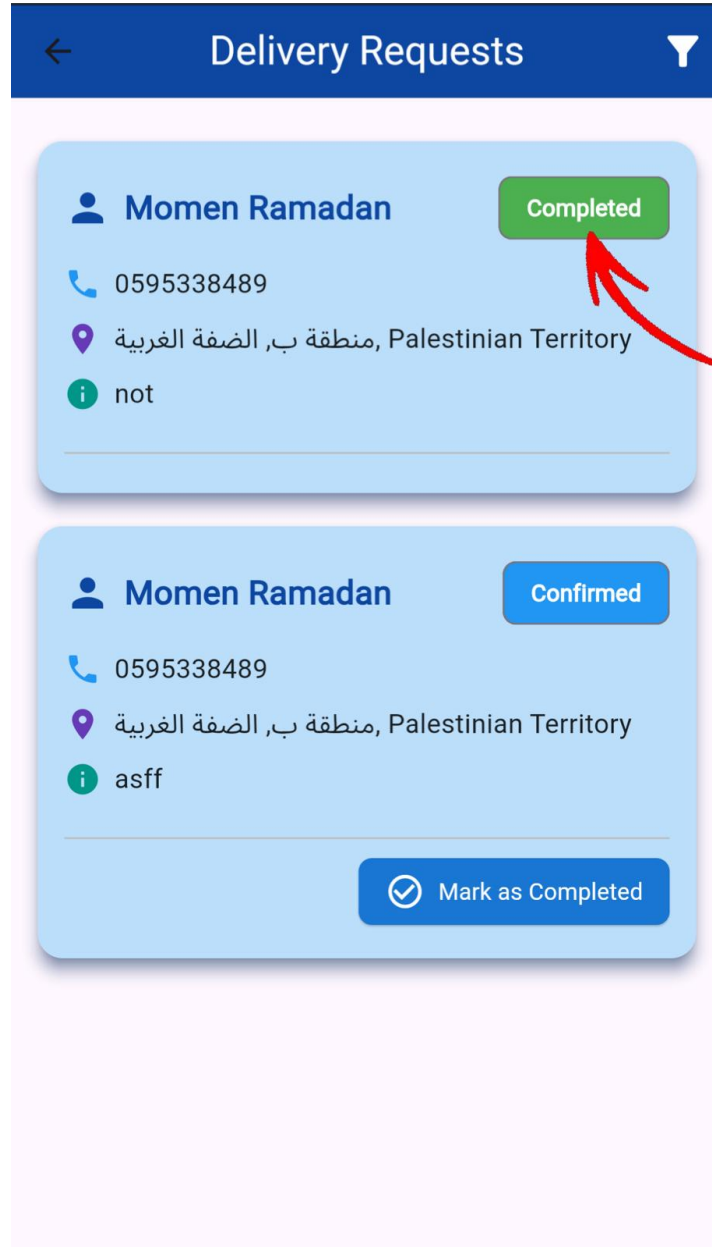
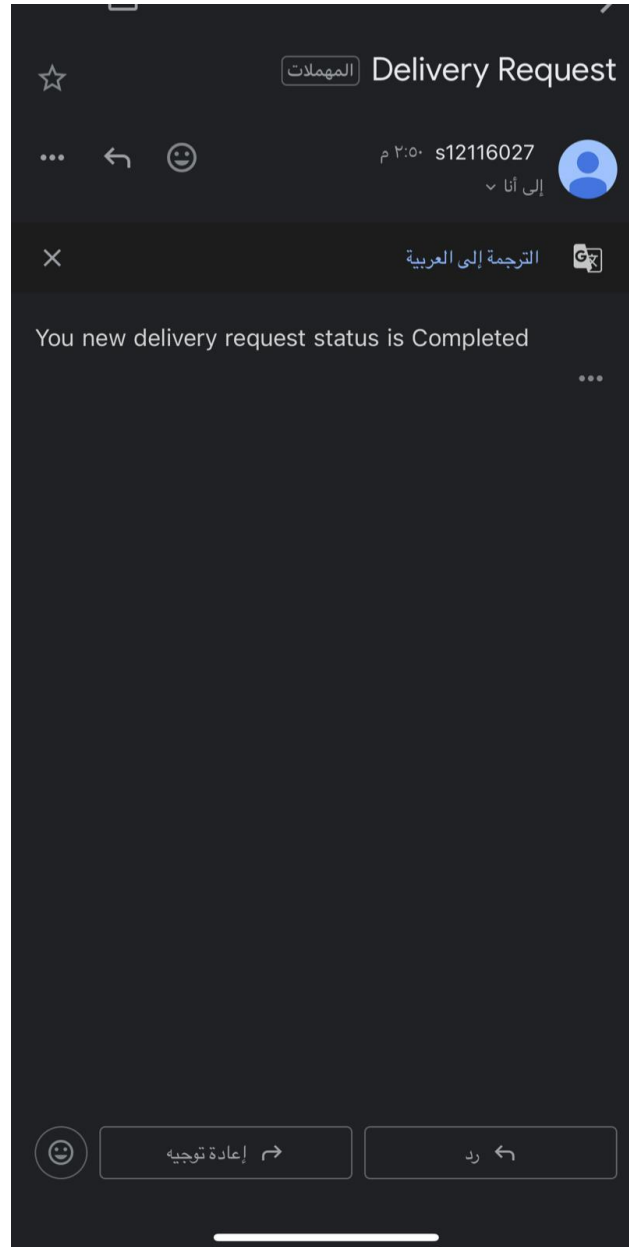


Figure 48 user delivery request confirmation email notification

If the vehicle is prepared and you wish to move forward with delivering it to the user, you update the status to Complete.



Subsequently, a message is dispatched to the user informing them that the status has been updated to Complete, indicating that the vehicle is prepared and heading to the user's address.



❖ **Order parts online**

The Order Parts Online page serves as a shopping site for automotive parts or accessories contributed by the owner. For every item, you can see the name, picture, price, stock quantity, and a description of the item. This enables you to conveniently explore and acquire car parts or accessories tailored to your requirements.

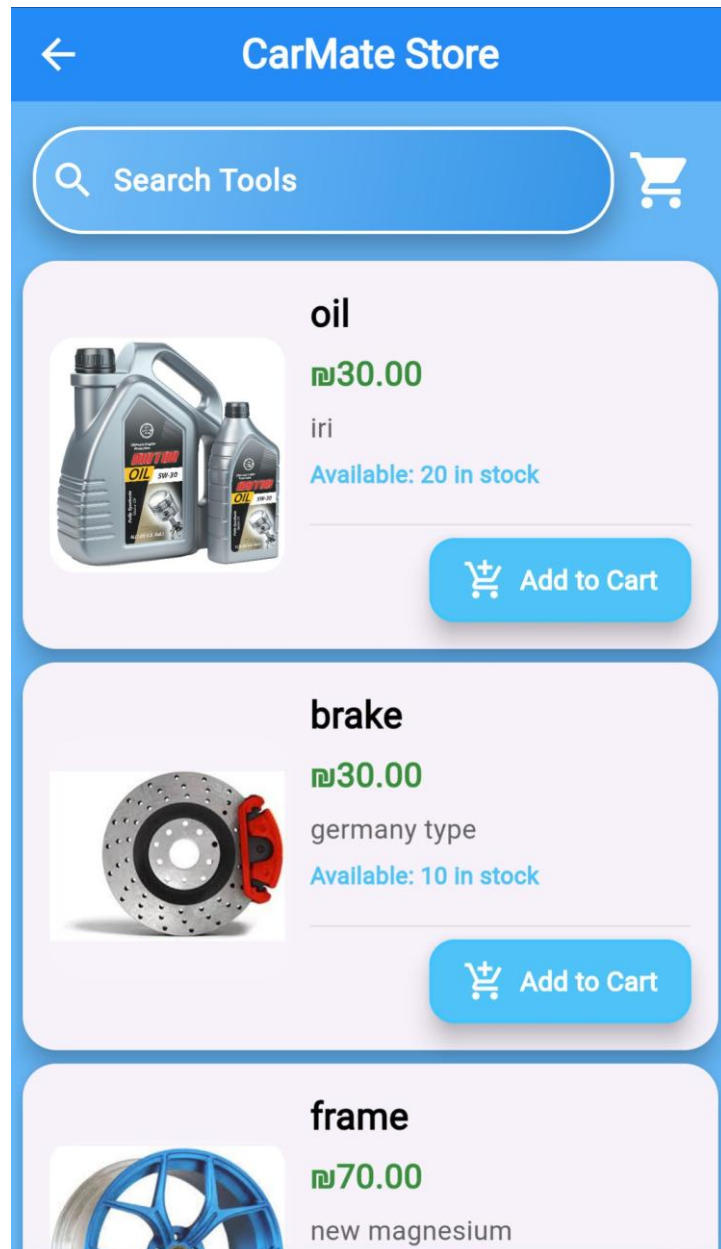


Figure 49 user's shop page

If the user intends to buy an item, they can click on Add to Cart and then choose the quantity they want to buy of that item.

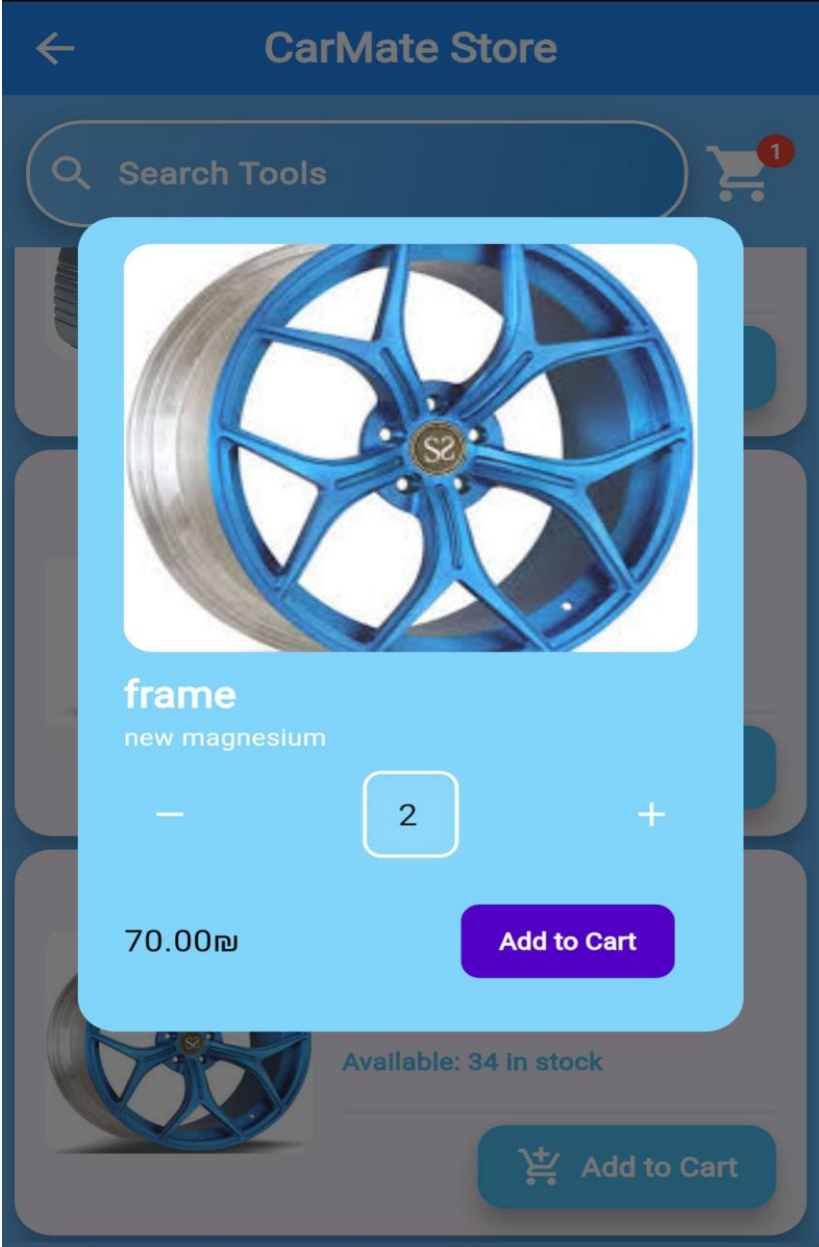


Figure 50 dialog for inserting an item to cart

Subsequently, you will be taken to the Shopping Cart, where a message will appear indicating that items have been included. The cart will show the item you picked, along with the amount you selected and the price for every item. Furthermore, you can either eliminate the chosen item from the cart or modify the quantity as required prior to moving on to checkout.

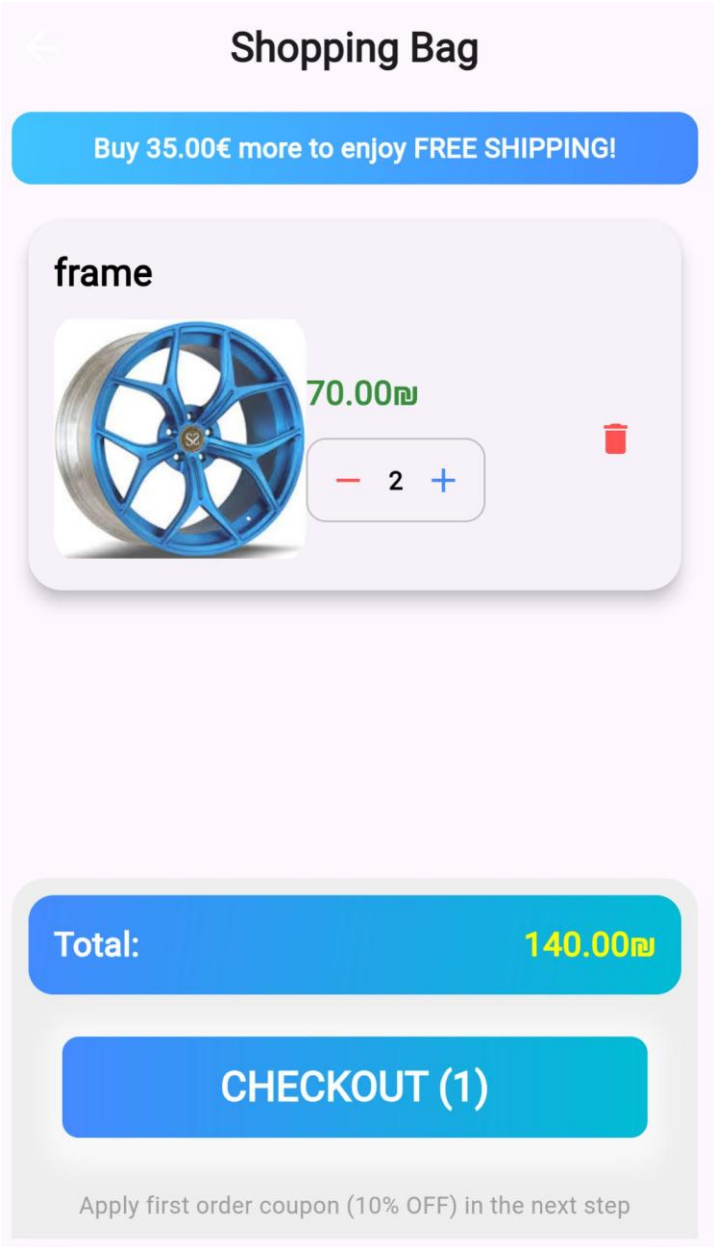


Figure 51 cart page

When you select the Checkout button, a page for credit card details opens, allowing you to enter your card information. When you input the information for the first time, it will be stored for the user, allowing the system to automatically identify it in subsequent transactions, thus negating the need for re-entry.

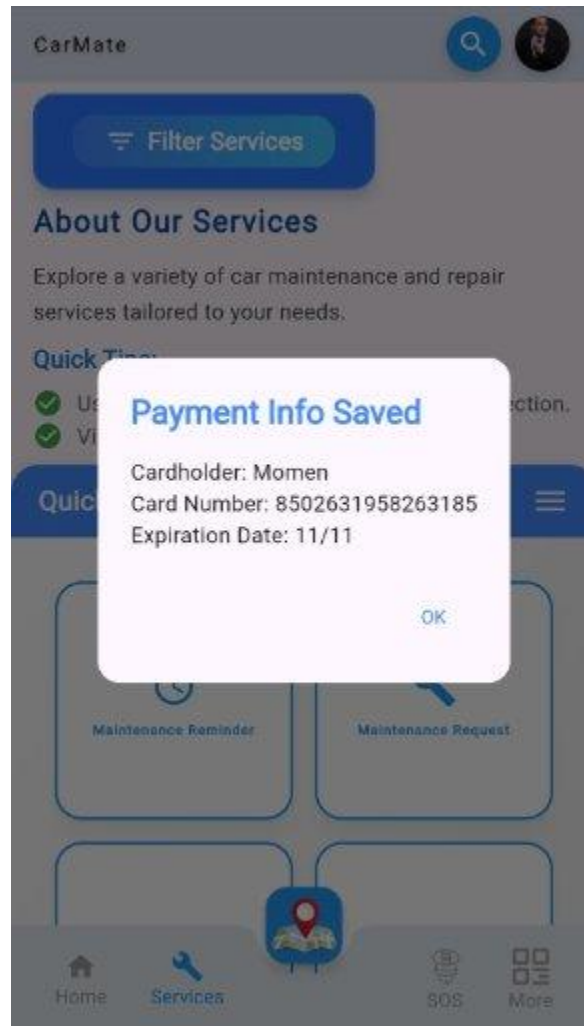
**Enter Your Credit Card Details**

0/16

0/3

**Submit**

Once you click Submit, a confirmation dialog shows the details you provided, enabling you to examine and verify it prior to continuing.



❖ **View workshop rating**

On this page, users have the opportunity to rate the offered workshops and compose a tailored review outlining their experience. This input aids other users in making educated choices and also offers important insights to the workshop owners.

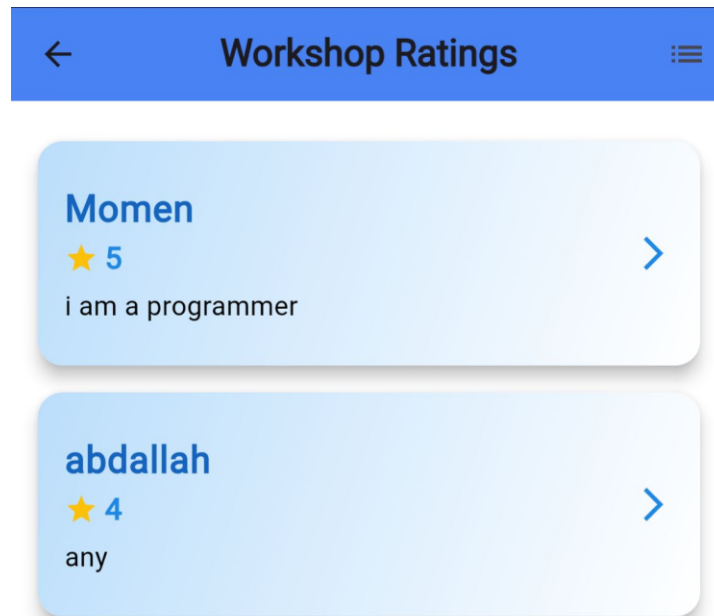


Figure 52 View workshop rating page

For instance, if you're looking to evaluate a particular workshop, you can give it a star rating (such as ★ ★ ★ ★ ★ for 5 out of 5 stars) and include a written account of your experience. This enables you to provide in-depth feedback regarding the service you experienced, assisting others in making informed choices.

← Submit Complaints & Feedback

## Submit a New Complaint

Description

great service

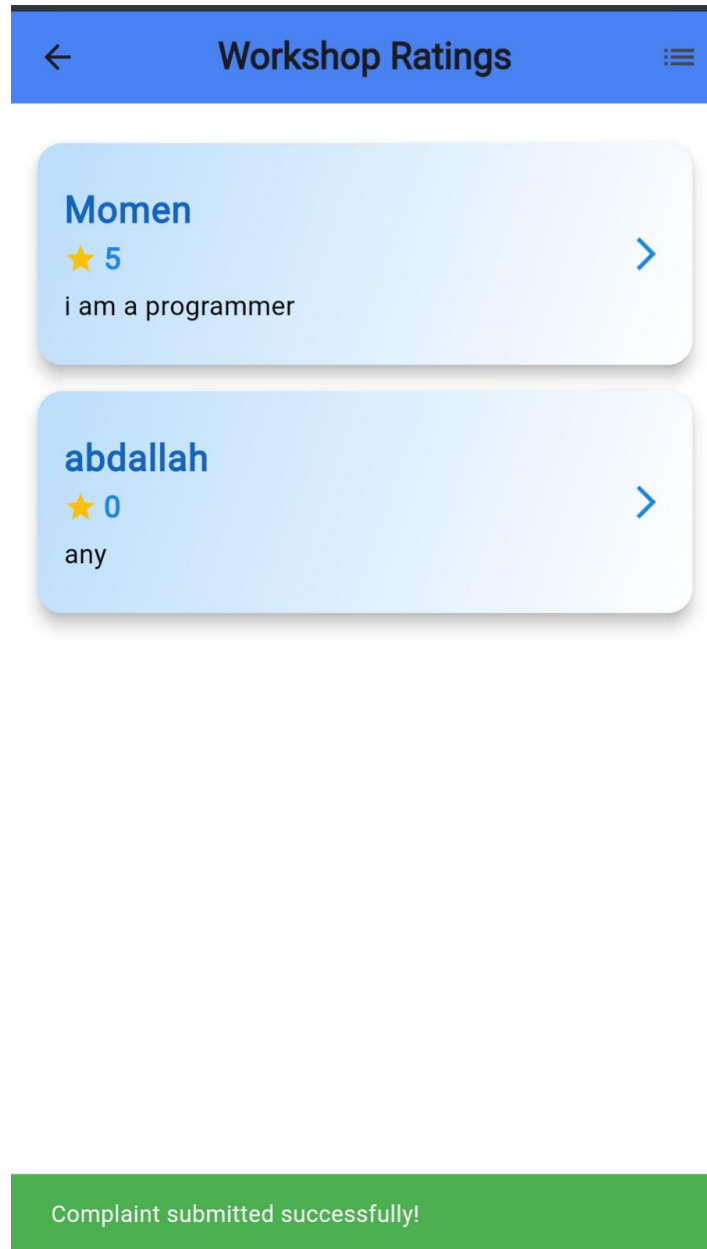
Rate the Complaint (1 - 5 stars)

★ ★ ★ ★ ★

Submit Complaint

Figure 53 submitting a complaint

Once you submit your rating, a confirmation notice will display saying, "Your rating has been submitted successfully," to verify that your feedback has been received.



On this page, users have the opportunity to rate the workshops offered and compose a tailored review detailing their experiences. Moreover, the user can edit or remove their rating and review whenever they want, giving them the ability to revise or eliminate their feedback as necessary.

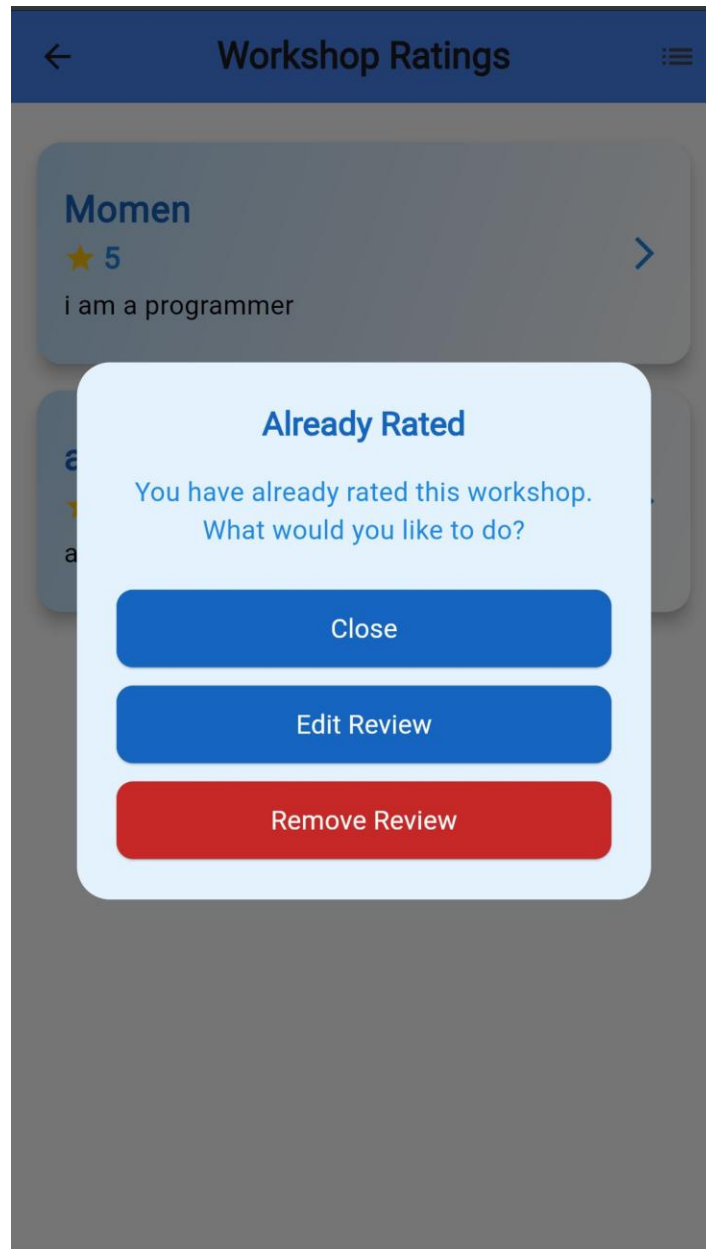


Figure 54 editing or removing rating dialog

To change your rating, simply click on Edit Rating, which lets you alter the star rating and adjust the written description if necessary. This guarantees that your feedback stays precise and current.

← update Complaints & Feedback

### update a Complaint

Description

good service

Rate the Complaint (1 - 5 stars)

★ ★ ★ ☆ ☆

Submit Complaint

Figure 55 editing rate

To remove your rating, you can click on Delete Rating, and a confirmation message will display saying, "Your rating has been deleted successfully," to confirm the action.

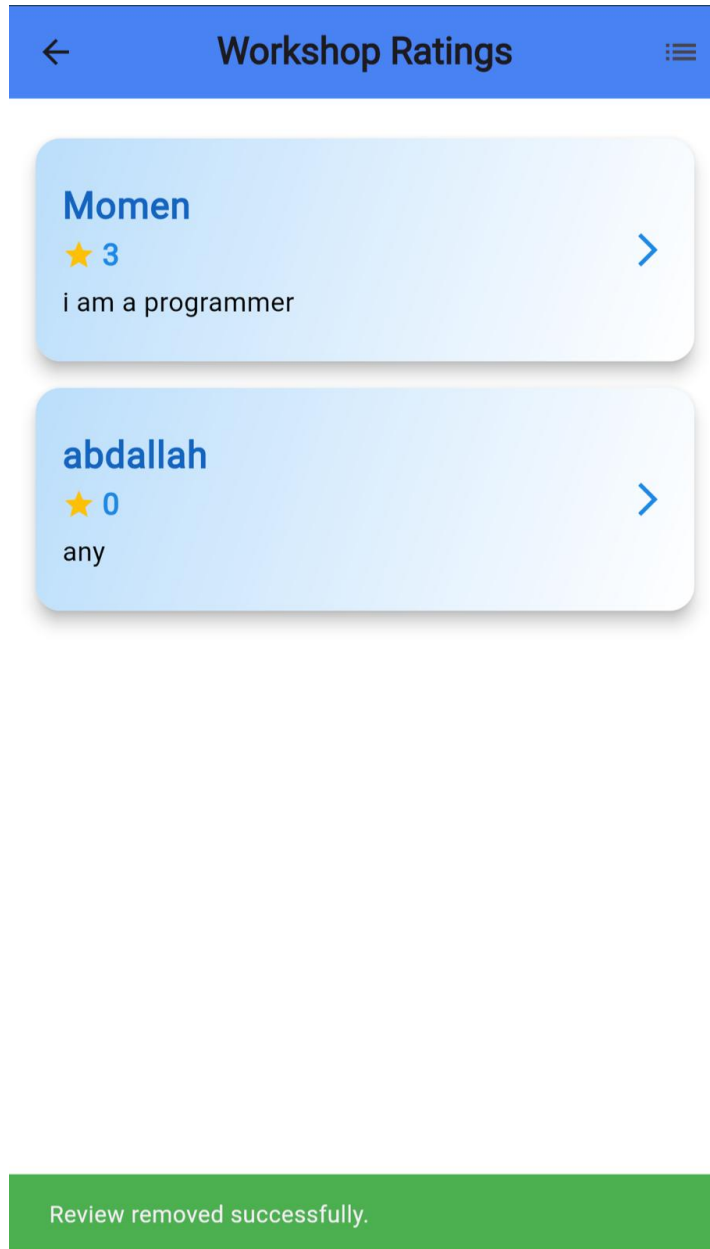
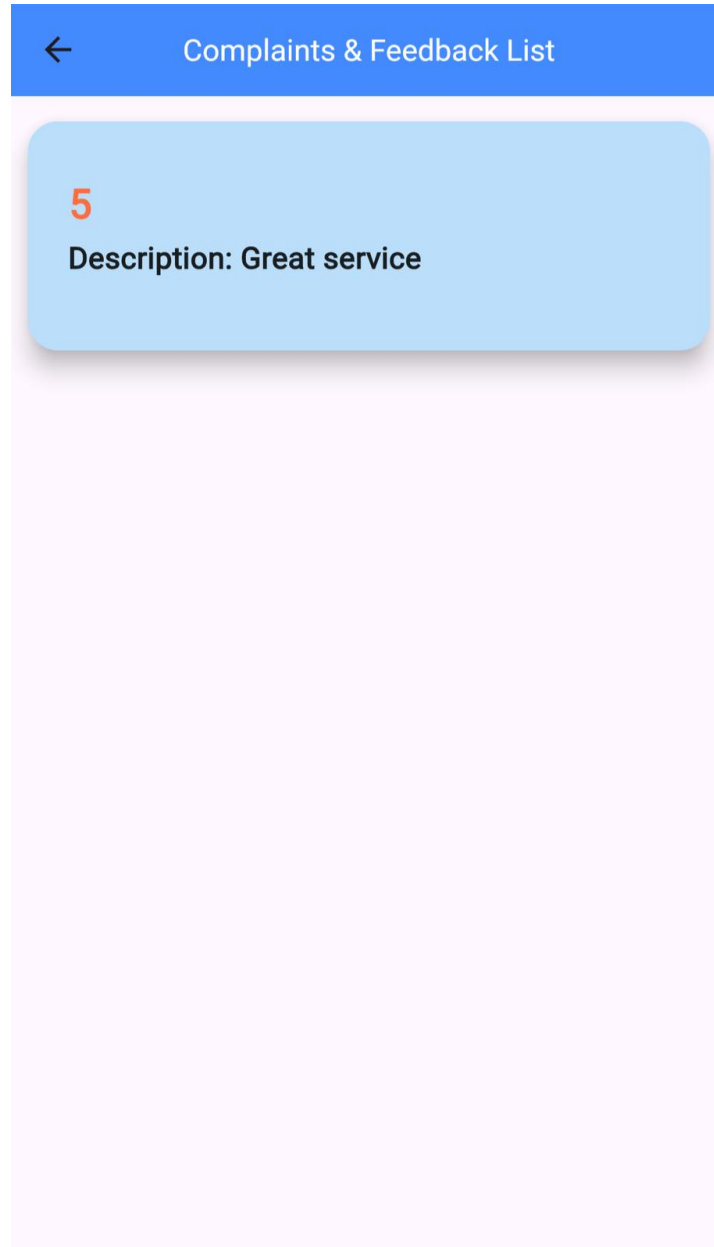


Figure 56 removing a rate

It is important to note that these ratings and reviews are provided to the workshop owner while maintaining the confidentiality of the user's identity, thereby protecting their privacy. This input also aids in enhancing the service and customer engagement offered by the workshops.



