

An-Najah National University



Faculty of Engineering and Computer Technology

Computer Engineering Department

Software Graduation Project

قطاف | Qitaf



Prepared by:

Woroud Fouleh
Raghad Mustafa

Supervisor: Dr. Emad Natsheh

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Disclaimer Statement

This report was written by students Woroud Fouleh and Raghad Mustafa at the Engineering Department, Faculty of Engineering, An-Najah National University. It has not been altered or corrected, other than editorial corrections, as a result of assessment and it may contain language as well as content errors. The views expressed in it together with any outcomes and recommendations are solely those of the students. An-Najah National University accepts no responsibility or liability for the consequences of this report being used for a purpose other than the purpose for which it was commissioned.

Abstract

Because of the harsh conditions Palestinians are currently enduring as a result of wars, state-enforced restrictions, segmented unemployment and a capricious economic environment in the Palestinian market, agriculture has grown to be the most common form of work, be it farming, selling agricultural products, or working on a farm. As a solution to these struggles, our project suggests the need for a community that seamlessly connects landowners, agricultural product owners, and job seekers. In conjunction with economic empowerment, this application aspires to foster food security through easy access to agricultural resources and employment, especially in Palestinian villages. Our vision is to support Palestinian farmers and producers by enabling them to efficiently advertise their resources while simultaneously generating job opportunities within the agricultural industry, helping in combating unemployment. For example, the app assists landowners in finding labourers for harvesting their crops by enabling the chat feature for direct communication. Besides this, other features that the app offers include buying, selling and displaying farming items, and the ability to send farm products to production units for olive oil presses and soap factories. Furthermore, the app facilitates the exchange of knowledge and solutions for agricultural issues within the community, helping farmers tackle various challenges they face.

Where the owners publish their properties, whether lands, products, agricultural crops or production lines, with all the necessary details and add the locations of each of them on the map, thus enabling the user, if he wishes to work, to join the work of harvesting the land of a specific owner and the ability of the owner to create a chat group that brings together the workers of this land and also he can evaluate the user's work, or if the user wants to buy products with the freedom to choose the payment method, whether upon receipt or by credit card and choose the delivery method that suits him in addition to obtaining points that enable him to obtain discounts on purchases and also his ability to evaluate the products he requested after he receives them, as well as the ability of the user when he needs a specific production line to create a reservation for himself and evaluate the efficiency of the production line after completing his work and in the event of his failure to do so, his account will be reported and his appointment will be cancelled.

Of course, with the provision of a map on which the locations of each of the lands, product receipt sites and production lines are fixed, providing them with the shortest path and expected time of arrival.

The Qitaf application also allows, through its advertisements, to provide several job opportunities, including displaying employment opportunities for delivery men and controlling them through the admin.

Qitaf also allows displaying a platform in which Exchange agricultural problems and provide solutions through comments that represent user experiences.

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1. Introduction

1.1 Problem

The Palestinian community still suffers from wars, occupation controls, high unemployment, and poor economy; therefore, agriculture is a significant source of income for many. There is no platform to link landowners, agricultural producers, job seekers, and buyers; thus, communication, resource allocation, and access to opportunities become ineffective. Landowners cannot find workers for harvesting; producers cannot market their products; buyers do not have a structured marketplace. Another challenge is limited avenues of addressing agricultural problems and structured job opportunities, such as for delivery personnel. These all call for comprehensive solutions to emancipate the agricultural sector and improve economic stability in Palestine.

1.2 Objectives

Here are the main objectives of the "Qitaf" project:

1. **Empowering Palestinian Farmers:** Through it, farmers get an opportunity to display their opportunities in agricultural sector that will create employment for the unemployed.
2. **Enhancing Food Security:** By allowing users to purchase and supply agricultural produce and by connecting producers with consumers or by helping farmers transport their crops to output stations like olive processing plants or native soap production factories.
3. **Providing Job Opportunities in Agriculture:** Helping the landowners to find the workers for the harvesting and providing the facility to list the lands and messaging about the land through the App.
4. **Fostering Community Collaboration:** As discussed in the following section, it also is an enabler of knowledge and solution sharing amongst the farming community for agricultural problems.
5. **Supporting the Palestinian Economy:** This is levelled at empowering users through provision of a marketplace where agricultural produce and processed agricultural products are sold and equally providing hope through providing a window to job opportunities.
6. **Providing Agricultural Production Services:** By the features which enable a user to schedule production lines, for example olive presses, and to give a rating to the infrastructure once the work is done.
7. **Building Trust and Transparency:** Through the provision of rating of products, services and labour once used, assisting to establish a good reputation for all.

8. **Improving User Experience:** Through its aid in mapping out where the agricultural lands are, the places for product pick up, and what production facilities, plus the shortest possible trip and estimated time of arrival.

1.3 Scope of The Work

1. Account Creation

- Some services let users and owners sign up and enter all personal data they need to use the service.

2. Login

- There are two options for signing-in, the user can sign in by using their email and password.

3. Password Recovery

- Customers can enter a request to have a reset code sent to their email address for creating a new password.

4. Profile Management

- This will enable users to edit personal information, upload profile picture and change password.

5. Additions by Owners

➤ Adding Agricultural Lands:

Owners can input additional information about agricultural lands including the number of workers needed, location on the map, wages per hour for workers and the required harvest time.

➤ Adding Agricultural Products:

Owners can add products under three categories: fresh crops, retailed food products & retailing non-food products. They can list from where they can get details about the available quantity, price based on the unit size of the product that is being sold and also marking the production location on a map.

➤ Adding Production Lines:

It can input working days and working hours, required crop type, and production cost based on a given quantity by the owner.

6. Requests by Workers/Users

➤ Work Requests for Harvesting:

Workers can apply to work on a specific land. The landowner reviews and either accepts or rejects the application, which will appear under the worker's job requests.

➤ Purchase Process:

- Users select products and their quantities to add to their cart.

- Confirm the order by specifying the delivery location, payment method (on delivery or via credit card), and delivery type (standard or express). The system displays the total price and applicable discounts based on the user's points.

➤ **Production Line Reservations:**

- Users select a production line and create a reservation based on available dates and times. The reservation is dynamically accepted or rejected to avoid conflicts with other bookings. The total cost is calculated based on the entered quantity.

7. Filtering

Users can filter:

- Lands by city and crop name.
- Products by name, city, and crop name.
- Production lines by city and raw material type.

8. Search

If there is a filter that was selected by the user, the users can search based on the selected filtering category.

9. Map Features

- Include places when advertising a land, product or production line.
- Confirm order and create a delivery location for the users.
- Show places and identify locations to visit with distance estimates from current location to the final destination with the estimated time of arrival.
- Include an API from Google Cloud outside the application to boost the capacity of maps.

10. Ads

- Image Slider for Ads:
Image slider on homepage and product page for ads.
- Ads Page:
Admin managed page for ads with text and images.

11. Chat

- **Chat Overview:**
 - All conversations with last message, status (read/unread) and last interaction timestamp.
 - Search for a conversation by user name.
 - One to one chat between owners, customers and delivery workers.
 - Shows timestamp for each message and allows:
 - Delete specific message.
 - Delete the entire conversation.

- **Group Chats:**

Users can create group chats by:

- Naming the group.
- Adding members to the group.

Features include:

- Show sender name and timestamp for each message.
- List of group members with group admin clearly marked.
- Delete specific message, entire conversation or group (only by the creator).

12. Notifications

For Owners:

- New work requests on their lands.
- Purchase requests for their products.
- Confirmed bookings for their production lines.
- Notifications will redirect owners to review the request.

For Users:

- Approval of their work requests.
- Order arrived at pickup point by delivery worker.
- Upcoming production line reservations.

For All Users:

- New message from another user.

13. Ratings System

For Users:

- Rate the quality of production lines after using them.
- Rate agricultural products after receiving them.

For Owners:

- Rate workers after they complete their tasks on the owner's land.

14. Points System

Users earn points through various activities within the application, which can be used for discounts or other benefits.

➤ Earning points:

- When making orders, the user got a point for every 20 shekels on the order total price.
- When rating, for every rate operation, the rater got two points.

➤ Discount system:

- If the user points are more than 100 then he got 30% discount.
- If the user points are more than 50 then he got 20% discount.
- If the user points are more than 20 then he got 10% discount.
- If the user points are more than 10 then he got 5% discount.

15. Agricultural Forum

➤ Post Creation and Interaction:

- Create posts containing text and images to raise agricultural inquiries or problems.
- Edit or delete posts as needed.
- Interact with posts by liking or commenting.

- Comments:
 - Add comments to posts with optional image attachments.
 - Edit or delete comments.
 - Interact with comments by liking them.
 - Comments are sorted based on the number of interactions they receive.

16. Profile Management

- Owner's Profile:
 - View all previously added items, including lands, production lines, and products.
 - Edit or delete these items.
- User's Profile:
 - Access and edit personal information, including the profile picture.
 - View other users' profiles, which include personal details, ratings, and points.
 - Quickly start a chat with any user from their profile page.

17. Reporting System

- Reasons for Reporting:
 - Users can report an owner if their order is not delivered.
- Owners can report users for:
 - Not showing up for work on the land.
 - Missing production line reservations.
- Account Suspension:
 - Accounts are automatically suspended after three valid reports.

18. Delivery Worker Application

- Application Process:
 - Users can apply to be delivery workers by attaching a copy of their driver's license.
- Automatic license scanning and expiration validation:
 - If expired, the application is rejected.
 - If valid, the request is forwarded to the admin for review.

19. Admin Features

- Statistics:
 - View overall statistics, including the total number of:
 - Users (owners, users, and delivery workers).
 - Products (categorized into fresh crops, food products, and non-food products).
 - Production lines.
 - Lands listed.
 - Filter statistics based on cities.
- Advertisements:
 - Add, edit, or delete advertisements displayed to users.
- Content Review:
 - Review and moderate all posts related to lands, products, and production lines.
- Delivery Worker Requests:
 - Review and either approve or reject applications from potential delivery workers.

- Delivery Workers List:
 - View and filter the list of delivery workers by city.

20. Delivery Worker Features

- Dual Account Access:
 - A user account doubles as a delivery worker account once their application is approved by the admin.
- Delivery Status:
 - Available: Can view a list of delivery requests and choose a suitable one.
 - Busy: Changes status to "busy" upon selecting a delivery request.
 - Unavailable: Marks themselves as offline, not receiving any requests.

21. Profile Management:

- Edit personal information, including the profile picture.
- Delivery Process

22. Delivery Options:

- Express Delivery:
 - Deliver the complete order to the user in one trip, including items from multiple cities.
 - Higher delivery cost with the quickest possible delivery time.
- Standard Delivery:
 - Deliver items to the user in multiple trips based on the delivery worker's route.
 - Standard delivery cost remains unchanged.

1.4 Importance

Progressive agricultural projects such as the Qitaf plan have long been key to the agriculture part of the Palestinian district as well as its neighbourhoods. In very tough conditions, including wars, occupation restrictions, unemployment, and a declining economy, agriculture has become a necessity for many Palestinians as a primary source of earning a living. This platform targets the pressing demand for binding landowners, agricultural producers, job seekers, and buyers together for the purpose of simplifying access to agricultural resources and job opportunities.

Qitaf by applying agricultural processes in a straightforward manner and providing one platform at the same time empowers Palestinians to display their resources, create job opportunities, and establish the economic stability conducive to human well-being of the community. It helps to secure enough food, manage resources efficiently, and increase sustainability of agricultural trade. Furthermore, the platform nurtures community collaboration and ensures transparency, incorporating stringent quality standards in the creation of goods, optimal job results, and political and social practices. Ultimately, Qitaf is designed to enhance the agricultural sector as well as to decrease unemployment through contributions to the well-being of villages and communities as a whole in Palestine.

1.5 Organization of The Report

- **Chapter 1:** It is the one that gives an outline It describes the relevance of the project, goals, scope, and the project's objectives.
- **Chapter 2:** We will conduct more research on the literature review, projects, and publications from international sources to find out how this project was accomplished, what their suggestions were, and what elements might be incorporated to enhance it.
- **Chapter 3:** The methods used to develop the system and the problems faced by the project as well as the limitations are discussed in the chapter on methodology.
- **Chapter 4:** Besides the project's ultimate result, the results and discussion are also discussed in this section.
- **Chapter 5:** The final section of the project is the conclusion and the recommendations that are presented, besides the suggestions for further investigation and projects.

2. Literature Review

Introduction

Agriculture remains a significant sector in the Palestinian economy, particularly due to the socio-economic challenges arising from ongoing conflicts, restrictions, and unemployment. This literature review explores the agricultural landscape in Palestine, the existing solutions, and the unique contributions that the Qitaf application aims to offer.

Background and Context

Historically, agriculture has been integral to Palestinian livelihoods, providing employment and ensuring food security. However, Palestinian farmers face numerous challenges such as restricted market access, limited resources, and unstable economic conditions [1]. The need for innovative solutions to these issues is critical.

Existing Solutions and Applications

Globally, several platforms connect farmers with resources and job seekers. For example:

- *Kisan Network*: A platform in India that connects farmers directly with buyers, reducing the role of intermediaries [2].
- *Farmcrowdy*: A Nigerian platform that empowers smallholder farmers by providing access to funding, technical support, and market access [3].

These platforms serve as successful case studies, highlighting the potential impact of a tailored application like Qitaf in the Palestinian context.

Gaps and Needs

Palestinian farmers face unique barriers, including limited movement, economic instability, and access to resources [4]. Existing solutions often do not address these specific challenges, emphasizing the need for a localized platform like Qitaf. The application's focus on community-driven solutions, direct communication, and resource sharing positions it to effectively fill these gaps.

Theoretical Framework

The application aligns with various theoretical frameworks, such as agricultural economics and community empowerment. By providing a platform for resource sharing and communication, Qitaf supports sustainable development and economic empowerment principles [5]. Additionally, it aligns with community-based development theories, which emphasize local solutions and participation [6].

Implementation and Impact

Pilot projects and trials have demonstrated the potential effectiveness of the Qitaf application in addressing unemployment and enhancing food security [7]. The expected outcomes include increased economic empowerment, job creation, and improved food security for Palestinian farmers and communities.

Conclusion

The Qitaf application addresses the unique challenges faced by Palestinian farmers by providing a comprehensive platform for communication, resource sharing, and employment. Leveraging agricultural economics and community empowerment principles, Qitaf has the potential to significantly impact the Palestinian agricultural sector, fostering economic growth and food security.

3. Methodology

3.1 Tools, Technologies and Programming Languages

3.1.1 Tools

Several cutting-edge tools played a key role in the project's creation to ensure precision and performance across the board.

- **VS Code:** This served as the primary IDE (Integrated Development Environment) to edit, debug, and write code.
- **Android Studio:** We used this to test and mimic the mobile app in different virtual environments.
- **MongoDB:** This acted as our database management system to store, handle, and process data giving us the flexibility and room to grow that our project needed.
- **Postman:** We used this to send various HTTP requests and responses, check different APIs, and make sure our program worked.
- **Firebase:** We picked Firebase's real-time database for things like live chat and alerts because it can grow and handle problems well. The app uses Firebase storage along with checks to keep images safe in the cloud. This makes sure pictures are easy to get to and manage across the whole platform.
- **GitHub:** GitHub helped us work together and keep track of changes. This made it easier to organize our work and see what changes we made to the code.

3.1.2 Programming Languages

In the development of this project's website and mobile application, this front-end tool named Flutter was applied. Flutter is cross-platform that is designed to create the mobile application with the best performance. Unlike other approaches, Flutter utilizes its very own rendering widgets to render view components instead of web views or OEM widgets on the devices. Second, Google's Dart programming language which is specifically renowned for its ability in developing larger-than-life Internet applications is used in Flutter. In Flutter, widgets are essential components that fall into two primary categories: stateless widgets and stateful widgets, although the two serve different purposes.

For purposes of database management, we deployed the MongoDB tool. MongoDB is a form of NoSQL database management that is used in order to solve issues of handling large volumes of unstructured and semi-structured data. Its model based on documents allows for the longitudinal storage of the HDFS as well as the collection and retrieval of various structures of data with high performance and maintainability. Querying and aggregation provision of MongoDB made it very easy to manage the data and analyse the project for scalability while at the same time check consistency.

Node.js, a high-performance framework for I/O-bound applications due to event-driven architecture was used on the back-end. Using server-side apps, Node.js helps us fight the battle of running a program on every request as server side stay alive all times because. This results in quicker response times and more user return.

Also Node.js incorporated Express.js, was one more third party framework. Based on many middleware layers and the core Node.js Http module, Express.js is a flexible web framework. Reduces duplication and overall code complexity, e. g. making it simpler to do things like HTTP request body processing, session management, and routing.

3.2 Features Implementation

3.2.1 Mobile Application

- **Welcome Page**

In this page the user can choose either to login or to create an account



Figure 1. Welcome Screen

- Create Account:

The owner and the customer are the two types of accounts that can be created, the owner can add his lands, production lines, and products, while the customer can apply to work in lands, book an appointment in production lines, and make an order from available products.

There is required information to create an account, passing 3 pages to fill them:

1. The first page requires a first and last name, the email which must be unique, the phone number, and the password, which must be identical in both fields
2. The second page requires filling the city, location, birth date and the gender
3. The last page optionally adds a profile photo, the username and the type of account the user wants.

6:05

الحساب الخاص بك

الاسم وزرود

اسم العائلة فولة

البريد الإلكتروني
woroudfouleh26@gmail.com

الهاتف
Code +970 599786746

كلمة السر
woroud123
يرجى ادخال كلمة السر

تأكيد كلمة السر
woroud12
يرجى تأكيد كلمة السر

التالي

هل لديك حساب؟ تسجيل دخول

US

Figure 2. Sign up-First page

6:06

قم بإنشاء الحساب الخاص بك

نابلس

الموقع
شارع 24

تاريخ الميلاد
2002 8 13

الجنس: ذكر أنثى

التالي

تسجيل دخول هل لديك حساب؟

Figure 3. Sign up-Second page

There are two choices for profile image, to take a new image from camera which opens the real camera of the phone and choose a camera from photo album from the device as appear in figure 4.

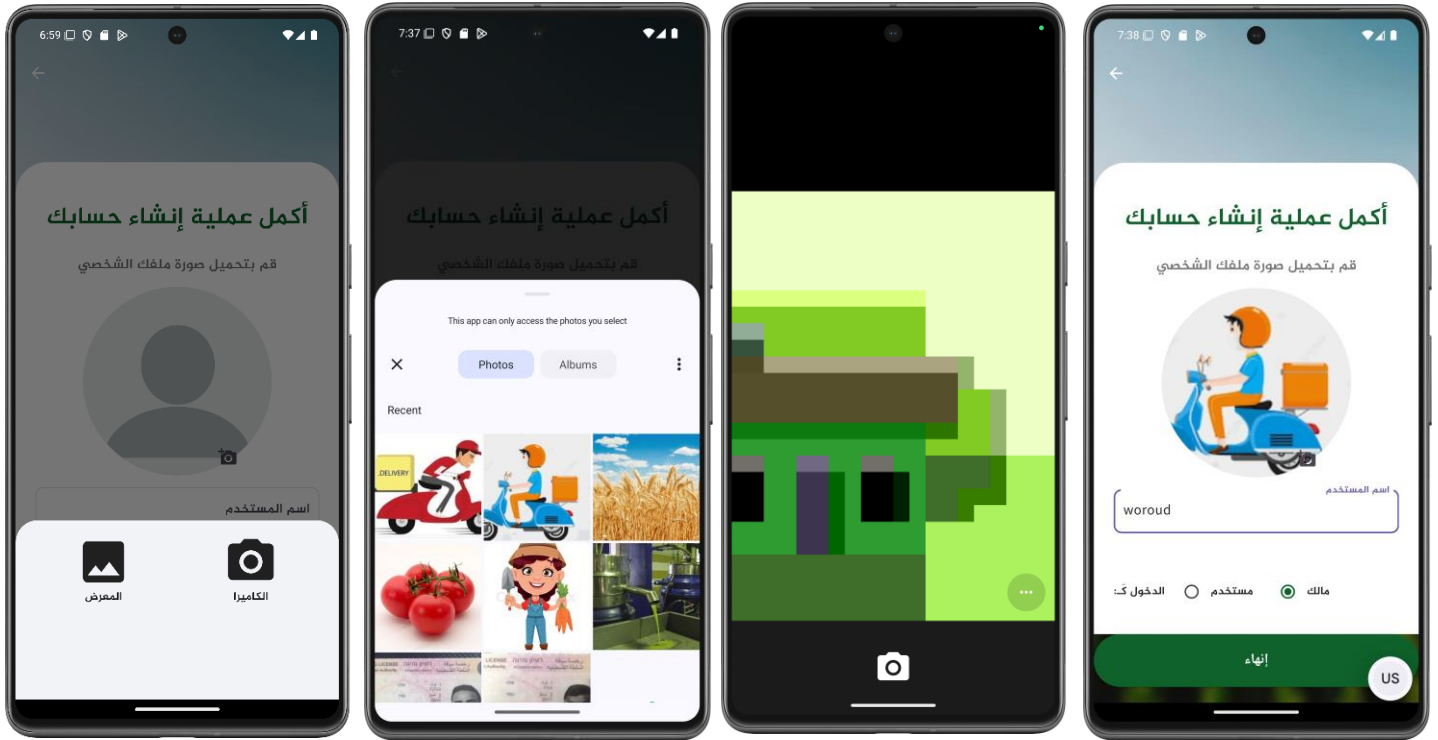


Figure 4. Sign up-Third page

As you can notice a validation for all fields was implemented to ensure reliability, once the user clicks on 'Finish' button the account will be created successfully.

- Login

The user enters a valid email address and password to access the account. The backend checks for the account validation with correct email and password, while the frontend gives feedback to the user by using inner notifications.

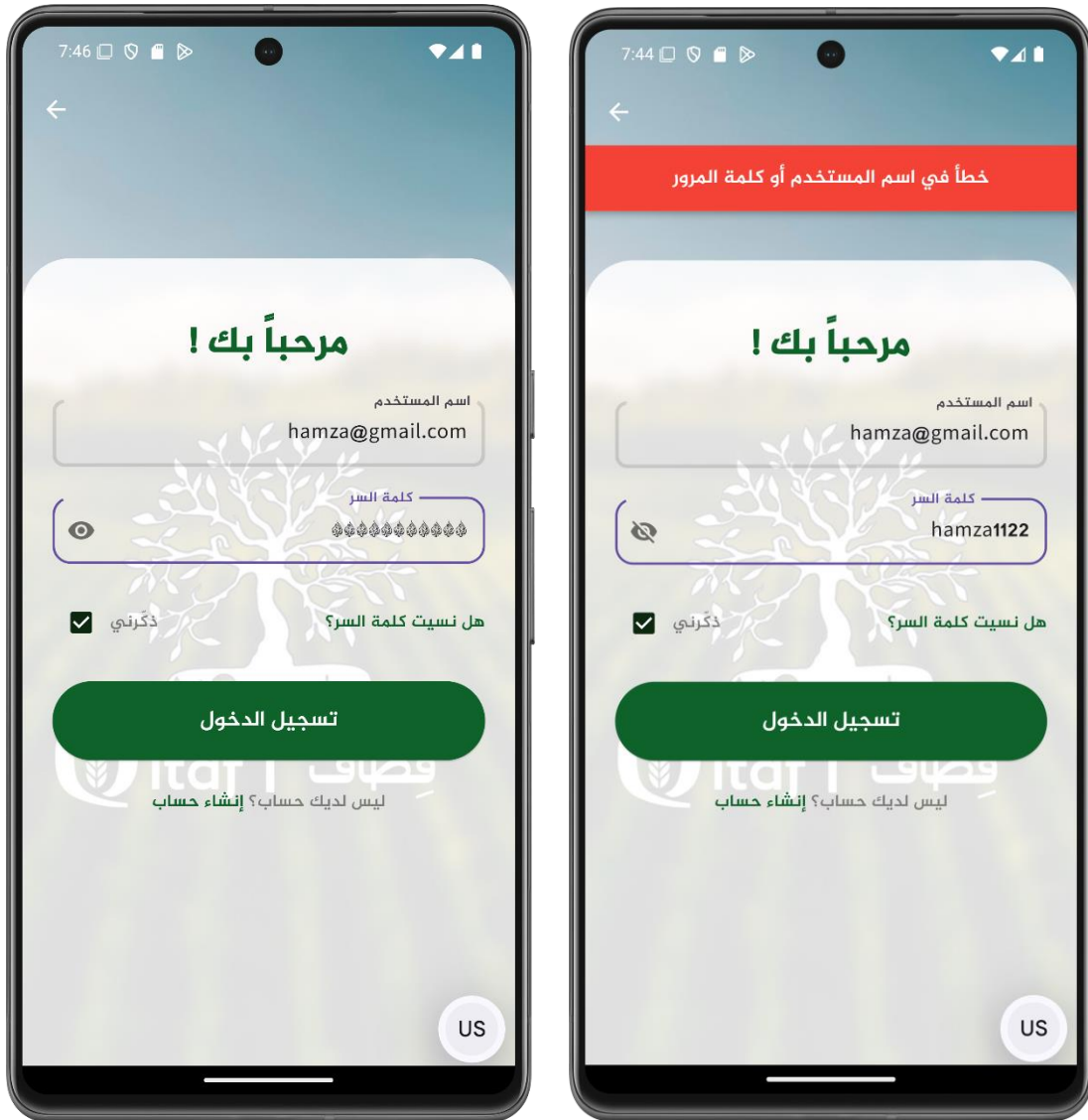


Figure 5.Login

Suspended accounts:

To ensure the credibility in the application, a reports system is activated.

There are some cases where the user can report another user in the system, which are:

- If the customer didn't come at his appointment in a production line, the owner can report him.
 - If the worker didn't come to work in the land.
 - If the customer cancels his order and don't take it from the delivery man
- If the user got three reports, his account c=become suspended for three days, so he can't use it until the three days passed.
- Here is a user that has 3 reports and tries to login:

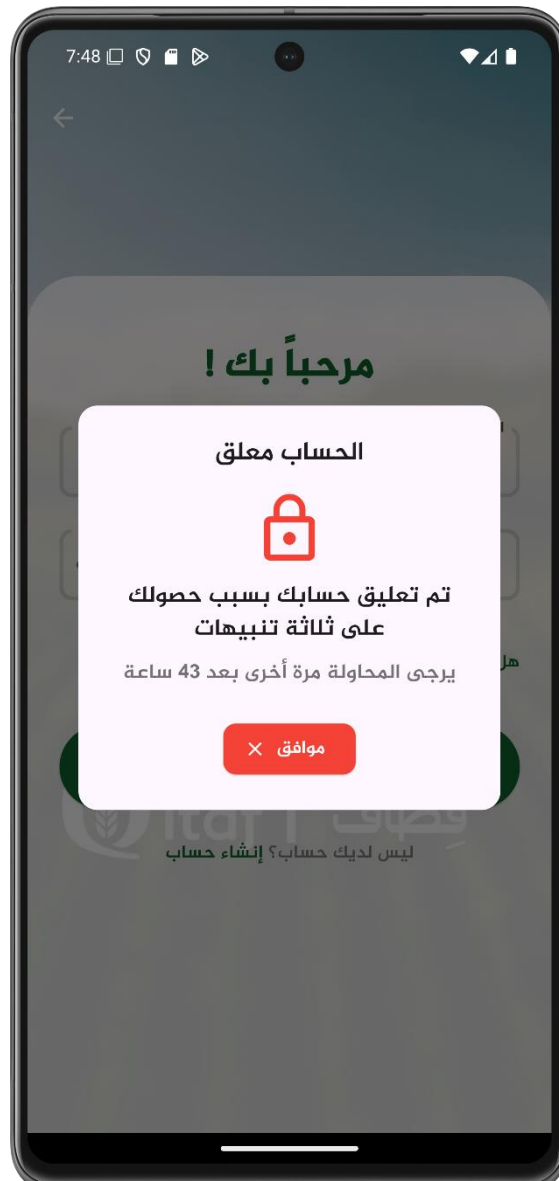


Figure 6 Suspended account

- Forget password

If the user forget his account password, he can change it by enter an email, then a code from 4 digits will send to the entered email, this code is available for just 10 minutes, by entering the correct code received on the email, the user can choose a new password and by pressing 'update password' button, the password updated, and the user can login to his account using it.



Figure 7. Forget password

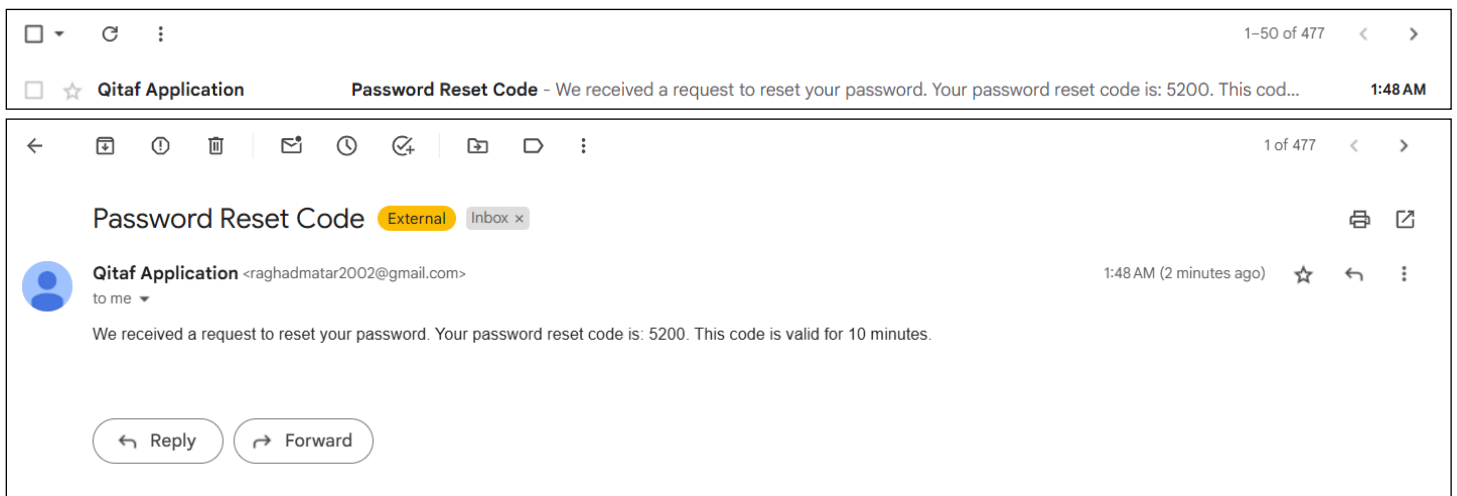


Figure 8. Reset password Email

Customer Home Page

After a successful login as a customer account, the application takes the user to the customer home page which includes:

- A slider for advertisements and promotions, which includes several images managed by the admin. The admin can add, edit, or delete images, and the slider is displayed to users to provide a clear overview of the application and its features.
- The Main Menu for the customer includes:
 - Harvest lands: by pressing on this option, the application will take the customer to the lands list, where he can send a request to work on a land.
 - Purchase order: which takes the customer to the products page, which enables him to make an order.
 - Book Production lines: which takes the user to the production lines list, to register an appointment on the production line he needs.
- Bottom Navigator Bar: provides streamlined access to key sections of the application, as this order:
 - Home page
 - Chat page
 - Notifications page
 - A forum for inquiries and solutions page
 - Advertisements page



Figure 9. Customer Home Page

Lands Section

When the user press on 'harvest lands' on the home page, the application takes him to the lands page, where the list of the lands uploaded by their owners appears.

The user can search on lands by 3 categories:

- The land Name
- The land city
- The land fruit type

Primarily the user will see a picture of every land, with its name, the number of workers still needed, the land city, and its fruit type.



Figure 11. Lands List

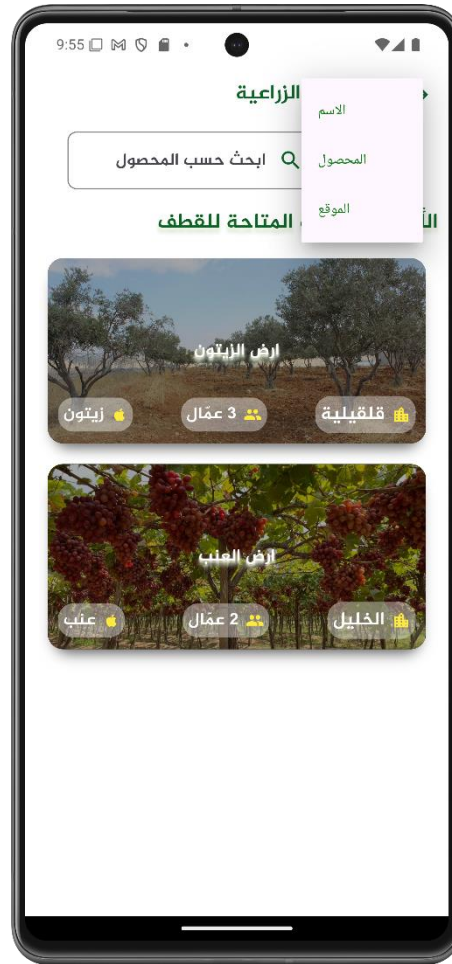


Figure 10. Lands Search and filter



By pressing on one of lands, a detailed land page will open, includes all information's about the land, its image, name, location, space, number of workers needed, fruit type, the time interval for this land working includes the dates and hours of working, the owner's name and the worker wages by the hour.

By pressing on the owner's name, an owner profile page will open, includes the owner name and his contacts information, like his email, and phone number, in addition to a direct access to chat with him by pressing on 'chat with' icon.



Figure 12, Land Details Page

Also, by pressing on the land location, the application will take the user to a map.

Once the map opened, a dialog shows the distance between your current location and the land location, also an estimated time to reach this place appears.

Then the shortest path between the two places is drawn.

The user applies to work on this land by pressing 'Request to join work' button, then his work request sent to the landowner to decide, either accept it or reject it.

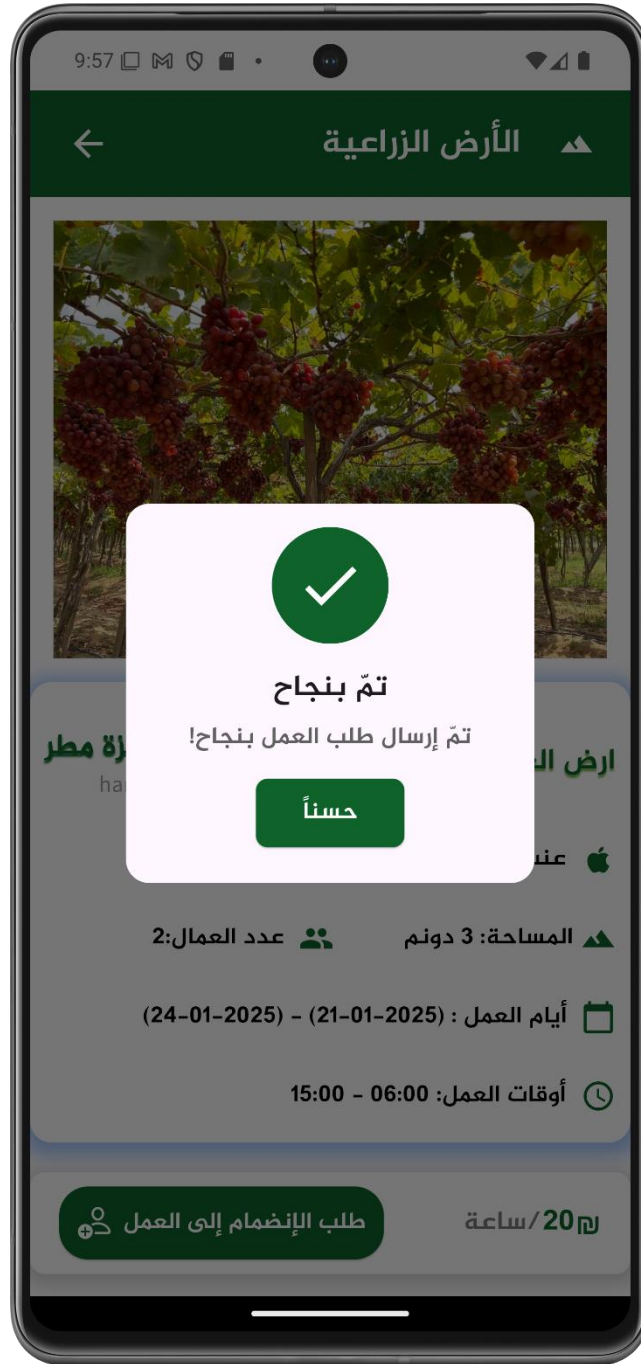


Figure 13. Send work request

Production Lines Section

When the user press on 'Production lines' on the home page, the application takes him to the production lines page, where the list of the lines uploaded by their owners appears.

The user can search on lines by 3 categories:

- The line Name
- The line city
- The line raw material (fruits, woods....)

Primarily the user will see a picture of every line, with its name, the city, and the raw material.



Figure 15. Production Lines list



Figure 14. Production lines search and filter



By pressing on one of lines, a detailed line page will open, includes all the information about the line, its image, name, location, the line rate, price and time for processing the unit of raw material, the days and hours of line working.

By pressing on the owner's name, an owner profile page will open like the one on the land page.

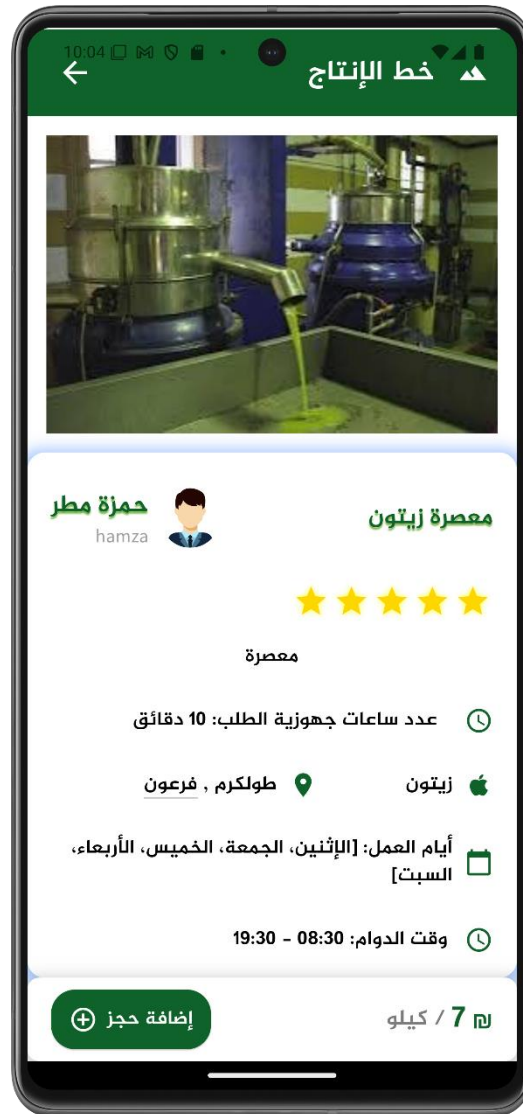


Figure 16. Production line Details Page

Also, by pressing on the line location, the application will take the user to a map.

Once the map opened, a dialog shows the distance between your current location and the production line location, also an estimated time to reach this place appears.

Then the shortest path between the two places is drawn.

An external APIs was used for this process:

- Location: to retrieve the current device location.
- google_maps_flutter: integrates Google Maps into the Flutter application.
- google_maps_webservice: calculates the distance and estimated travel time between two points, also fetch routing information via the Directions API.
- flutter_polyline_points: converts the route data into a polyline format

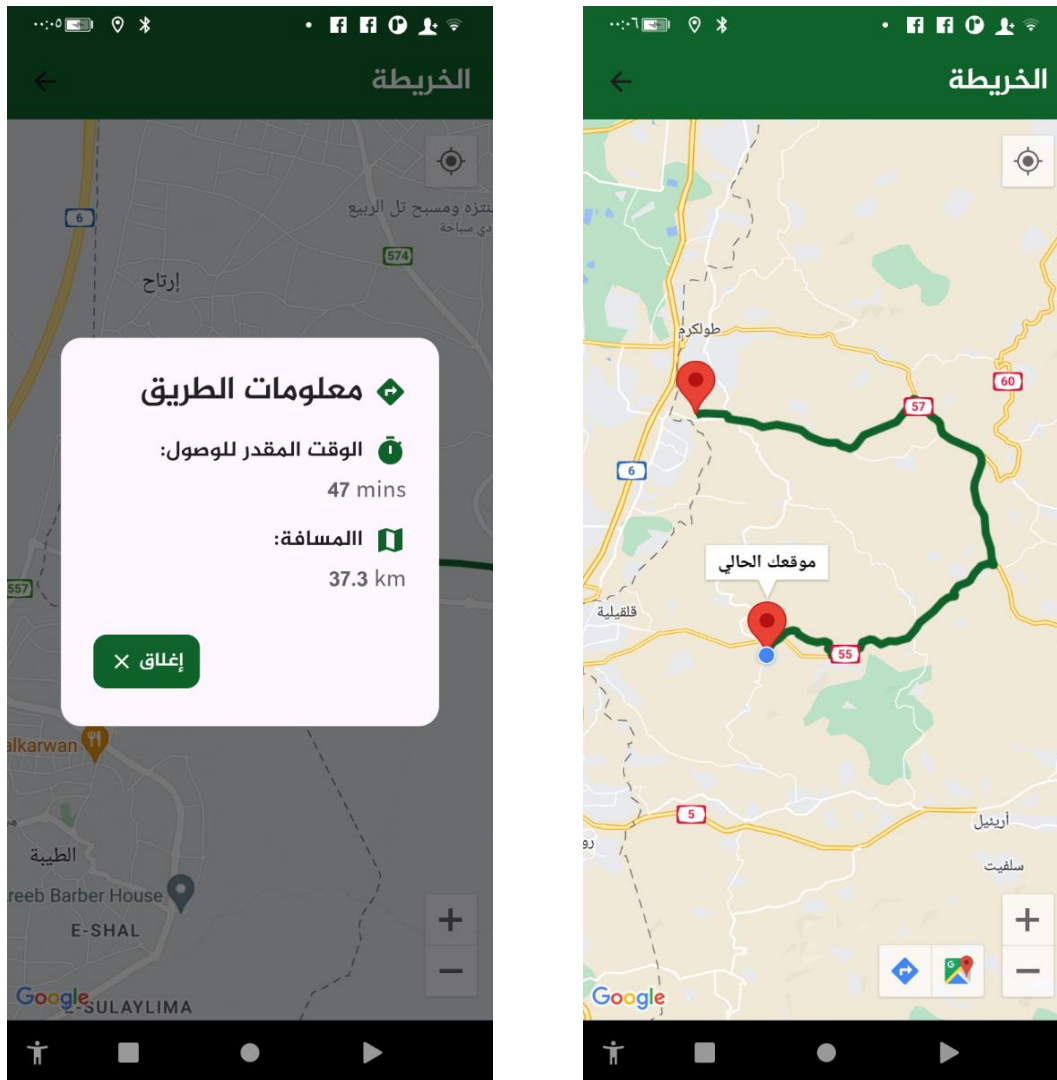


Figure 17. Navigation To Map

When the user press on 'request booking' button, on the bottom of the line page, the application takes him to booking page. This page includes the days and hours of line working and allow the user to fill the info as shown in the figure.