### ❖ Offer Notifications

The Offers Page showcases exclusive promotions posted by the owner. Every offer contains the product name, an explanation of the deal, the discount rate, and the offer's validity period, specifying the deadline for its availability.

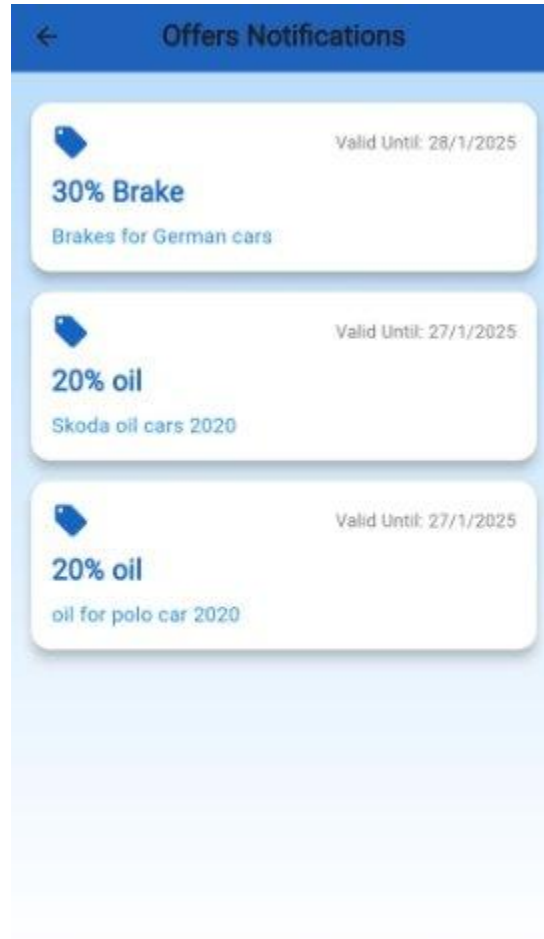


Figure 57 Offer Notifications

## ❖ Get Repair Estimate

The "Get Repair Estimate" page enabled users to enter information regarding the problems their vehicle was facing. Although spelling mistakes might occur, the system was created to comprehend the issue using the keywords given by the user. After the user submitted the issue, the system evaluated the input and provided an estimated repair cost for that particular problem.

If several problems were reported, the system merged the specific charges for each issue and presented a total anticipated cost for the repair. This functionality allowed users to swiftly evaluate the likely expense of repairing their vehicle, even if they were not completely informed about the details of the problem. The system's capacity to comprehend incorrectly spelled words enhanced convenience, providing a smooth experience for the user while calculating the repair expenses.

Essentially, the "Get Repair Estimate" page provided an easy method to receive a repair estimate by merely outlining the car's issues. The feature demonstrated its worth for users looking to grasp the anticipated expenses prior to engaging a repair service.

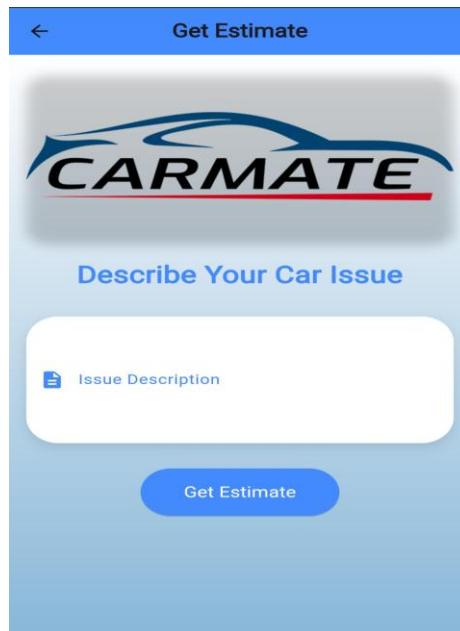


Figure 58 Get Repair Estimate

For instance, if we intend to change the oil, the system will offer an estimated price for the oil replacement.

If we aim to change the oil and resolve the car's overheating, the system will offer a total estimated expense for both the oil change and the overheating problem.



Figure 59 Get Repair Estimate cost

## 6-Service Page(Owner)

The Owner's Service Page includes these sections:

- **Manage bookings & Appointments:** Enables the owner to oversee repair reservations and appointments with clients(We talked about it previously because it relates to a service user).
- **manage request&maintance** Allows the owner to manage service requests and maintenance duties (We talked about it previously because it relates to a service user).
- **Employee Management:** Offers resources for overseeing employees, their timetables, and responsibilities within the workshop.

- monthly performance review: Enables the owner to assess the workshop's monthly outcomes.
- Sales & Inventory Management: Assists the owner in monitoring sales of parts and accessories, overseeing inventory, and ensuring stock levels are upheld.
- Delivery Request: Oversees vehicle delivery requests, ensuring seamless coordination for customer delivery (We talked about it previously because it relates to a service user).
- Complaints & Feedback: Enables the owner to access and respond to complaints and feedback provided by users (We talked about it previously because it relates to a service user).
- Advertisement Management: Allows the owner to oversee any promotional deals or advertisements associated with their workshop, assisting in managing visibility and customer interaction.

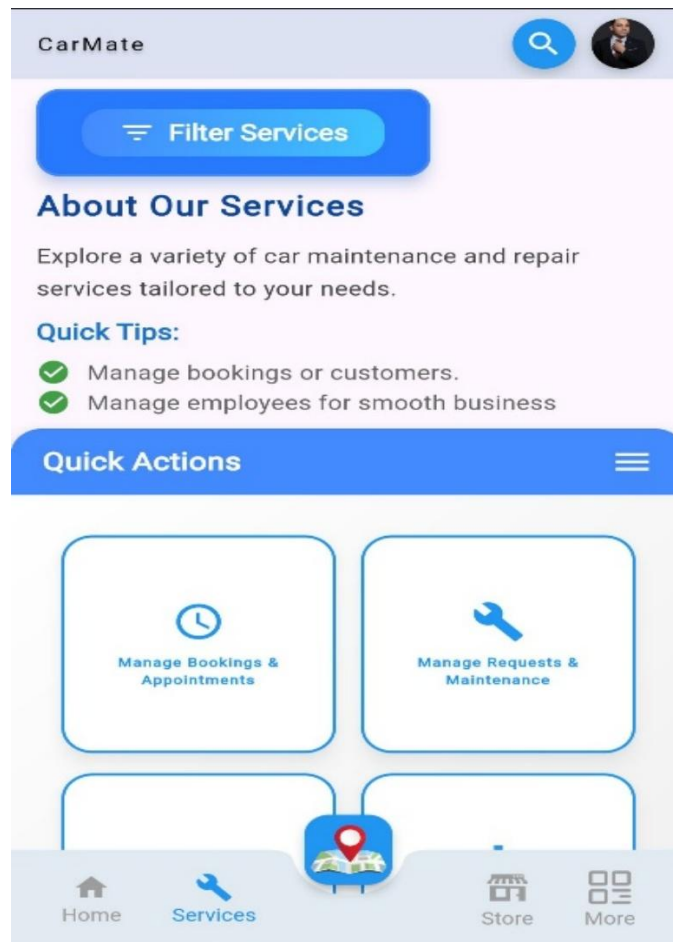


Figure 60 Service Page(Owner)

Additionally, there is a **service filter** that allows the owner to select a specific service category. Once selected, only the relevant services will be displayed, helping the owner focus on the services they want to manage or view.

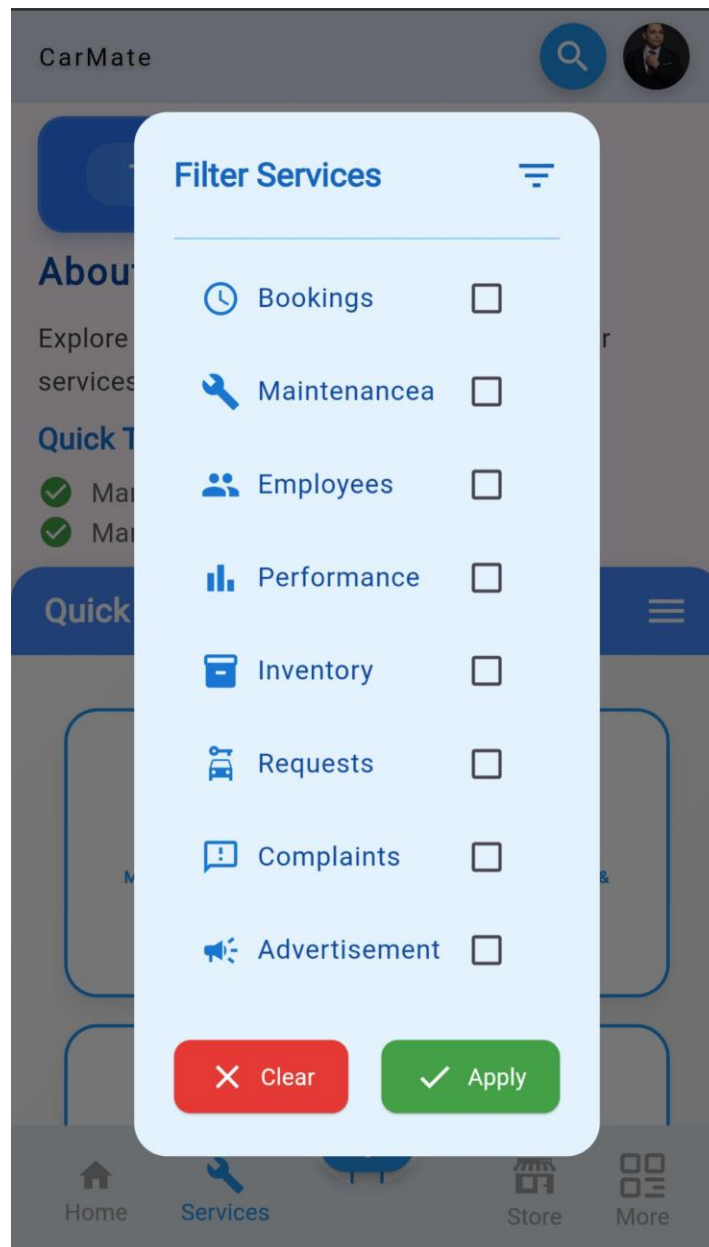


Figure 61 service filter(owner)

When both the Request and Complaint filters are applied, only the requests and complaints will be shown, enabling the owner to concentrate exclusively on these particular categories.

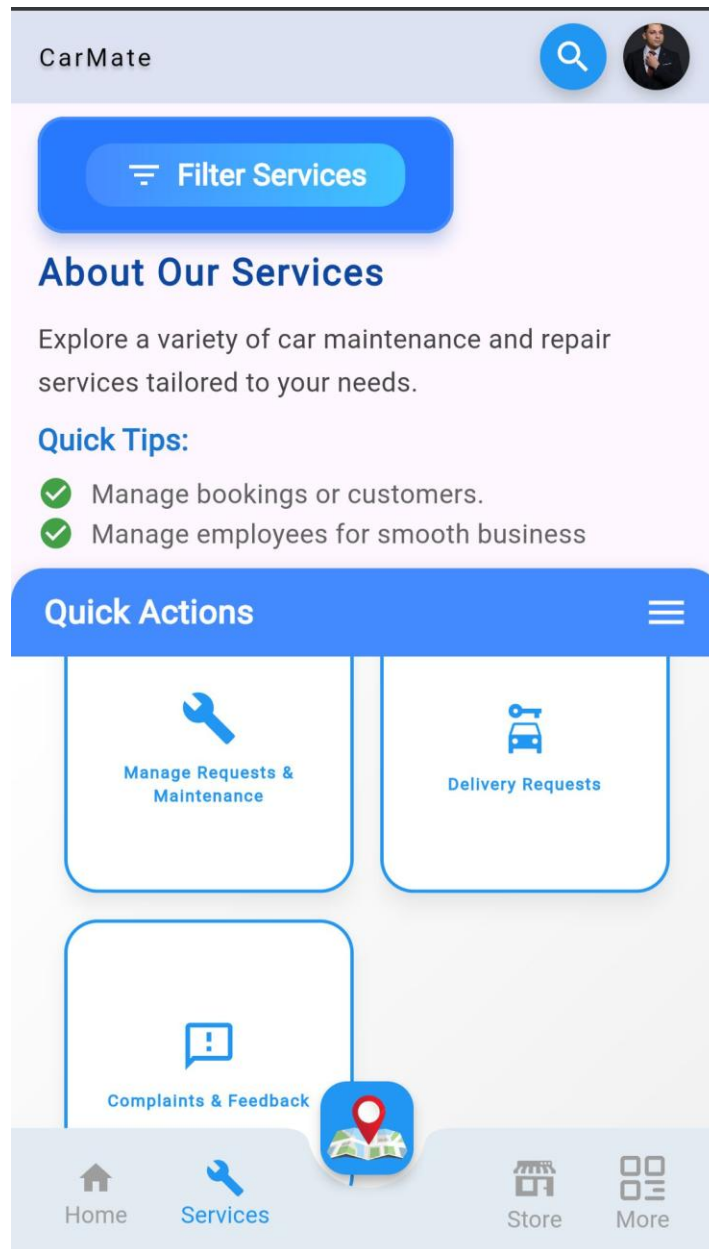


Figure 62 applying service filter(owner)

## ❖ Employee management

The Employee Management section shows a roster of the staff members employed at the workshop. You can look for a particular employee, introduce new employees, or change the information of current ones. Furthermore, you have the ability to remove employees and designate particular tasks or roles for them, guaranteeing that the team's duties are effectively handled.

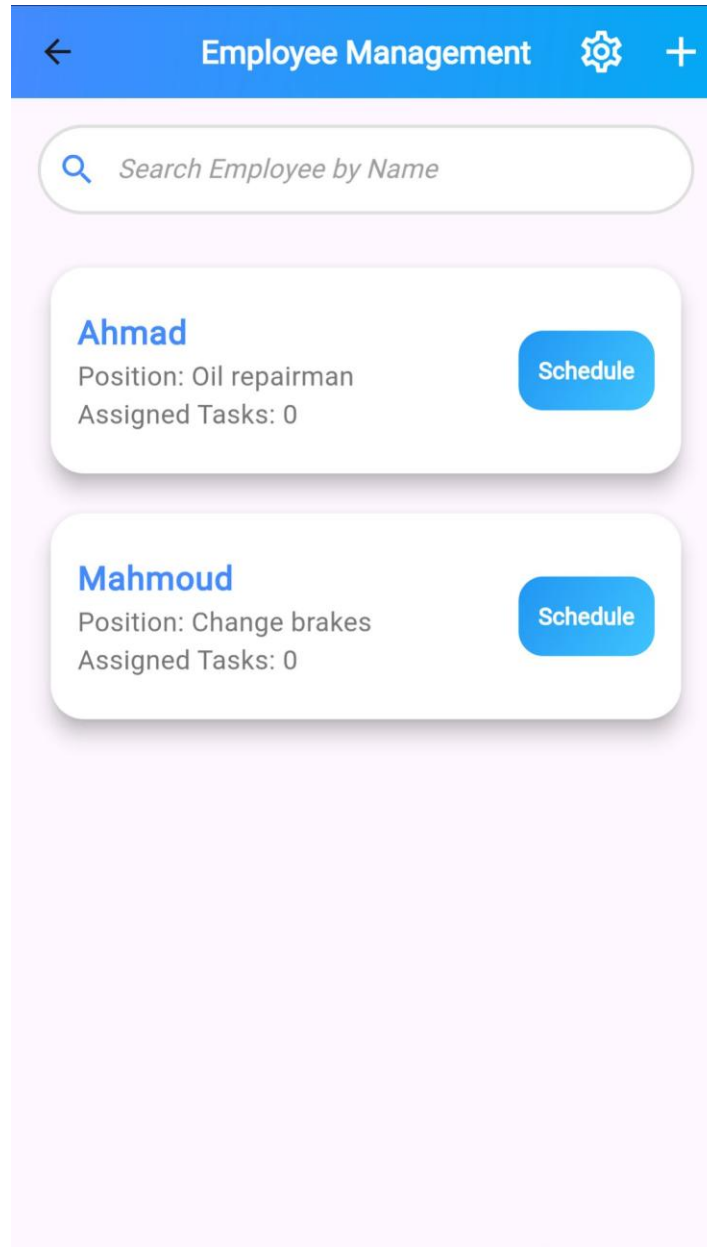


Figure 63 Employee management page

As stated earlier, the Employee Management page enables you to change and remove employee information. This page is tailored to handle your employees by offering choices to modify their details and delete them from the system.

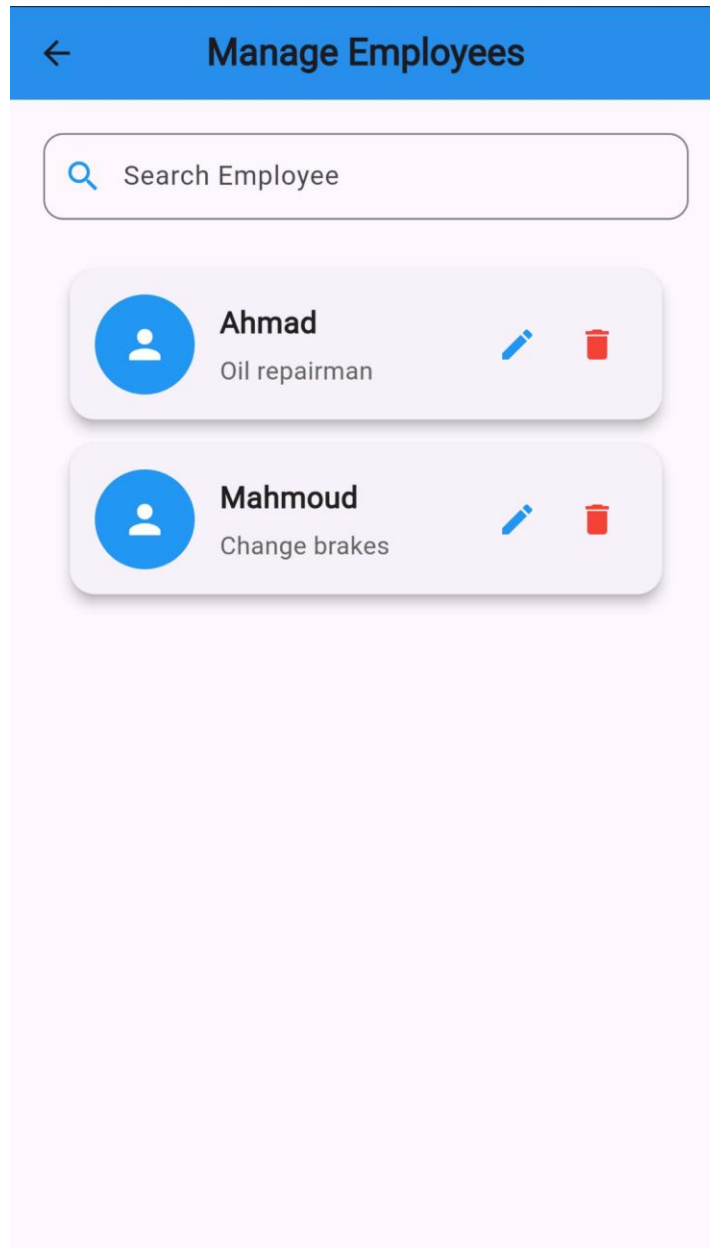


Figure 64 Employee management and search page

You can modify the employee's name or their role on the Employee Management page. This enables you to modify their information as required, guaranteeing that the details stay correct and current.

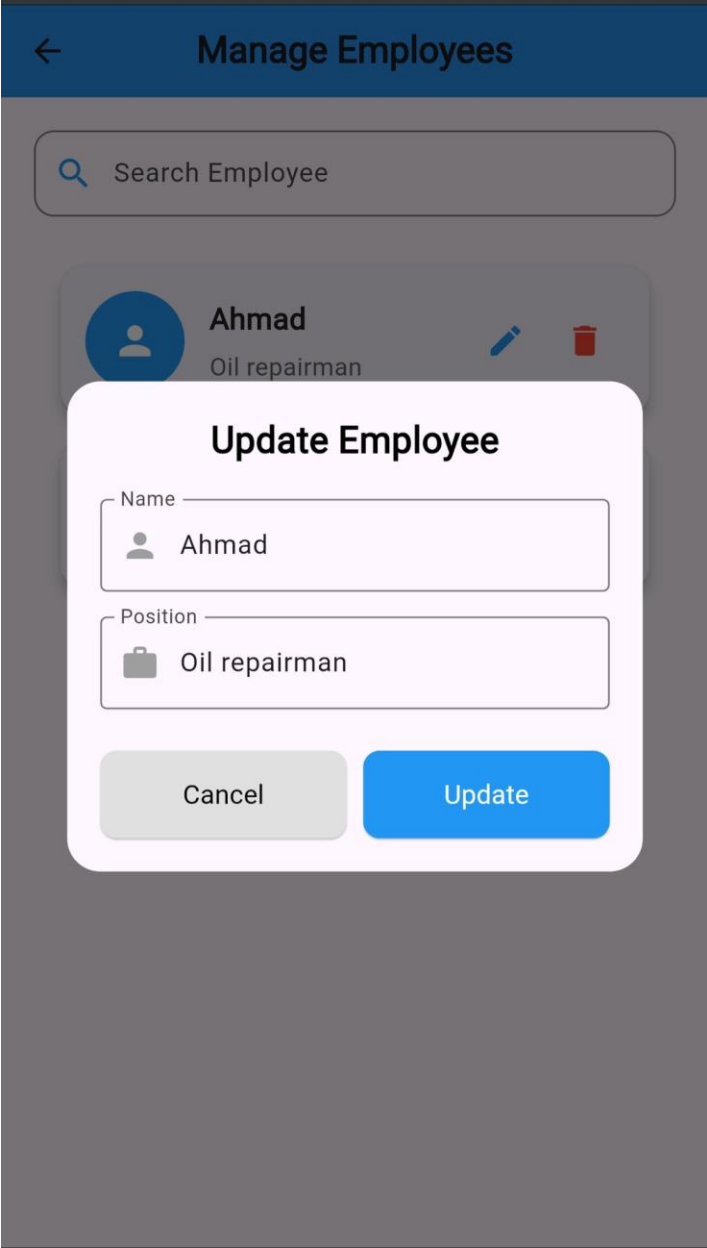


Figure 65 Dialog of editing employee

Moreover, it is possible to remove an employee. Upon clicking the Delete Employee button, a confirmation alert will pop up, inquiring whether you really want to remove the employee. This guarantees that you have verified the action prior to its completion.

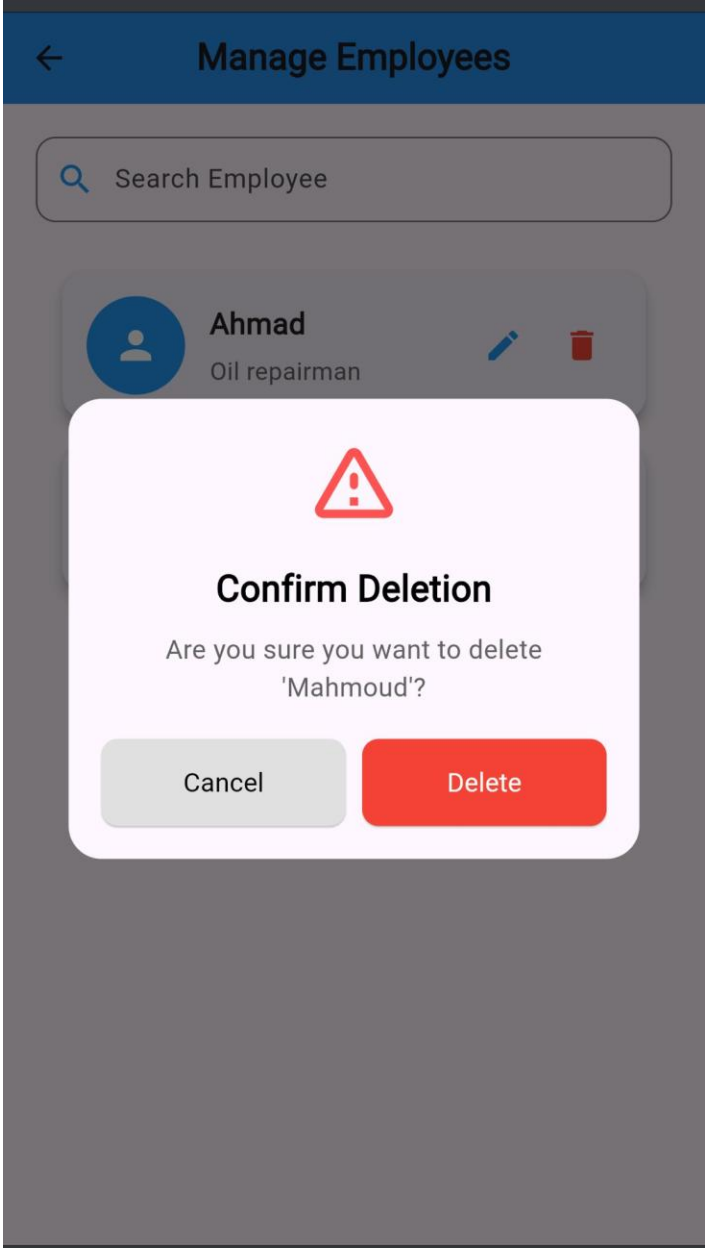


Figure 66 Dialog of deleting employee

You can introduce a new employee by inputting their name and the role they will occupy in the workshop. This enables you to effortlessly oversee and grow your team by adding new individuals and designating them roles.

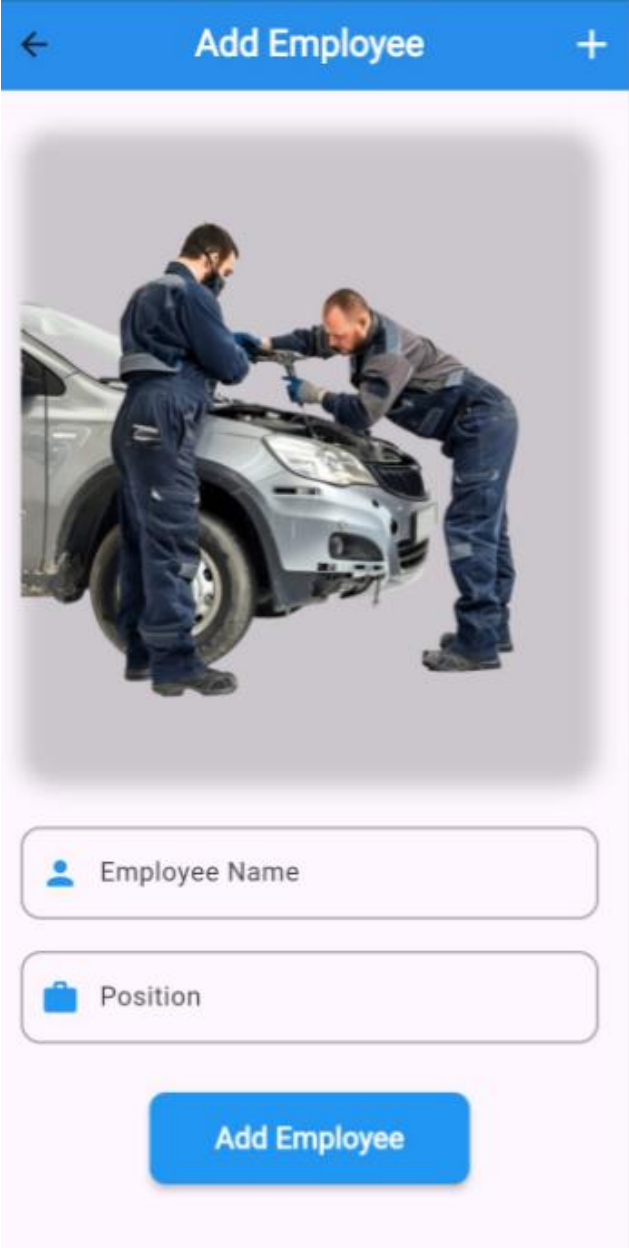


Figure 67 adding new employee page

Upon adding a new employee, a notification will display confirming that the employee was added successfully. This guarantees that the addition has been finalized without any problems.