- The system checks firstly that the day chosen by the user is from the list of working days.
- Then calculates the time needed to process all the quantity the user has by getting the time specified to process one unit, then multiply it by the number of units the user have.
- After that the system checks that the start time and ended time for the appointment is within the working hours of the line.
- The last thing it checks for conflicts with previous scheduling appointments at that day and time.

If one of these problems appears, the user got a note that he must choose an available time and day, otherwise, the total price calculated by multiplying the price to process one unit by the number of units, then the user got a confirmation dialog with the booking details.



Figure 18. Booking process

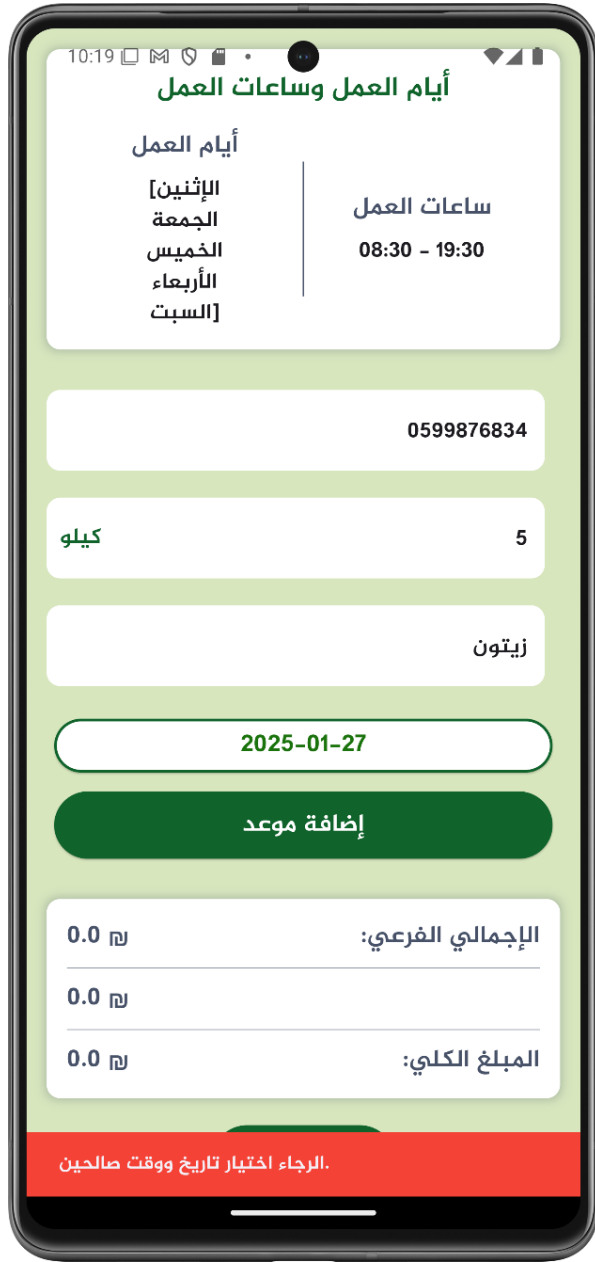


Figure 20. Failed Booking



Figure 19. Success Booking

Since the booking succeed, the owner notified of this booking, and it is recorded in his list of bookings.

Products Section:

When the user press on 'Products' on the home page, the application takes him to the products page, where three sections appear, for the three categories of the products:

- Crops
- Foode products
- Non-Food products

The page also includes an advertisement banner, which can be modified by the admin by edit, delete and adding images for this banner.

The search bar is included also, which allows searching on the products by their names.

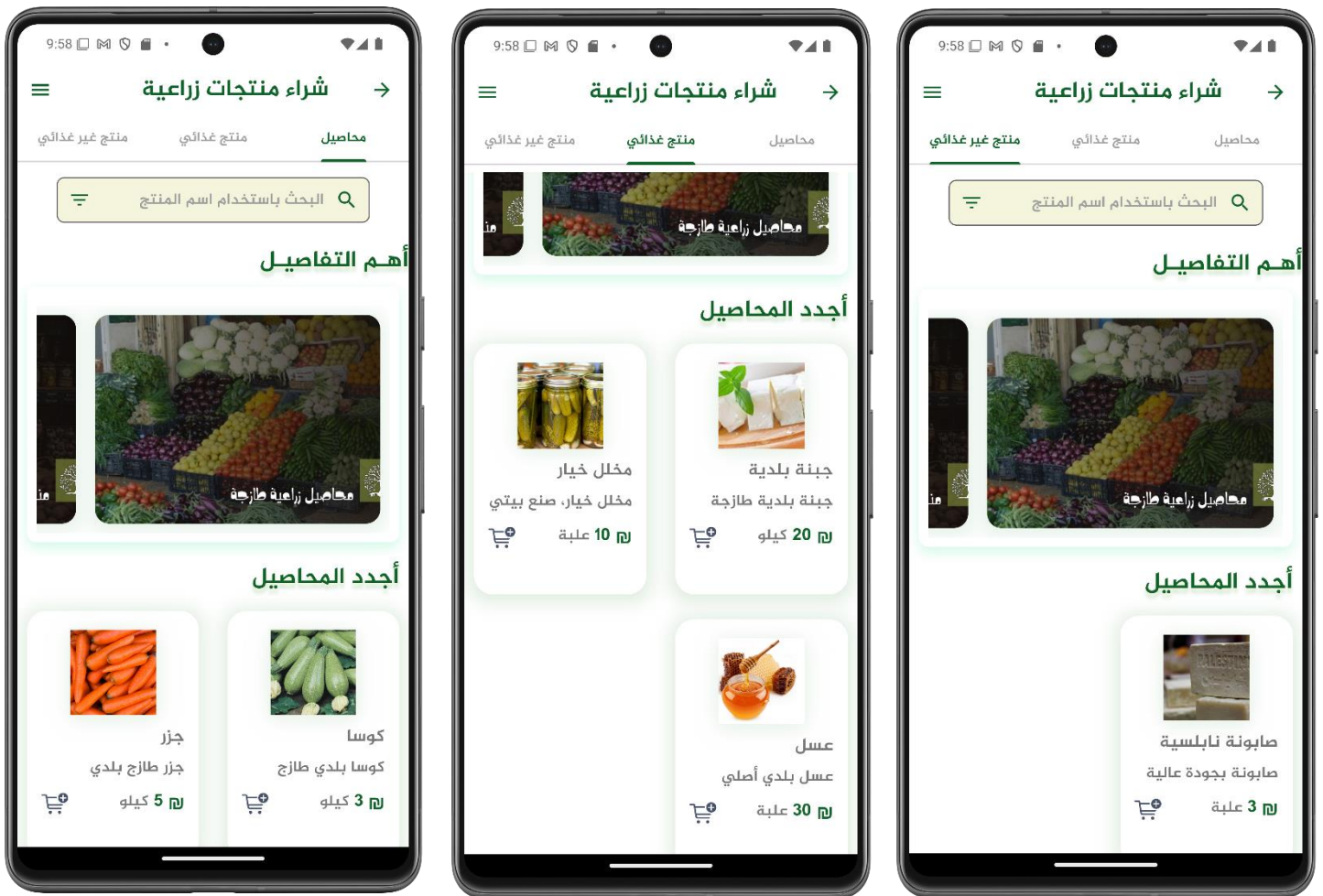


Figure 21. Products Lists



Figure 22. Products searching

By pressing on any product, a detailed product page opens, including the product name, rate, owner name, price, description and allows the user to add the product to his cart with the quantity he wants.

The quantity is limited by the available quantity of this product, to be sure that the user doesn't order more than the remaining quantity.

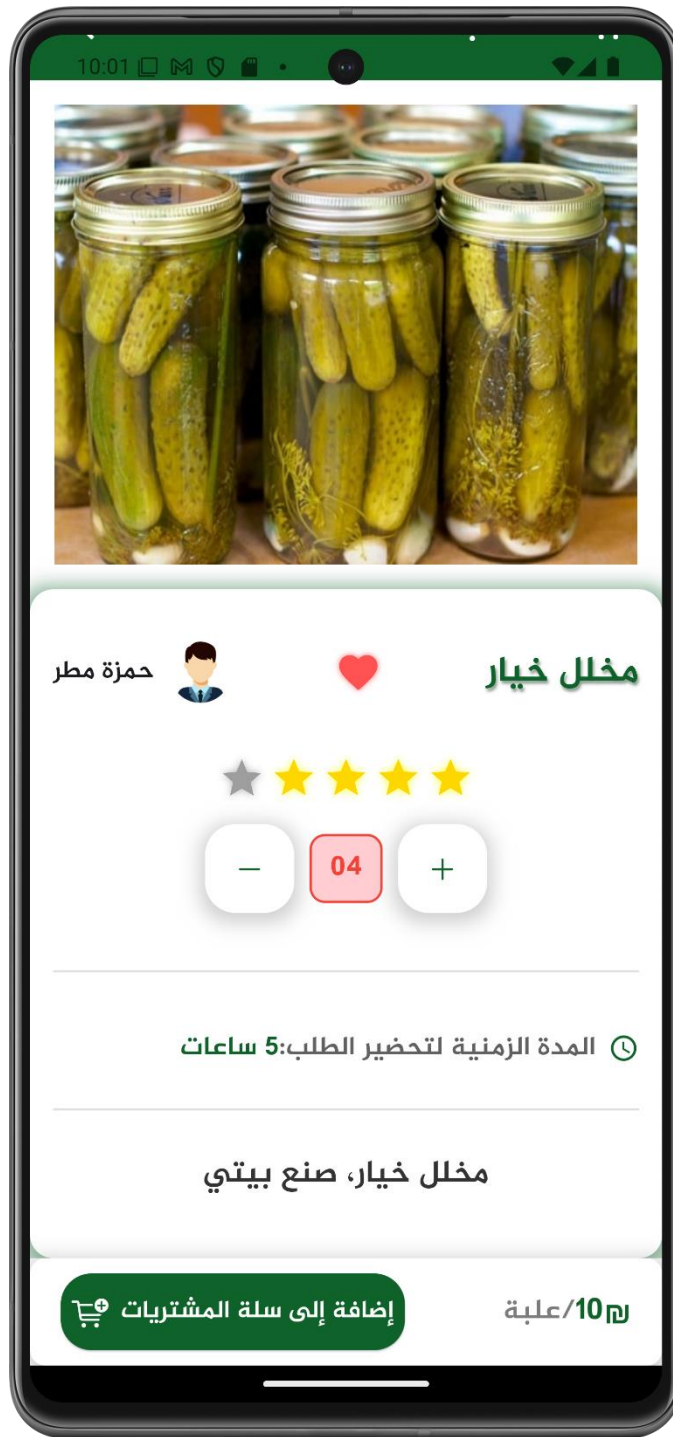


Figure 23. Product Detailed page

By pressing on 'add to shopping cart' button, the item added to the user cart with the quantity he specified.

Customer Custom Drawer:

The three lines on the top left corner of the customer home opens a custom drawer, which includes different sections as follow:



Figure 24. Customer Custom Drawer

Customer Profile Page:

This page includes the customer personal info, with the ability to update his personal info like his first and last name, his phone number, profile image, city and location and others.

Also display the rate, and the user points.

On the bottom of the page, there is 2 buttons, the 'save changes' button, which saves the modified personal information, and 'change password' button, which goes on the same process as forget password on login page.



Figure 25. Customer profile

My bookings:

This page shows all the customer previous bookings on production lines, and their details, with feedback from the owner of the line, by a status button.

There are three statuses for the booking:

- Done: which means that the user comes to his booking and the process is done.
- Cancelled: which means that the customer had not come to the booking, and the owner give that he didn't come.
- Pending: the booking time doesn't come yet, so no status yet.

There is also an icon to rate the production line, but this feature is enabled just after finishing the booking process, to ensure the credibility of the rating, and an icon to delete the booking.

By rating the lines, the user will get two points for every rate.



Figure 26. Customer Bookings



Figure 27. Production Line Rating

My work requests:

This page shows all the customer previous working requests, with details about the request like the land name, owner, dates and time of work, and the status of the request.

There are three statuses:

- Approved: which means the landowner accepts the work request.
- Rejected: which means that the owner rejects this request.
- Pending: the request has no decision yet.

Also, the icon to delete this request.

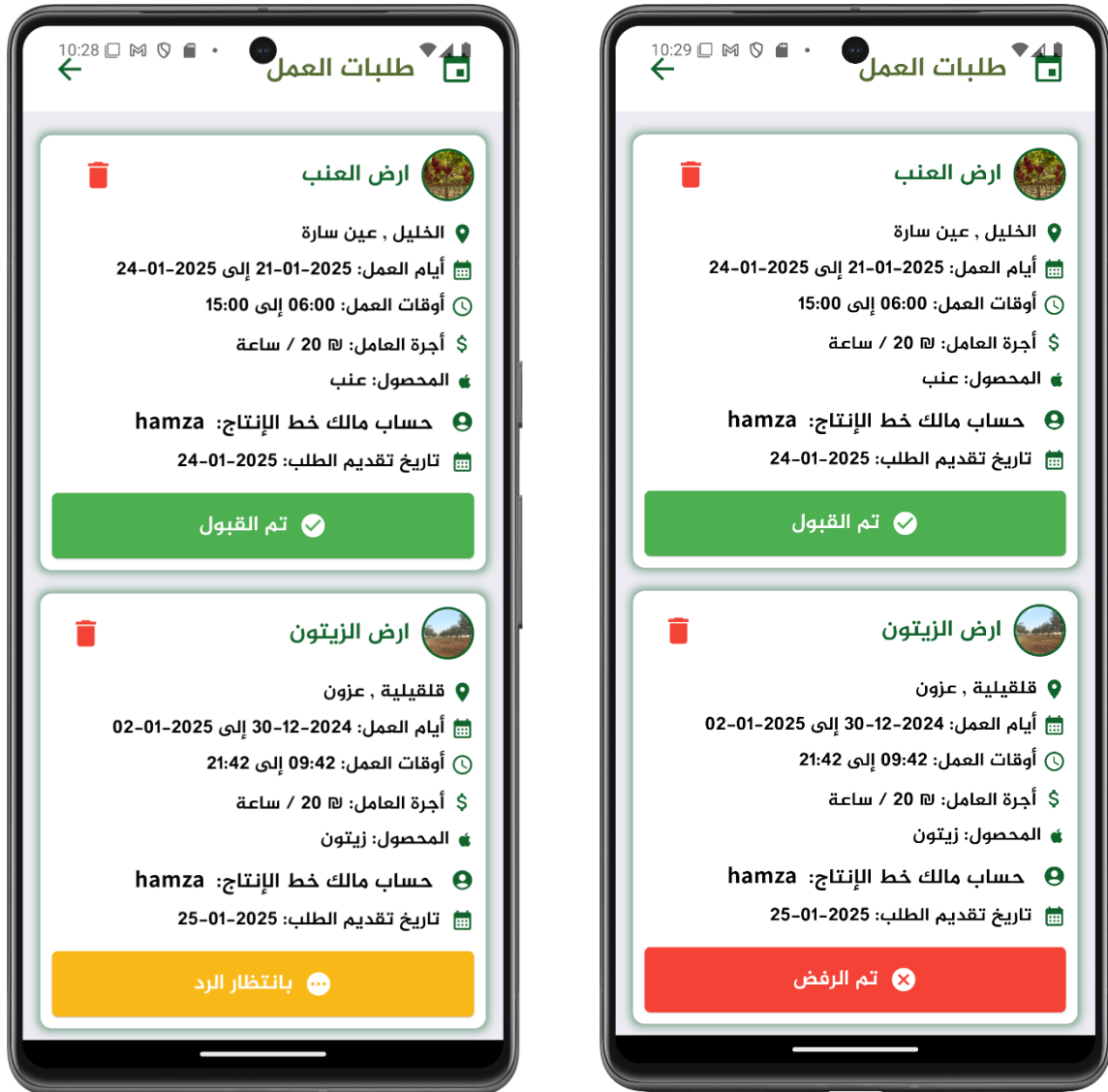


Figure 28. Customer work requests

Shopping cart:

All the products the user added to his cart appears here, with their quantities, and price.

On this page the user can make an order, after filling the recipient city, the recipient specific location, phone number, delivery type, and the payment method.

By pressing on the trash icon on every item, this item removed from the cart.

The user specifies the recipient location of the order by pressing on the location icon, which navigates to a map, where the user can press on a specific place on the map, then a dialog appears to choose a name for this location, then by click 'save' then it returns to the cart page and save the chosen.



Figure 30. Shopping Cart

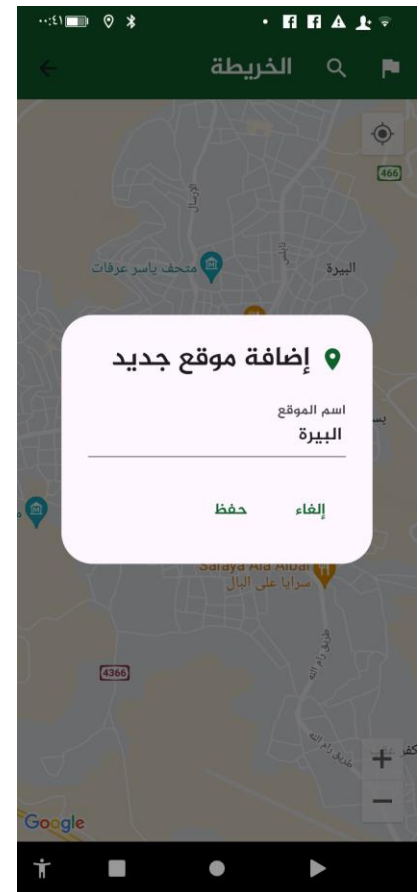


Figure 29. Choose Order Recipient place

For the delivery, there is two choices, the user can choose between them:

- Fast delivery: which means that the order is delivered in one batch and as quickly as possible, by choose this choice, the delivery cost will increase.
- Normal delivery: which means that the order elements delivered separately, while the delivery cost will remain as it.

Also, for the delivery cost, the system checks for the recipient city, if it is from Gaza cities or west bank, the cost is 20 shekels, but if it is from the occupied cities or Jerusalem, the cost become 40 for the normal delivery, and for fast it become 30, 60 Sequentially.

For the payment method, two payment methods are available:

- Cash on delivery: which is just available on fast delivery.
- Visa payment: which is available for both fast and normal delivery.

The figures below show all choices for delivery and payment

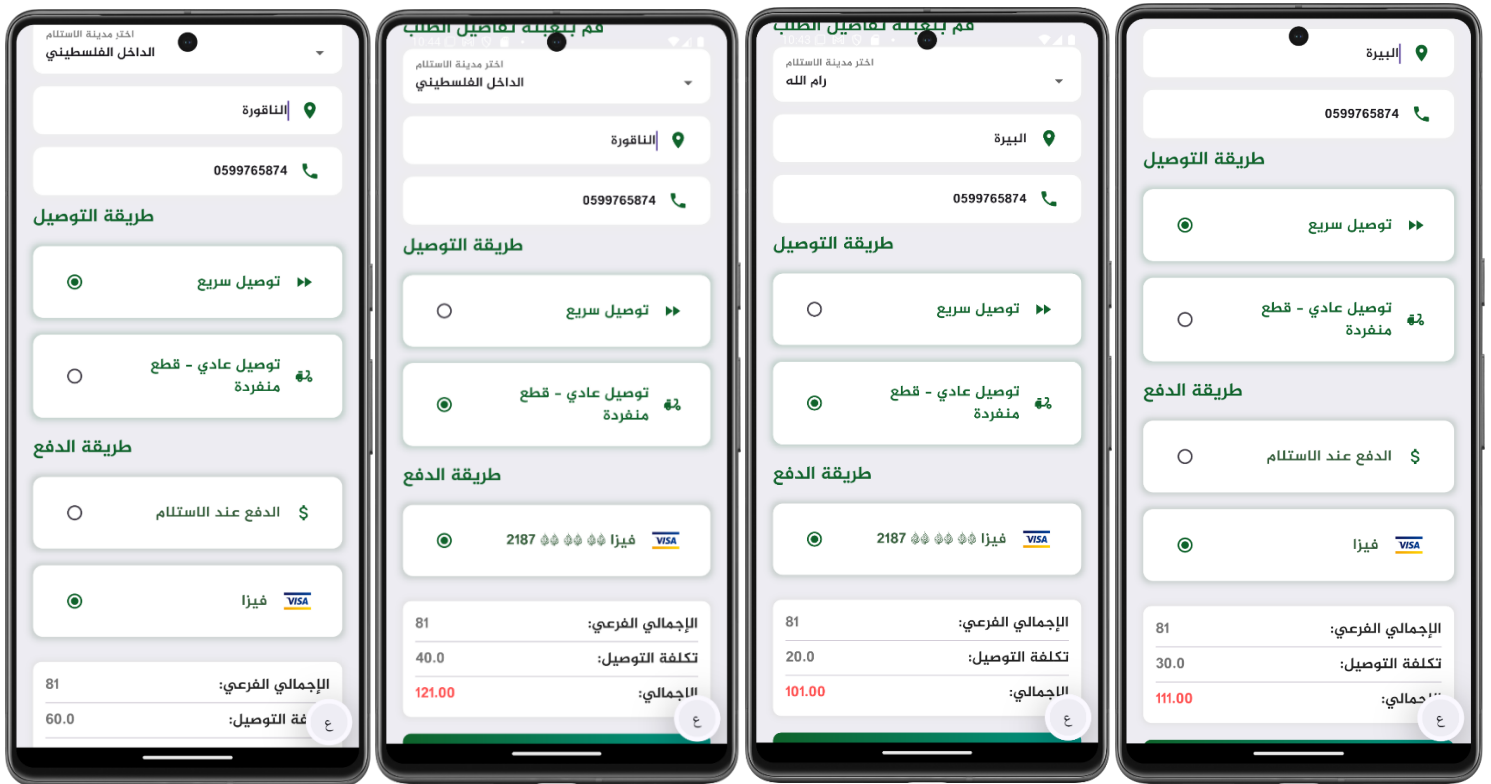


Figure 31. Order delivery and payment options

- After choosing the delivery and payment method, the user must press on 'order now' button on the bottom of the page, which will confirm the order and notifying the items owners to start the items preparation to let the delivery men take them.
If the chosen payment method is the visa, a dialog will open to fill the card info, Stripe payment platform is used for this process.
After filling the card info, the ordering process is done successfully.
The user gets points depends on the order total cost, for every 20 shekel = 1 points added.

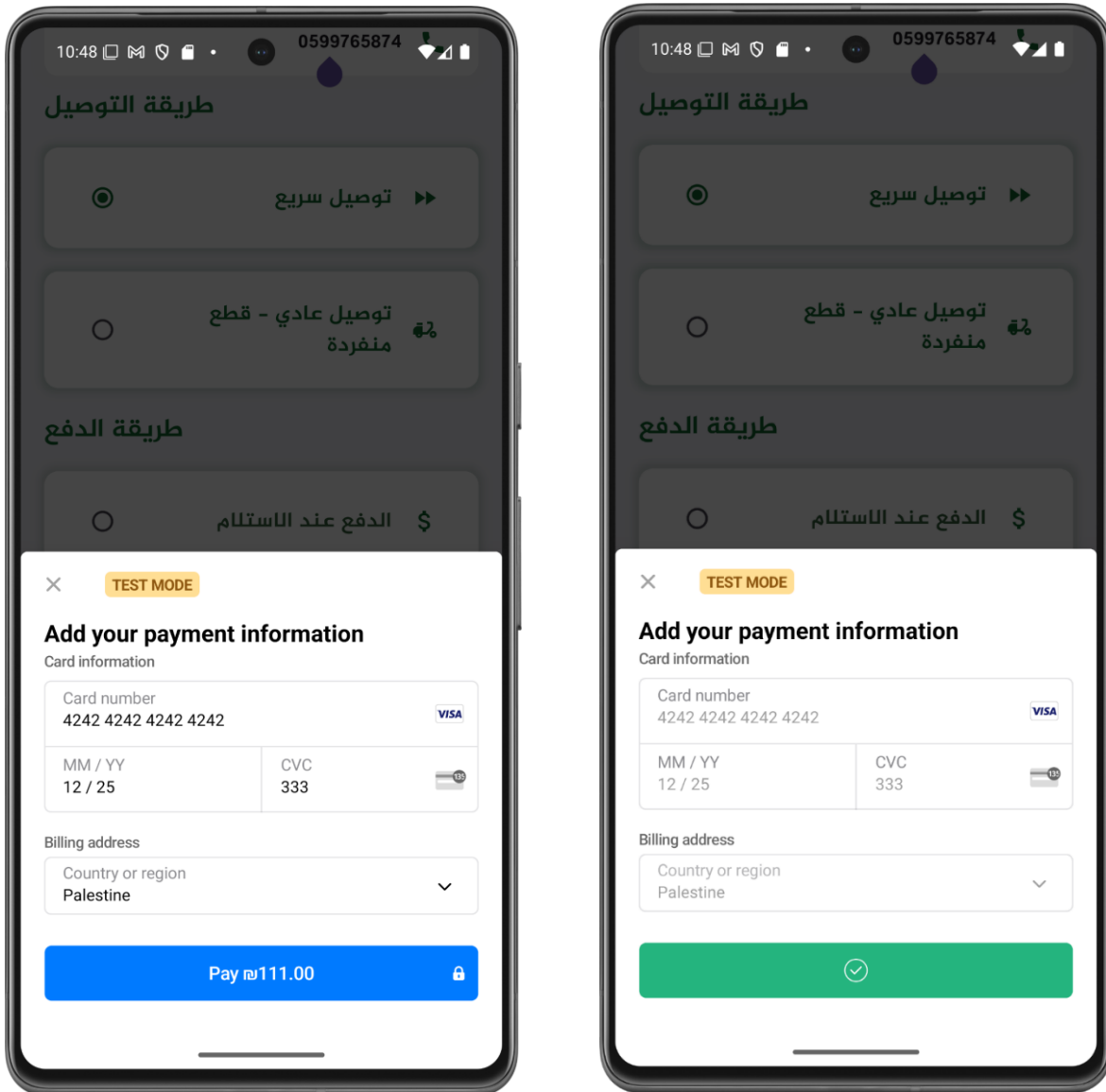


Figure 32. Order Payment process

Our application also provided a discount system on orders, based on the user points number, if the points ≥ 100 so the user got a 30% discount. if the points ≥ 50 so the user got a 20% discount. if the points ≥ 20 so the user got a 10% discount. if the points ≥ 10 so the user got a 5% discount. So, the app told the user that he has a discount, if he chooses to apply it now it applies and the discount applied to the total cost, if he want to not apply it now, his points remains the same, and there is no discount on the order cost.



Figure 33. Order Discount

Previous Orders:

The custom drawer also has a user previous orders section, here the user can check for his previous orders, with their dates, status and total cost, then go through all order elements. The first page opens includes all previous orders, with their status, when the user press on the order, the app takes him to order details page, which includes the order items.

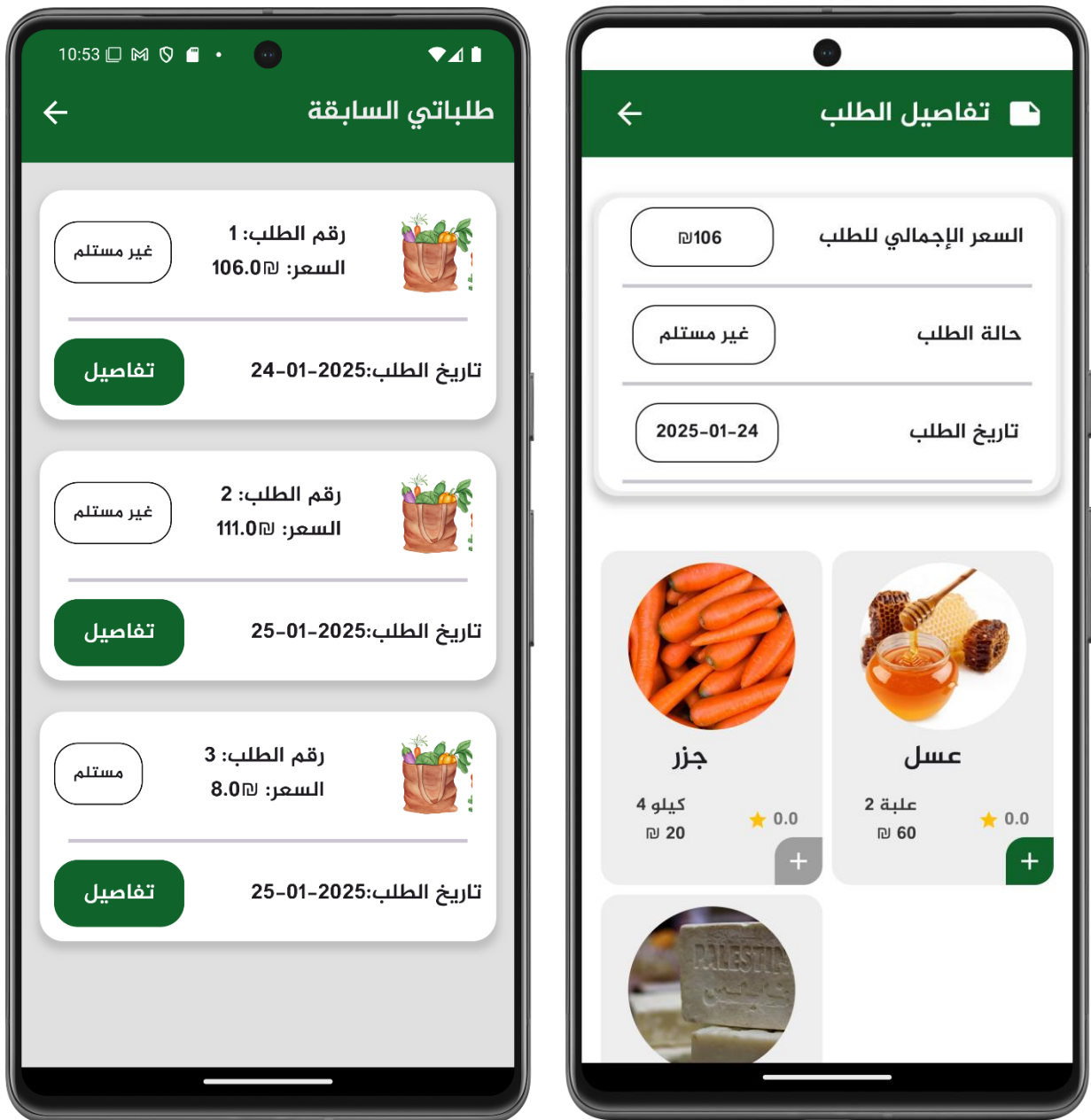


Figure 34. User Previous orders

By pressing on the '+' button on every element on the order, the user can rate this product, but the rating process is not allowed till the item is delivered to the user
By rating the products, the user got 2 points for every rate.

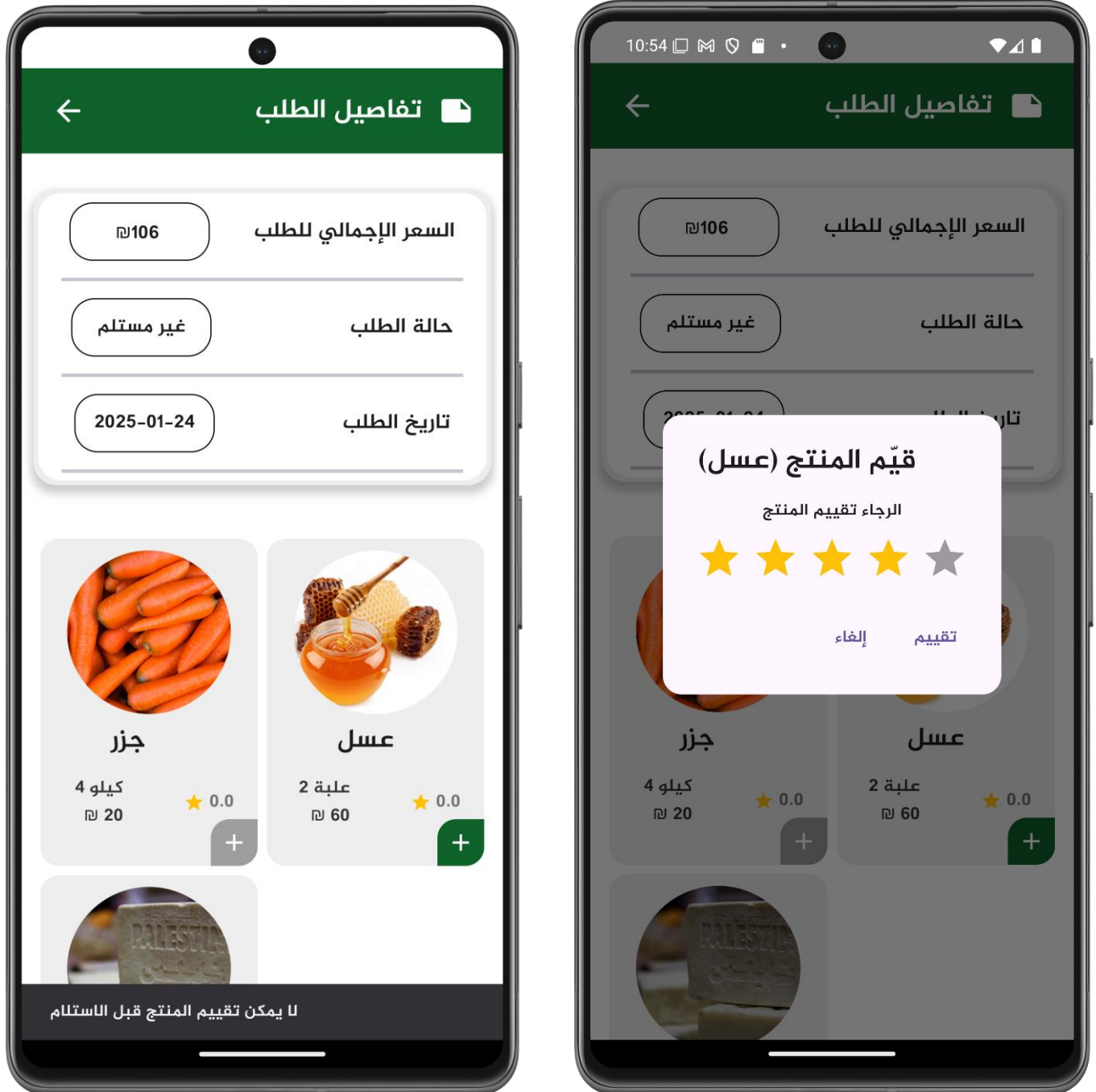


Figure 35. Products Rating

Now, the customer custom drawer is done. Let's return to the home page.

Customer Advertisement:

By pressing on the advertisement icon on the bottom navigation bar, the advertisement page opened, this page includes the advertisements published by the admin for the customers, for example, the app needs a delivery man to work with the application, so this advertisement appears to the user, and he can apply to this work.

Let's go through this process.

By pressing on the 'send request' button, at the bottom of the advertisement, the user taken to fill the form of the request



Figure 36. Qitaf advertisements -Delivery

The user asked to fill his personal information. His name, email, phone number, his city, which is the city used to get him the normal orders, as will explained in delivery section. Also, he asked to upload his drive license file, like and image or pdf file.

10:58

طلب توصيل

الاسم الأول
جعفر

اسم العائلة
فولة

البريد الإلكتروني
Jafar.28@gmail.com

رقم الهاتف
+970 599876345

رقم الهوية
407658495

اختار المدينة
طولكرم

السنة الشهر اليوم
2001 أكتوبر 11

رفع رخصة القيادة

اختر ملف

E9BB7673-515B-4FFA-BA1E-654D8517BCDD~2.jpeg

إرسال الطلب

11:00

طلب توصيل

اسم العائلة
فولة

البريد الإلكتروني
Jafar.28@gmail.com

رقم الهاتف
+970 599876345

رقم الهوية
407658495

اختار المدينة
طولكرم

السنة الشهر اليوم
2001 أكتوبر 11

رفع رخصة القيادة

اختر ملف

E9BB7673-515B-4FFA-BA1E-654D8517BCDD~2.jpeg

إرسال الطلب

Figure 37. Delivery work request form

When the user presses the **‘Send Request’** button, an automatic validation process begins:

License Validation Using OCR:

- The application uses OCR (Optical Character Recognition) technology to scan the license document.
- It automatically extracts the license expiry date from the scanned license.

Expiry Date Verification:

- The extracted expiry date is compared with the current date.
 - ✓ **If the license is valid** (i.e., the expiry date has not passed):
 - The user’s request is forwarded to the admin for review.
 - The admin can then either approve or deny the request.
 - The user receives a dialog notification informing them that their request passed the first check process and sent to the admin to take decision.
 - ✓ **If the license is invalid** (i.e., the expiry date has passed):
 - The request is automatically denied.
 - The user receives a dialog notification informing them that their request has been denied due to an invalid license.

This process ensures efficient and automated validation, reducing manual checks while maintaining accuracy.

The admin will be notified that there is a new delivery request if the request is accepted automatically, and check for it then take a decision either accept or deny.

The user will be notified about the admin decision.

At the first figure, we notice that the expiration date has passed, so the request was denied automatically.

While at the second one, we noticed that the expiration date has not passed yet, so the request was passed the first check process and sent to the admin.

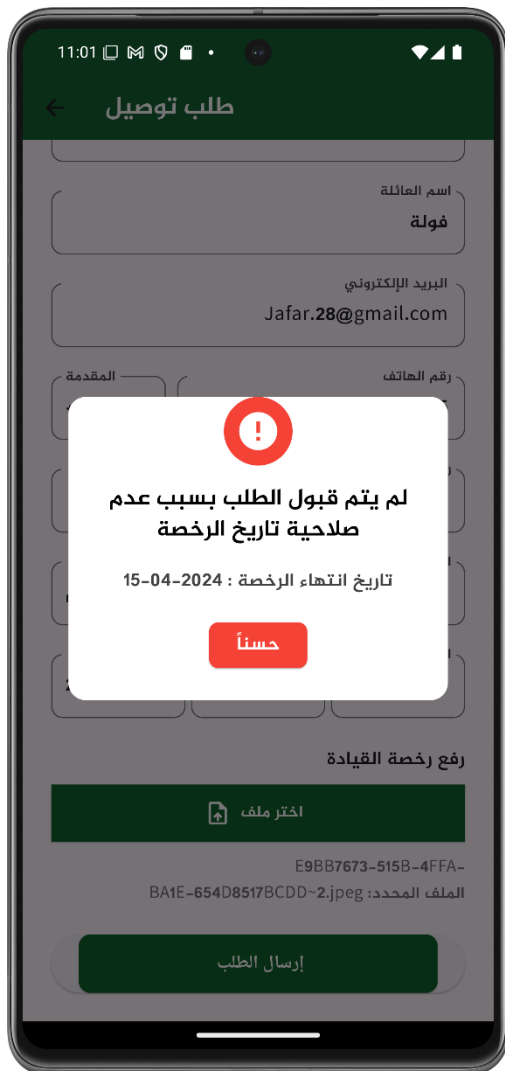


Figure 38. Auto driving license check-Deny

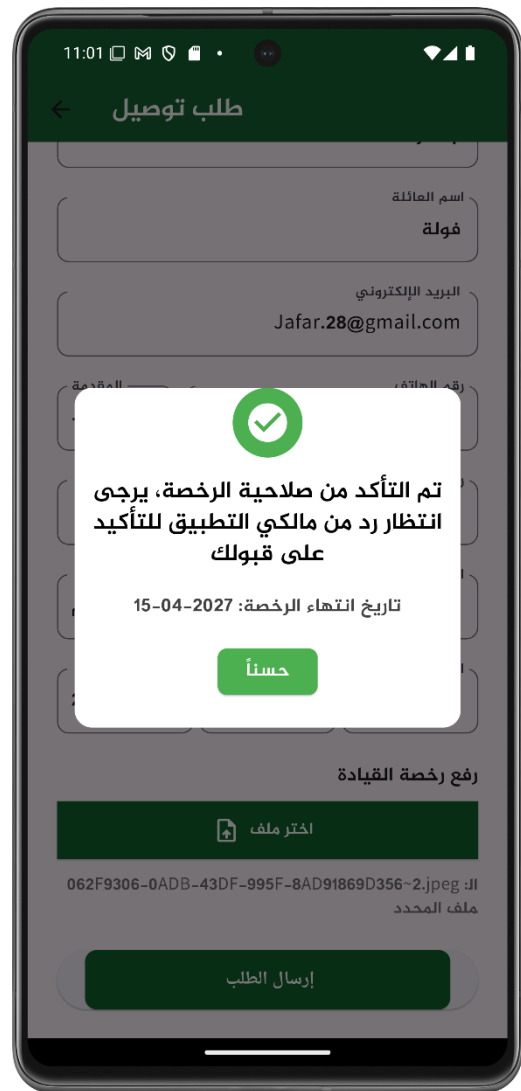


Figure 39. Auto driving license check-accept

Here is all about the customer specific features, now let's talk about the owner.

Owner Home page:

After a successful login as an owner account, the owner taken to the home page, where is the same components of the customer home page, except the 'harvest land' section, which is not found in the owner home page, because it is illogical for a landowner to work on other people's lands.

The bottom navigation bar on the owner home, includes a part to add lands, production lines, and products, which is not found in the customer bar.

The owner custom drawer also has extra section compared with the customer section, which is the customers' work requests, bookings and buying.



Figure 41. Owner Home Page



Figure 40. Owner Custom Drawer

Owner profile page:

When you press on the profile page on the owner's custom drawer, the owner profile page opens, the first page includes the main info about the owner, his profile photo, name, rate, number of points, and his posts number.