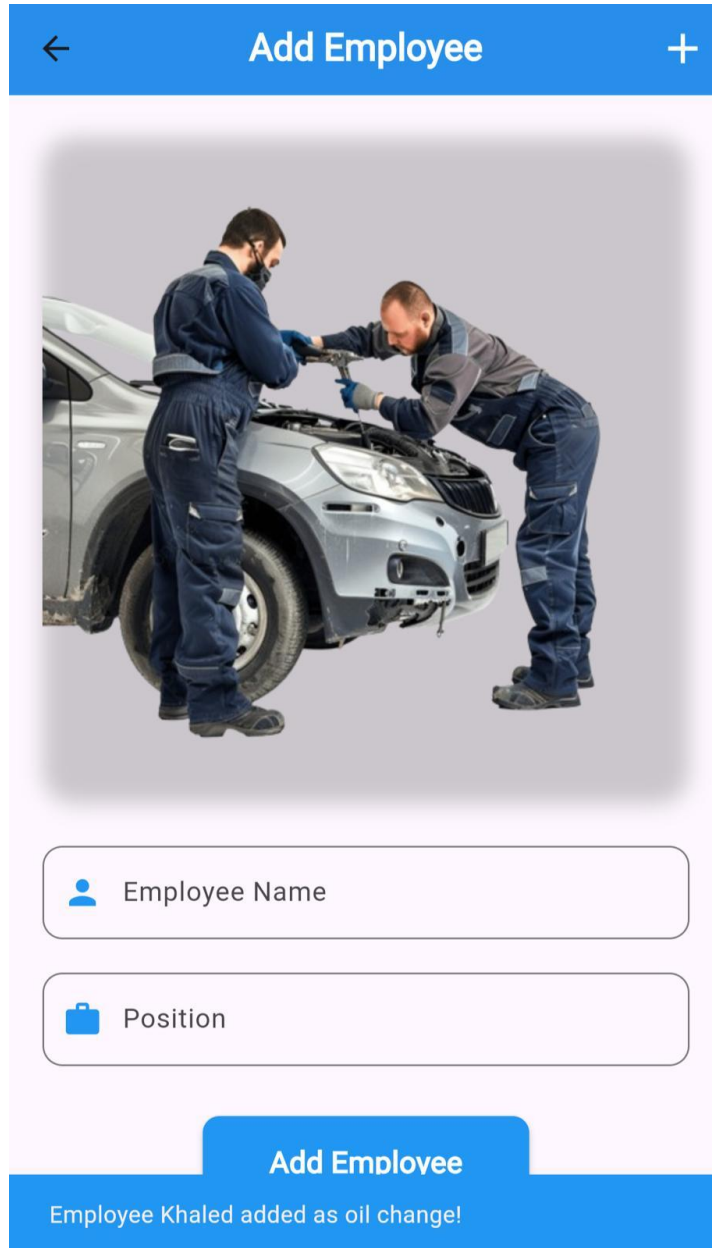


Figure 68 submitting adding employee

You have the ability to allocate particular tasks to staff by choosing the task name, in addition to the date and time when the task should be completed. This aids in effectively organizing and scheduling employees' work.

← Add Available Schedules

### Set Up Your Schedule

Task

Date & Time

+ Add Schedule

No schedules added yet.

Figure 69 adding schedule to the system

When you assign a task to an employee, a notification will show up confirming the task has been successfully created. This guarantees that the task has been allocated and organized properly.


← Add Available Schedules

### Set Up Your Schedule

Task

Date & Time

+ Add Schedule

0 oil change 

Date: 2025-01-26  
Time: 10:30 AM

Schedule added successfully!

Figure 70 submitting adding schedule to the system

Once the task is added, you can choose the employee assigned to carry it out. This ensures that every task is given to the right person according to their role or availability.

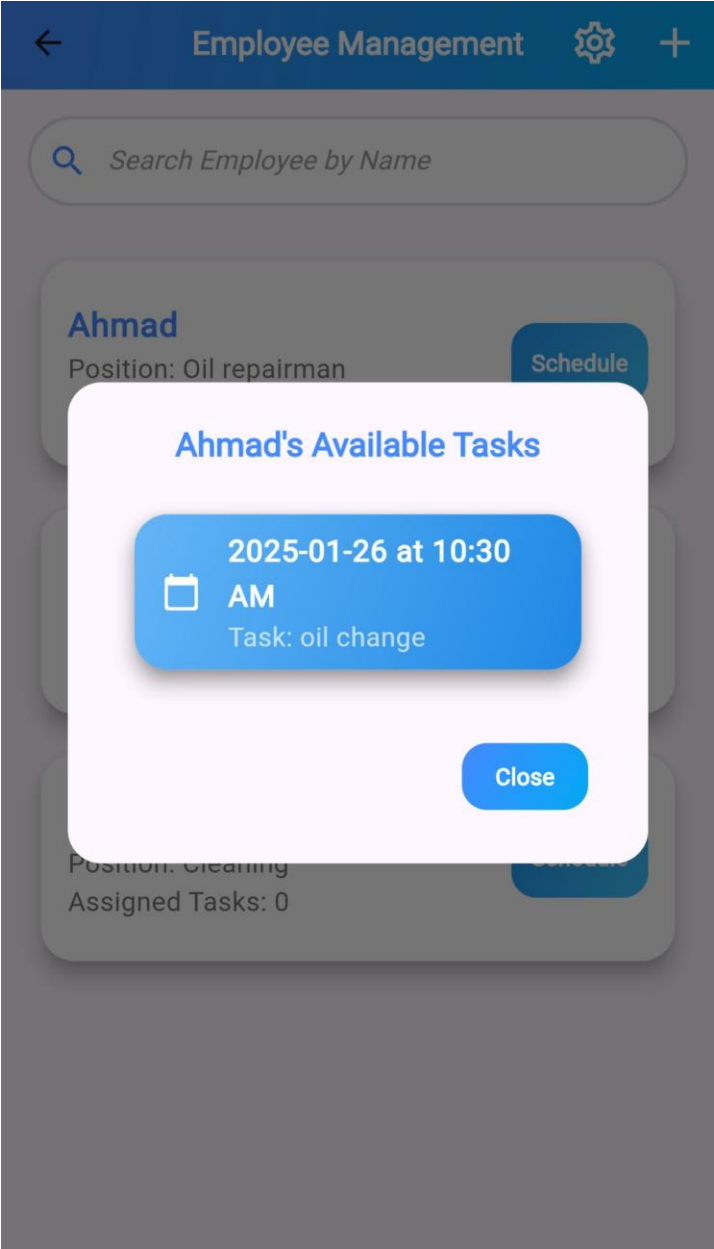


Figure 71 dialog for adding schedule to an employee

As the job includes replacing the car's oil, you may choose the employee assigned to this duty. After being assigned, the employee's task tally will be revised, showing the new responsibility they have received. This guarantees that employees are effectively scheduled and their workload is monitored.

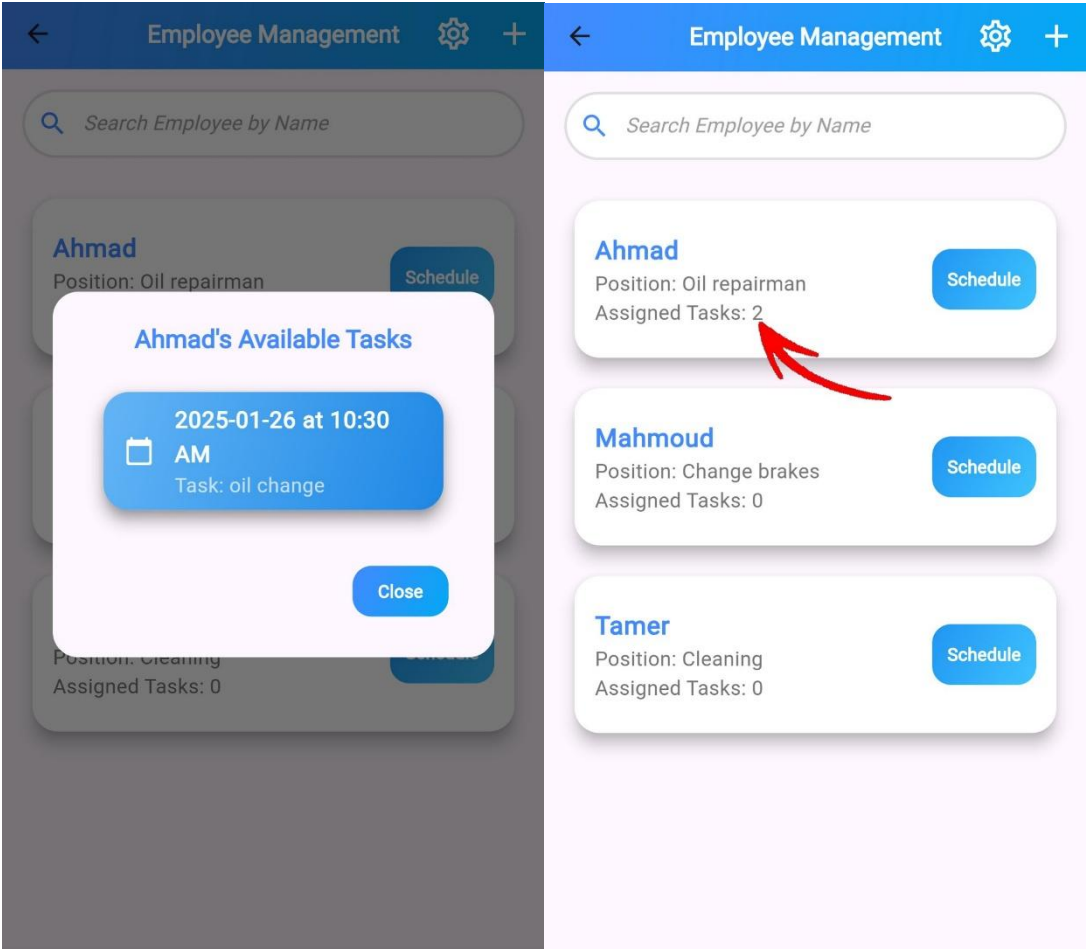


Figure 72 seeing details of all employees

## ❖ Sales & Inventory Management

This page enables you to oversee the items offered for sale in your store, making sure they are accessible to users within the app.

To include a new item, follow these instructions:

- Name: Input the name of the item.
- Description: Give an extensive description of the item.
- Quantity: Indicate the total number of items currently in inventory.
- Price: Establish the cost of the product.
- Images: Upload as many as three pictures of the item, which will be shown to users sequentially, automatically switching every 3 seconds for a thorough look at the product.

This guarantees that the store stays current with precise and appealing listings for customers.

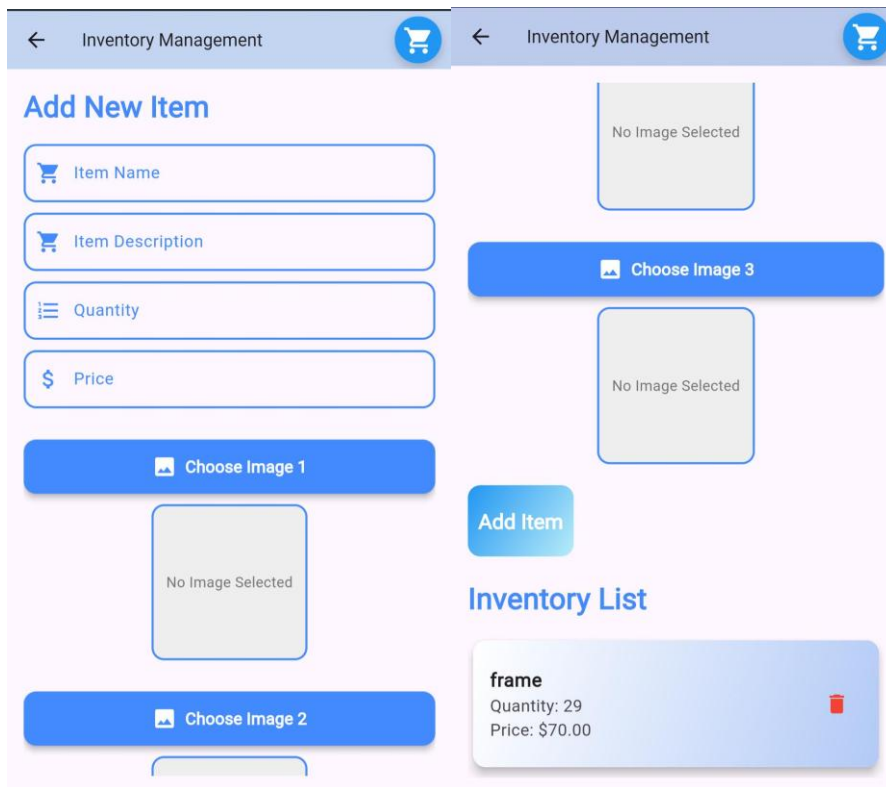


Figure 73 Sales & Inventory Management page

Once a new item is added successfully, a message confirming this will appear:  
"The item has been successfully added."

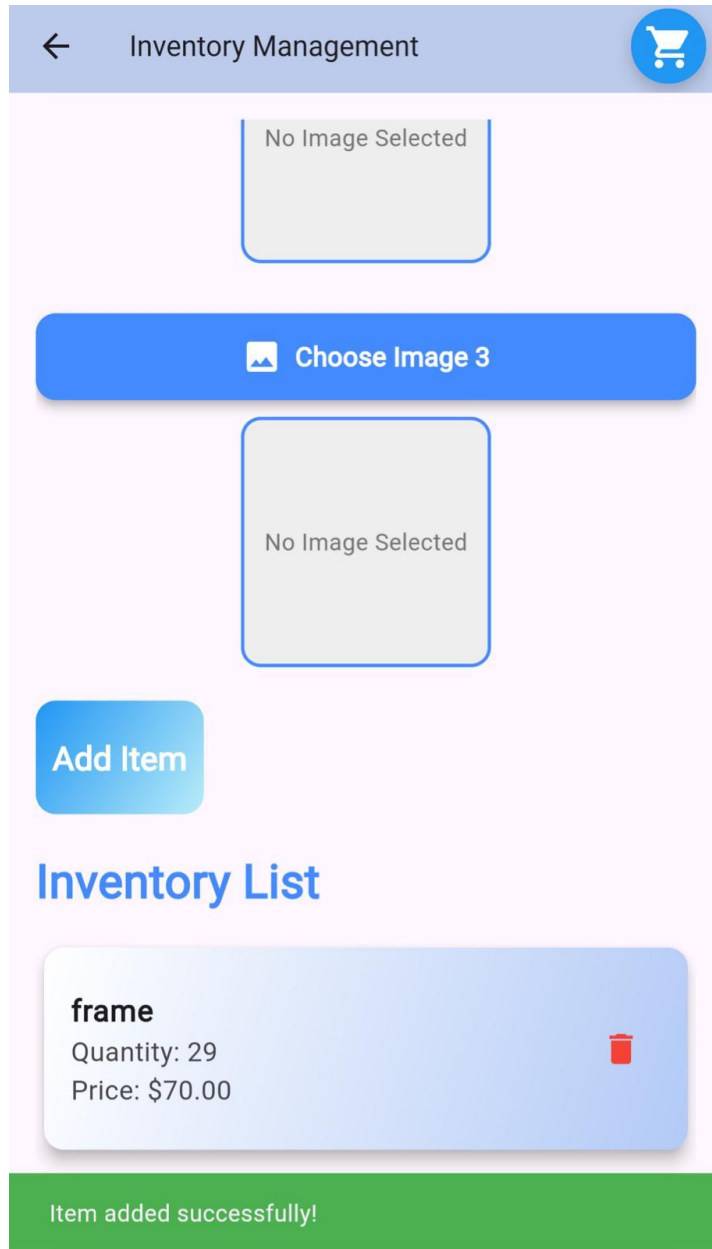


Figure 74 adding item

If you sell an item for cash rather than through the program, you can select the item and indicate the quantity sold to maintain correct inventory levels. Be aware that you cannot input a number exceeding the available quantity; if you attempt to do so, the value will automatically adjust to reflect the current inventory.

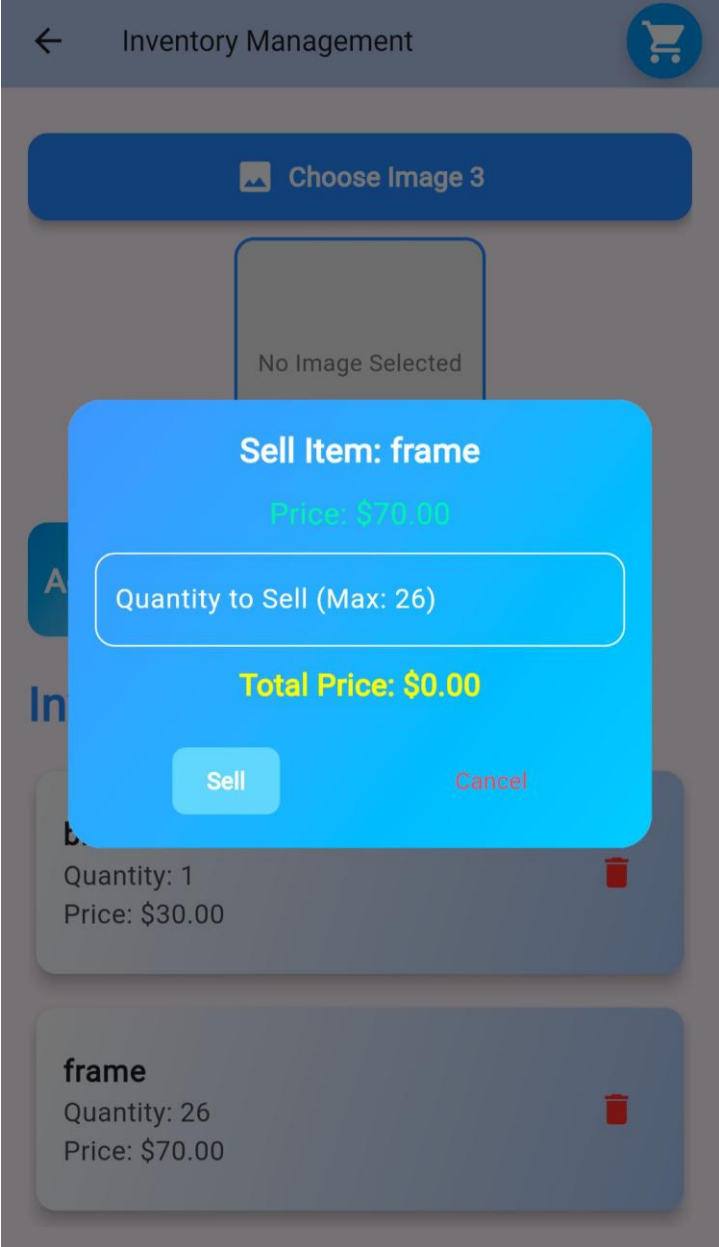
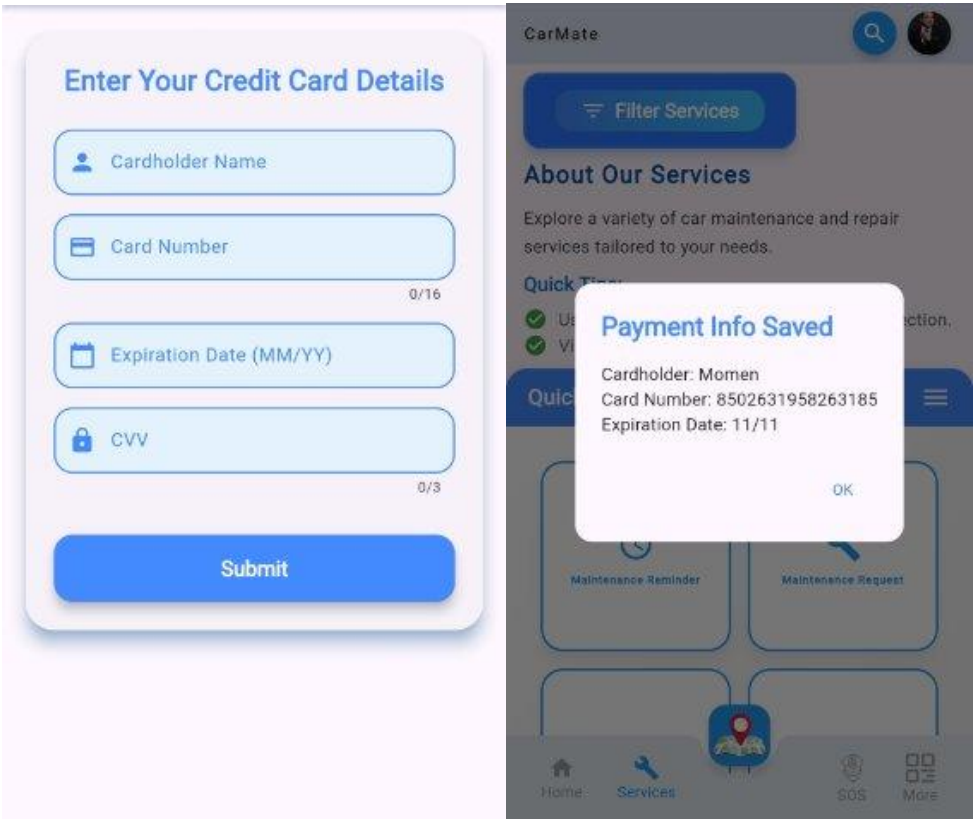


Figure 75 dialog for selling an item from the market (1)

Once the quantity sold is entered, a payment page for credit card transactions will be displayed. If the credit card information was saved earlier, the page won't appear again. Nonetheless, if it's the user's first time, they must provide their credit card information.



❖ **monthly performance review**

This page offers a visual depiction of monthly sales, enabling you to monitor performance throughout the year. It additionally shows the overall sales revenue for the year, the average monthly sales figures, and the item that was sold the most in the chosen year. Moreover, you can sort by year to see comprehensive sales information for a particular timeframe, facilitating trend analysis and strategy modification.

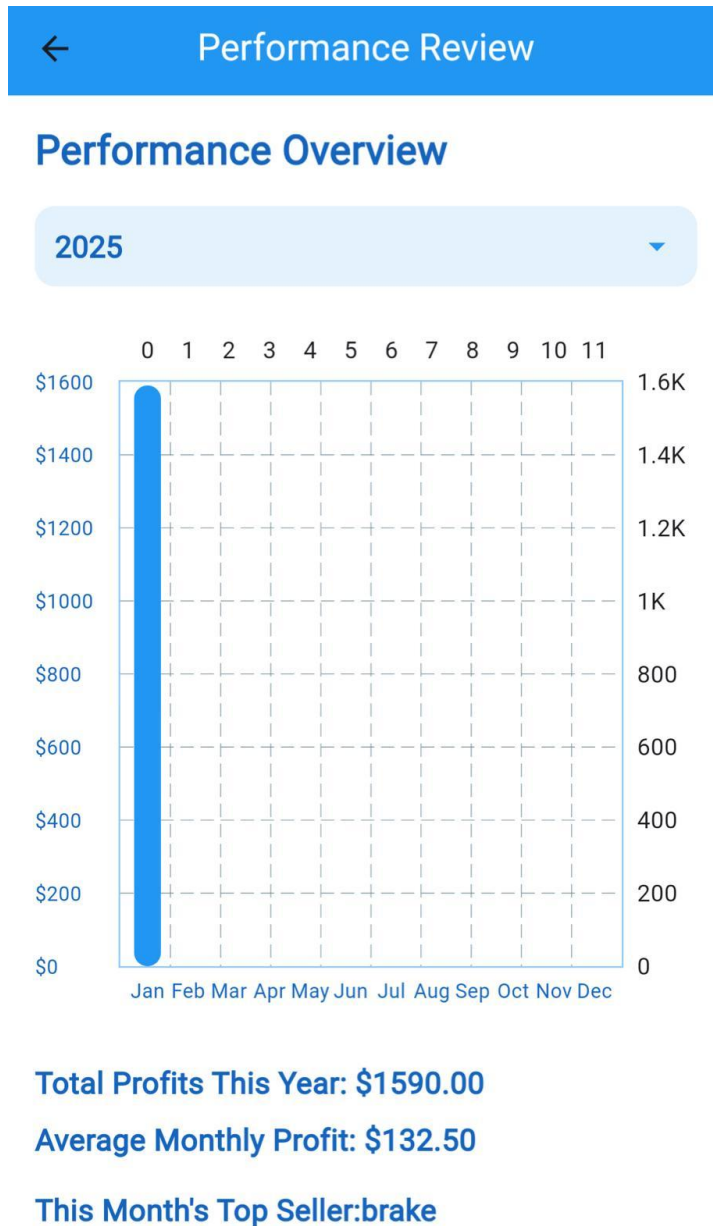


Figure 76 monthly performance review page

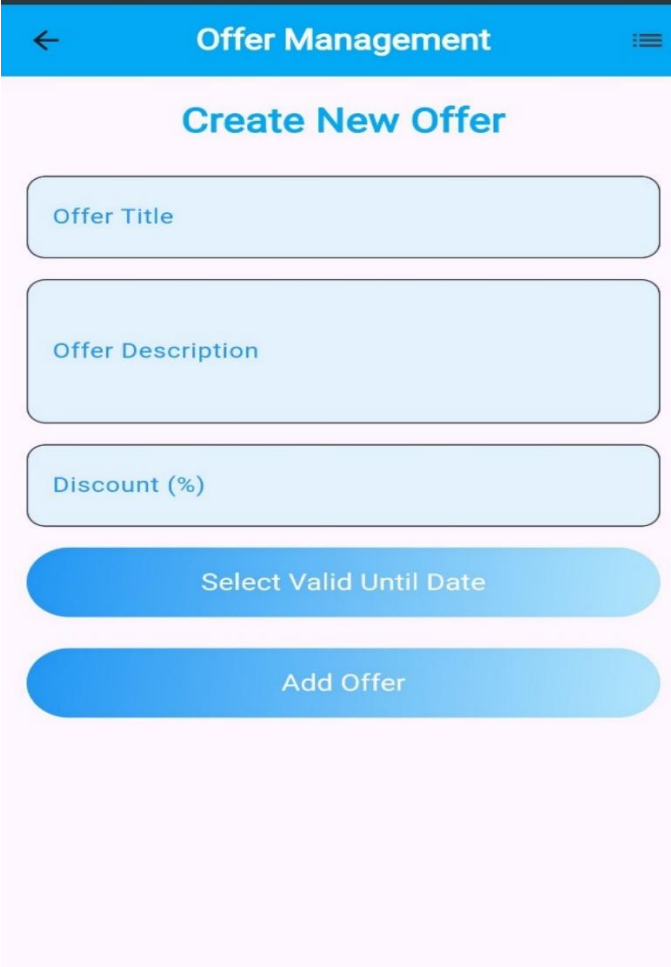
## ❖ Advertisement Management

This page enables you to generate offers for users by supplying the subsequent information:

- Offer Title: The name of the offer.
- Description: A concise summary of the proposal.
- Discount Rate: The rate at which the discount is being provided.
- Expiration Date: The date on which the offer becomes invalid.
- 

These promotions will subsequently be displayed to users, facilitating the capture of their attention and enhancing engagement.

It is essential to highlight that the highest permissible discount percentage is 99%. For instance, if you attempt to input a value exceeding 99, the system will promptly change it to 99% to maintain its validity. This avoids mistakes and ensures uniformity in the offers shown to users.



The screenshot displays a mobile application interface for 'Offer Management'. At the top, there is a blue header bar with a back arrow on the left, the text 'Offer Management' in the center, and a hamburger menu icon on the right. Below the header, the main content area has a light pink background. The title 'Create New Offer' is centered in a bold blue font. The form consists of five vertically stacked elements: 1) A light blue rounded rectangular input field labeled 'Offer Title'. 2) A larger light blue rounded rectangular input field labeled 'Offer Description'. 3) A light blue rounded rectangular input field labeled 'Discount (%)'. 4) A solid blue rounded rectangular button labeled 'Select Valid Until Date'. 5) A solid blue rounded rectangular button labeled 'Add Offer'.

Figure 77 Advertisement Management page

Upon successfully adding an offer, a notification will display stating that "The offer has been added successfully." This guarantees that the procedure has been finalized and the offer is currently accessible to users.

The screenshot displays a mobile application interface for 'Offer Management'. At the top, a blue header bar contains a back arrow, the title 'Offer Management', and a menu icon. Below the header, the main content area is titled 'Create New Offer'. It features three light blue rounded rectangular input fields: 'Offer Title', 'Offer Description', and 'Discount (%)'. Below these fields are two blue rounded rectangular buttons: 'Select Valid Until Date' and 'Add Offer'. At the bottom of the screen, a green notification bar displays the text 'Offer added successfully!'.

Figure 78 adding offer

Moreover, there is a list showing all the offers you've included. This list enables you to see, handle, or change the offers with ease.

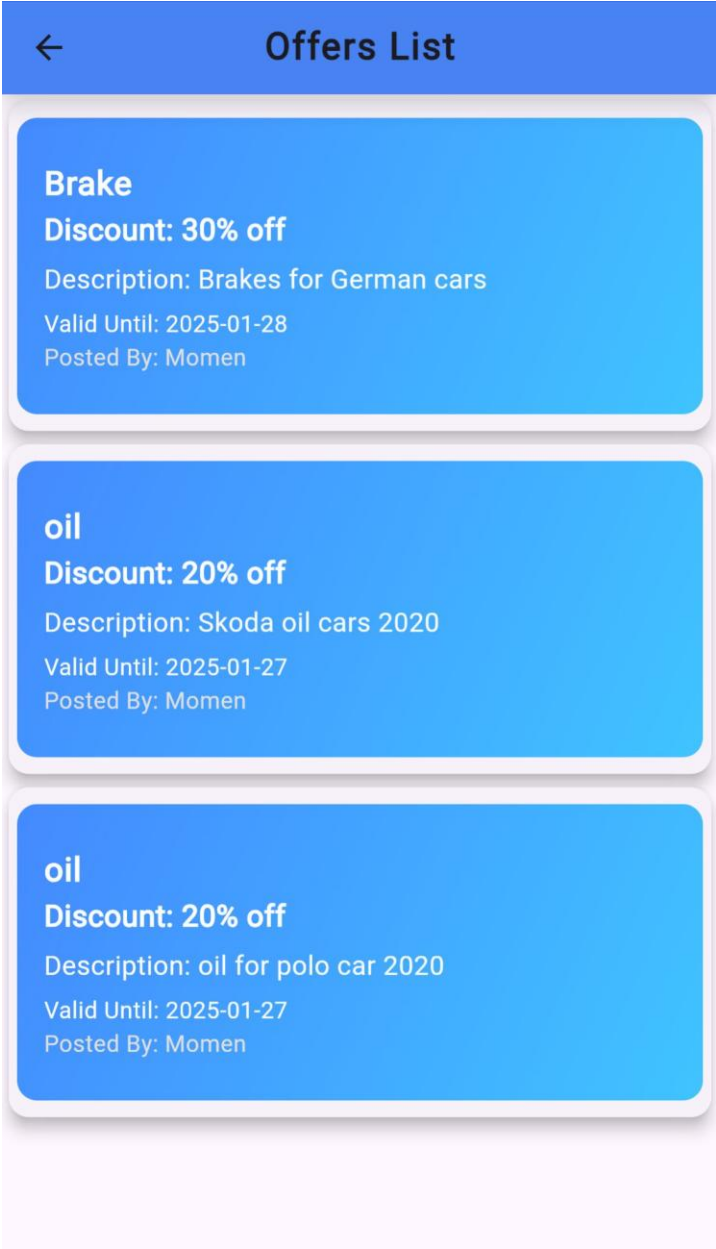


Figure 79 offer list page

## 7-Store page management

This page shows the overall count of items in your inventory and the cumulative number of sales. Every sale is recorded as a single sale, no matter how many items are bought. Moreover, it displays the top-selling or most favored items, enabling you to monitor the success of specific products.