Then the owner posts section comes, with three parts, lands, products, and production lines. This section shows all the owner posts in the three parts.

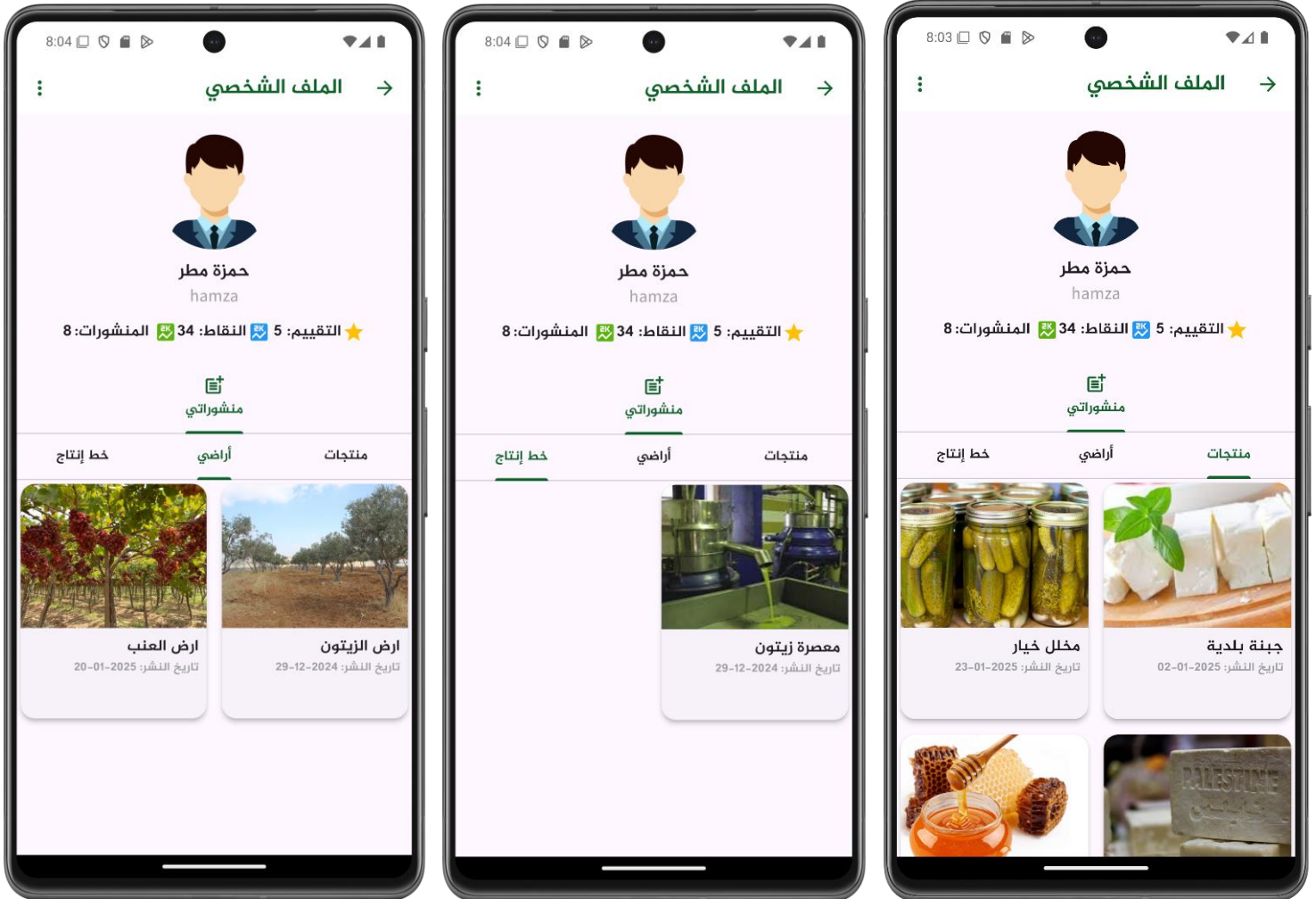


Figure 42. Owner Profile Page

By pressing on any of these posts, the owner could edit this post info from editing page, for example editing the product quantity if he got more instead of publishing a new post. Also, he can delete the post by pressing the 'delete' button.

Here is the editing page for the products, it is the same as production lines with a difference in the info can edited related to production lines:

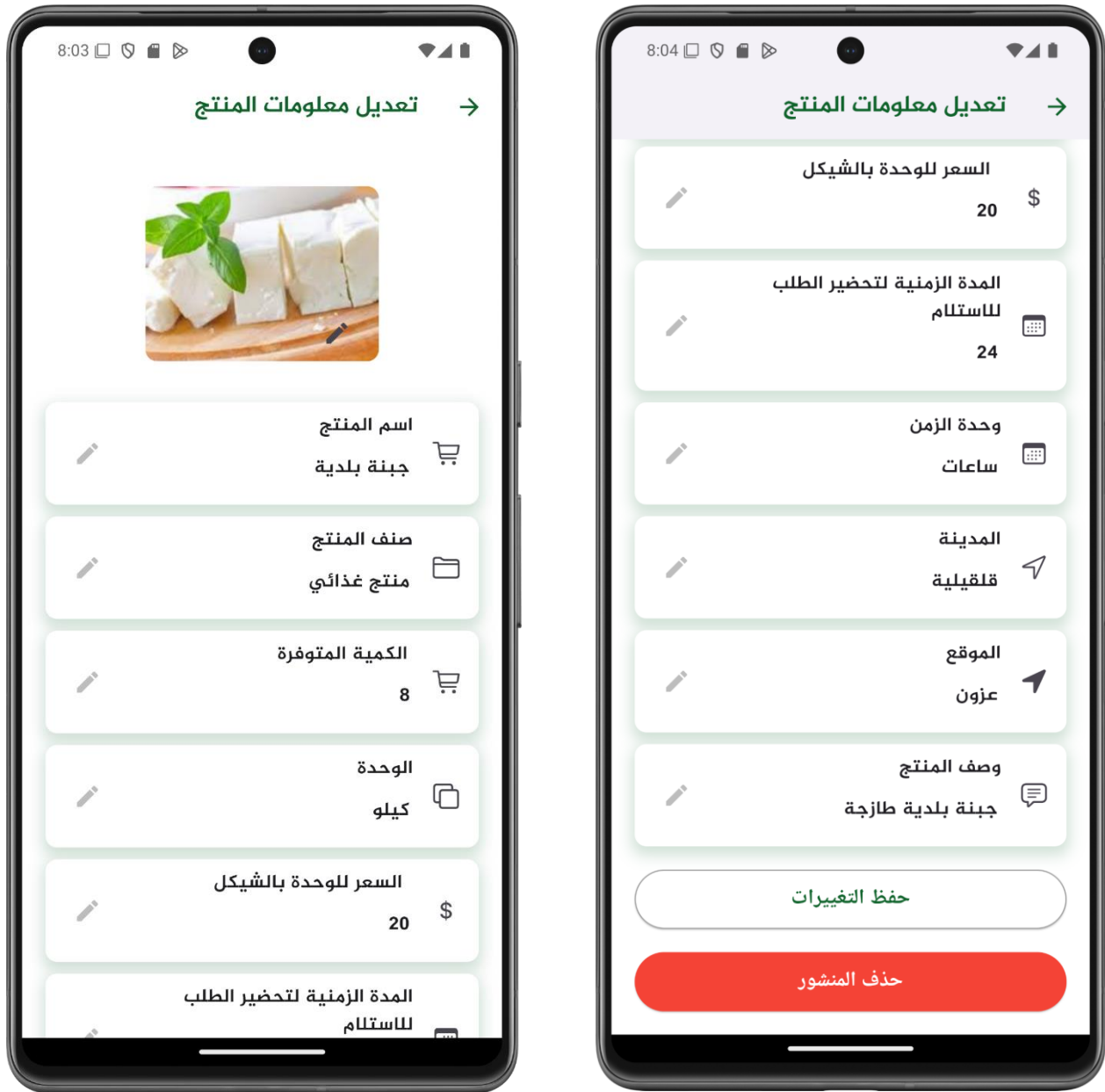


Figure 43. Edit product page

On the land pages, there is an addition button appearing, which shows all the accepted workers on this land, with the ability to rate them, report them if they don't come to work, or delete them. This makes It easy for the owner to contacting them and reach them.

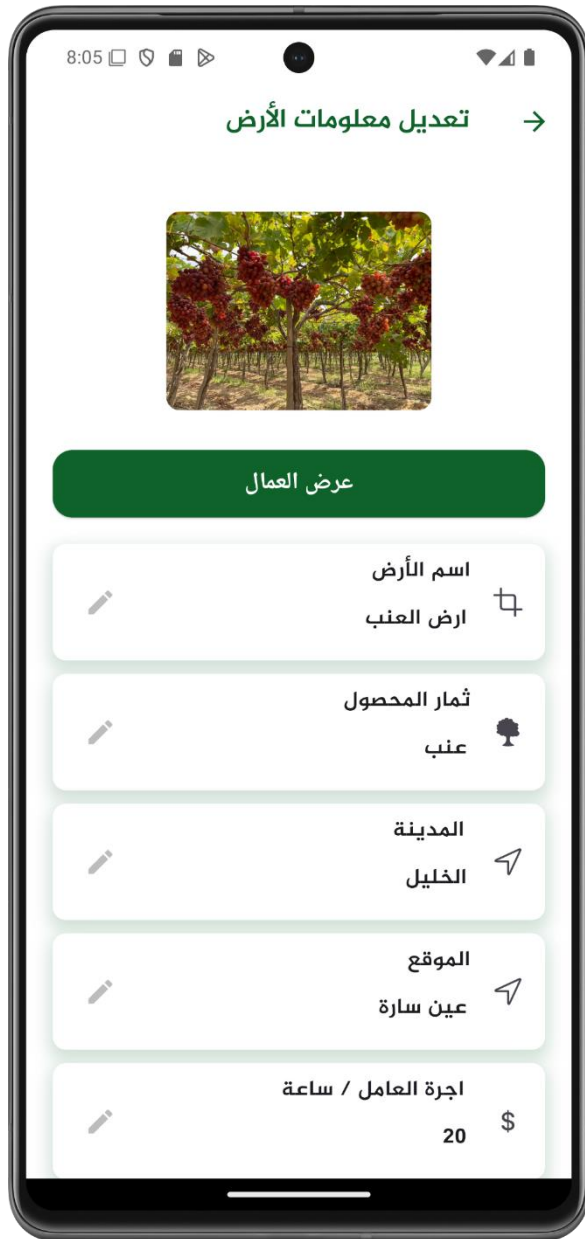


Figure 45. Edit land page



Figure 44. Accepted land workers

On the workers list, when press on rate worker button, a rating dialog appears, while pressing on report worker button a report confirmation dialog opens, after rating, the owner got 2 points because of his rating:

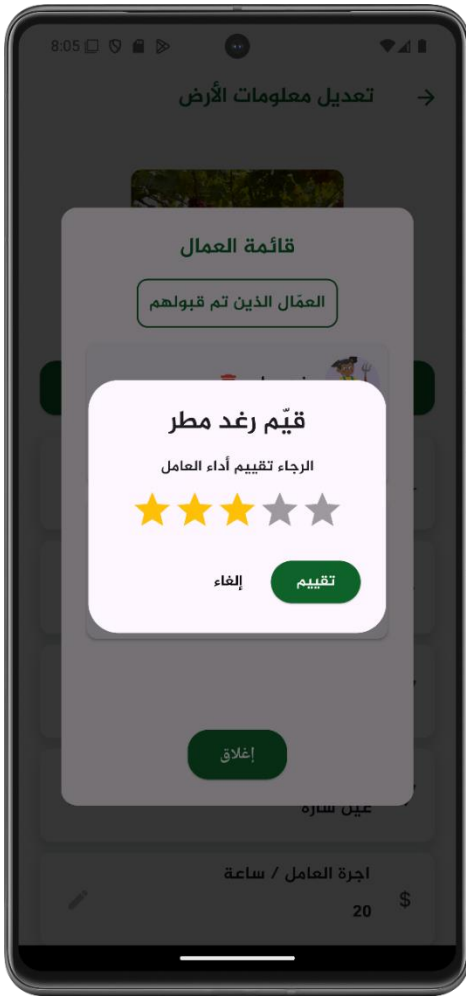


Figure 46. Rate Worker

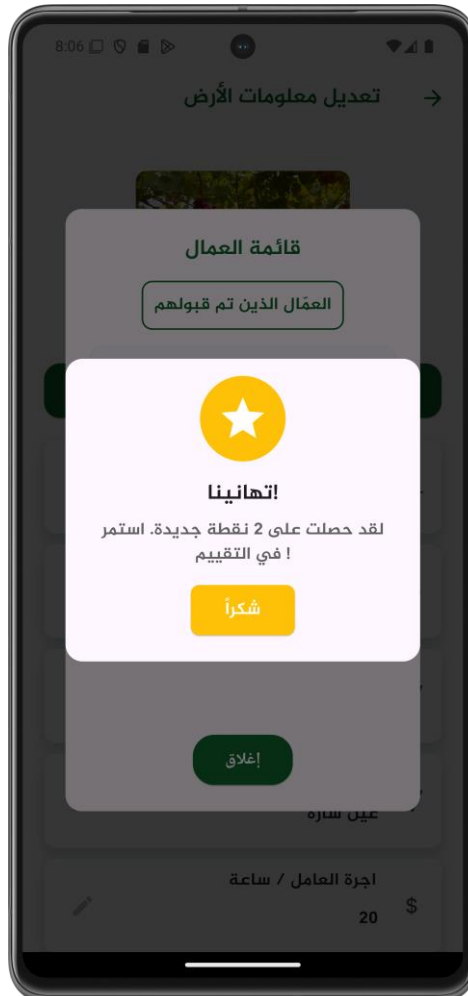


Figure 47. Report Worker

This worker will be notified that he got a new report, and after 3 reports his account will be suspended.

On the top left corner of the profile page, there is 2 lines, when press to them, the owner got two choices, to edit his profile or log out, by choosing edit profile, edit profile page opens and the owner can edit his personal info and change the password as in customer profile page



Figure 48. Edit owner profile

Customers Booking:

By pressing on the customers bookings section on the custom drawer, all the bookings on the owner's production lines appears in the page, with the customer information, and booking details.

The owner here can edit the status of the booking, by pressing on the button, where a dialog opens, and the owner has 3 choices:

- Done: the owner chooses this choice if the customer come to his booking and the process done.
- Pending: this is the default status, which means the booking time didn't come yet, so no judgment.
- Cancelled: which means the customer didn't come at the booking time.



Figure 49. Update Booking status

Every booking appears with its status, and the customer info, by pressing in the customer photo, a customer profile page opens, which includes the customer's contact info, with the ability to direct reach to chat with the customer:



Figure 50. Customers Booking page

If the booking status is cancelled, this allows the owner to report the customer because of not coming to his appointment.



Figure 51. Report Cancelled Bookings

Customers working requests:

By pressing on the Customers work request section in the owner custom drawer, all pending work requests on the owner lands appears, with the worker personal info.

The owner can accept the work request or deny, and the worker will be notified about the owner decision.

By accepting the request, the number of workers needed in the land decrease by one, and if it reaches zero, the land stop appearing on the lands list.

The owner also can get the worker info by pressing on his profile photo, which takes him to the worker profile page, to see his contact info and access directly to his chat.



Figure 52. Work requests

Orders preparation:

By pressing on the 'customers buying' section on custom drawer, a page includes all the items the owner must prepare for customers' orders, he got every item, with its quantity and details to prepare the order then change the status to prepared.

Since the owner changes the order status, then the item will appear on the delivery man available orders page.

Every item has two buttons, the first one for item preparation, it is not prepared by default, but the owner can change the status by press the button.



Figure 53. Change the item preparation status

The second one gives the owner a feedback about the item delivery status, which updated by the delivery man, so if the customer deliver the order the delivery man updates it to delivered, but if the customer didn't deliver it, and not response to the delivery man so he change it to undelivered, and the default state is pending, which means the item is not taken to deliver yet.

If the customer refuse delivering the item, the owner can report him.



Figure 54. Orders delivery status

Add lands, production lines and products:

The owner can upload and publish his lands and production lines and products on the app, by clicking on the add icon on the bottom navigation bar in the home screen

Which gives him three choices:

- Add Land
- Add Production Line
- Add Product

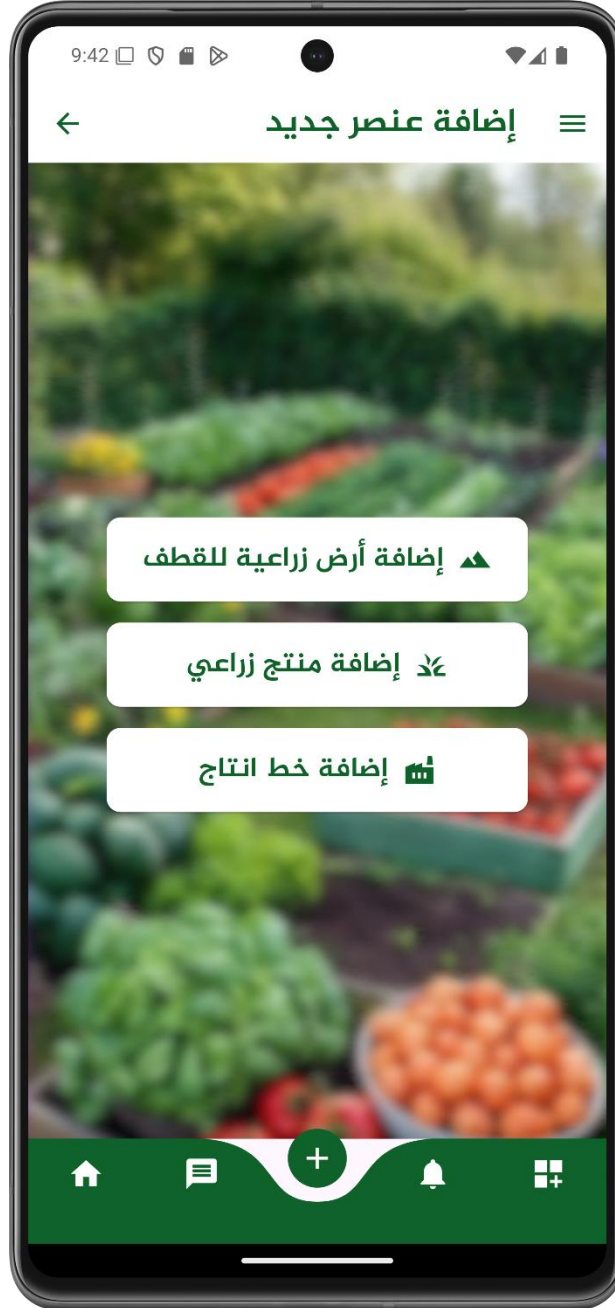


Figure 55. Add lands. lines, products

Add Land

By clicking on add land, the land information form opens.

The owner fills all the fields with his land details, uploading the land image, its name, space, city and street, number of workers needed, the time interval for the work by specifying the start and end dates, and the hours of the work every day, also specifies the worker wages for every hour working.

Then by press the 'Add land' button, the land will appear to all users to send a work request.

The screenshot shows a mobile application interface for adding a new agricultural land. The title bar at the top reads 'إضافة أرض زراعية' (Add Agricultural Land). Below the title bar is a back arrow on the left and a menu icon on the right. The main content area features a large image placeholder icon with the text 'إضافة صورة' (Add Image) in a green button below it. Below this are several input fields: 'اسم المحصول' (Crop Name), 'اسم الأرض' (Land Name), a city selection dropdown labeled 'اختر مدينتك' (Choose your city), a text field for 'وصف الموقع' (Location Description), 'مساحة الأرض (دونم)' (Land Area in Dounam), 'أجرة العامل/ساعة' (Worker Wage per Hour), and 'عدد العمال' (Number of Workers). At the bottom, there are four buttons for setting dates and times: 'حدد تاريخ الانتهاء' (Set End Date), 'حدد تاريخ البدء' (Set Start Date), 'حدد وقت الانتهاء' (Set End Time), and 'حدد وقت البدء' (Set Start Time).

Figure 56. Add New Land

Add Production Line:

By clicking on add production line, the line information form opens.

The owner fills all the fields with his line details, uploading the line image, its name, city and street, the raw material it accepts, the day of works weekly, and the work hours.

Also, he specifies the cost to process one amount of the raw material

Then by press the 'Add line' button, the line will appear to all users to make bookings on it.

9:43

إضافة خط إنتاج

إضافة صورة

المادة الخام المطلوبة

اسم خط الإنتاج

وصف خط الإنتاج

رقم الهاتف للتواصل

المدينة

الموقع

وحدة الزمن

عدد ساعات جهوز الطلب

السعر

الوحدة

إلى الساعة

من الساعة

السبت

الأحد

الاثنين

الثلاثاء

الأربعاء

الخميس

الجمعة

Figure 57. Add New Production Line

Add Product:

By clicking on add product, the product information form opens.

The owner fills all the fields with his product details, uploading the product image, its name, city and street, its category, and the available quantity, with the price, and a description.

Then by press the 'Add product' button, the product will appear to all users to buy it.