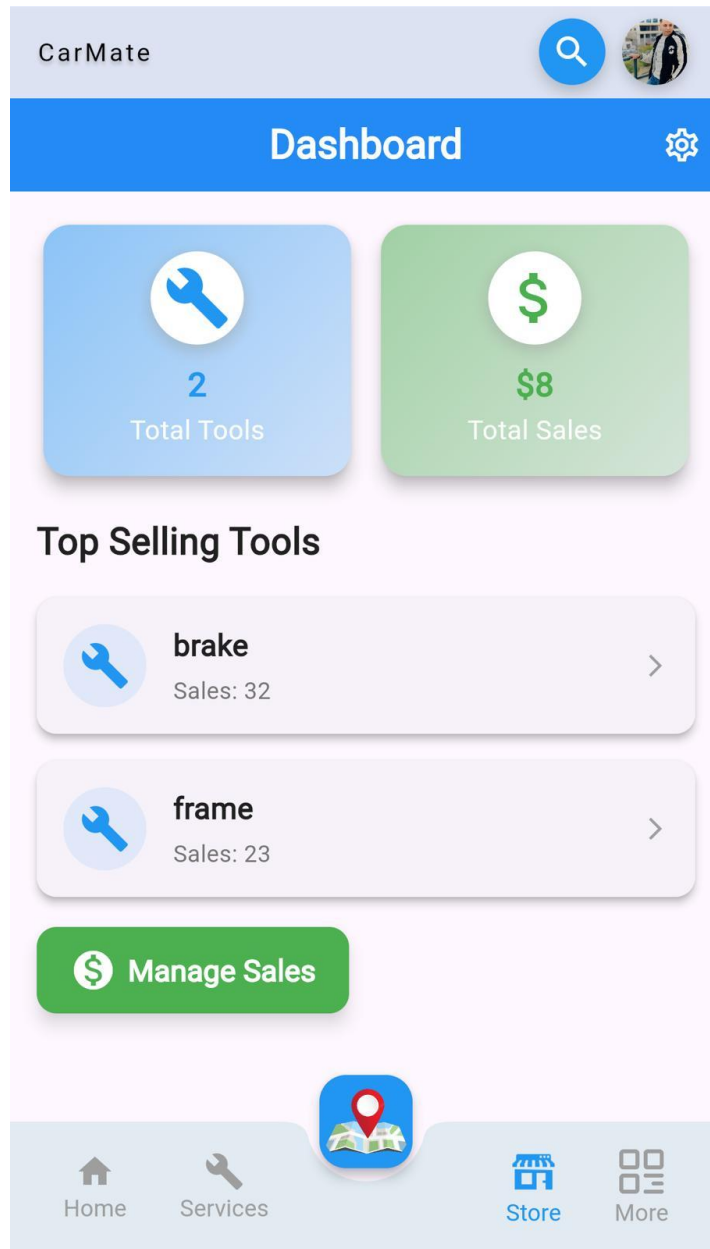


Figure 80 Store page management

Upon clicking the "Manage Form" button, it reveals the sales transactions, which include the sold quantity, the total price, and the sold item's name. This enables you to gain an in-depth perspective on your sales and monitor how each product in your inventory is performing.

Item Name	Quantity	Total Price
frame	2	\$140.00
brake	3	\$210.00
frame	3	\$210.00
brake	3	\$90.00
frame	5	\$350.00
brake	4	\$120.00
frame		\$100.00

Figure 81 sales management page

Furthermore, you have the option to remove or change the product by altering its name, quantity, or price. This provides you with complete control over your inventory, enabling you to modify details or eliminate items as necessary, guaranteeing that your records remain precise and current.

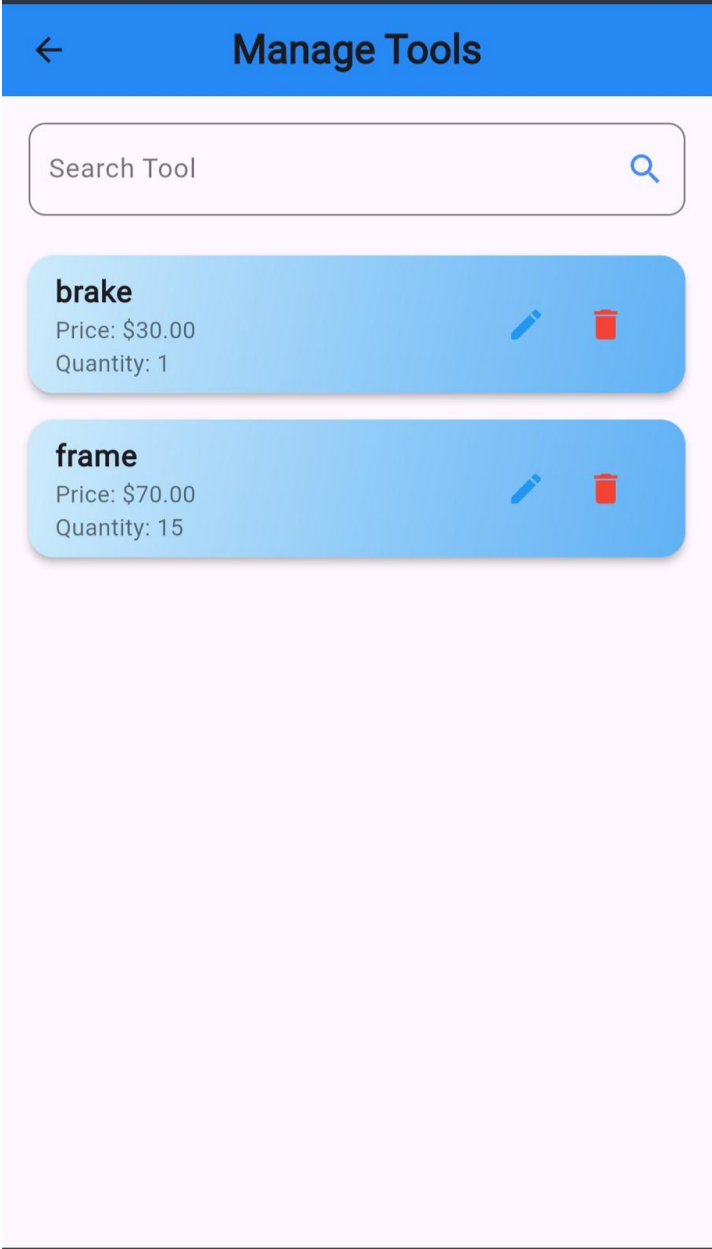


Figure 82 manage tools page

If you intend to remove a particular item, a confirmation message will pop up asking, "Are you certain you want to delete this item?" This guarantees that unintentional deletions are prevented, allowing you to verify the action prior to its completion.

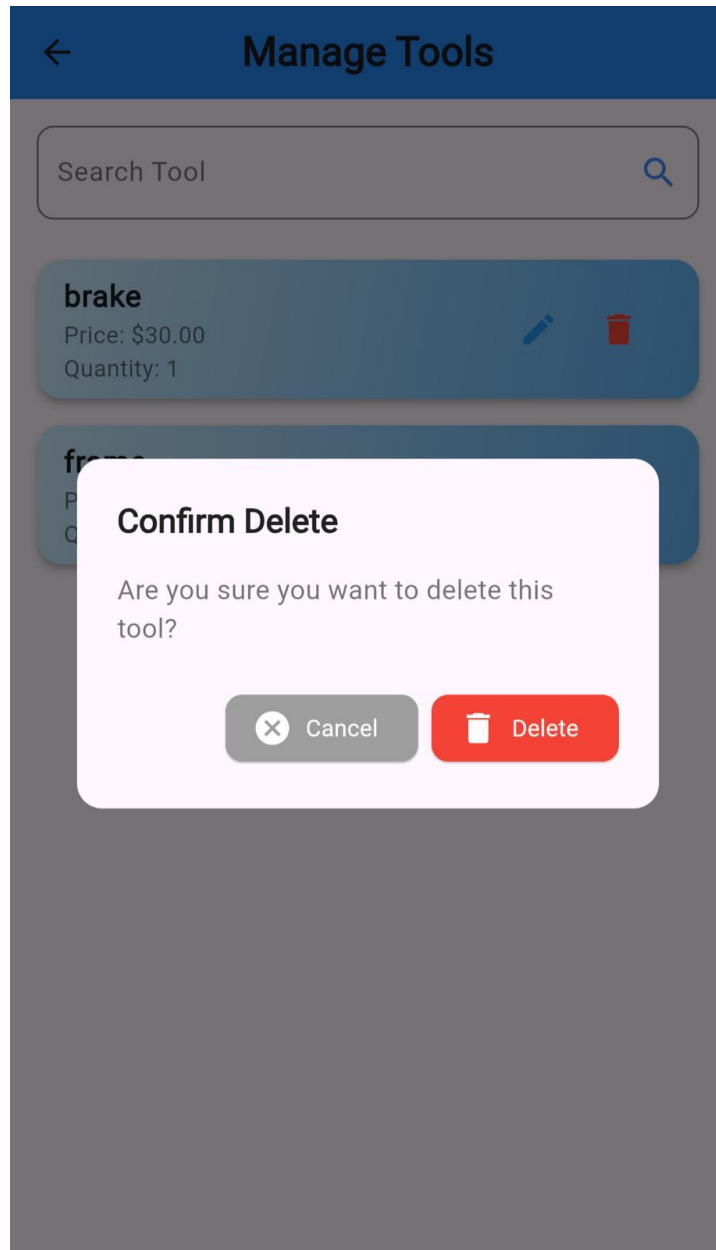


Figure 83 dialog to delete tool

Furthermore, when an item is sold in the workshop, you can designate it as "sell" to keep the quantity correct. If you attempt to input a number greater than the available stock, a message will pop up alerting you that the quantity is not available, ensuring the system avoids any inconsistencies in inventory figures. This aids in ensuring precise inventory management and avoids overselling.

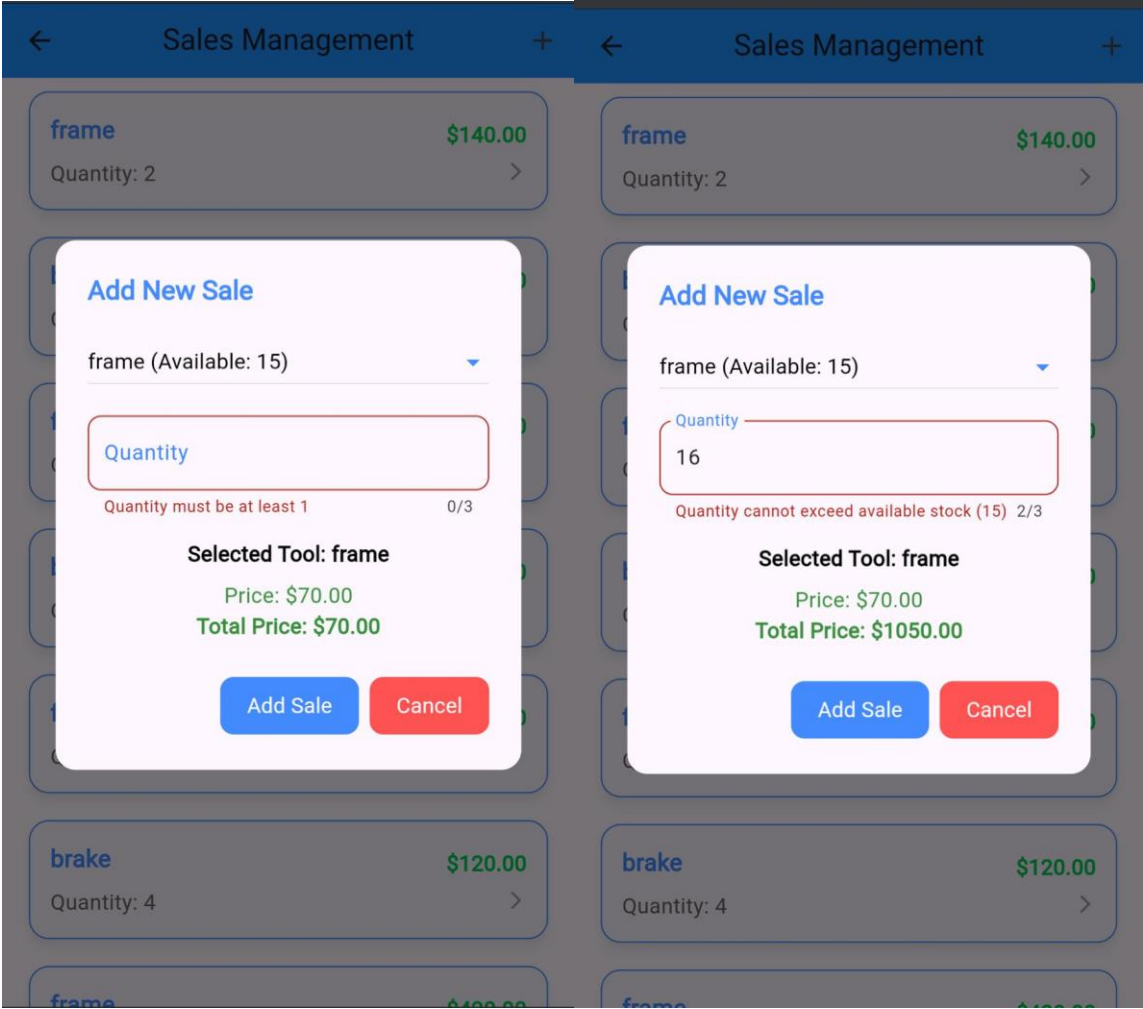
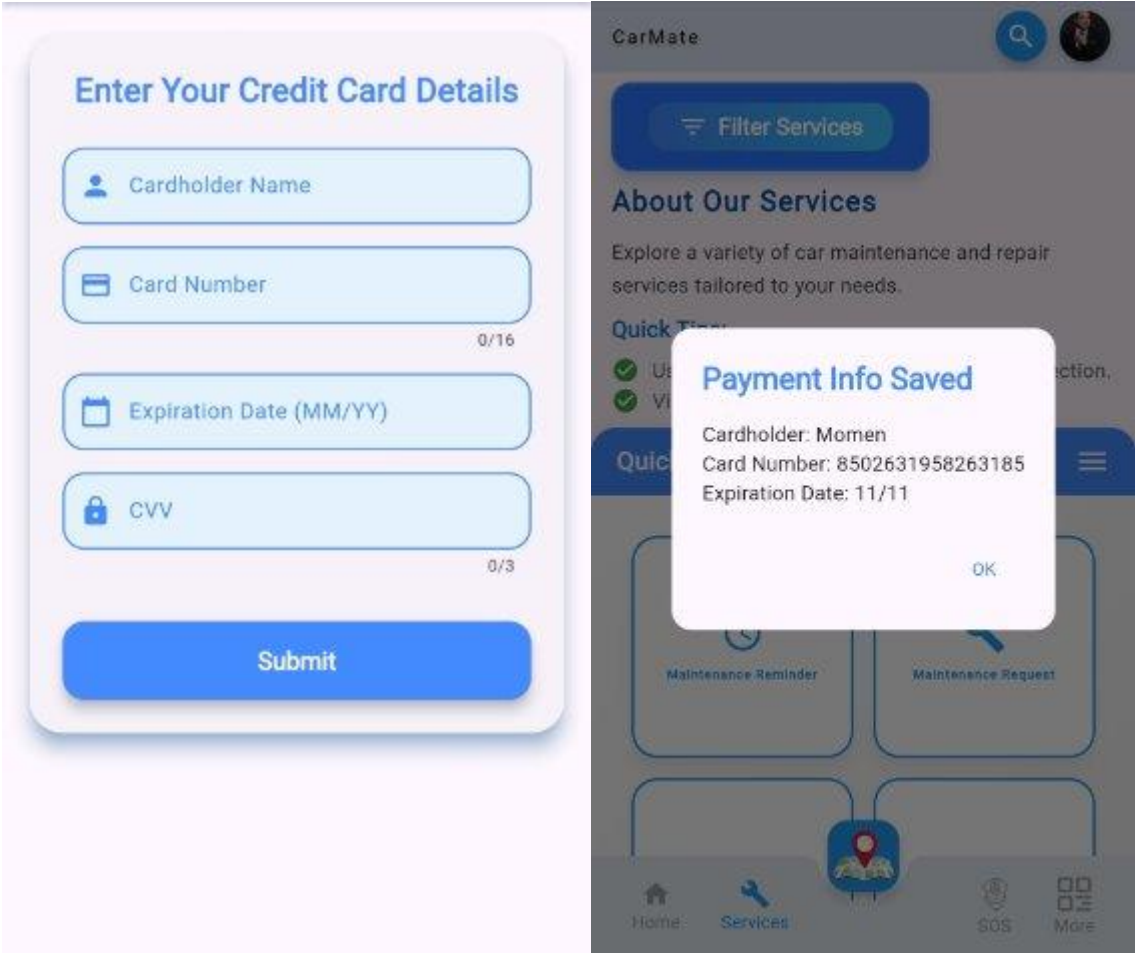


Figure 84 dialog for selling an item from the market (2) with problems

Once the quantity sold is entered, a payment page for credit card transactions will be displayed. If the credit card information was saved earlier, the page won't appear again. Nonetheless, if it's the user's first time, they must provide their credit card information.



## 8-SOS Page

The SOS Page offers vital emergency contact numbers such as the police, ambulance services, and civil defense. Furthermore, it provides a list of various companies that offer towing services if your vehicle experiences a breakdown. The page offers a function that enables you to reach out to the closest towing service provider directly via the platform. The system automatically locates you and finds the nearest available service to help you quickly.

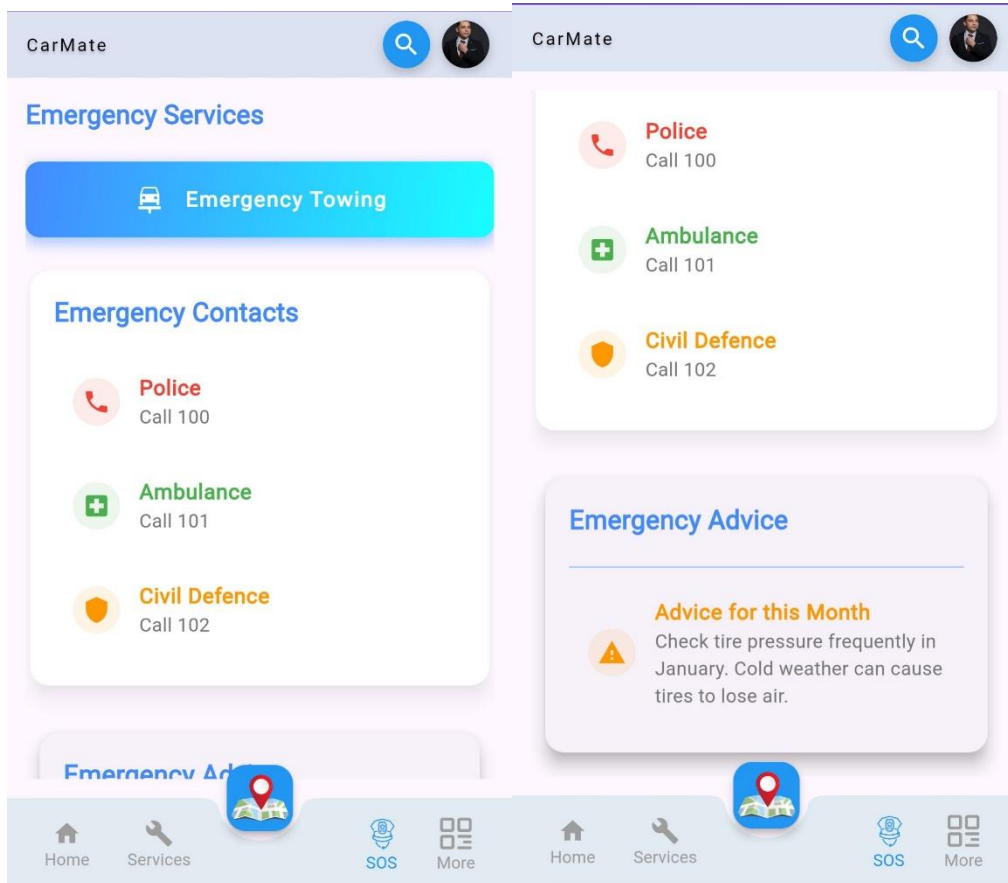


Figure 85 SOS Page

By pressing the Emergency Towing button, a list will show up featuring the names, locations, and contact information of towing service providers ready to help you. This simplifies selecting the most suitable choice according to your circumstances.

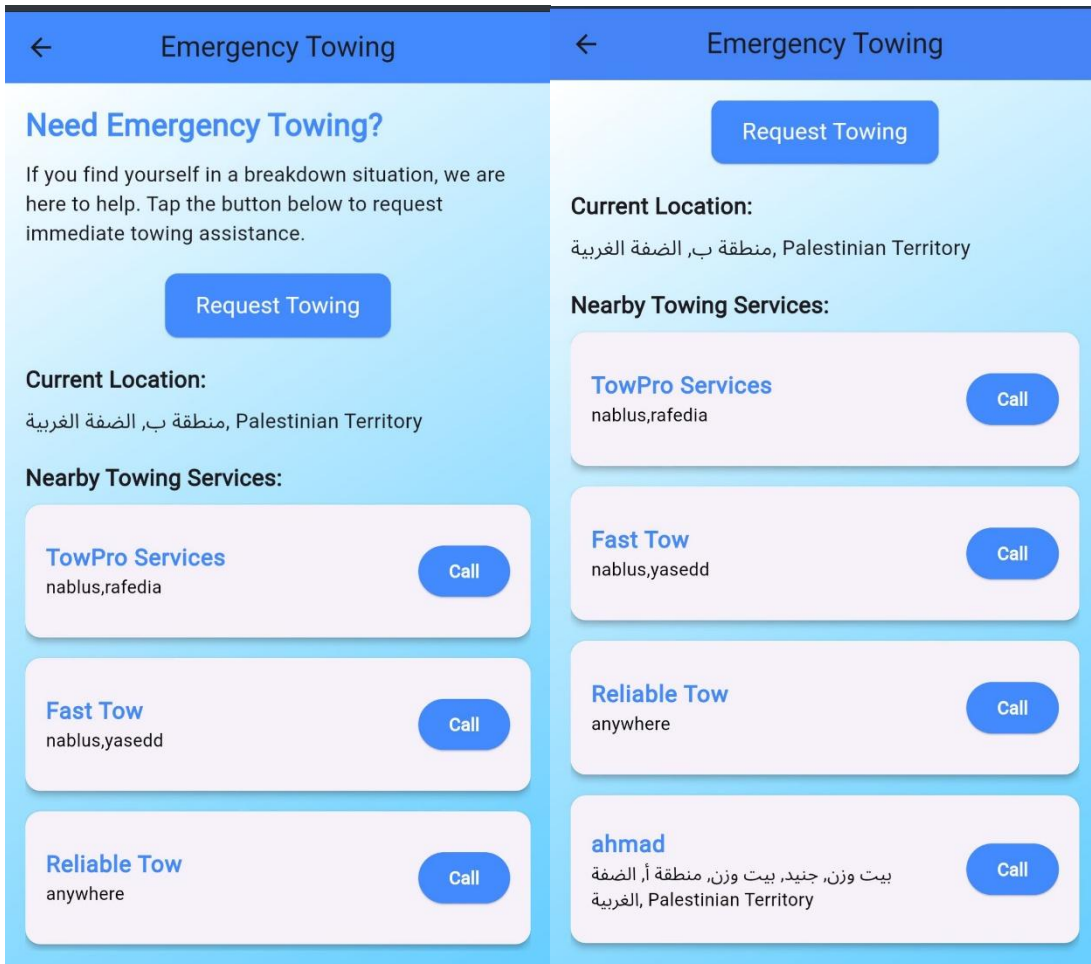


Figure 86 Emergency Towing page

When the user clicks the Request Towing button, they will get the information of the closest towing service, which includes its address, phone number, and extra location details. The user can subsequently contact the service directly for help.

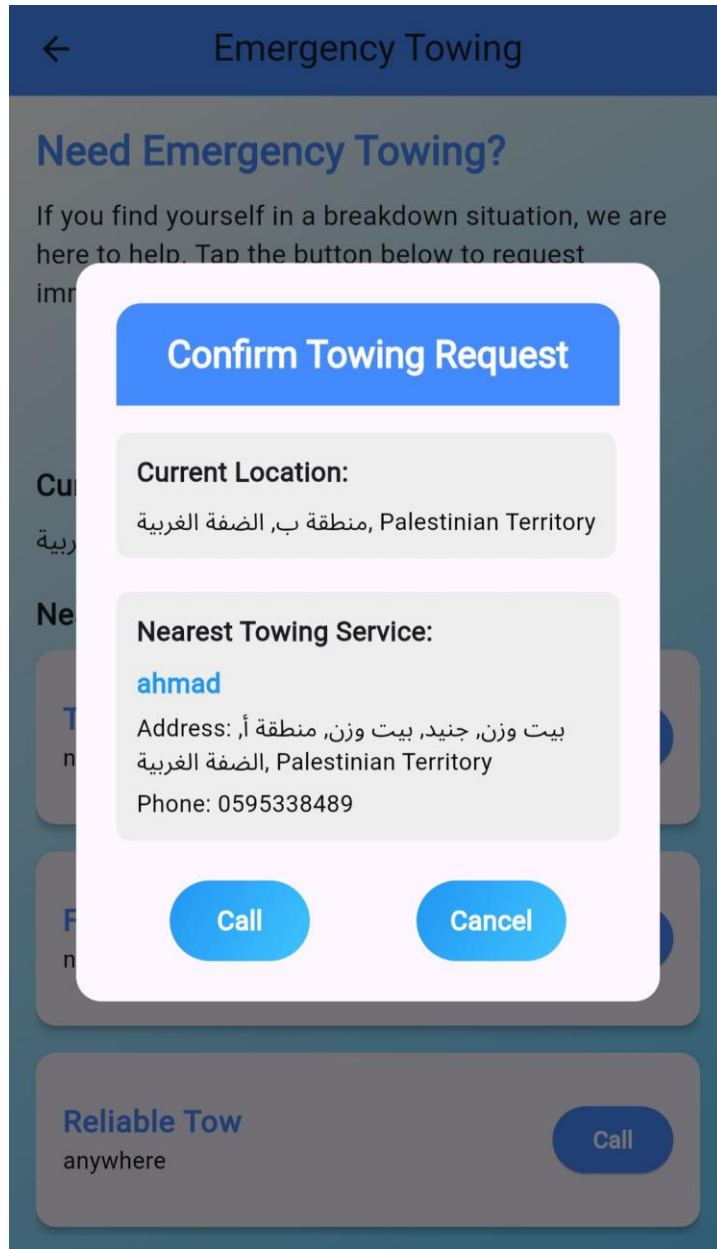


Figure 87 dialog to show nearest Emergency Towing service

If the user's account lacks support for location services, a notification will show that access to the location has been restricted due to web permissions limitations.

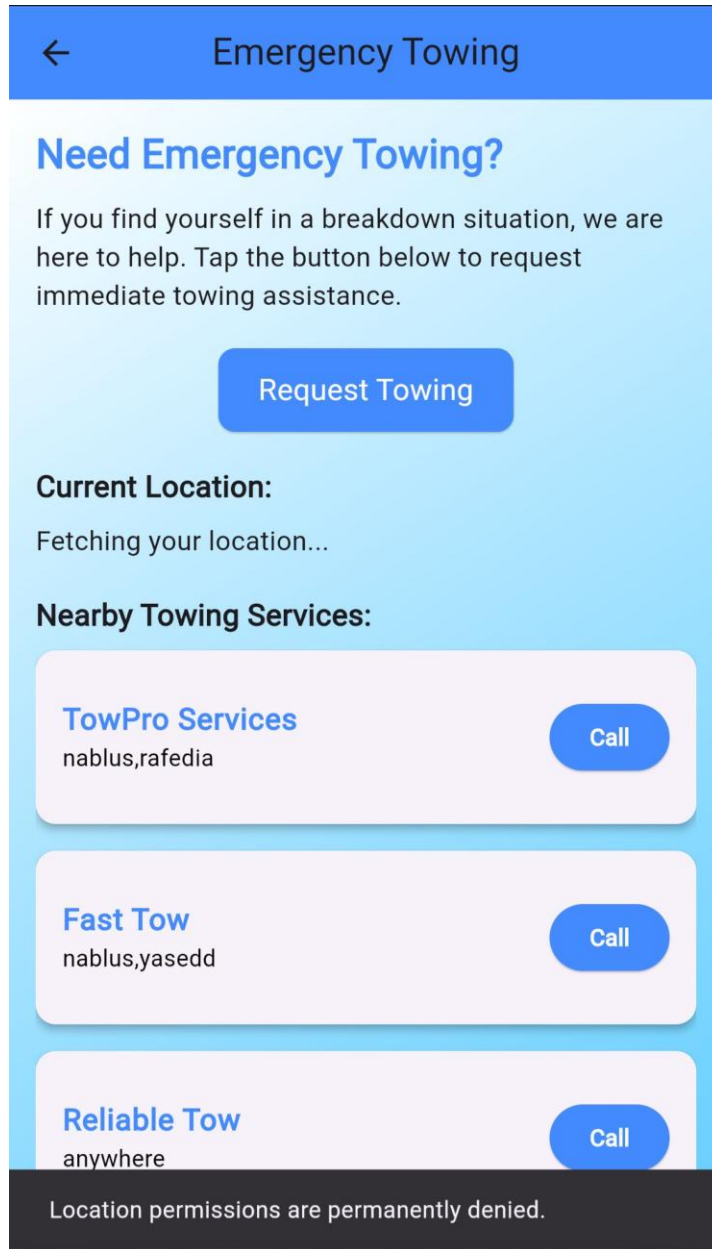


Figure 88 Emergency Towing page error fetching location

## 9- Map Page

The Map Page shows your current position and enables you to look for any location you desire. You can conduct the search by either entering the name of the location or utilizing voice input for ease.

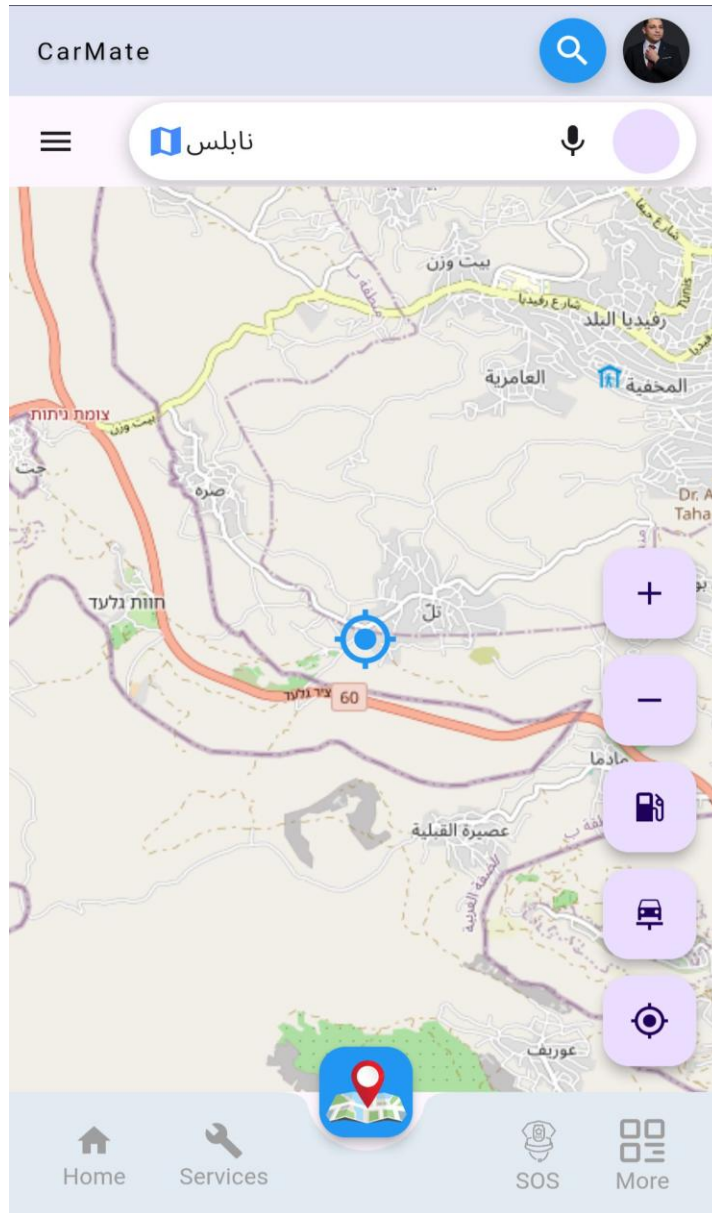


Figure 89 Map Page

The **Map Page** also allows you to locate the nearest gas station. By clicking on the gas station icon, the map will highlight the closest gas stations to your current location, making it easy to find fuel services nearby.

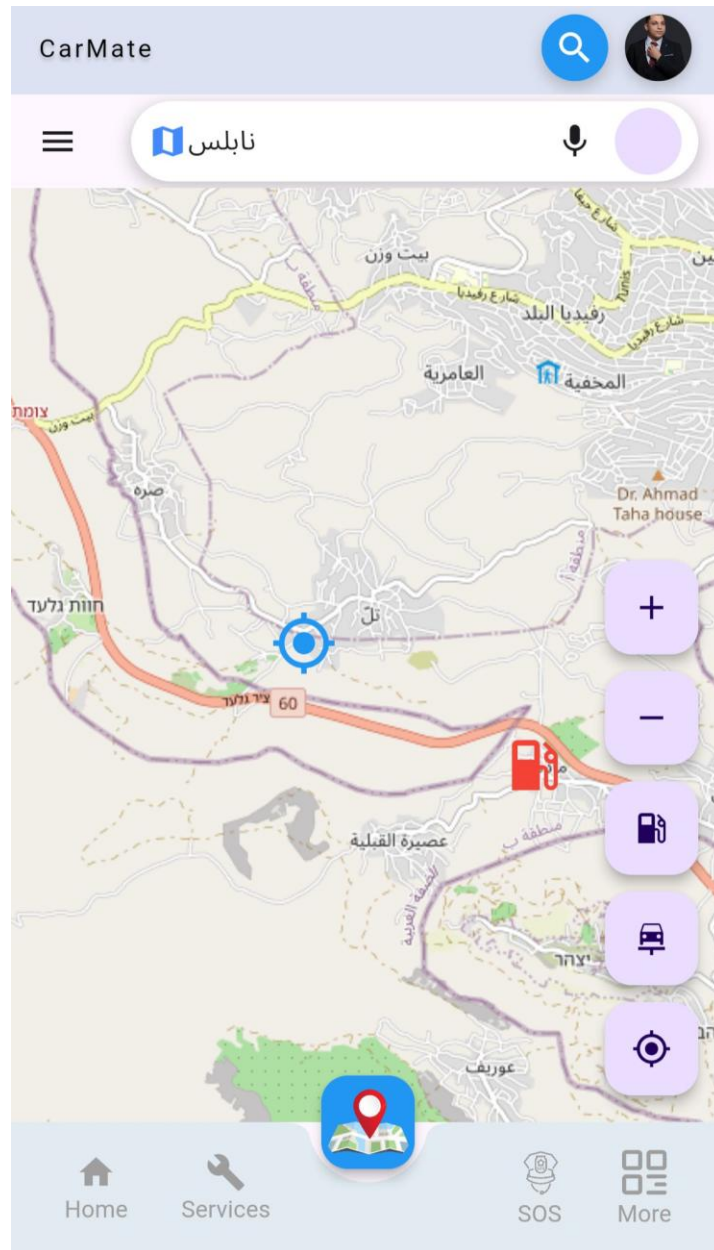


Figure 90 getting nearest gas station

The **Map Page** also allows you to find the closest repair workshop. Clicking the repair workshop icon will show the nearest workshops to your location on the map, assisting you in swiftly locating repair services when necessary.

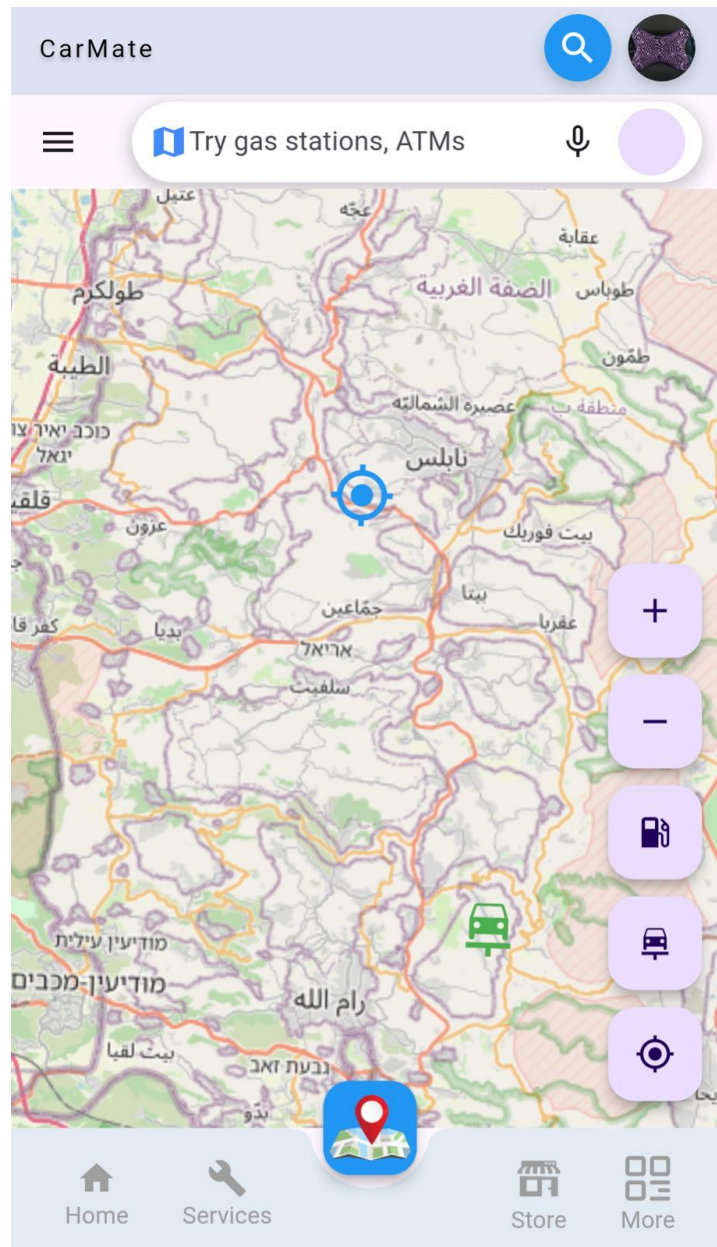


Figure 91 getting nearest repair workshop

## 10-More Page

The More Page offers different choices for handling your account settings. It enables you to modify personal details like your name, phone number, and password. Moreover, you have the option to personalize the app's look, including altering color schemes to match your tastes. This page additionally offers access to various settings and features that we will explore in more detail.

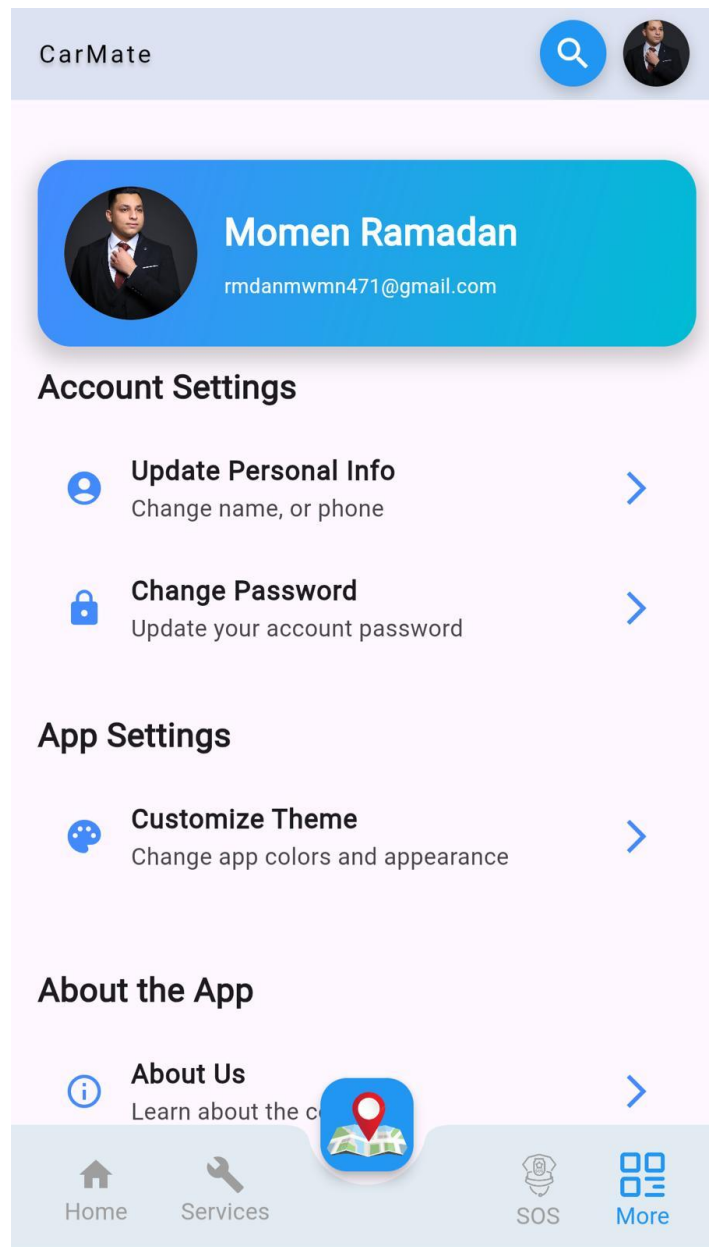
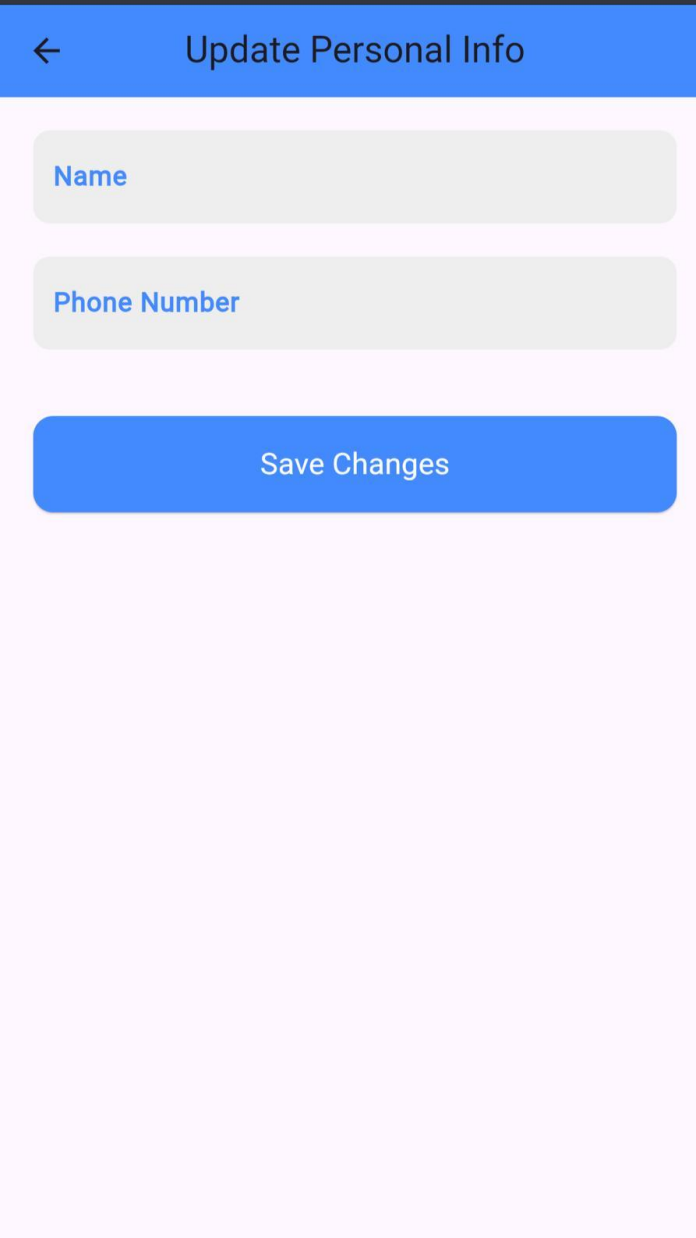


Figure 92 More Page

### ❖ **Account Setting**

Initially, updating your Name and Mobile Number enables you to revise your information. You can modify your name and phone number by inputting the new name and new mobile number in the specified fields. Once you have made the changes, you can save them to refresh your account details.



The screenshot shows a mobile application interface for updating personal information. At the top, there is a blue header bar containing a white back arrow on the left and the text 'Update Personal Info' in white. Below the header, there are two light gray rounded rectangular input fields. The first field is labeled 'Name' in blue text, and the second field is labeled 'Phone Number' in blue text. At the bottom of the screen, there is a prominent blue rounded rectangular button with the text 'Save Changes' in white.

*Figure 93 Account Setting page*

Secondly, you can modify your password by inputting your current password, then entering the new password and confirming it. After you have correctly entered the new password, you can save the changes to enhance your account security.

The image shows a mobile application interface for changing a password. It features a blue header bar with a white back arrow on the left and the text 'Change Password' in the center. Below the header, there are three light gray rounded rectangular input fields, each containing blue placeholder text: 'Current Password', 'New Password', and 'Confirm New Password'. At the bottom of the form is a blue rounded rectangular button with the white text 'Change Password'.

*Figure 94 modify your password page*

If you enter the wrong old password, a message will appear stating that the Old Password is Incorrect. You will be prompted to re-enter the correct password to proceed with changing it.

The screenshot shows a mobile application interface for changing a password. At the top, there is a blue header bar with a white back arrow on the left and the text "Change Password" in the center. Below the header, there are three input fields, each with a label above it: "Current Password", "New Password", and "Confirm New Password". Each input field contains five black dots, indicating that the text is masked. Below the input fields is a large blue button with rounded corners and the text "Change Password" in white. At the bottom of the screen, there is a red banner with the text "Incorrect current password" in white.

*Figure 95 incorrect current password*

If you input a password that contains less than 6 characters, a notification will display indicating that the password needs to be at least 6 characters long. To continue, you must enter a valid password that fulfills this requirement.

The screenshot shows a mobile application interface for changing a password. At the top, there is a blue header bar with a white back arrow on the left and the text "Change Password" in white. Below the header, there are three input fields, each with a label above it: "Current Password", "New Password", and "Confirm New Password". Each field contains five black dots representing masked text. Below the "New Password" field, there is a red error message: "New password must be at least 6 characters". At the bottom of the form area, there is a large blue button with the text "Change Password" in white.

*Figure 96 password that contains less than 6 characters*

If the new password and the confirmation password don't match, a message will show up saying that The passwords do not match. You must input the passwords accurately again to continue.

← Change Password

Current Password  
•

New Password  
•••••••

Confirm New Password  
•••••••

Change Password

New password and confirmation do not match

Figure 97 passwords don't match

If all details are entered correctly, a notification will display indicating that Your Password has been Updated successfully. This verifies that your new password has been stored.

← Change Password

Current Password  
•

New Password  
•••••••

Confirm New Password  
•••••••

Change Password

Password changed successfully!

Figure 98 Password has been Updated successfully image

### ❖ App setting

This page offers a Customize Theme feature that enables you to alter the app's color scheme according to your likes. You can choose from different color themes to customize the look of the application.

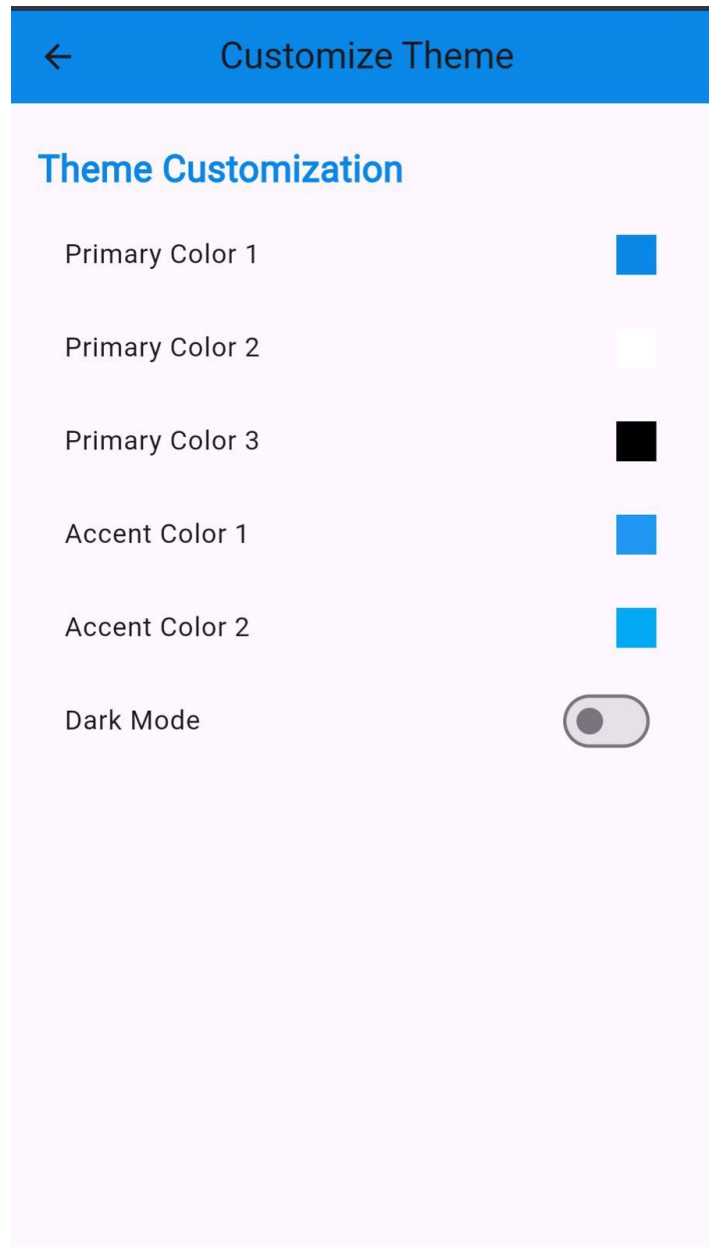


Figure 99 Customize Theme page

You may pick the color you'd like to alter and then choose the exact hue or depth of that color. This enables you to completely tailor the app's theme to suit your preferred appearance and ambiance.

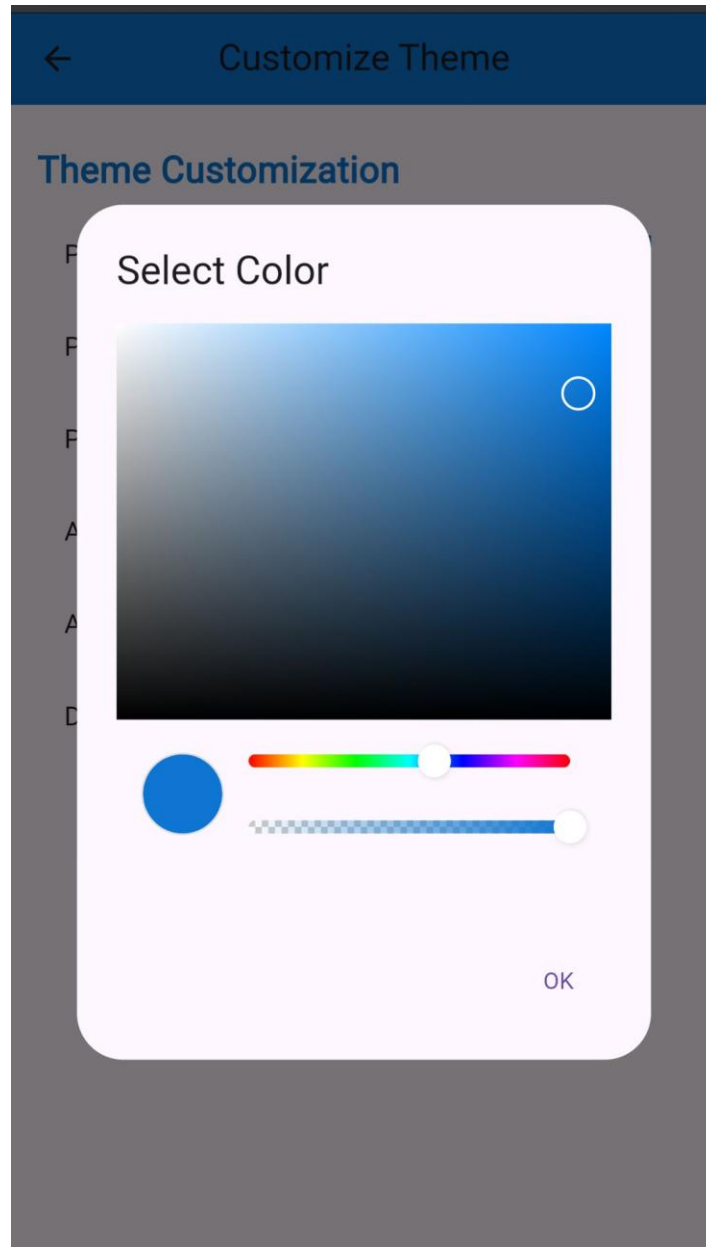
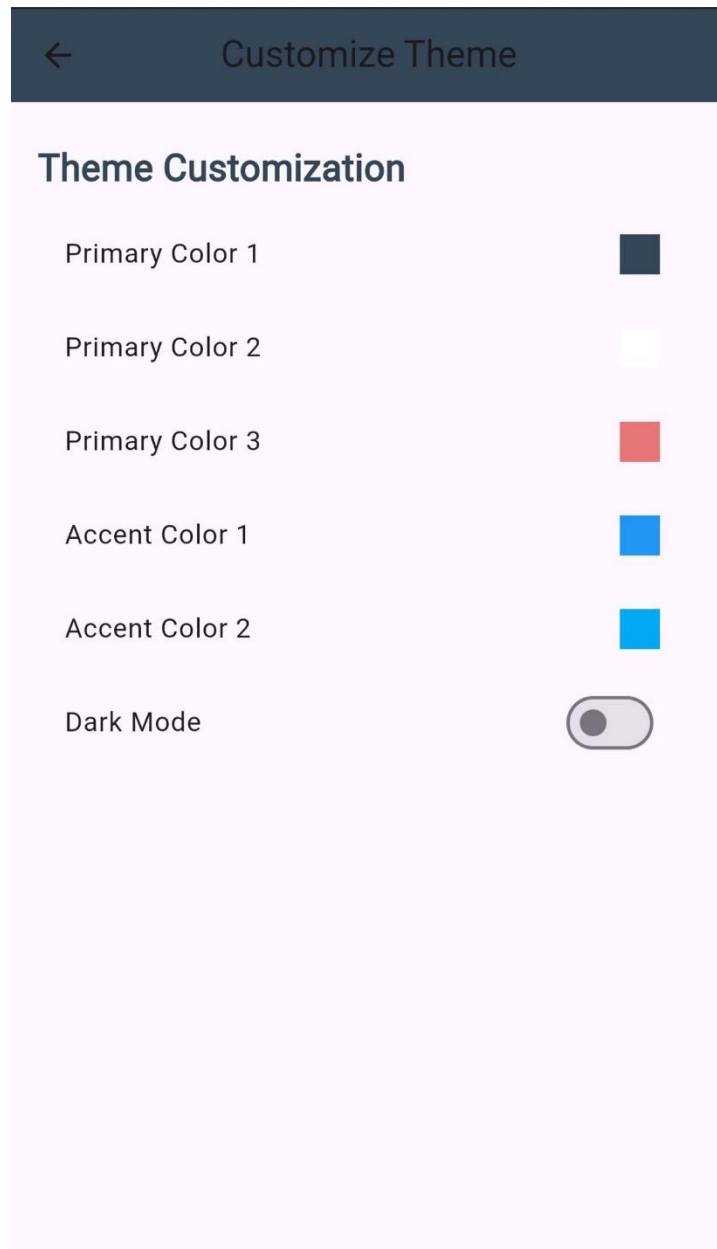


Figure 100 pick the color inside Customize Theme page

For instance, you can alter Primary Color 1 by choosing a different color and modifying its shade or brightness. This will change the app's primary color scheme to mirror your selection.



*Figure 101 Customizing Theme*

This page also gives users the option to activate the Dark Mode feature in the application, creating a more pleasant viewing experience, particularly in dim lighting conditions.

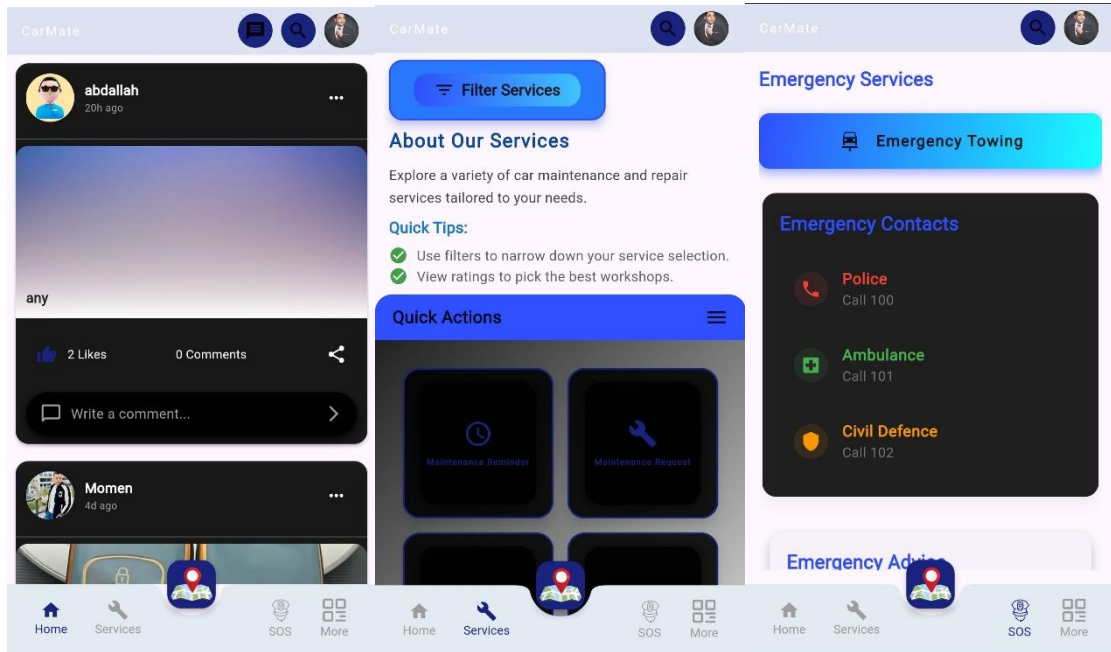


Figure 102 dark mood theme

### ❖ **About the app**

The page features an About Us section that offers details about the platform and its objectives. Moreover, it encompasses information regarding the currently installed App Version, alongside sections pertaining to Safety and Privacy, which detail how user data is safeguarded and the safety protocols established to provide a secure experience.