The screenshot shows a mobile application interface for adding a new product. The title bar at the top reads 'إضافة منتج زراعي' (Add Agricultural Product). Below the title bar is a large image placeholder with a green button labeled 'إضافة صورة' (Add Image). The form consists of several input fields:

- 'الناسم' (Name) - a text input field.
- 'صنف المنتج' (Product Category) - a dropdown menu.
- 'الكمية' (Quantity) - a text input field.
- 'الوحدة' (Unit) - a dropdown menu.
- 'السعر بالشيكل' (Price in Sheqel) - a text input field.
- 'اختر المدينة' (Select City) - a dropdown menu with a location pin icon.
- 'وصف الموقع' (Location Description) - a text input field.
- 'وحدة الزمن' (Time Unit) - a dropdown menu.
- 'مدة تحضير الطلب' (Order Preparation Time) - a text input field.
- 'وصف المنتج' (Product Description) - a text input field.

Figure 58 Add New Product

By this, we finished all separate features for both the customer and owner.
Now, let's go through the shared features we found on the navigation bar on both customer and owner home.

The chat:

Qitaf application provides a chat system, in two ways:

- Individual chat: where two users can message each other.
- Group chat: which allows groups from more than two users to talk with each other.

Individual chat:

After going to an individual chat part, the user can start a new chat with any user in the application by searching his name on the search place, then the user writes a message and sends it, but if there is a previous chat between the users, there is no need for search, because the previous chats appear on the main page.



Figure 59 Chat- Searching for users

The chat also gives feedback for the sender if the other person reads the message or not yet
Also, the time when the last message appears



Figure 60 Individual chat main page

In the inner page of the chat, the messages appears on the arrange they was sent, with the ability to delete a specific message by pressing and holding on the message, then a delete confirmation dialog opens.

Also, there is a choice to delete the whole chat, by pressing on the three dots at the top right corner then choose delete cha



Figure 63 Individual chat



Figure 61 Delete a message



Figure 62 Delete a chat

Group chat:

The other choice for chatting is via a group chat, the user can make a group by pressing on the icon in the top of chat page.

Then a list with all users on the app appears, so the user can choose the group members, and the group name.

All user groups appear in the groups section, with the sender of the last message and its time.

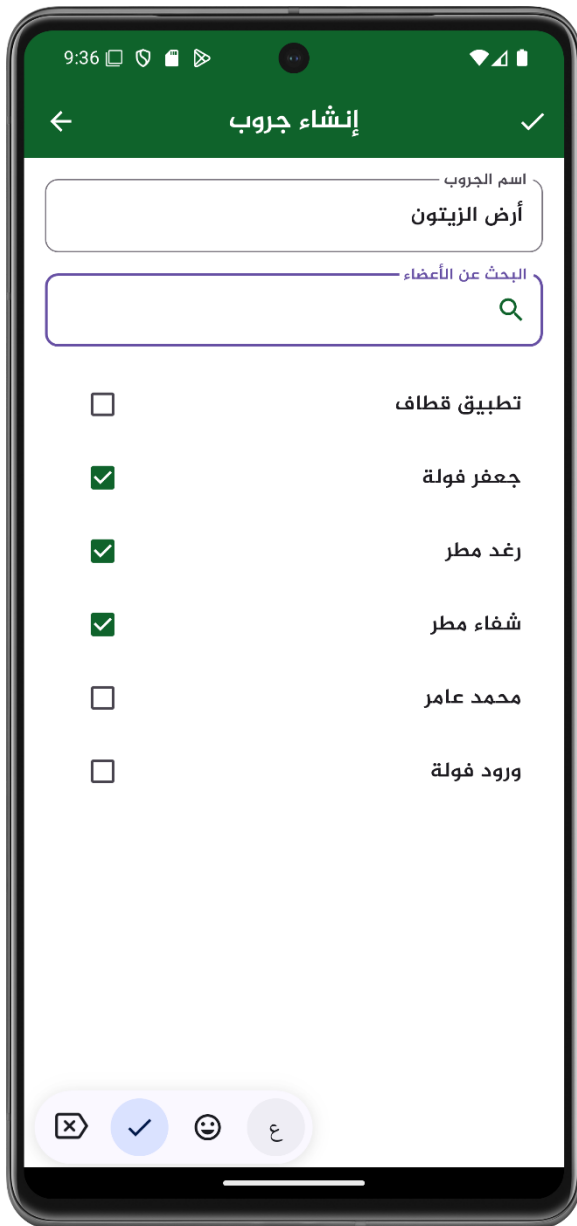


Figure 65 Creating Group



Figure 64 Group chats main page

By pressing on a group, the user moved to the group chat, appears all messages sequentially, with the sender's name.

To see all group members, the user press on the members icon at the top right corner, so all the members name appears, with the admin of the group. At the bottom of this page the button to delete the chat and other to delete the group.



Figure 66 Group chat



Figure 67 Group members

Chat Live Notifications:

Once the user sends a message either on individual chat or group chat, a live notification sent. In the individual chat the receiver receives a notification includes the sender's name and the message content.

In the group chat the notification sent to all group members, includes the sender and the group name, in addition to the message content.



Figure 68 Chats Live Notification

Notifications:

There is a notification section for both the customers and owners, which can be reached by pressing on the notification icon on the bottom navigation bar.

The customer got a notification when:

- A decision about his work request taken, so he knows if his request is accepted or denied.
- When he got a report from one owner, explaining who the reporter is, and warn the user that after three reports, his account will be suspended
- If his delivery work request is accepted or denied.

By pressing on the notification, it will navigate the user to the related page, depends on the notification purpose, for example it takes him to his work requests page if the notification is about his work request

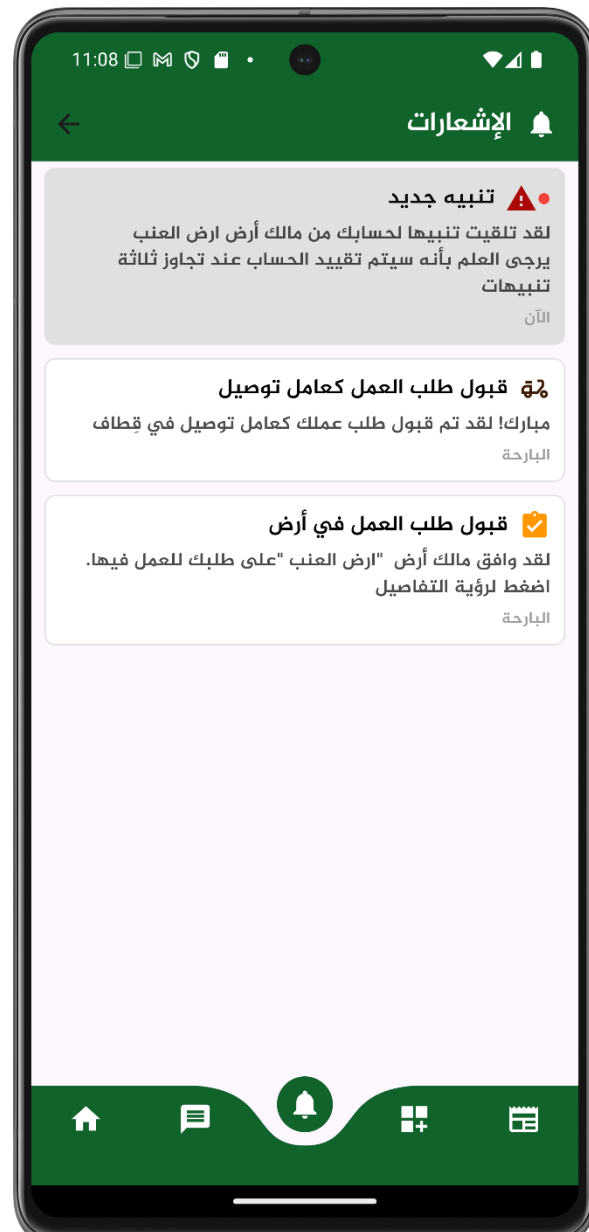


Figure 69 Customer Notifications

Owner Notifications:

As the customer notification, the owner also received notifications when:

- The owner receives a new work request on one of his lands.
- A new booking registered on one of his production lines.
- A new order including one of his products is made

The notification explains the customer's name and to which land / line / product the notification elated, with the ability to navigate the owner to the related page to check for updates by pressing on the notification.

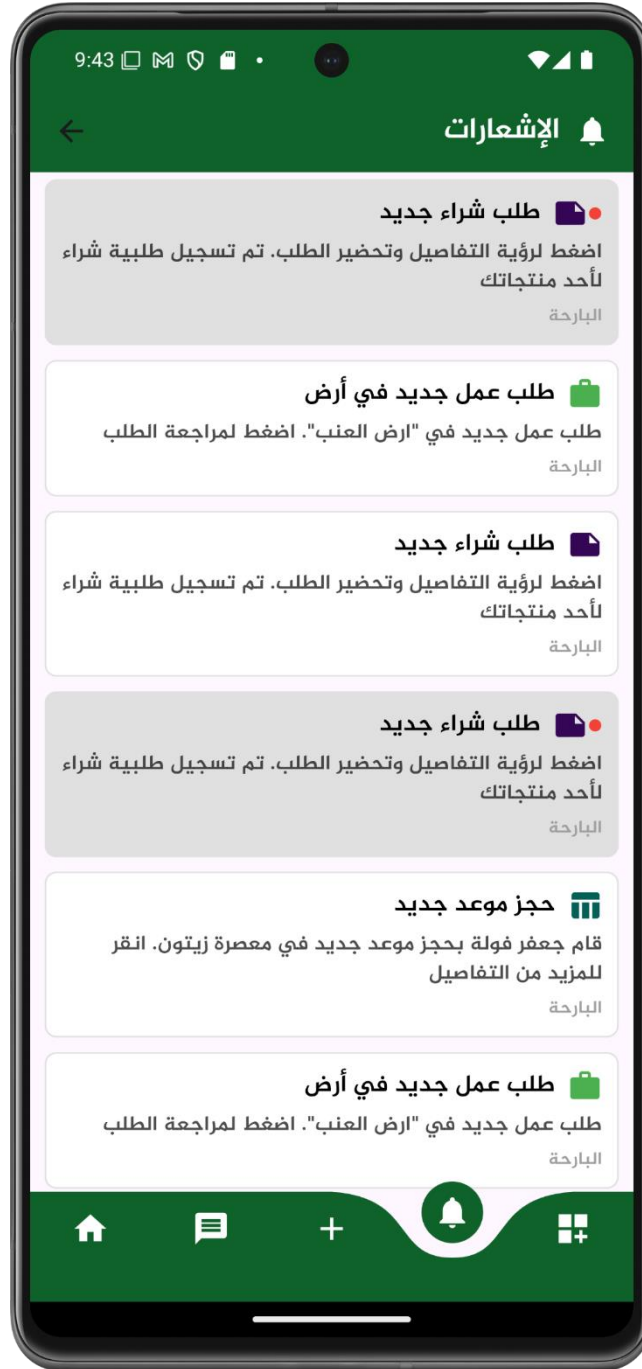


Figure 70 Owner's Notifications

Live notifications:

The live notifications also activated for all notifications type, in addition to adding it to notifications page.

The users receive a pop-up notification if an event happens either for the customers or owners.

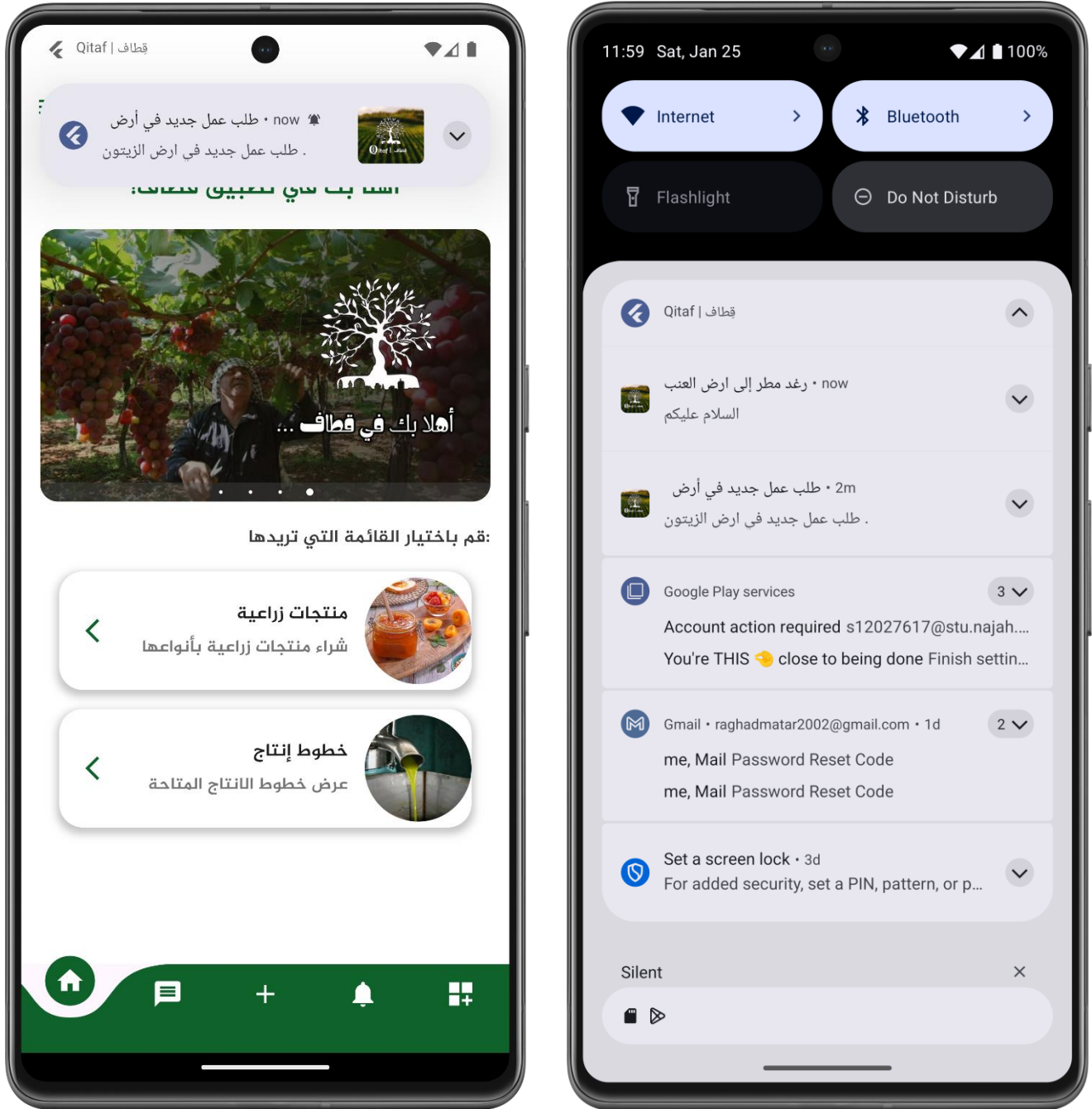


Figure 71 Pop-up Notifications

A forum for inquiries and solutions

This is the part where the users can share their experiences, problems and start a discussion about agricultural issues.

All users can post new posts including a text and image, the posts ask for a solution, or asks for something to get answers from other users

Also, it enables interacting with the users' posts, and leaving comments on it, and interact with the users' comments.

The comments appear based on its likes number, the highest likes appear firstly, which indicates that this is the right answer or solution.



Figure 72 Forum main page

Create a post, then press 'Publish' to share it with others:

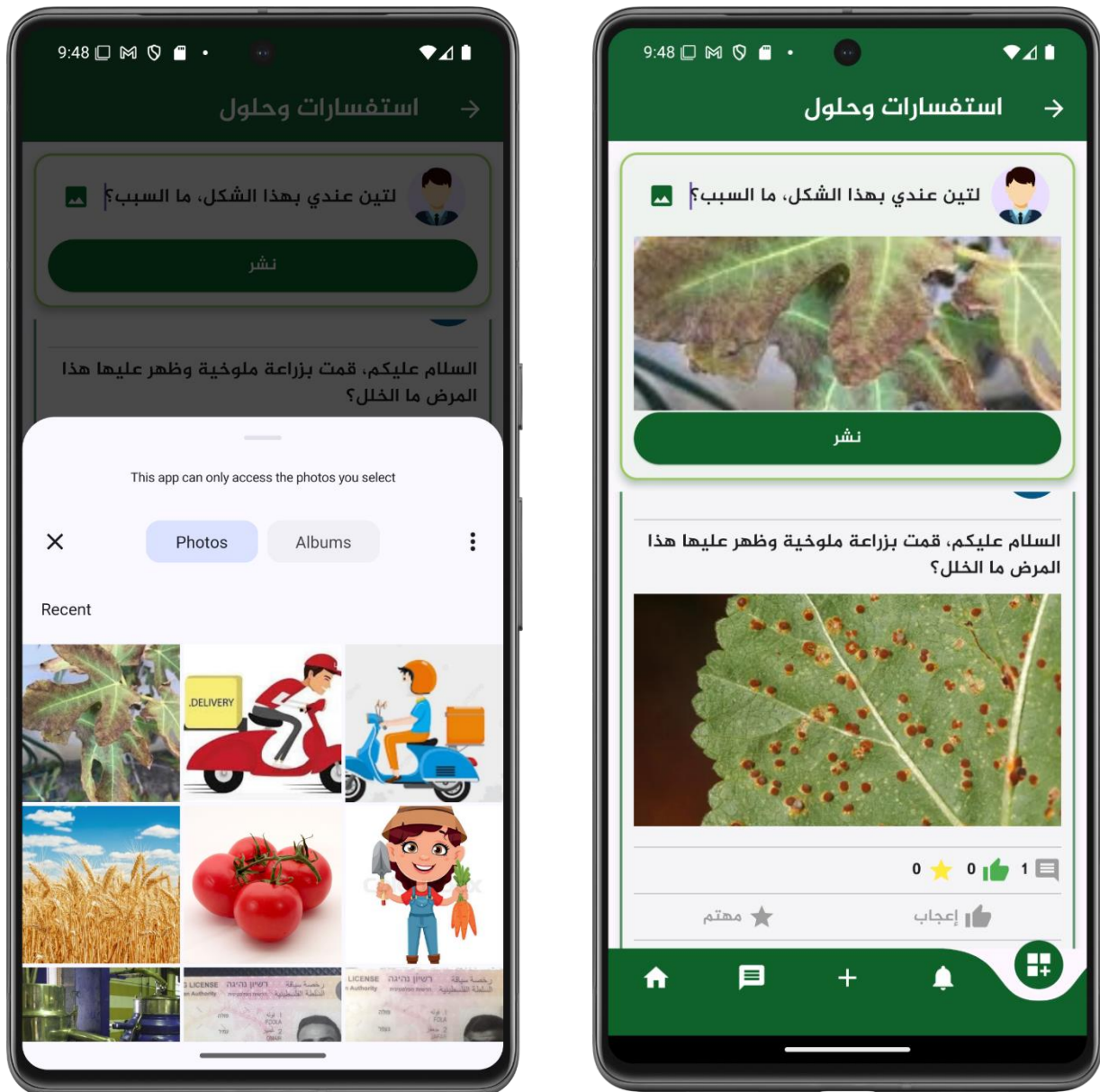


Figure 73 Create a post

The users can add comments including images, and then they can edit or delete them.

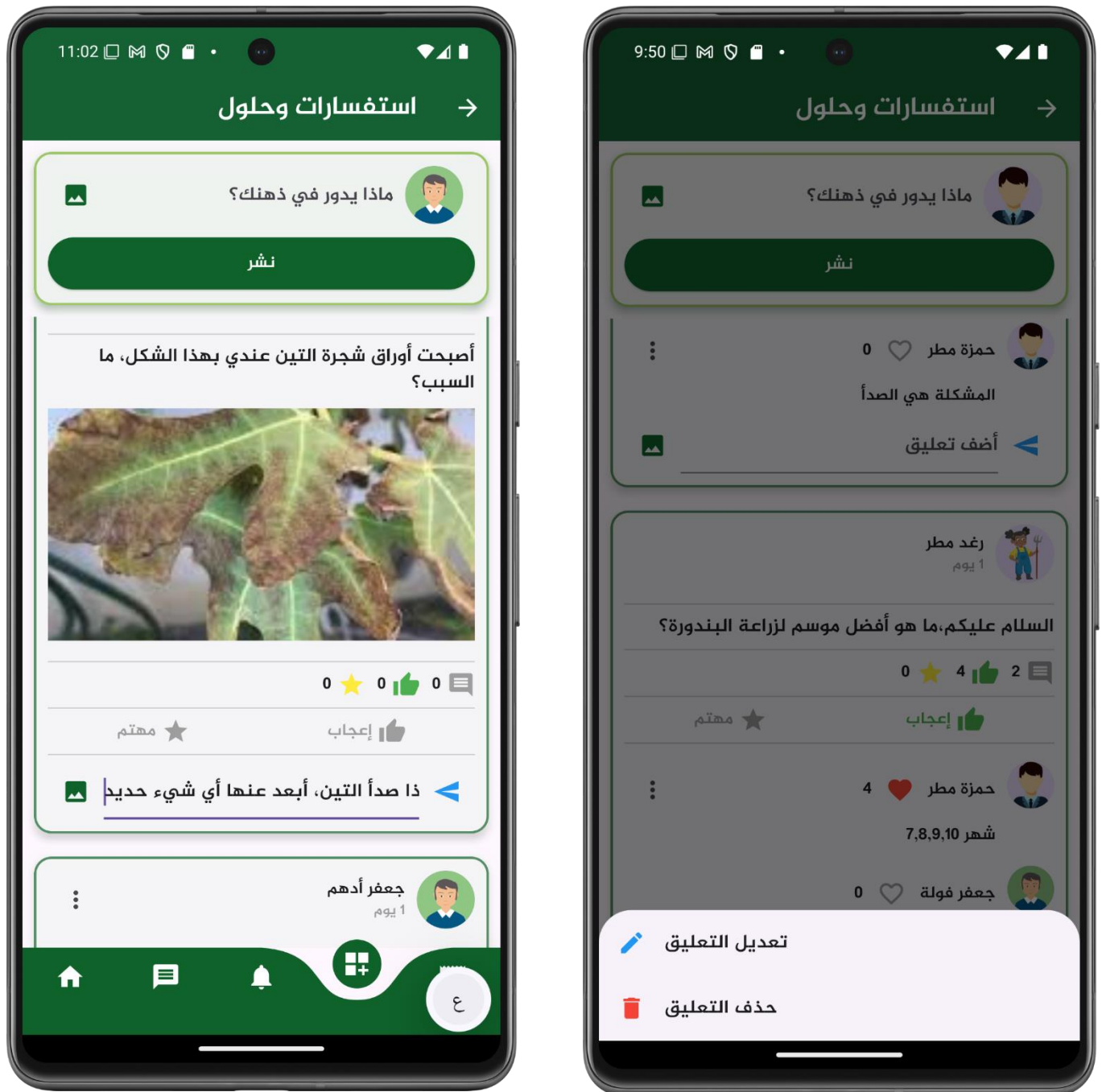


Figure 74 Add, Edit and delete a comment

The post writer can edit or delete his post:

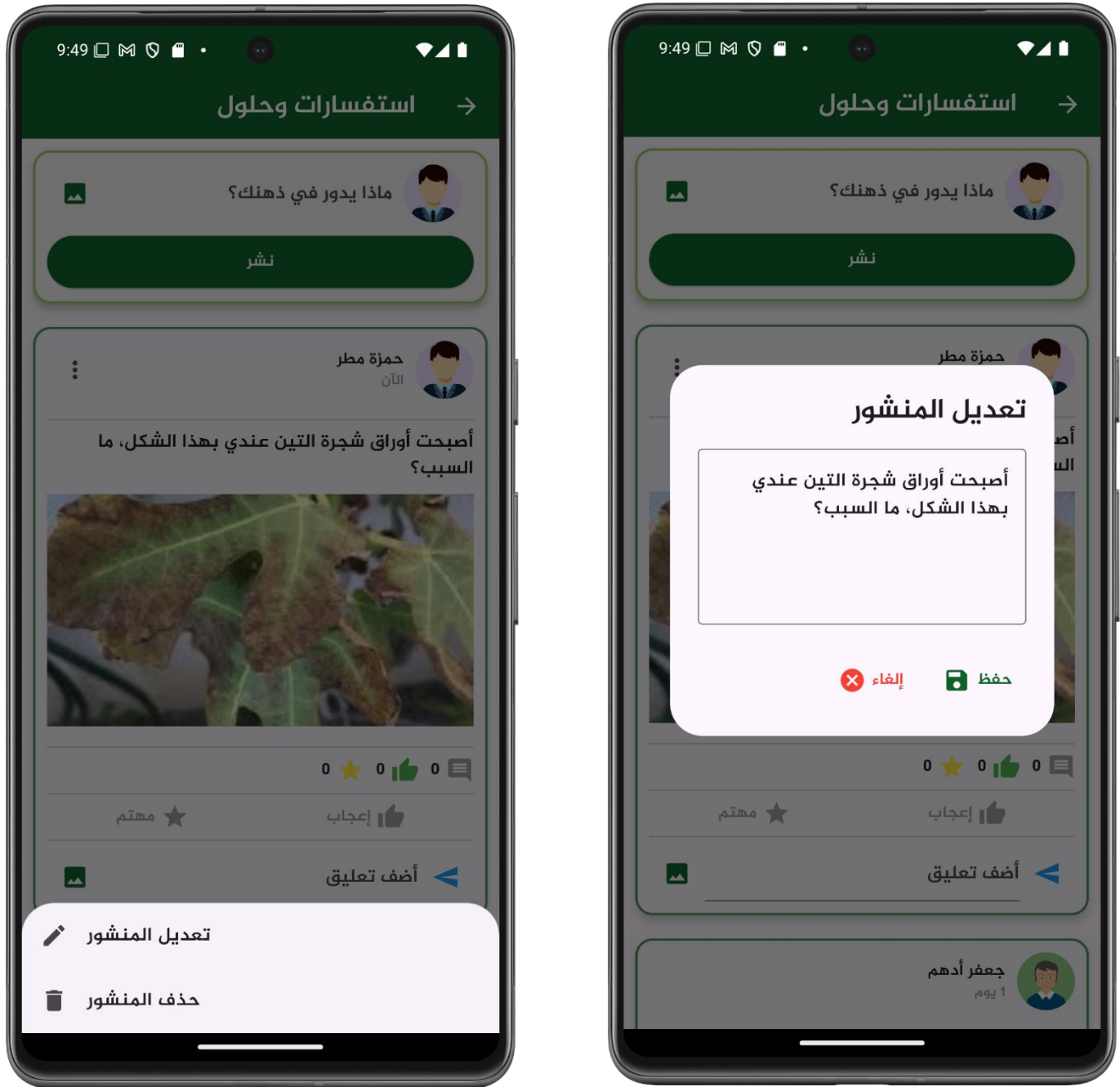


Figure 75 Edit, delete a post

Admin:

In addition to the customer and owners, there is a special login as the application admin with the name 'Qitaf'.

The admin role is to check for the whole application, control the advertisements, get statistics, accept delivery requests and manage them.

The Statistics:

The first page opens when a successful login to the admin account is the statistics page

This page gives the admin feedback about the main statistics and numbers on the application.

Firstly, there is a pie charts shows the distribution of the users, lands, production lines on the cities:

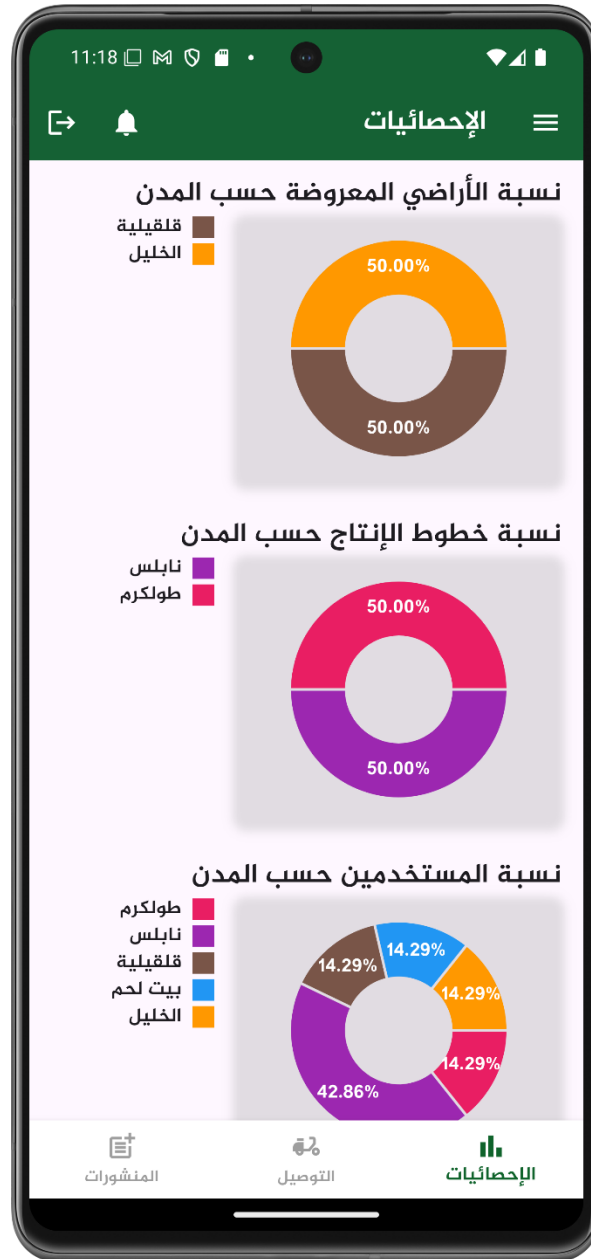


Figure 76 Admin statistics page 1

Then the fourth pie chart shows the distribution of the products based on its category

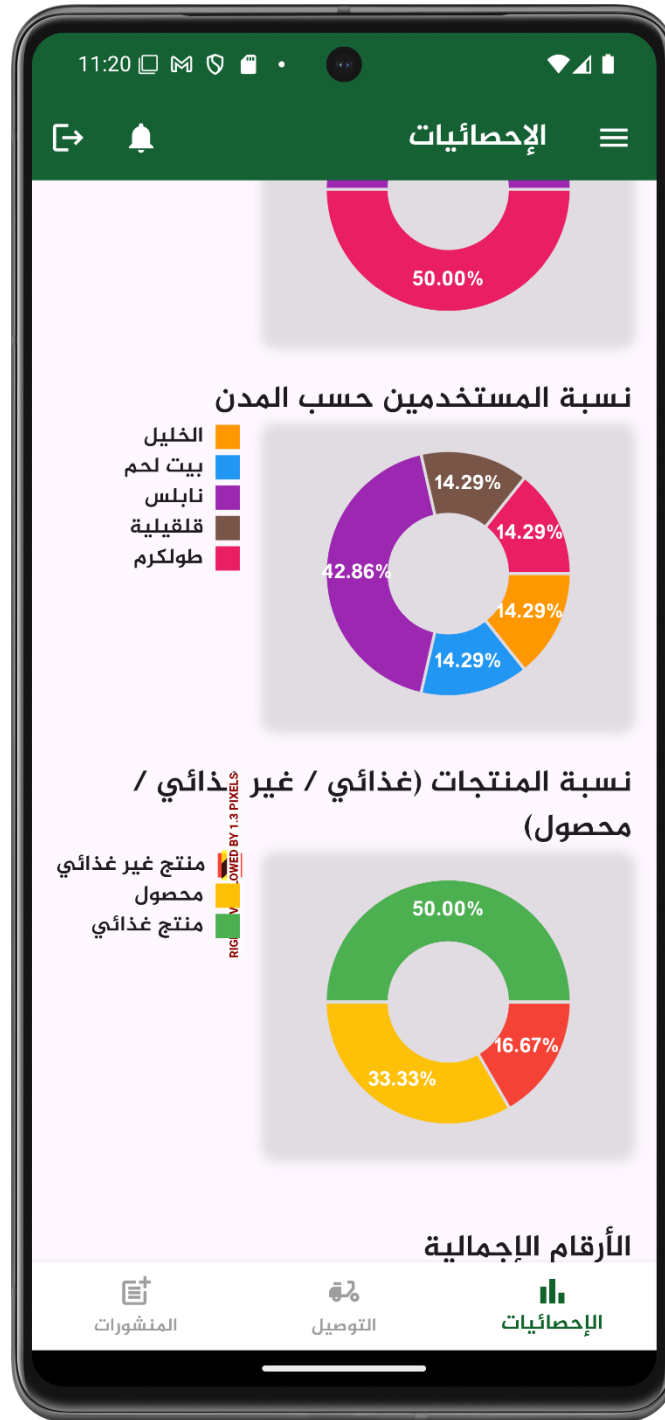


Figure 77 Admin statistics page 2

All these charts were built using the pie charts form by giving the name, and percentage, then the chart built.

Then there is a part that shows the numbers of customers, owners, delivery men, products, lands, and production lines in the application.



Figure 78 Admin statistics page 3

Delivery men:

On this part, the admin can check for all delivery men who are accepted and they currently work with the application, rating them and deleting them.

He can filter the delivery men by their cities, the filter bar gives him the cities that belongs to one man at least.

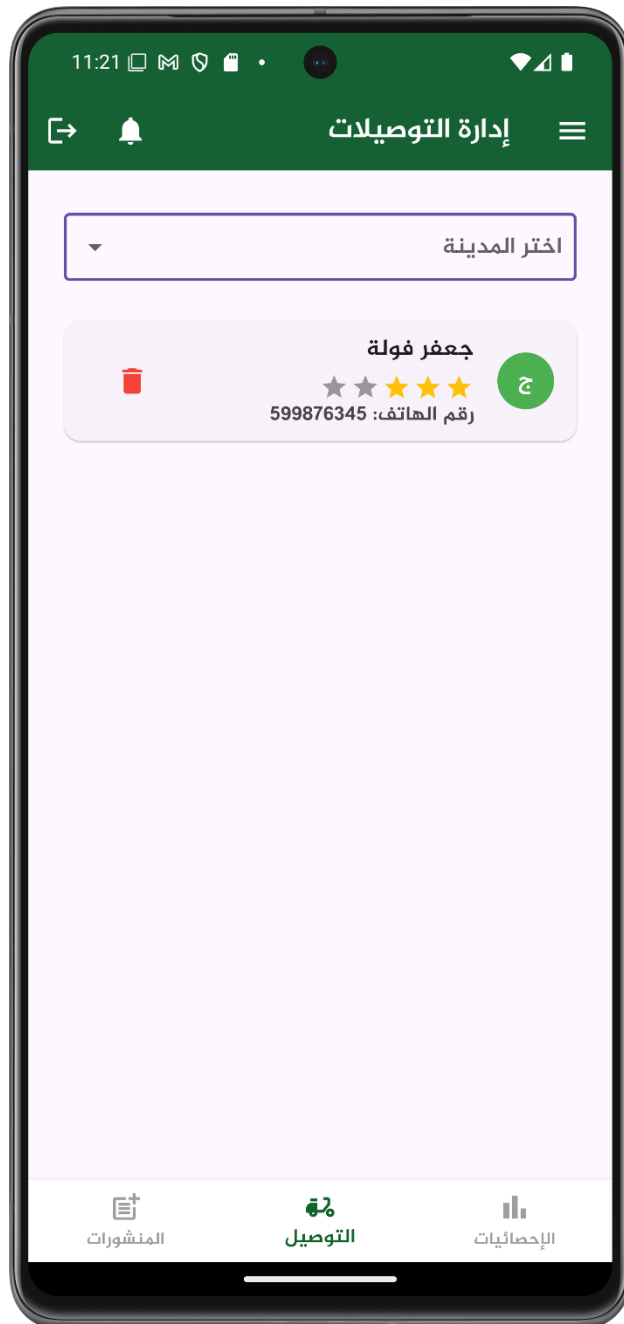


Figure 79 Admin- delivery men page

Application posts:

This section is where the admin can see all the current posts published on the application, with three parts: the land, lines and products.

With the ability to filter the lands and lines by cities and the products by their categories.



Figure 80 Admin- Application posts

Admin Notifications:

At the top bar, there is a notification icon, which opens the admin notifications page.

The admin notification is restricted to having a new delivery work request, to check for it.

By pressing on the notification, the delivery requests page will be opened.



Figure 81 Admin Notifications

By pressing on the three lines at the top right corner, the admin custom drawer opens, it includes different sections, Let's go through them one by one



Figure 82 Admin custom drawer

Main page advertisements:

At this page, the admin can control the images appears on the advertisement's slider on the customers and owners home page.

The admin can check for current images, add what he wants, and delete or edit the existed ones, and by add or delete, the slider will change automatically based on the final images number.

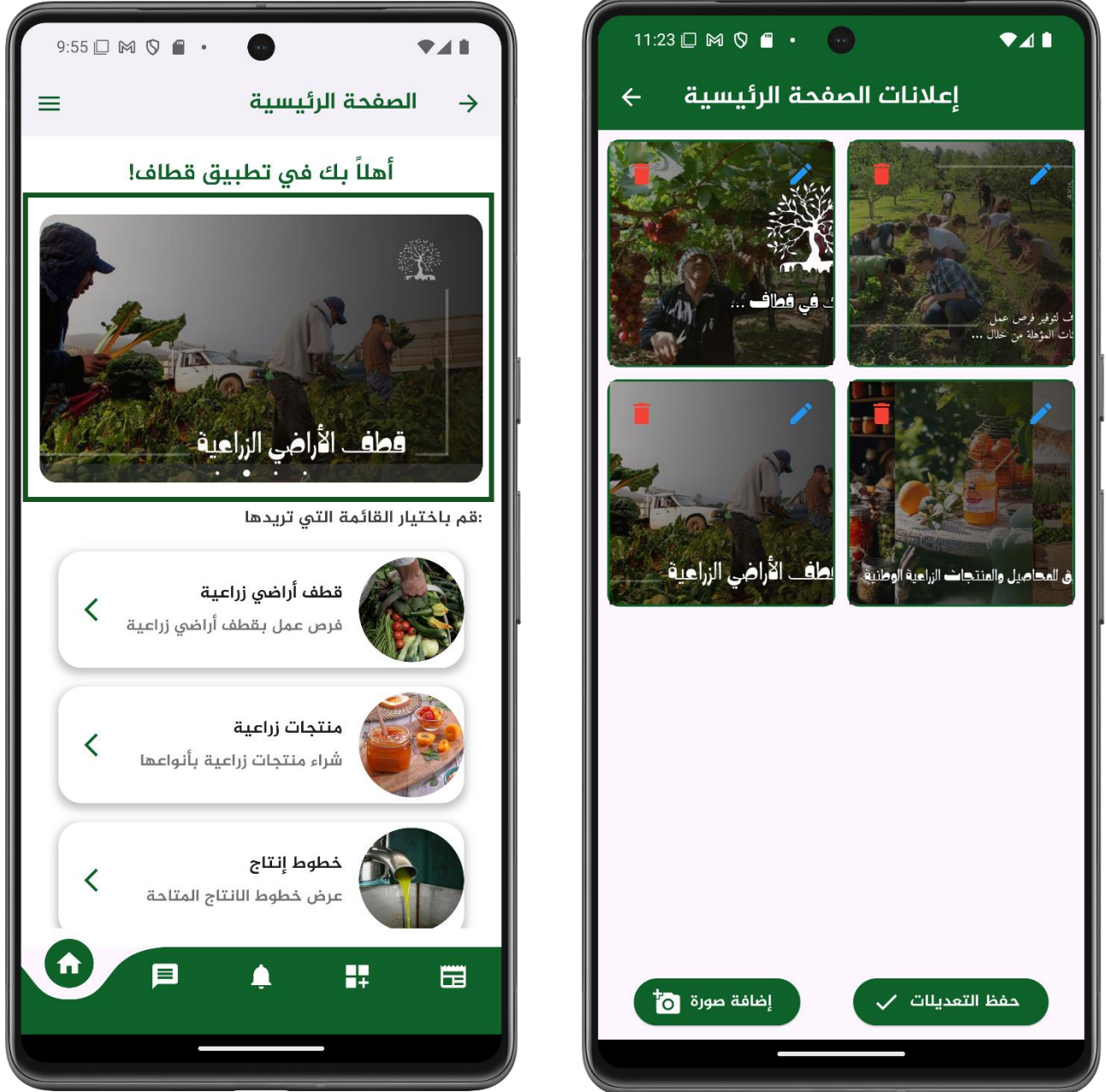


Figure 83 Admin- Main Page advertisements

Products page advertisements:

At this page, the admin can control the images appears on the advertisement's banner on the products page.

The admin can check for current images, add what he wants, and delete or edit the existed ones, and by add or delete, the banner will change automatically based on the final images number.