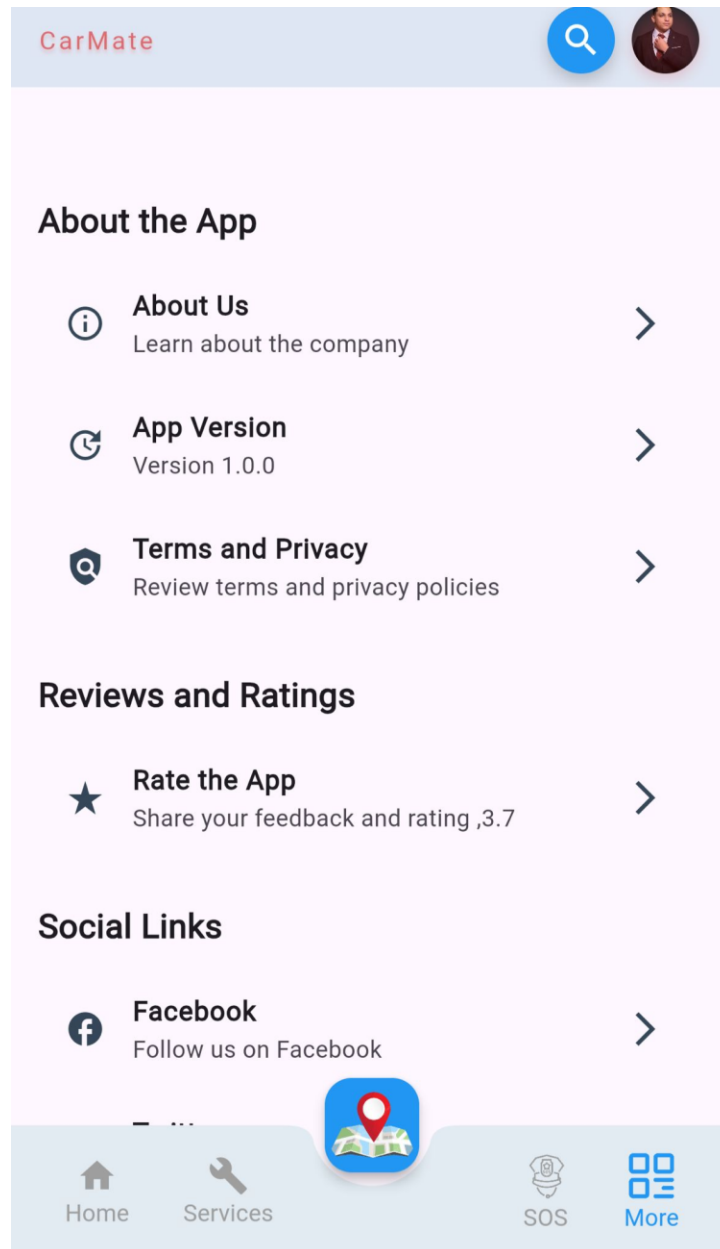
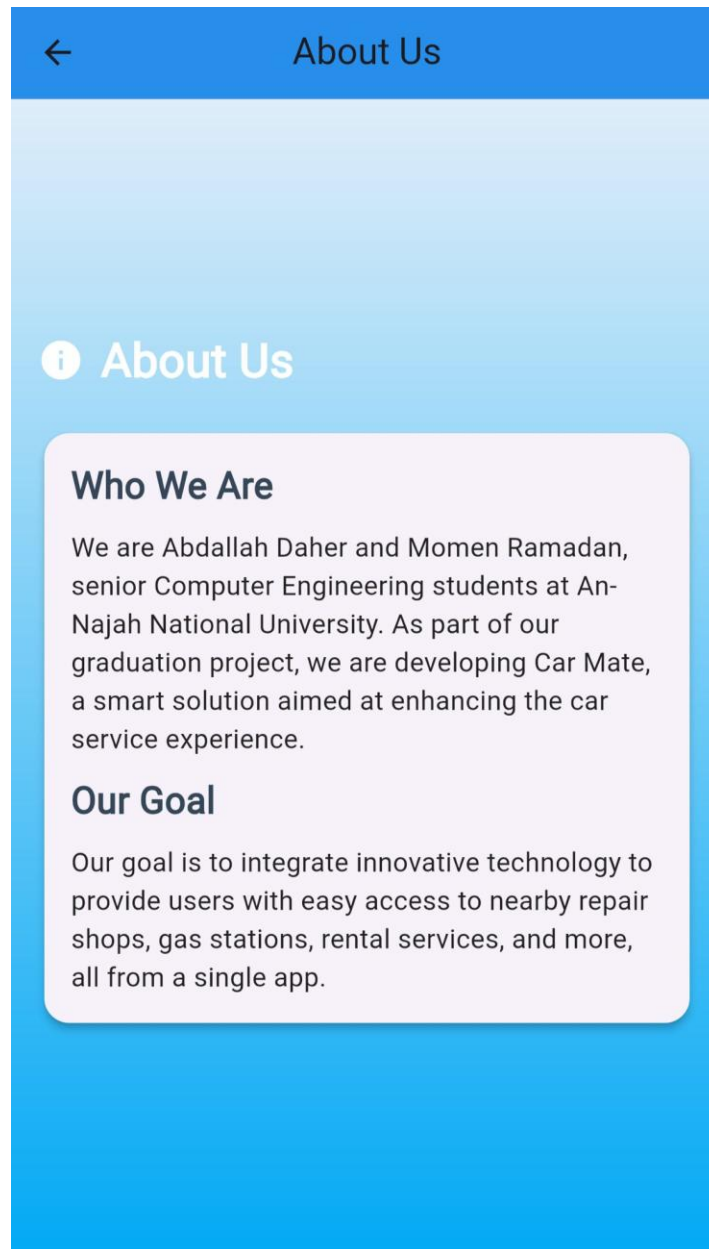


Figure 103 About the app section

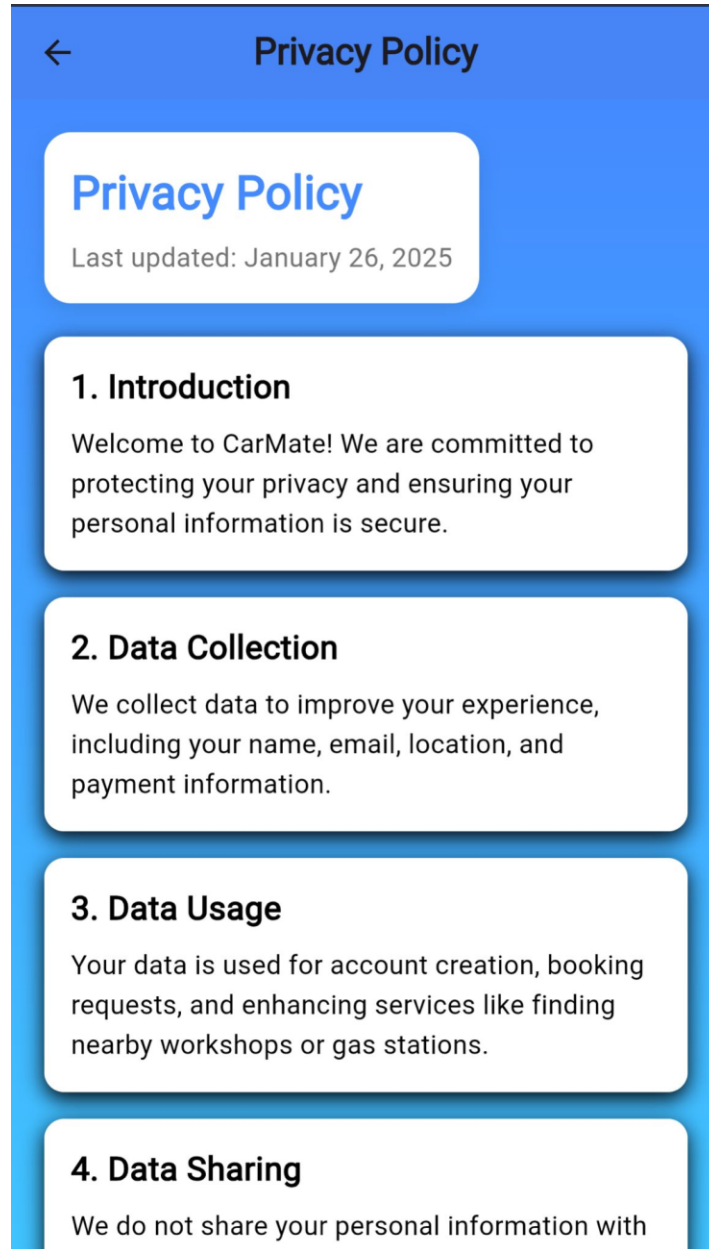
The About Us section offers details about our identity and the goals of the program. It outlines the concept driving the app, its goal to assist users, and how the platform intends to enhance their overall experience with vehicle maintenance and services.



*Figure 104 About Us page*

❖ **Terms and privacy**

This page presents the privacy and safety guidelines of the program, clarifying for users how their information is safeguarded and the actions implemented to ensure a secure experience.



*Figure 105 Terms and privacy page*

## ❖ Reviews and Ratings

You have the option to evaluate the app by assigning a rating according to your experience. This enhances the application and enables others to gain from your input.

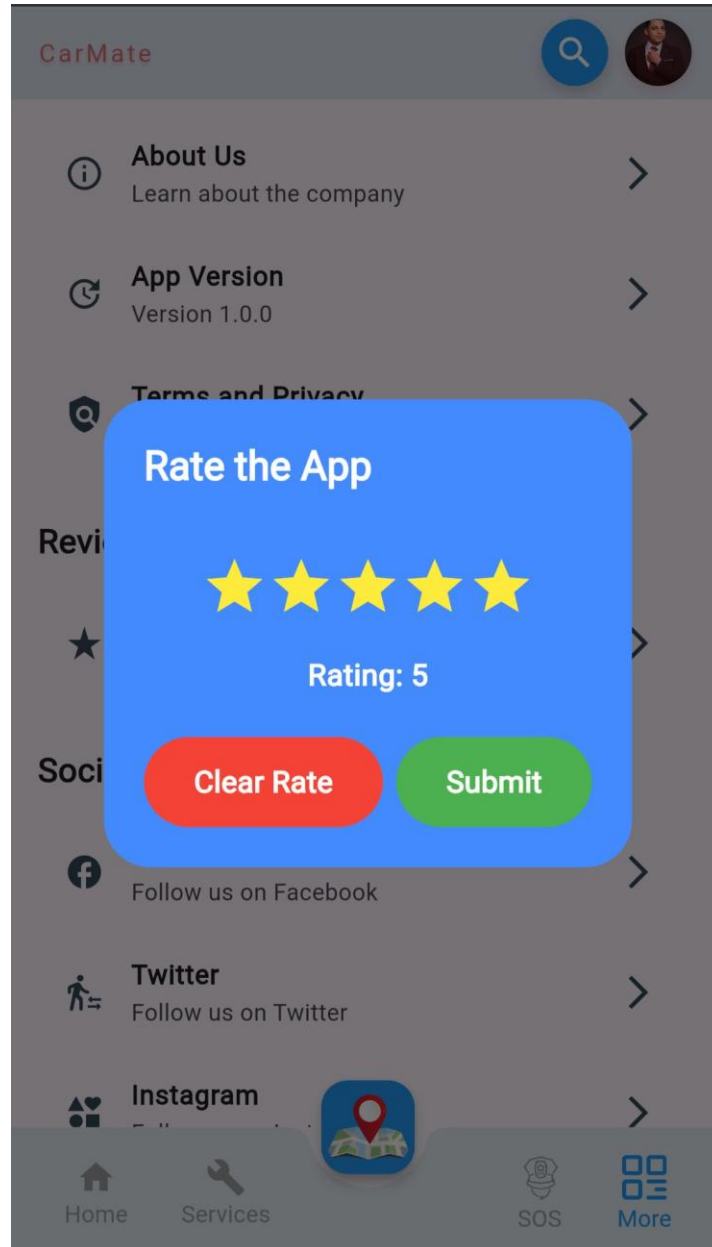


Figure 106 Reviews and Ratings for the app dialog

❖ **Social link**

You can directly access the program's social media accounts like Facebook, Twitter, and Instagram from the app to stay informed and interact with the community.

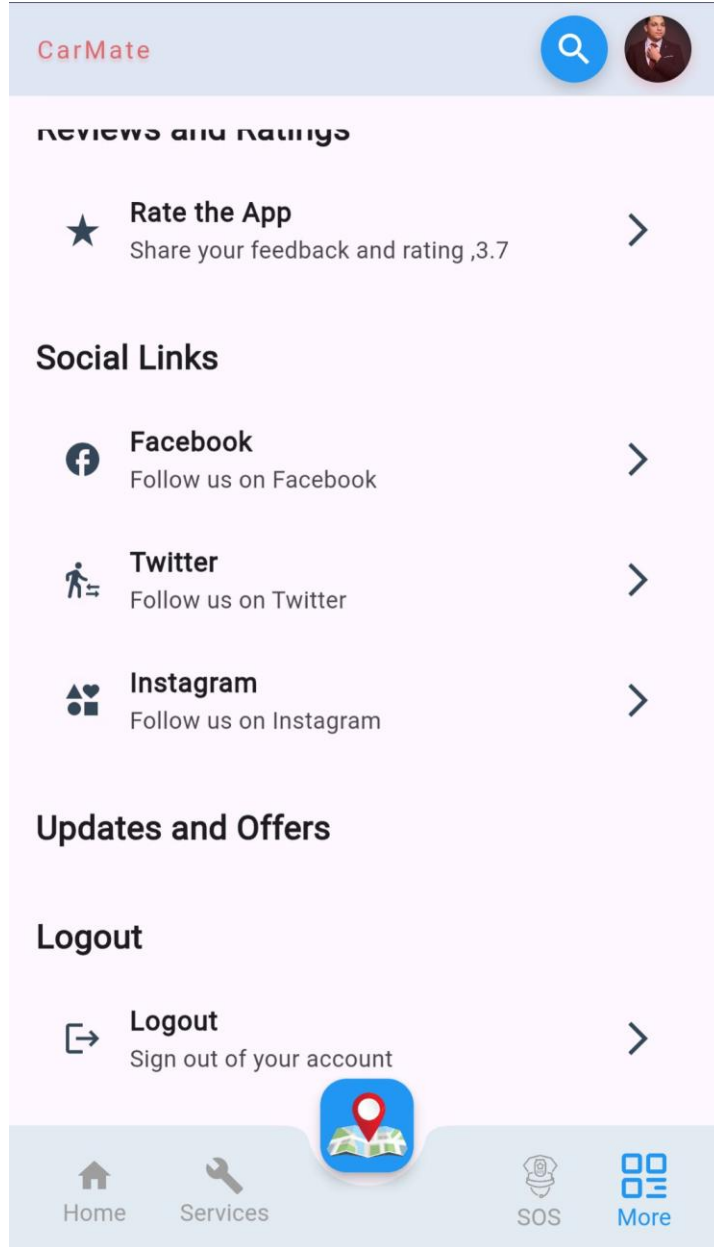


Figure 107 Social link section

## ❖ Log out

When you click on **Log Out**, you will be logged out of your account and redirected to the **Login** page, where you can sign in again if needed.

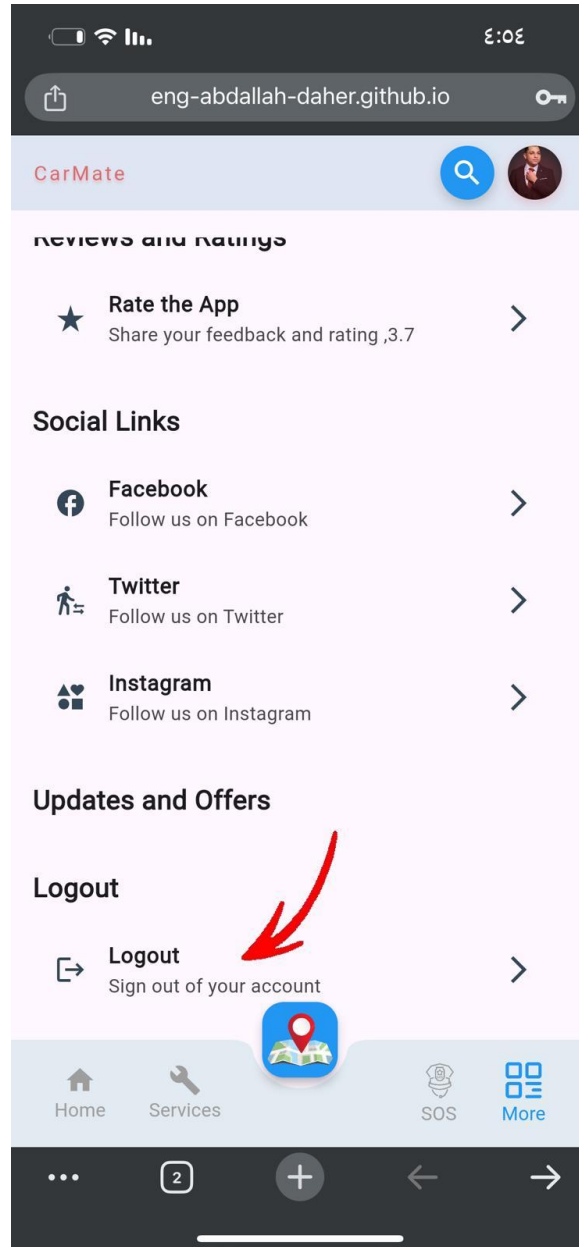


Figure 108 Log out button

The user may update their profile picture by clicking on the existing photo. They have the option to select a different image from their photo library, capture a new image with their camera, or pick a file from their device to refresh their profile picture.

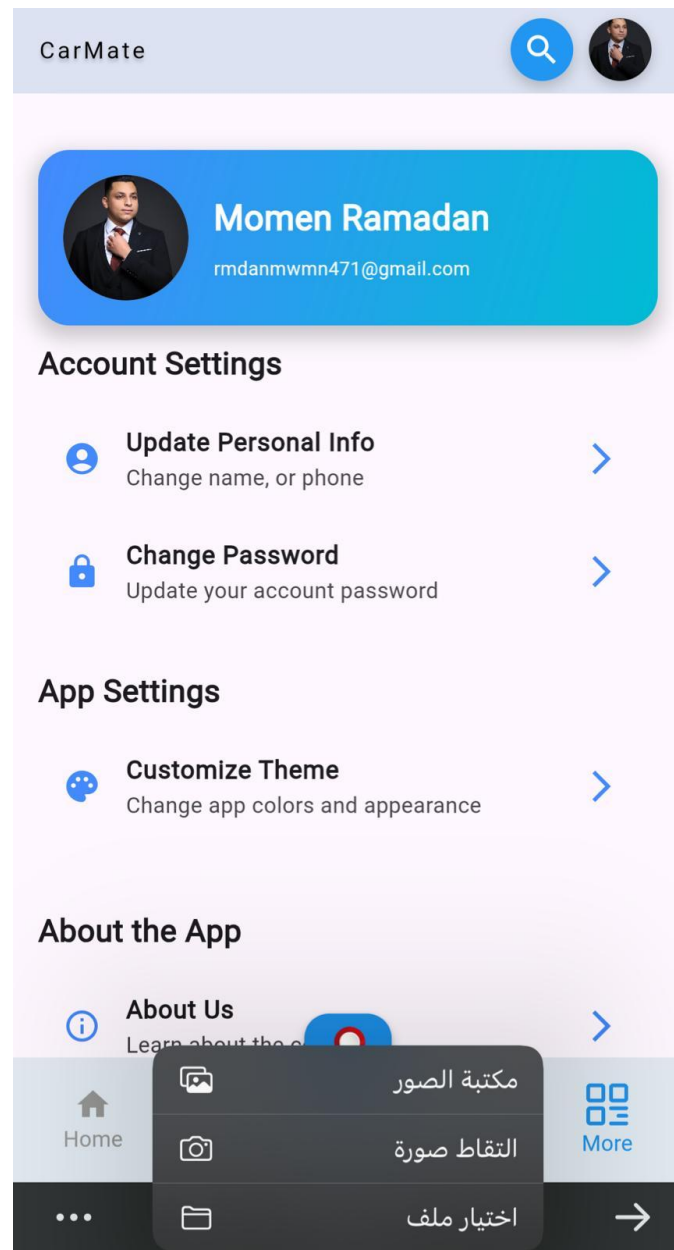


Figure 109 updating profile picture

## 11-Chat Page

The Chat Page enables the user to interact with the owner for questions or help. Nevertheless, users are unable to interact with other users since it is not required for their engagements on the platform. Only the user can contact the owner for assistance or inquiries about services or repairs.

If a user wants to start a conversation with an owner for the first time, they can visit the Owner's Profile and click on the Message Icon to begin chatting. Moreover, the user can reach out to the owner directly by clicking on the Call Icon, enabling them to initiate a phone call.

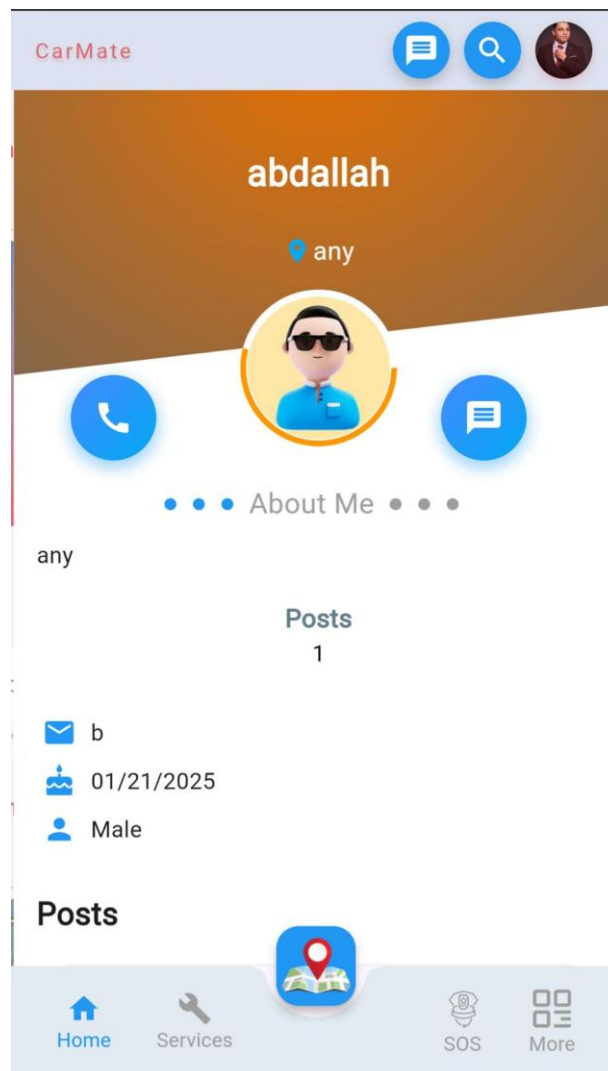


Figure 110 how to get Chat Page

By clicking on the Message Icon found on the main page, you will be taken to a list of your previous conversations. From that point, you can keep conversing with the owners or check past messages, helping you to effortlessly monitor your active conversations.

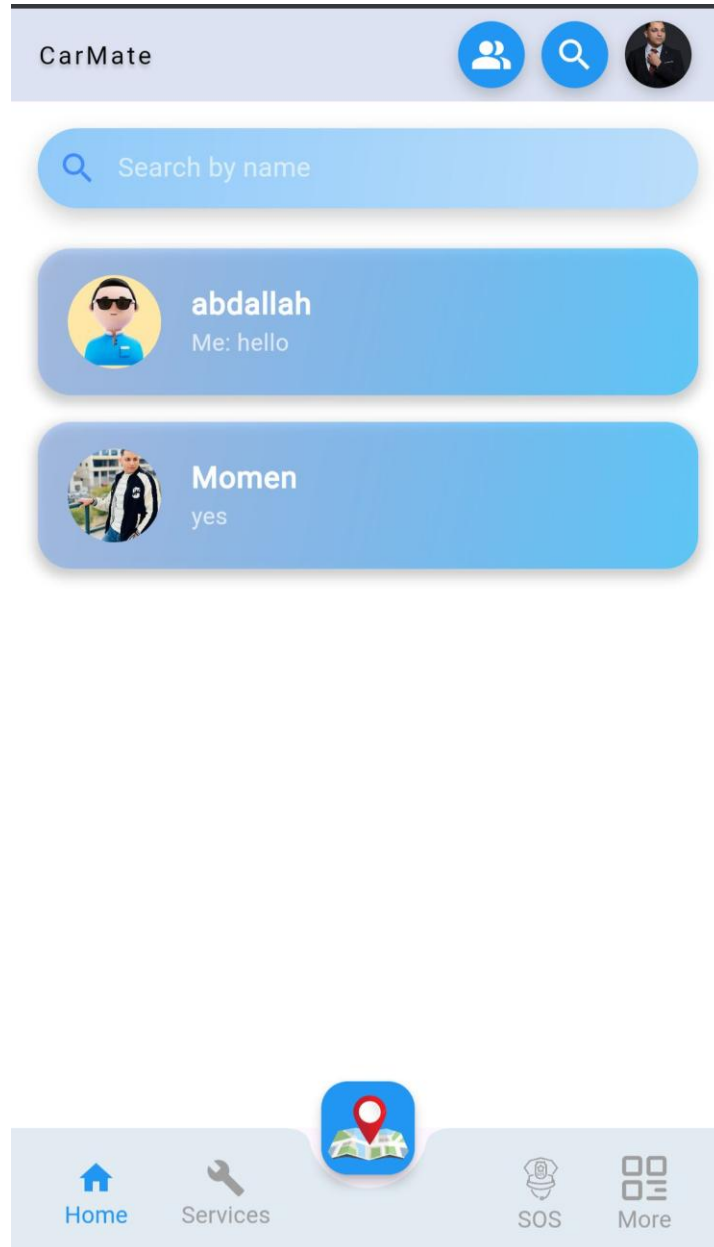


Figure 111 Chat Page

The dialog between the user and the owner facilitates the sharing of text messages or pictures. Furthermore, the chat interface shows if the individual is online or offline, offering immediate status updates to improve communication.

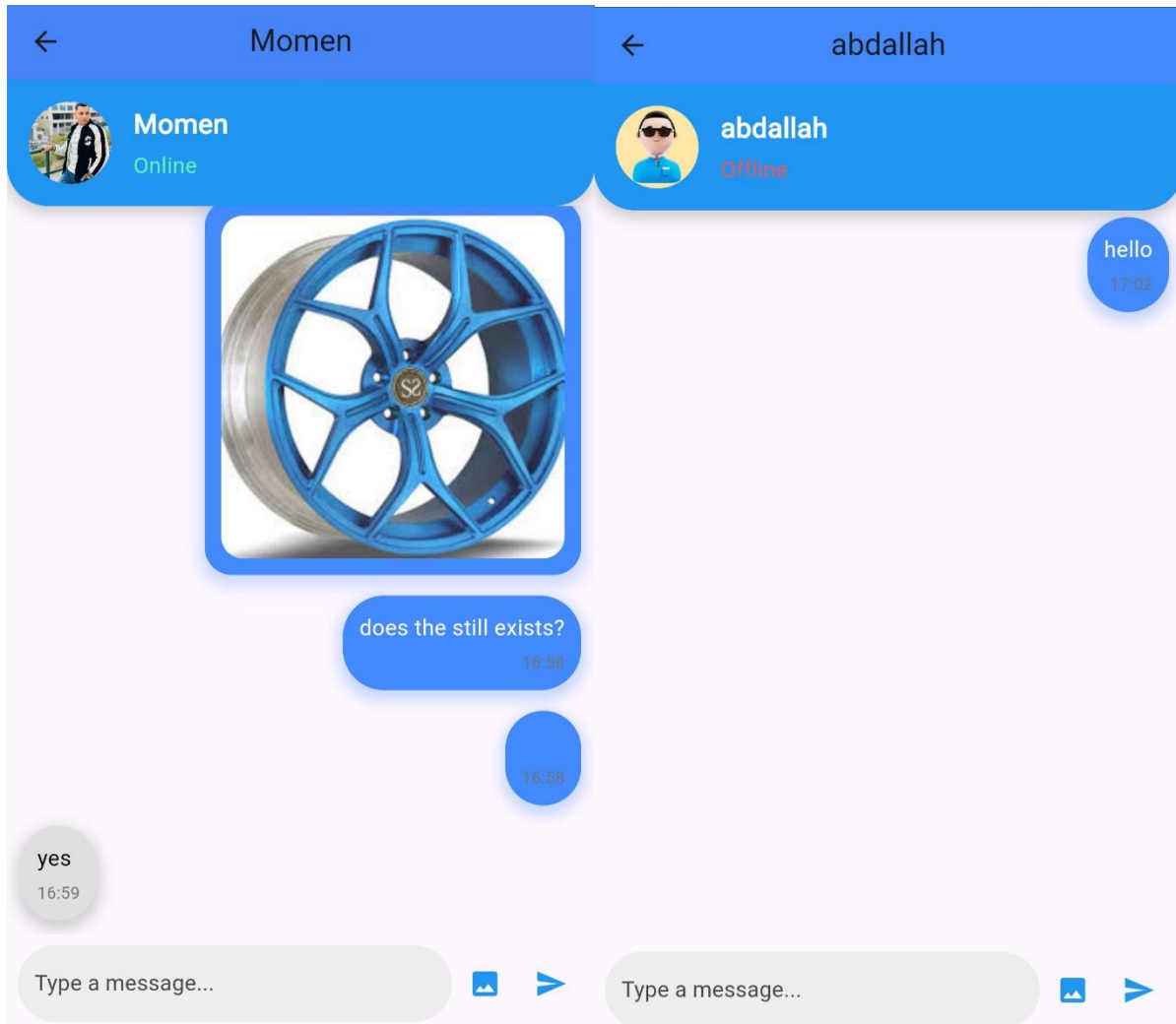


Figure 112 users chats

## 12-Search Page

When you click on the search icon, you can search for any workshop you want by entering its name or relevant keywords. This feature helps you quickly find and connect with specific workshops.

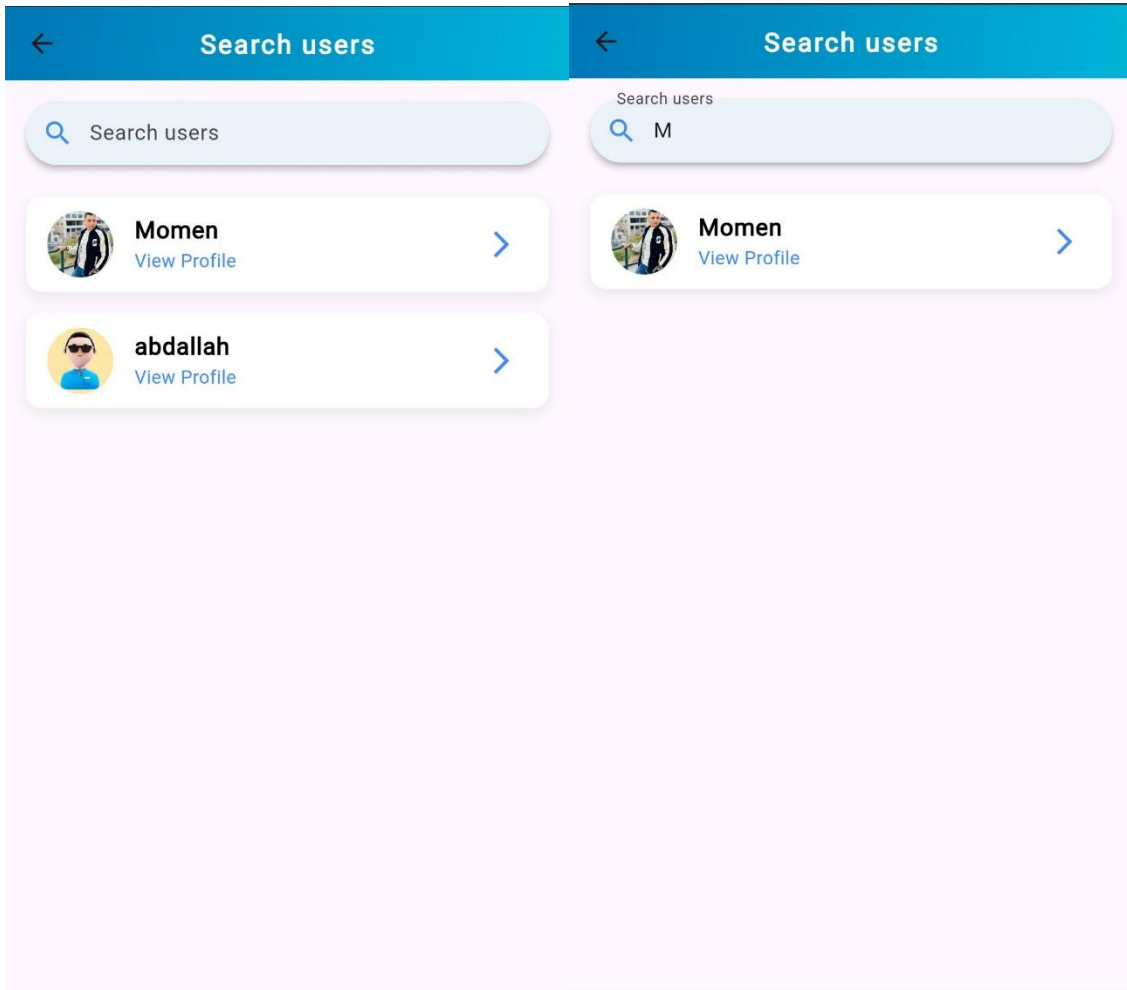


Figure 113 Search Page

## 13-Admin Page

The administrator possesses unique permissions that set them apart from all other roles.

### ❖ Request Page

This page shows requests for registration from workshop owners. The administrator evaluates these requests and determines if they should be approved or denied.

If the administrator approves the request, the workshop owner's account is activated, allowing them to manage their services on the platform.

If the administrator denies the request, the account stays inactive.

This procedure guarantees that access to the platform is only granted to verified and reliable workshop proprietors.

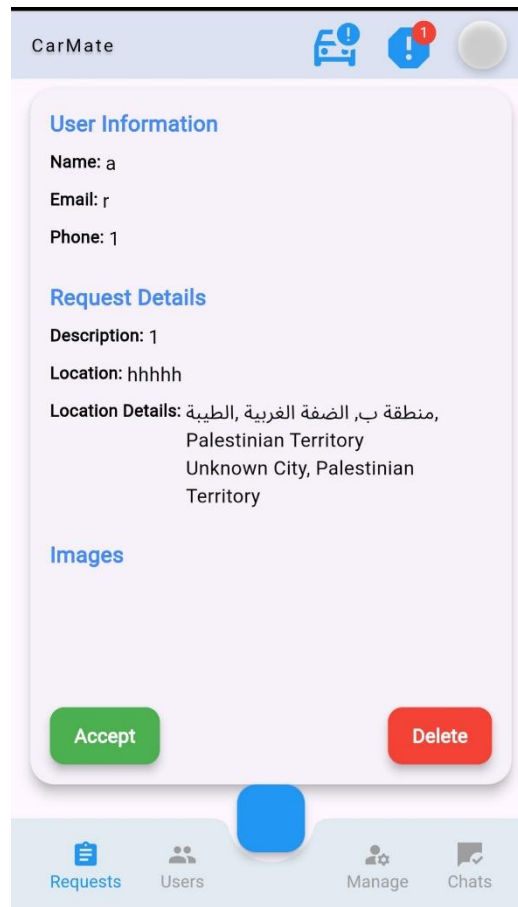


Figure 114 Requests Page (Admin)

## ❖ Owner Management

This page focuses on overseeing workshop owners and monitoring their monthly payments. For example, if there exists an arrangement between the administrator and the proprietor for a particular monthly fee:

When the owner completes the payment, a green checkmark (✓) appears next to their name.

If the payment isn't completed, a red sign (✗) will show until the payment is made.

This system shows the payment status for every owner, permits the admin to manually change the status after confirming payment, and allows access to earlier months and years to examine historical records. It guarantees transparency between the administration and owners by preserving a clear record of payments, streamlining the payment tracking process, and honoring all financial agreements.

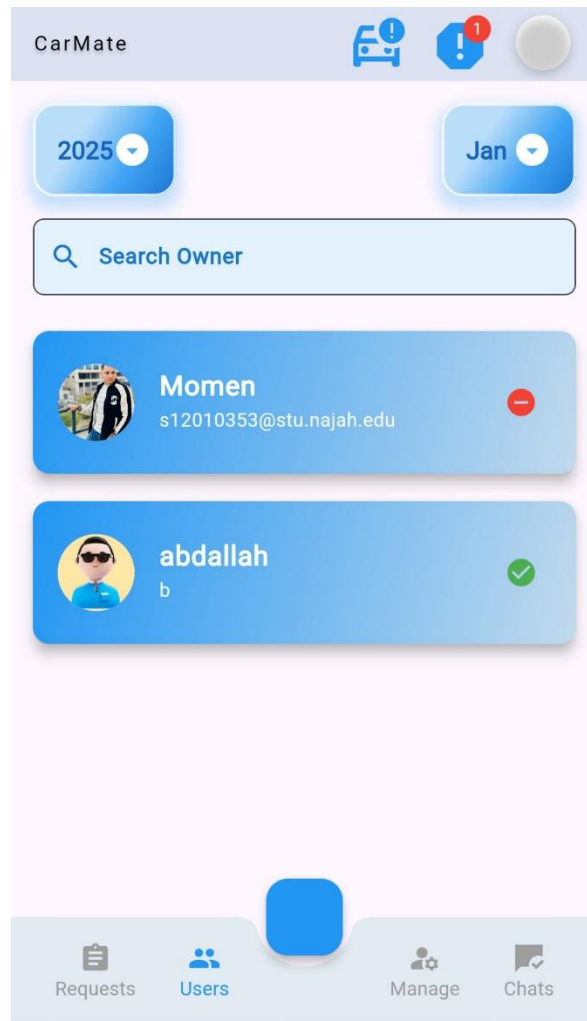


Figure 115 Owner Management page

### ❖ **Manage Page**

This page manages user and owner accounts. The admin can delete user accounts if they violate the rules and remove owner accounts for rule violations or non-payment of the required monthly fee. If an owner fails to pay, their account can be deactivated and marked as inactive until the payment is made.

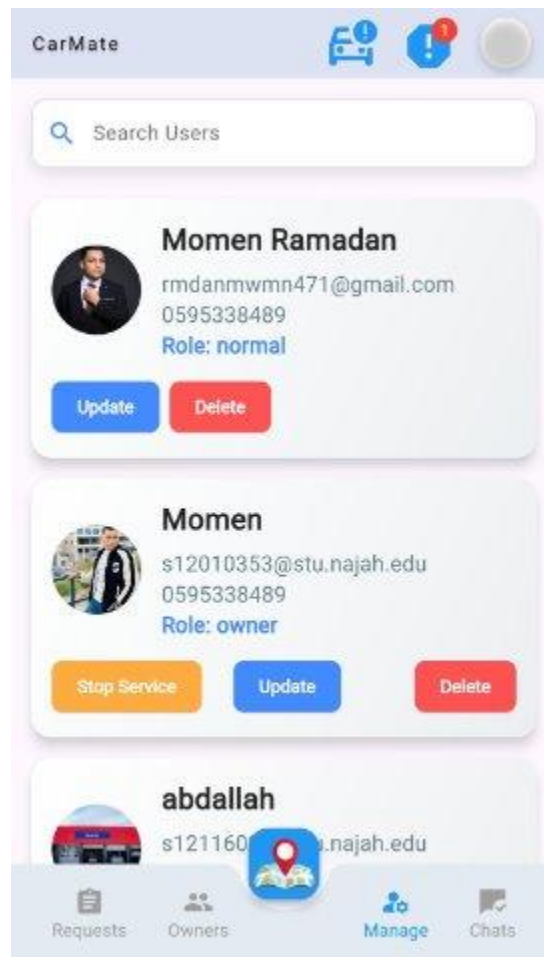


Figure 116 Manage Page for users

When an account is deactivated, a notification appears stating, "The account has been deactivated." Similarly, when the account is reactivated, a message confirms, "The account has been reactivated."

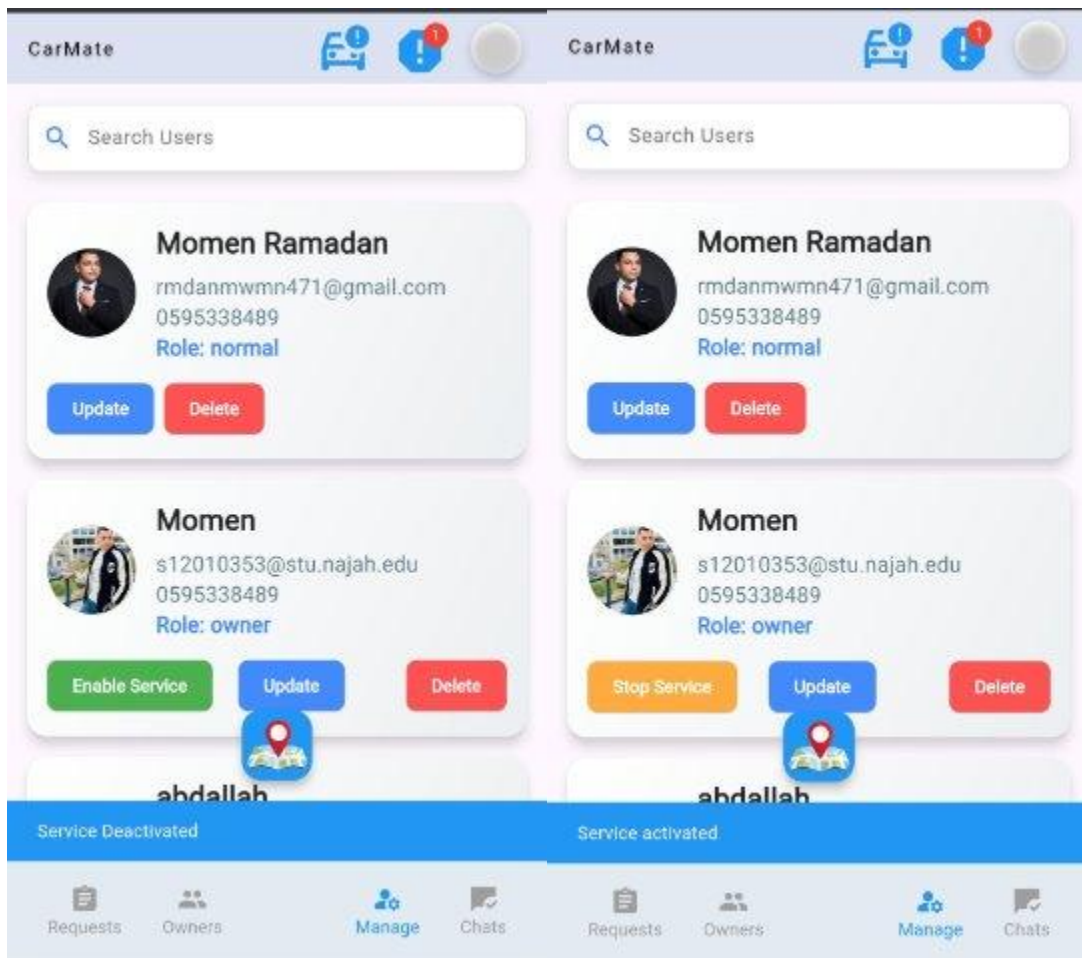


Figure 117 activating users page

## ❖ Chat Page

This page shows the admin's chat interface, enabling workshop owners to directly communicate with the admin.

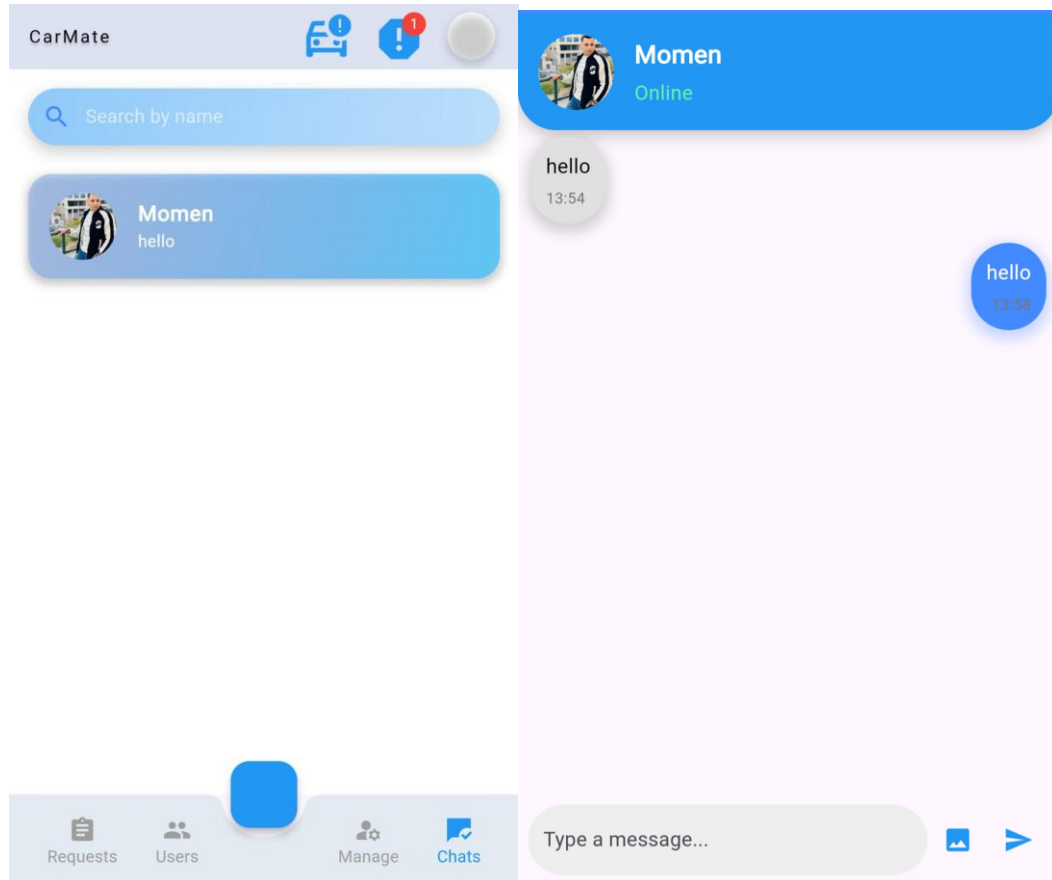


Figure 118 Chat Page (Admin)

The administrator can likewise include towing services to help with vehicle towing. This involves choosing the towing site, inputting the name of the towing service provider, and supplying their phone number.

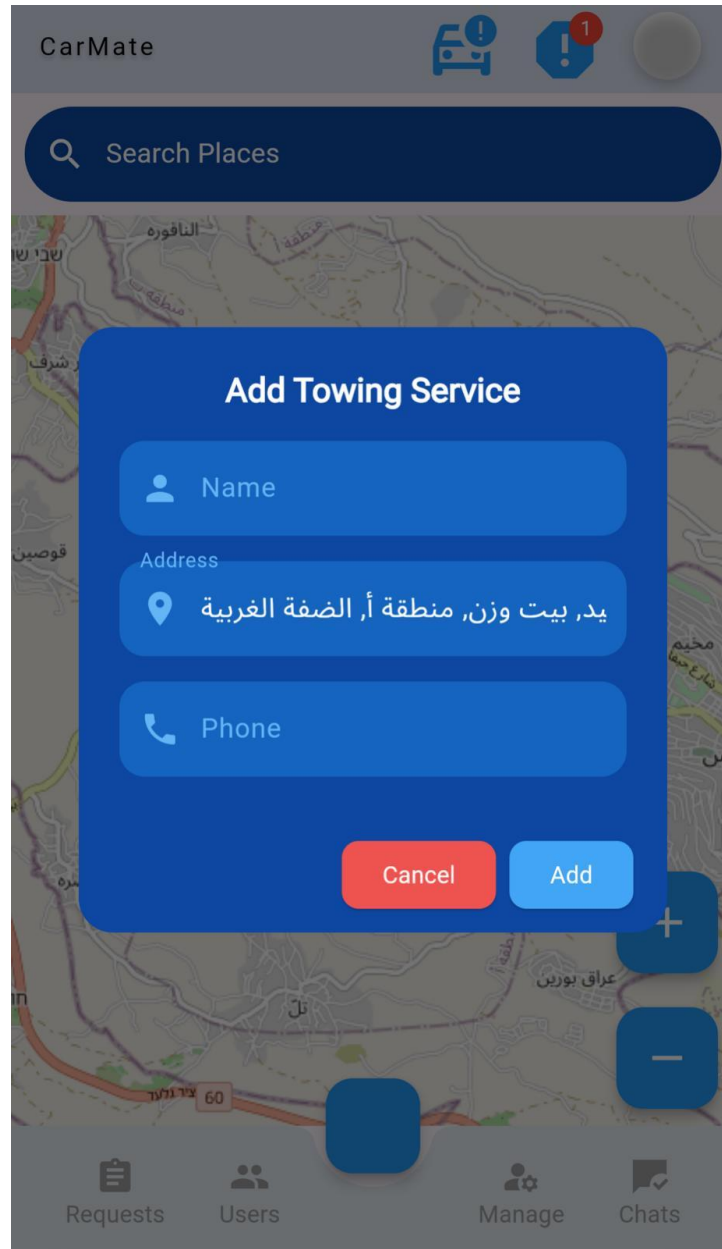


Figure 119 map for adding towing service

Once the towing service is added, a notification will display confirming that the service has been successfully integrated.

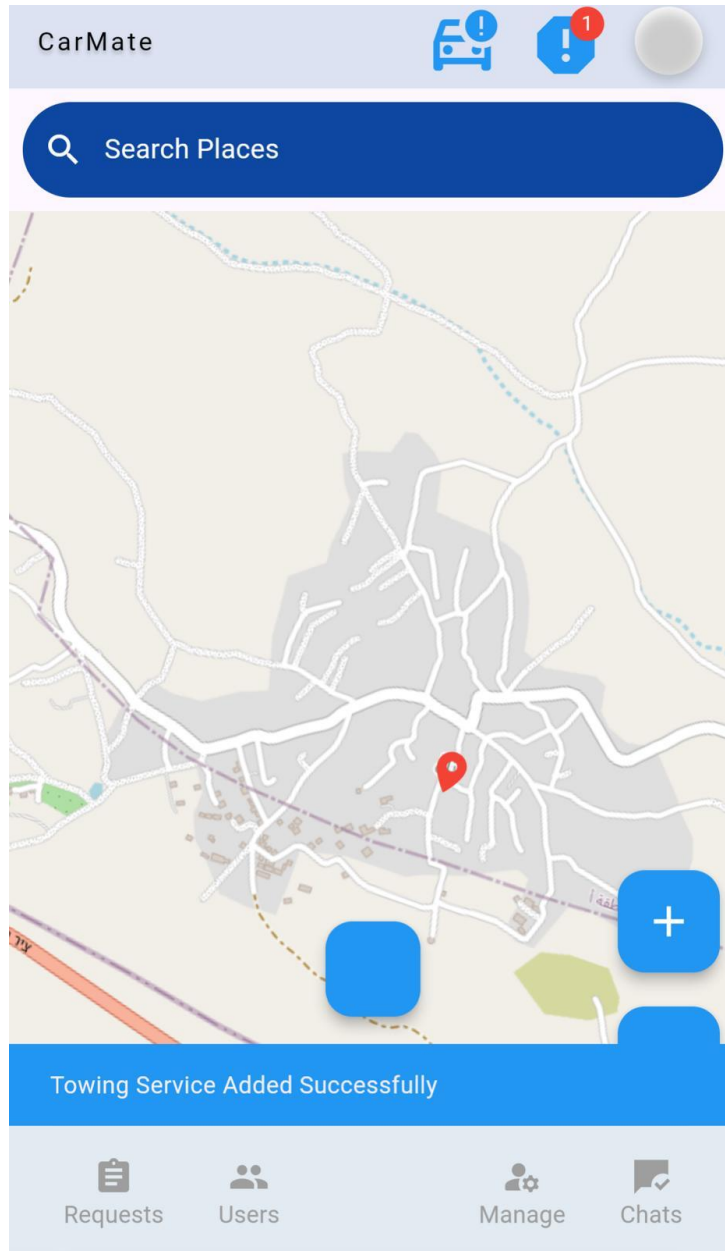


Figure 120 adding towing service

## ❖ Towing Page

Upon visiting the towing page, it will show the names and information of the towing services. You can look for the particular towing service you require from the list.

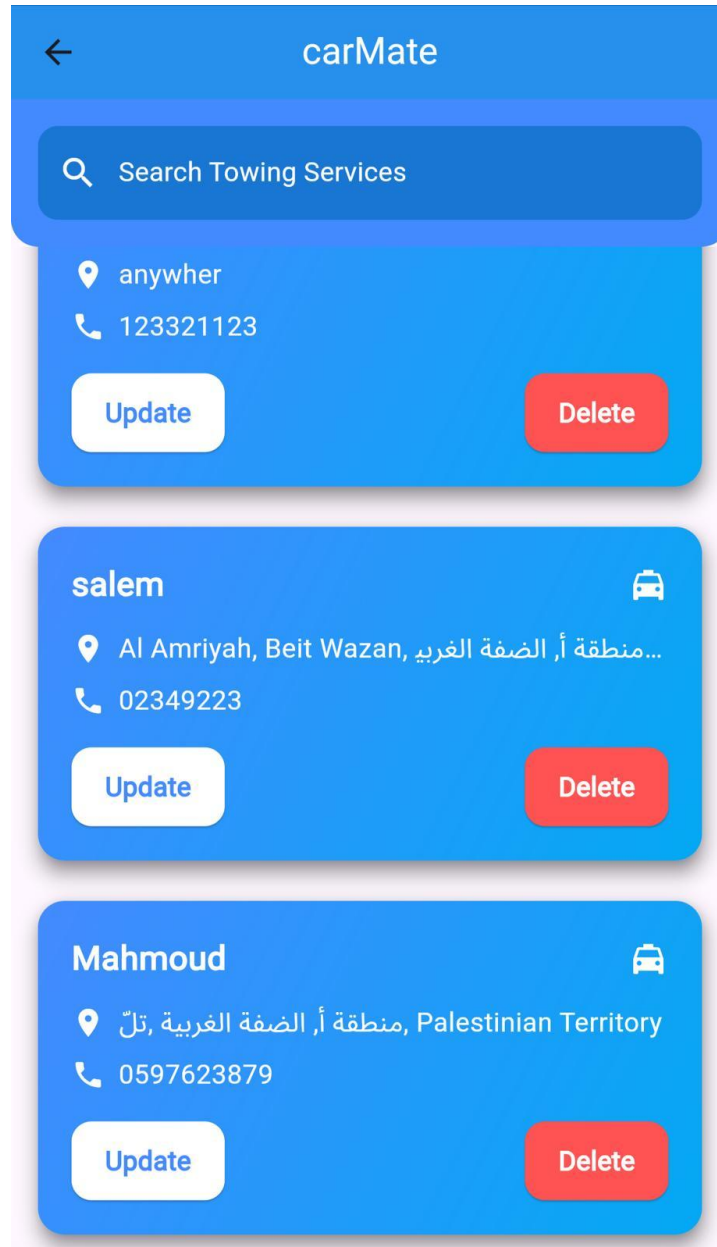


Figure 121 Towing service management Page

You can remove or modify the towing services by changing their name, phone number, or address.

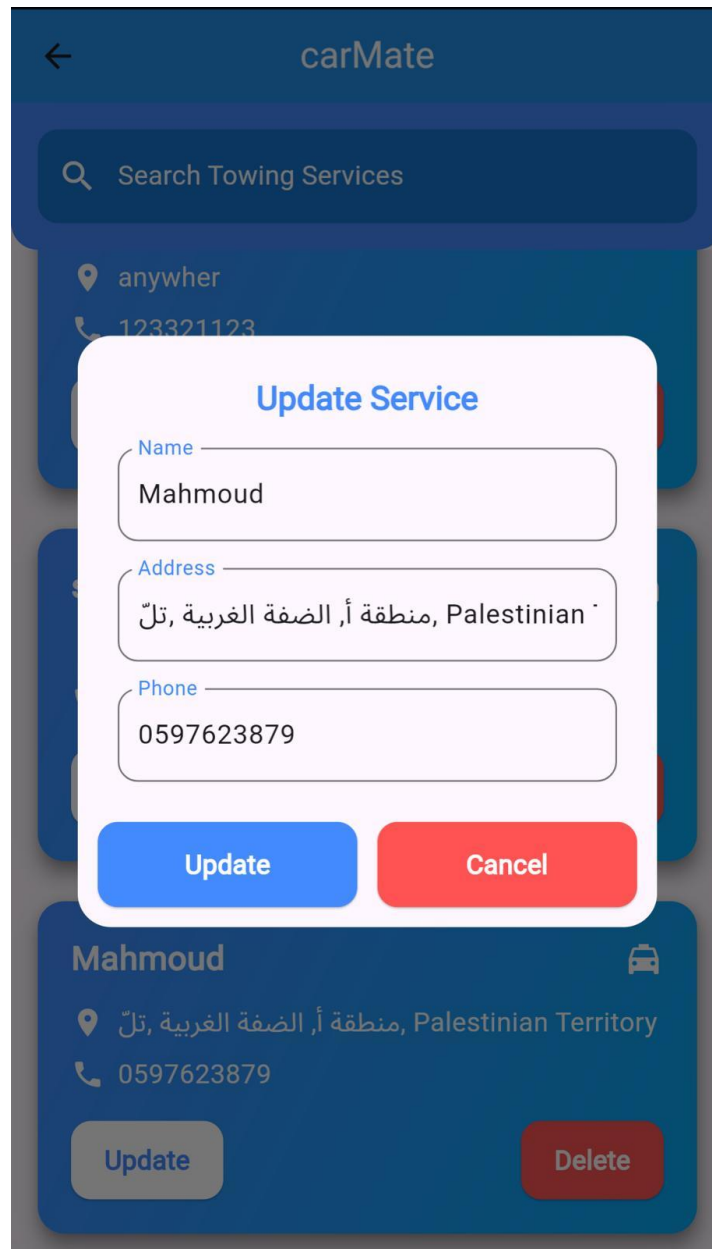


Figure 122 updating towing service

## ❖ Report Post Page

On this page, the administrator can see posts that have been flagged. The administrator can confirm the report's legitimacy, and if it is correct, they have the option to remove the post. If the report is deemed invalid, the admin will eliminate the report rather than erasing the post.

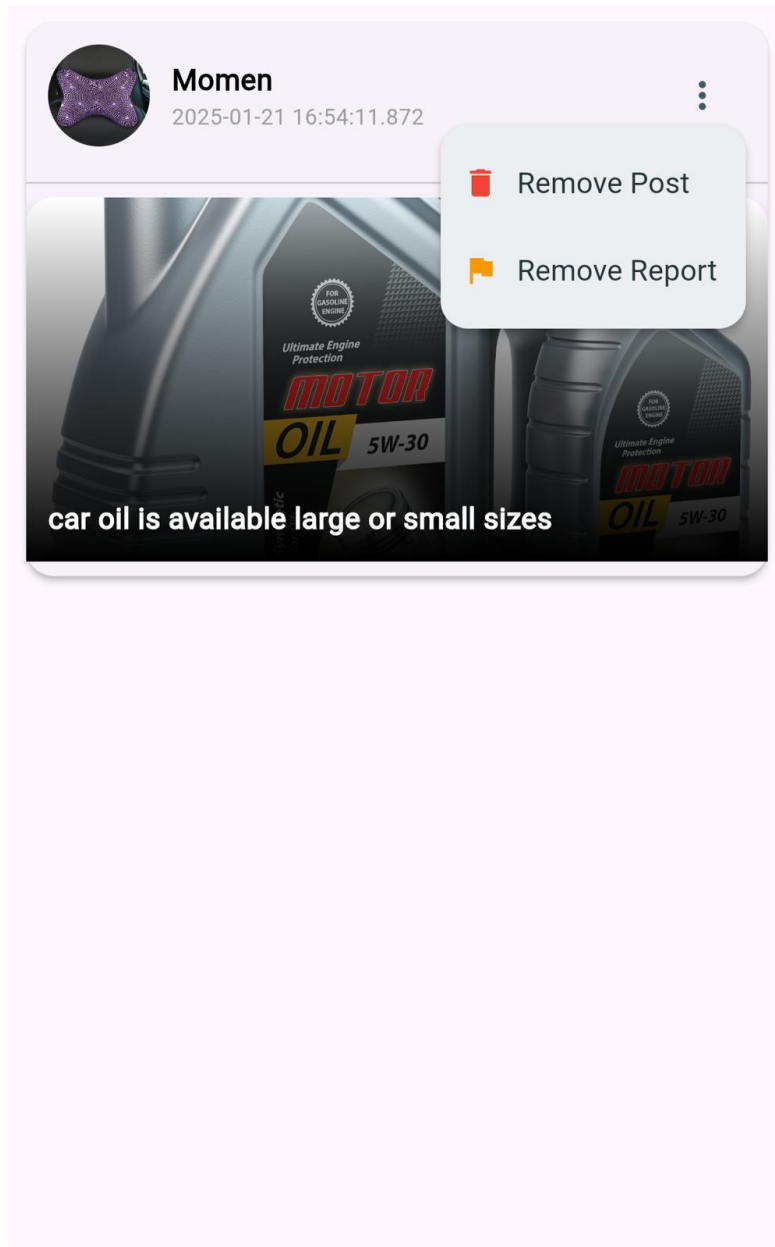
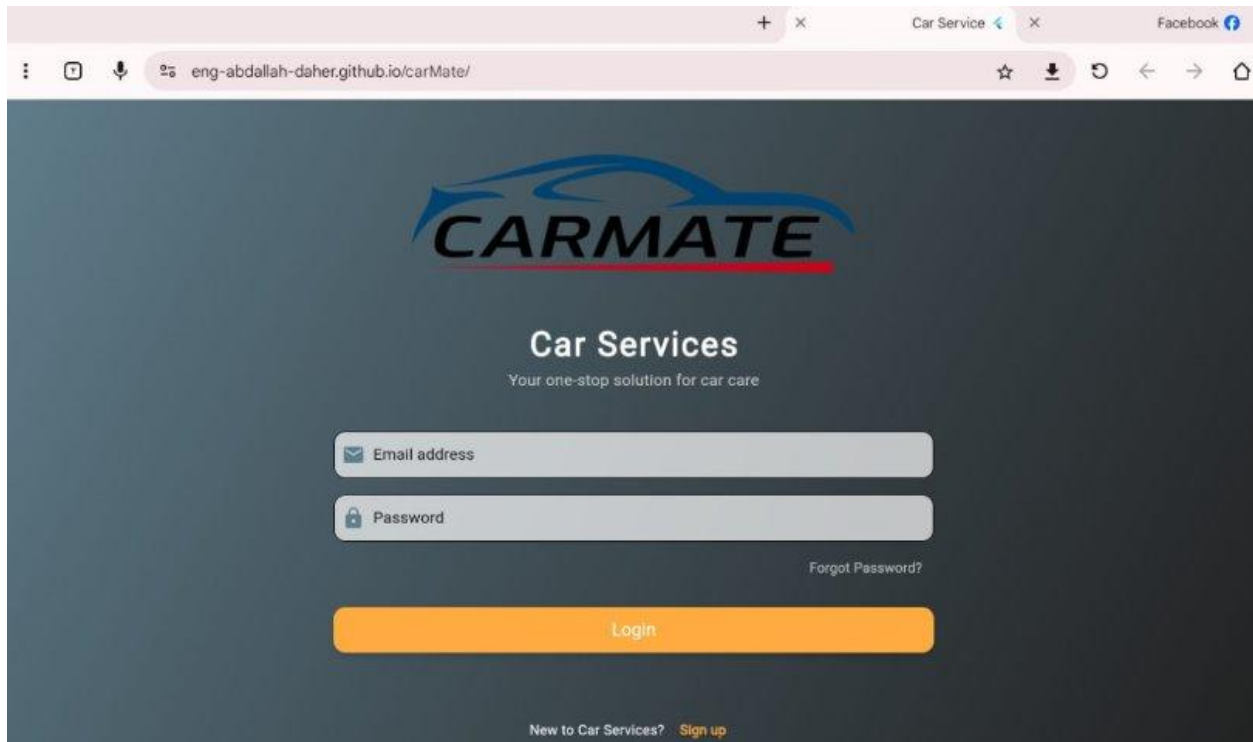


Figure 123 Reported Posts Page

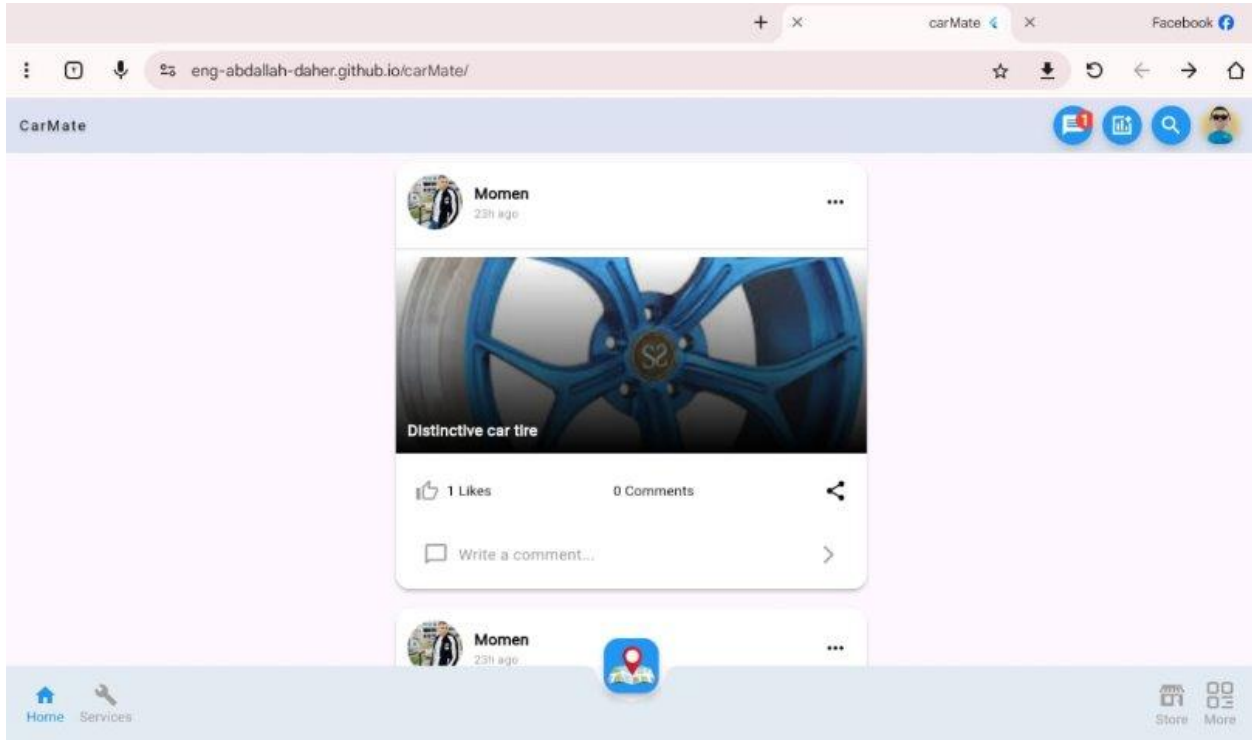
## 3.2 website CarMate

About the project, how to be on the website

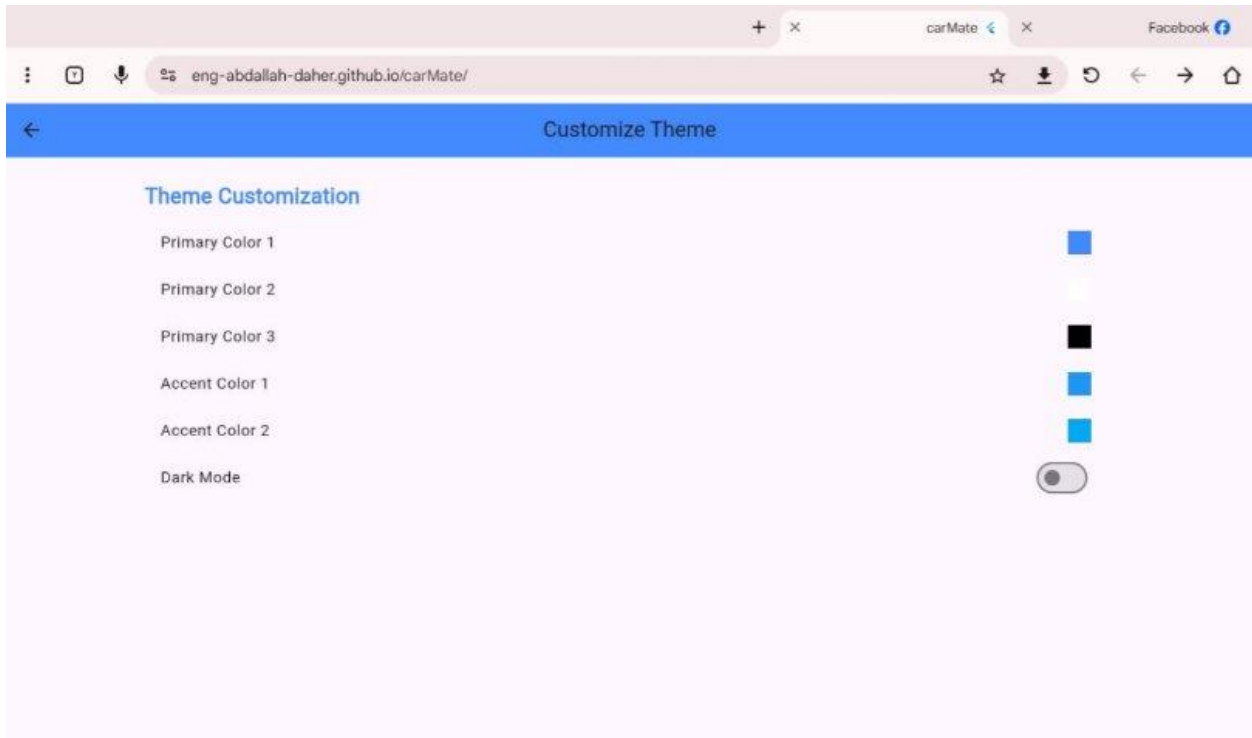
Log in website



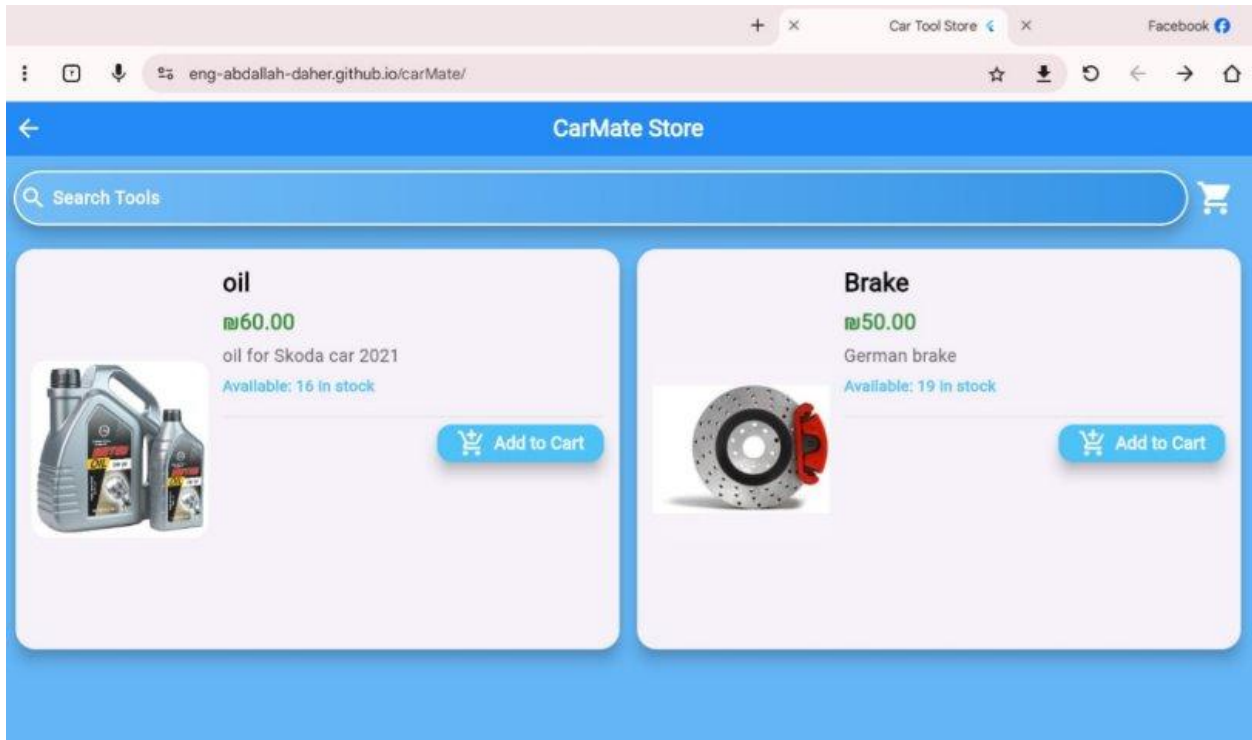
## Home Page website



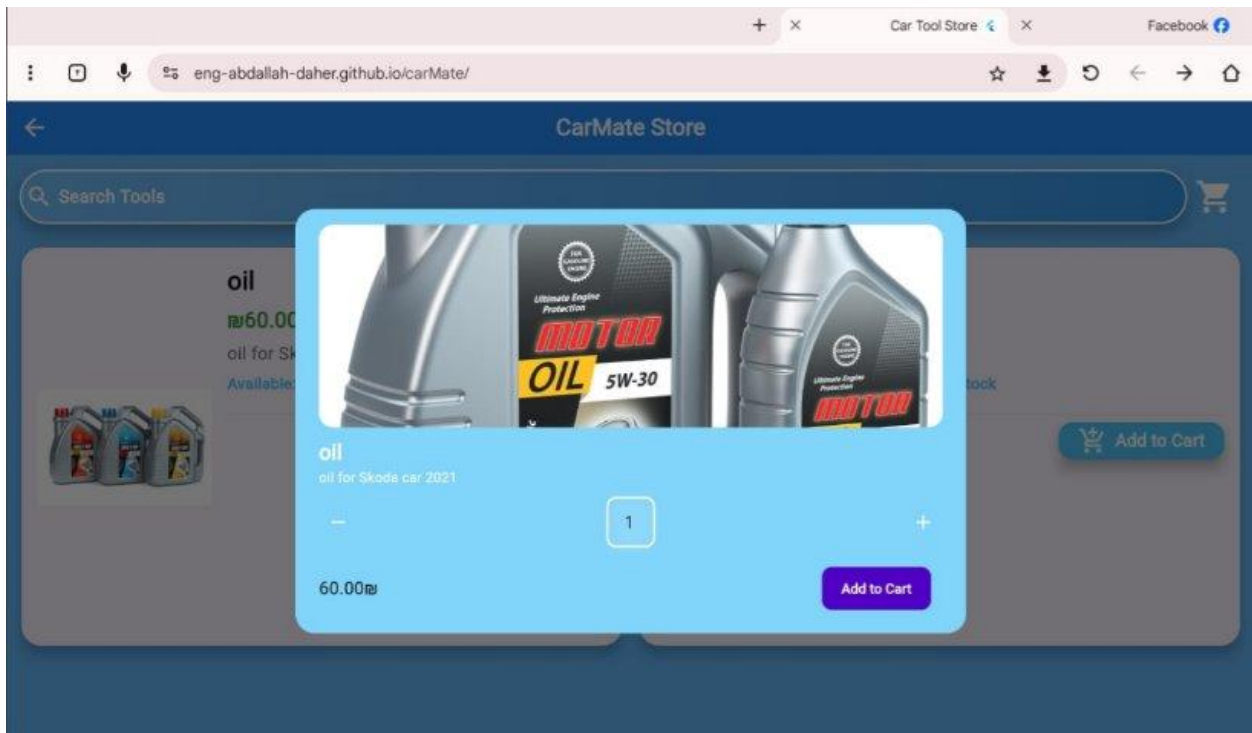
## Customize thema website



## CarMate store website



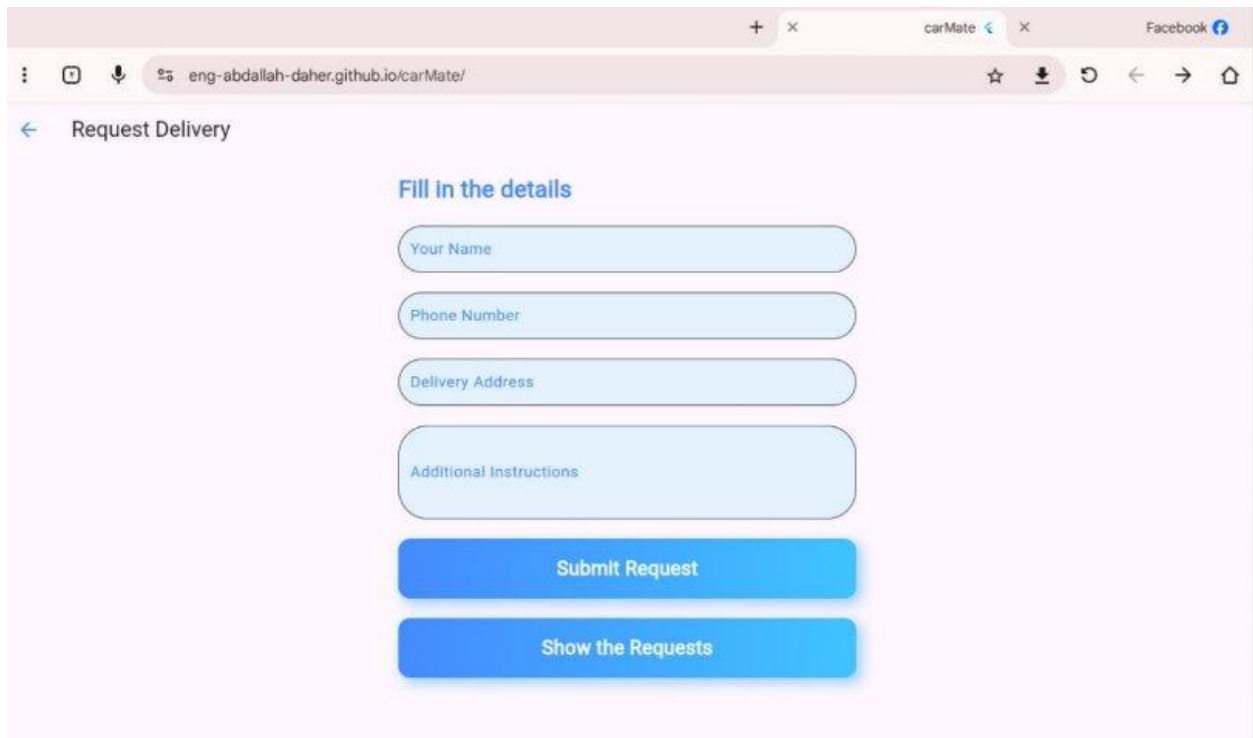
## CarMate store website(Add to chart)



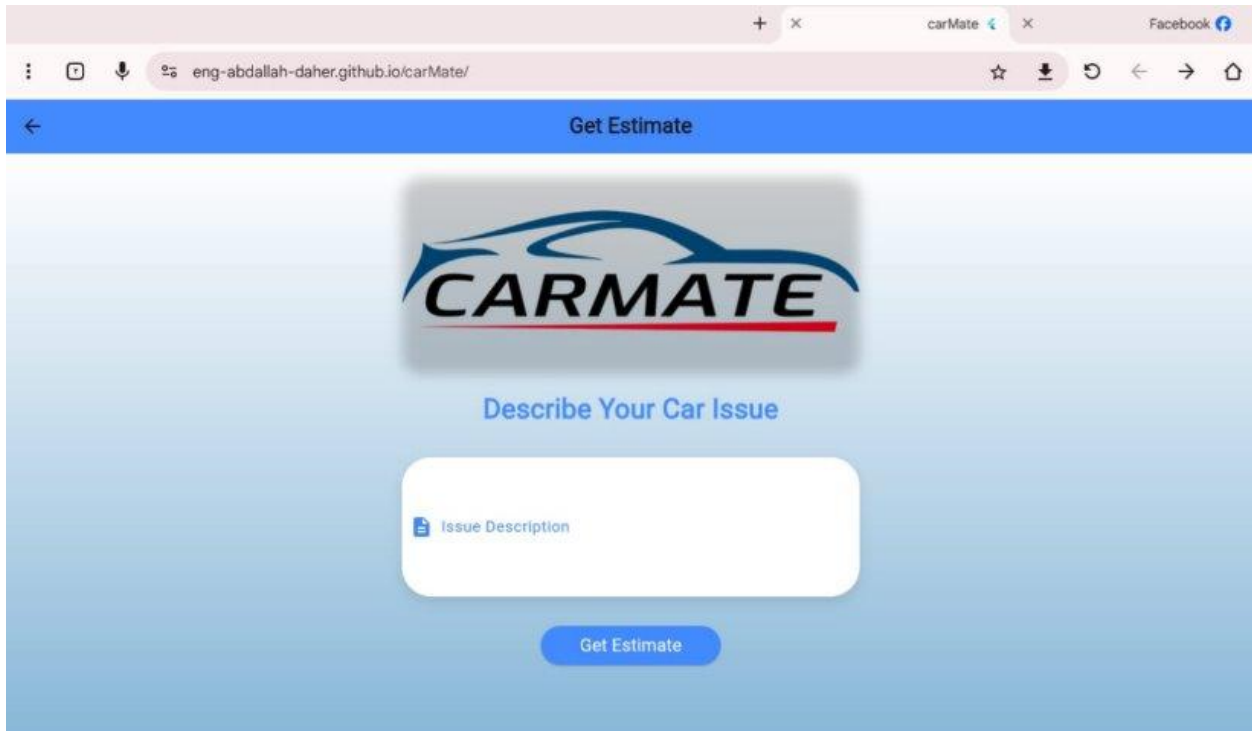
## Feedback website



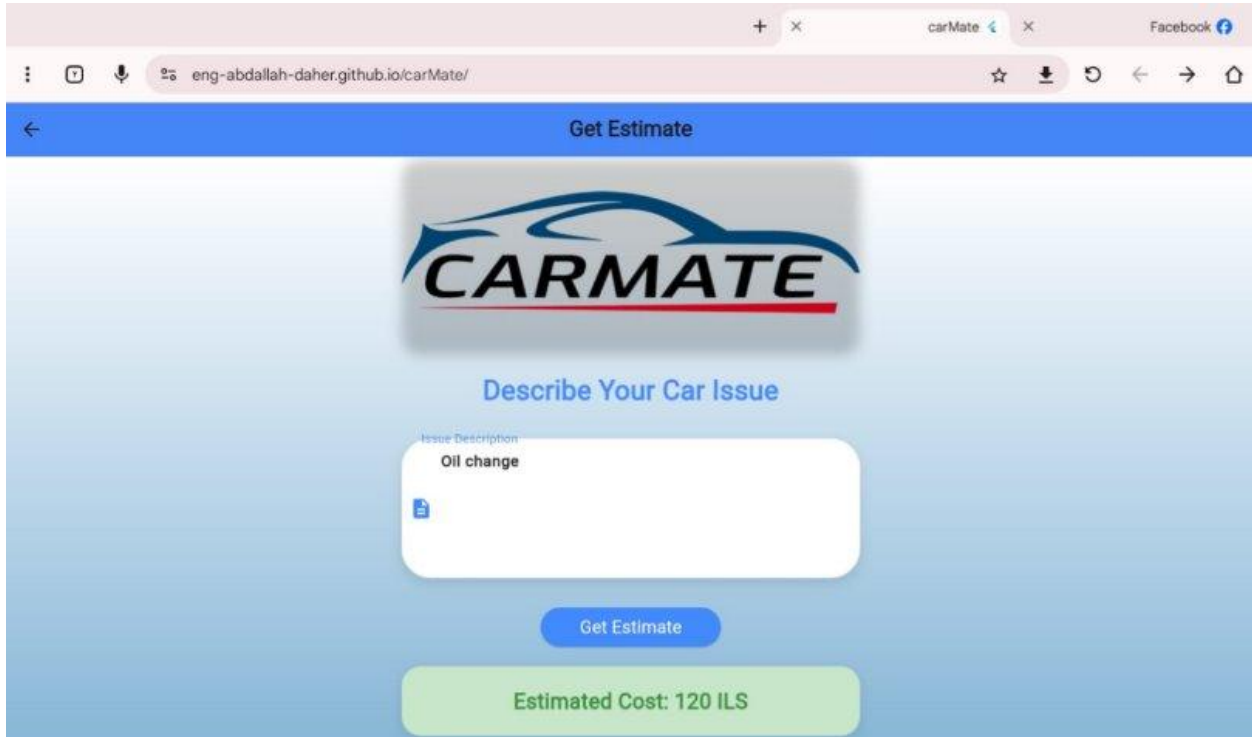
## Request delivery website



## Get repair estimate website



## Get repair estimate website



## Chapter 4: Result and Analysis

The "Result and Analysis" for the Car-related system was carefully examined based on user engagement, workshop administration, payment monitoring, service execution, and repair quotations. At first, users could explore and narrow down services, while workshops experienced a notable rise in service requests via the platform. Numerous users effectively scheduled repair services, and the system precisely monitored the duration and expenses associated with every repair. The incorporation of the delivery service feature allowed users to easily request vehicle delivery, enhancing their overall satisfaction.

The inclusion of the "Get Repair Estimate" feature was extremely successful. Users might enter their car problems, and the system would give an estimated price based on the reported issue, even considering misspellings. When several issues were identified, the system effectively aggregated the costs for each problem, yielding a precise final estimate. This functionality improved the clarity of repair expenses and enabled users to make better decisions prior to accessing services.

The assessment of the payment status system showed that workshops typically followed the monthly payment schedules, although there were cases of late payments. In these instances, the administrator effectively suspended accounts and notified users, maintaining the reliability of the payment system. Additionally, incorporating the feature for users to evaluate and rate workshops enabled the platform to gather useful feedback, which was then communicated to workshop owners. This anonymous feedback assisted workshop owners in enhancing their services, leading to increased user satisfaction over time.

Furthermore, the capacity to handle complaints and reports was vital for ensuring a seamless user experience. The administrator managed and responded to reports efficiently, eliminating harmful or unsuitable content when needed. The management function for towing services demonstrated potential, enabling users to request towing from local providers while the system effectively guided them to the nearest available service.

In general, the platform demonstrated a successful combination of various services and functionalities, assisting both users and workshop owners in optimizing their operations. The evaluation validated that the system offered an all-encompassing solution for vehicle services, improving user experience, facilitating seamless transactions, and upholding quality control throughout the platform.

## Chapter 5: Discussion

### **Discussion**

The goal of this project was to develop an all-encompassing platform that covers various facets of vehicle service management, such as scheduling repairs, estimating repair costs, tracking payments, user feedback, towing options, and managing the workshop efficiently. The system was created to enhance interaction between users and workshop owners, simplify the process of scheduling and executing services, and enable improved monitoring of payments and repairs.

### **Have you fixed the problem?**

Indeed, the issue has been effectively resolved by incorporating multiple features. The "Get Repair Estimate" feature, for instance, offers users a clear and simple way to assess repair expenses prior to agreeing to any service. By entering particular problems related to the vehicle, the system calculates the repair expenses, regardless of any spelling mistakes or various issues mentioned. This has significantly improved the user experience, enabling them to make knowledgeable choices based on the projected expenses.

Additionally, the capability to handle repair requests, arrange towing services, and enable real-time communication with workshop owners via a specific messaging function guarantees that users retain control over the service process. The incorporation of payment tracking, along with the capability to suspend accounts for non-payment, provides an additional level of responsibility, guaranteeing that financial commitments between workshops and users are respected.

### **What exactly have you contributed?**

The most remarkable aspect of this system is the launch of the "Get Repair Estimate" feature, representing a major advancement in vehicle service management. The platform simplifies the evaluation of the financial consequences of repair requirements by providing a way to estimate repair costs based on user input. Furthermore, the platform offers a unified space for reserving services, handling payments, and engaging directly with workshop owners, streamlining the entire experience for users and enhancing efficiency for workshop owners.

### **Logical Implications of Results:**

The logical consequences of these findings indicate that a system like this can transform how vehicle services are handled, giving both users and providers greater control over the process. Clear pricing and the smooth incorporation of repair management can enhance customer confidence and contentment. For service providers, the system assists in optimizing their operations, including managing bookings and payments as well as overseeing staff and inventory.

Moreover, by allowing users to evaluate workshops, the platform promotes a competitive atmosphere in which service quality is continually enhanced. The payment monitoring and interruption system guarantees compliance with financial agreements, further improving the platform's trustworthiness.

### **Suggestions for Further Study or Applications:**

Although the system has achieved considerable progress in tackling critical challenges in vehicle service management, there remain opportunities for enhancement and additional research. Potential improvements may involve incorporating AI-driven diagnostics for more precise repair cost assessments based on specific vehicle issues. Moreover, broadening the platform to incorporate additional advanced features, such as tracking vehicle performance and maintenance schedules over time, could provide users with even more extensive service options.

An additional aspect for possible growth might be the integration of a rewards program for users, motivating them to submit reviews or recommend workshops to others, thereby boosting interaction with the platform.

In general, the system has effectively achieved its objectives and offers a strong basis for future growth and enhancement.

## Chapter 6 : Conclusions and Recommendation

In conclusion, the created platform has effectively tackled numerous challenges encountered by both users and service providers in the vehicle repair sector. By incorporating various features like repair cost estimates, booking management, payment tracking, towing services, and user feedback, the system has optimized the handling of vehicle service transactions. The "Get Repair Estimate" function, specifically, has delivered considerable value by giving users a precise estimate of repair expenses, even if they err in detailing the problems. This has resulted in increased user satisfaction and better-informed decision-making.

Moreover, workshop owners have gained from effective management tools, such as the capacity to monitor reservations, staff assignments, and payments. This has led to more efficient operations and enhanced customer service. The user review and rating system of the platform has been essential in promoting a customer-focused strategy, enabling workshops to obtain important feedback for enhancing their services.

Nonetheless, there are aspects where the platform can be improved further. For example, the "Get Repair Estimate" function could be enhanced by incorporating AI-powered diagnostics that deliver more precise and detailed estimates considering a broader array of vehicle problems. This might enhance the accuracy and usability of the estimates. Moreover, broadening payment integration to incorporate various payment options, like credit cards, digital wallets, or even cryptocurrencies, would provide users with enhanced flexibility and boost financial clarity.

Incorporating a maintenance tracking feature would serve as a beneficial enhancement, assisting users in monitoring their vehicle's performance history and alerting them to upcoming services. This would promote forward-thinking maintenance choices and maintain user involvement. Creating a mobile application for users and workshop proprietors would improve the platform's accessibility and usability, allowing users to receive mobile alerts for repair updates, payment notifications, and service reminders.

To boost engagement even more, introducing a rewards or loyalty program might motivate users to write reviews, refer new users, and finish maintenance tasks. This would not only enhance retention but also draw more customers to workshops. Finally, equipping workshop owners with sophisticated analytics tools, including customer retention statistics, monthly sales patterns, and comprehensive service

feedback, would assist them in making informed business choices and improving their operations.

By persistently advancing the platform through these upgrades and addressing feedback from users and service providers, the system could evolve into a complete solution for overseeing vehicle services, enhancing customer satisfaction, and optimizing business processes.

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<https://pub.dev/>  
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  - Server of back-end:  
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  - Server of images:  
<https://docs.pinata.cloud/web3/ipfs-101/what-are-ipfs-gateways>
  
  - Server of the web site:  
[GitHub](#)
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