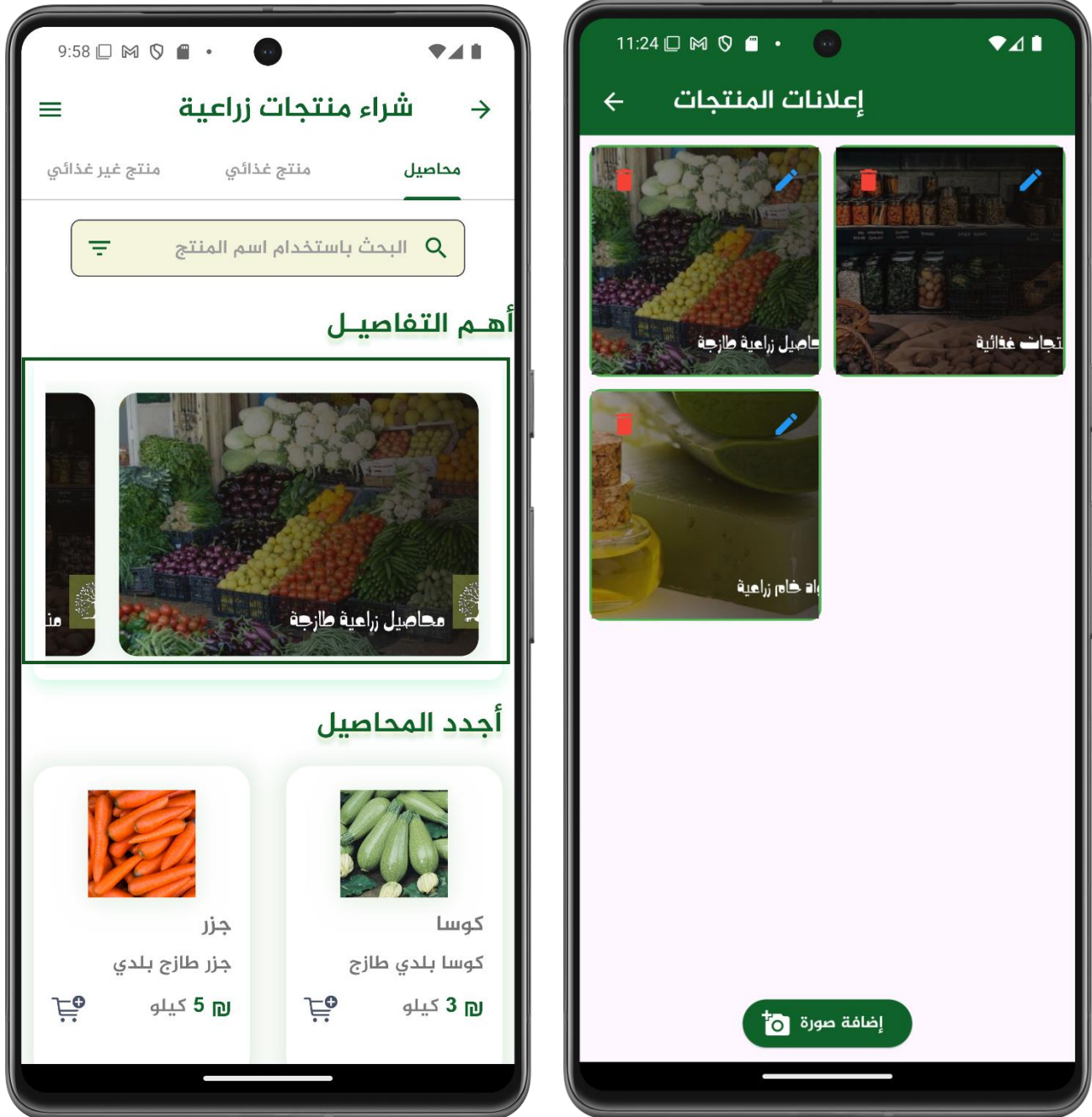


Figure 84 Admin- Products Page Advertisements

Create Advertisement:

This page allows the admin to create special advertisements, which appears at the advertisements part in customers' accounts

The admin specifies the ad title, content, image, and the button text, and then press create, so, the ad now appears to customers.

11:24

← إنشاء إعلان جديد

عنوان الإعلان
أدخل عنوان الإعلان

نص الإعلان
أدخل نص الإعلان

نص الزر
أدخل نص الزر

إضافة صورة
إضافة صورة للإعلان

إنشاء الإعلان

Figure 85 Admin- Create Advertisement

Check for advertisements:

The admin can check for previous published ads by press on the advertisements section at custom drawer, here, the admin can edit or delete the advertisements and save the edits.

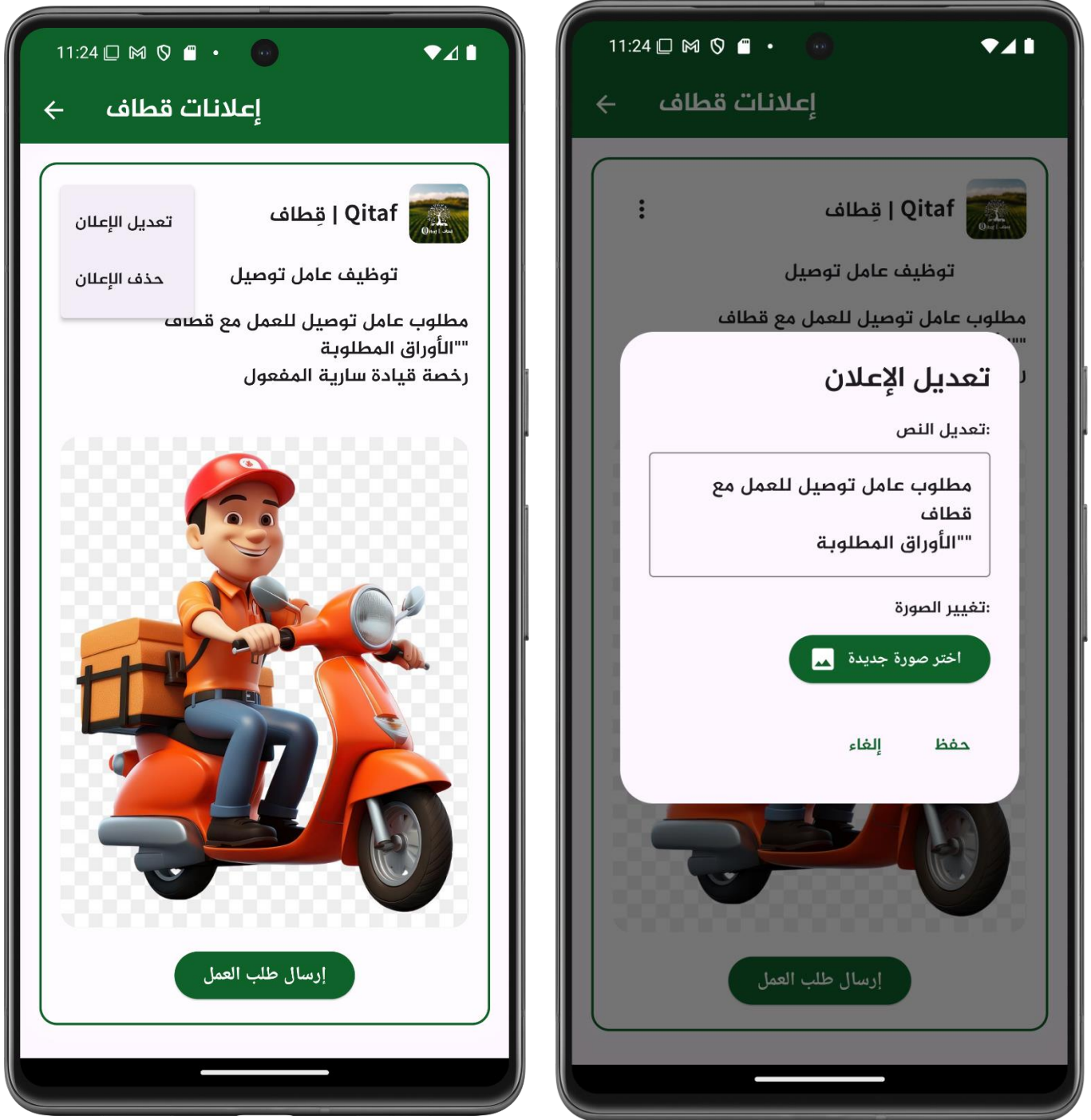


Figure 86 Admin-Ads edit and delete

Delivery work requests:

As mentioned before, the customers apply to work with the application as a delivery man, and upload their license, now, the auto-accepted requests come to this section, to be reviewed by the admin, and then accept or deny the requests.

The request shows all driver details, with the ability to open and check the license info.



Figure 87 Admin- Review Delivery requests

By pressing on the 'accept' button, then the customer will have 2 accounts in the application, a normal customer account, and a delivery account, then he can choose between them when log in. The customer will be notified by the admin decision when it is taken.

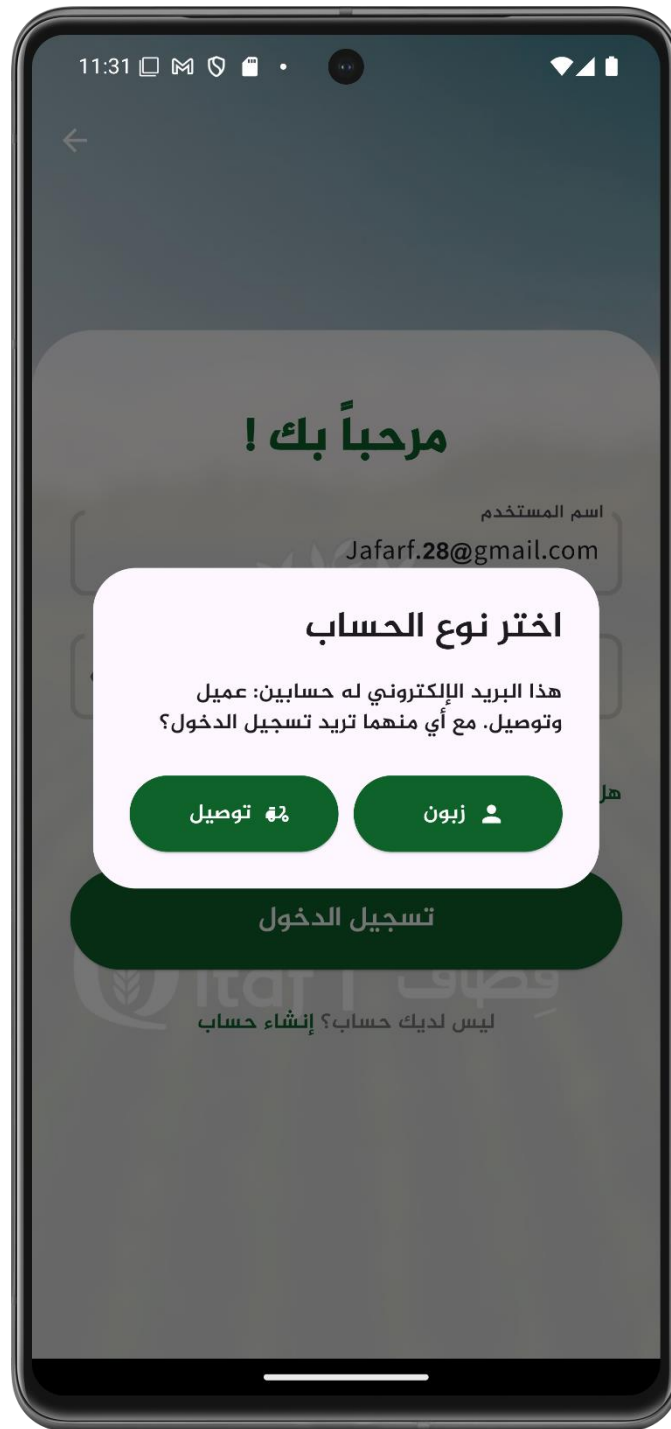


Figure 88 Delivery + Customer account

Now the admin is done, lets login as a delivery man and see how the delivery process goes!

Once the user chooses to login as a delivery man, this takes him to the page where the not taken orders appear, where he can choose an order and take it to deliver it

Firstly, the delivery man must choose the location, from where he will start his delivery by pressing on 'choose location' button, then the map opens, and he choose the location

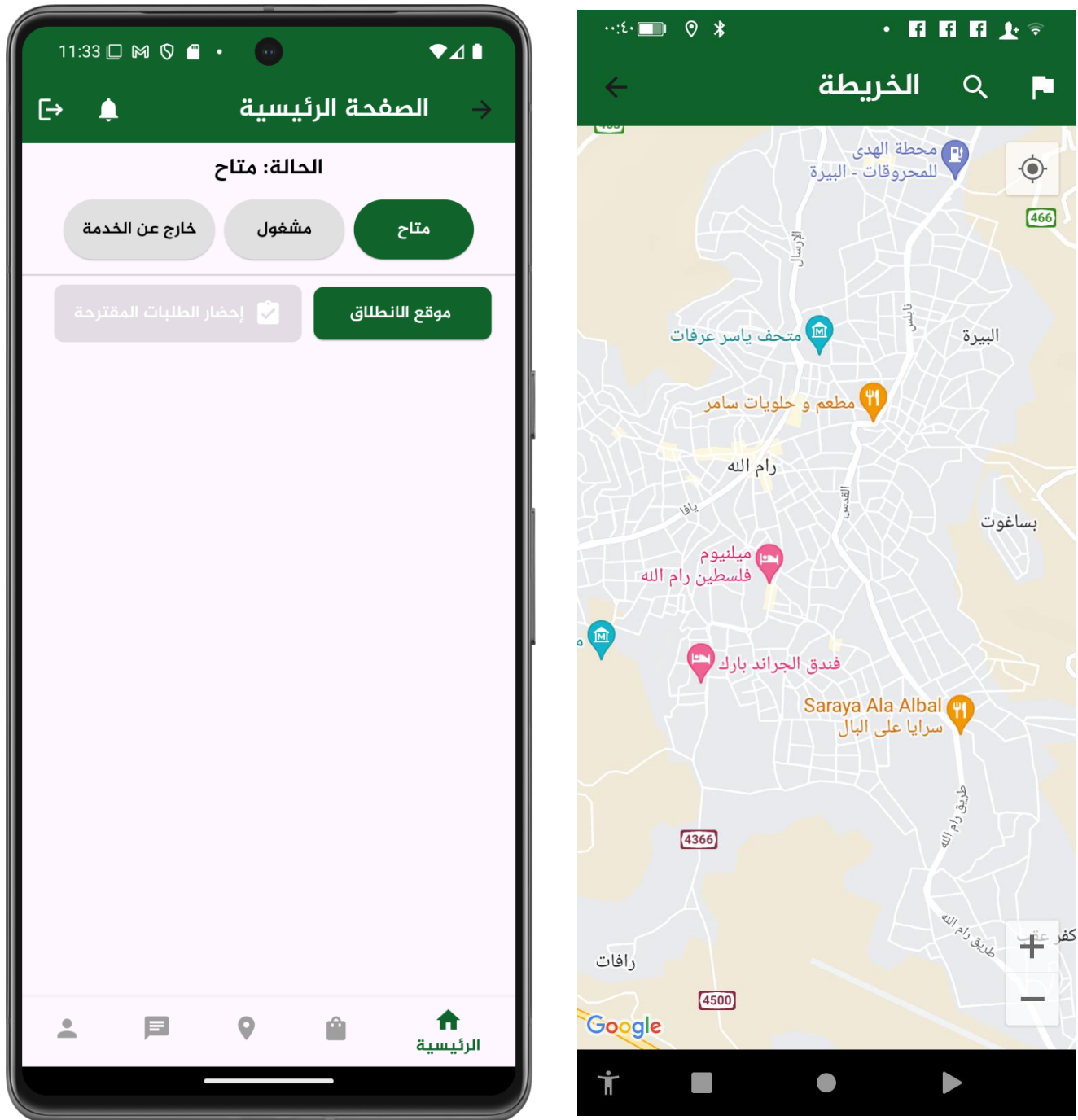


Figure 89 Delivery- Specify start location

Once the location is chosen, then the 'fetch orders' button become available, by pressing it, the delivery can choose between get fast delivery orders on normal delivery.

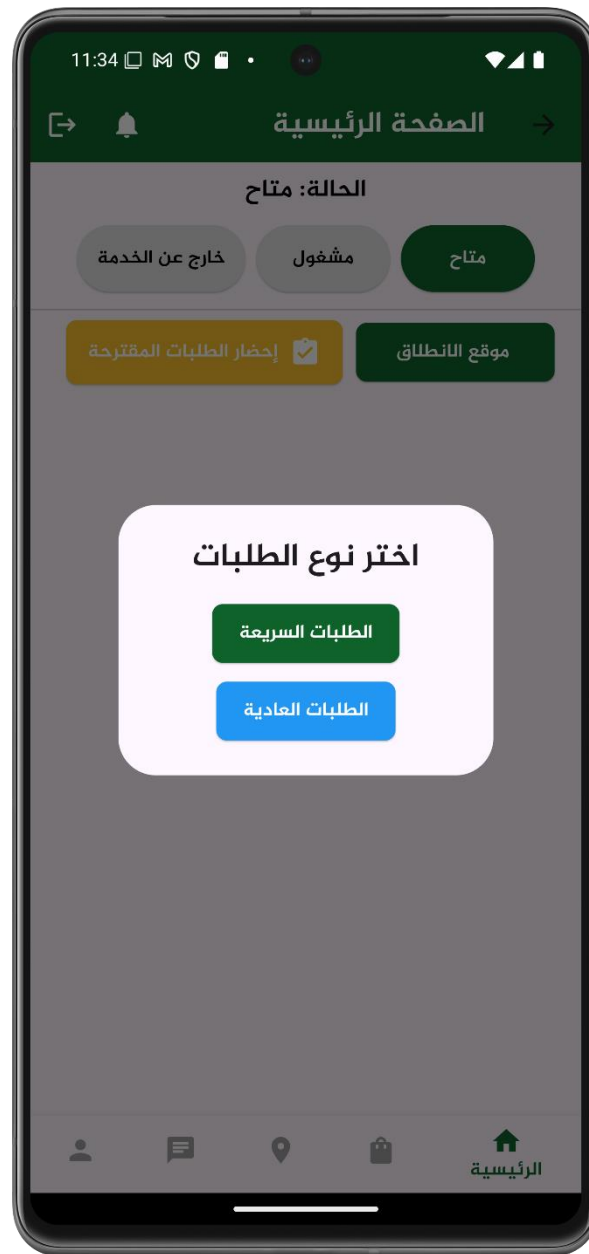


Figure 90 Delivery- choose orders type

Let's talk about two options!

Get fast orders:

As explained before, the fast delivery means delivering the whole order elements together, so, when the delivery chooses it, all undelivered fast orders appear on the page, to let him check, and choose the appropriate one.

But the system also provides the ideal path the delivery can go with to achieve the fast delivery process.

For this feature, the traveling salesman AI method was used, which takes all order elements coordinates, with the delivery start coordinates as a start point, and the order recipient location as end point, then the order of taking the elements from different cities and locations are done by TSM.

The orders appear to the user in a correct order, and pressing in any element takes the delivery to a map shows the element location and the path between delivery current location and the element location.



Figure 91 Delivery-Get Fast Orders

After checking the orders, the delivery can accept the order he wants by press the ‘accept’ button on the bottom of the order.

Then the delivery man status become ‘Busy’ and the accepted order appears on the accepted orders section.

The accepted orders section appears the current order the delivery accept and deliver, with two buttons which allows the delivery man to update the item status whether the customer takes it from the delivery or not, if he takes it, the item status become delivered, and this appears to the item owner, and if not, the owner can report the user as mentioned before.

For fast orders with different owners for the elements, the status updated for every element in the order, to send the feedback to all owners

Also in this page, pressing on an element, takes the user to a map showing the locations, path, and estimated time and distance.

After choosing ‘delivered’ or ‘Undelivered’ then the delivery man status returned to available, to take other orders if he want.



Figure 92 Delivery- Accepted fast orders

Get Normal orders:

Normal orders means that the order elements may not be delivered at the same time, based on its owner city,

So, to reduce the time, the process is done like this

Firstly, all undelivered elements from the normal orders grouped based on their source and destination cities

Then, the groups which their source city is the same as the delivery city, appears to the delivery man, so he can choose to which city he will go and deliver all its elements

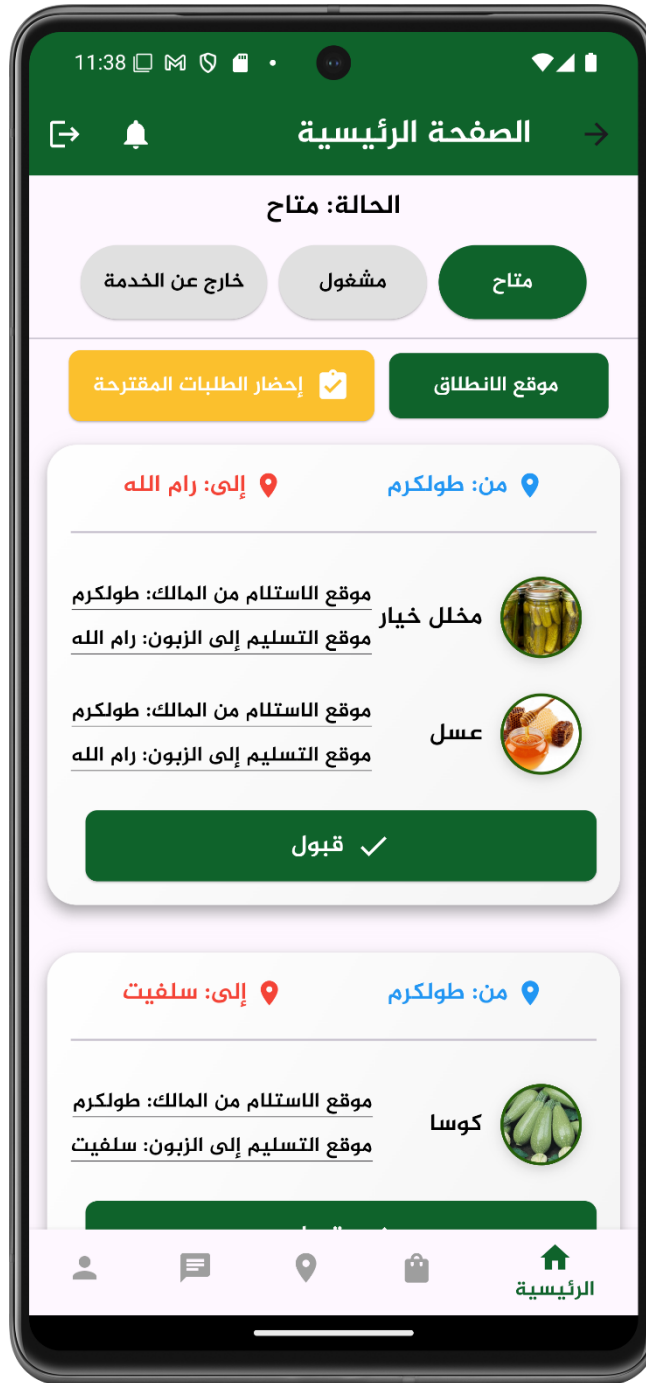


Figure 93 Delivery-Get Normal orders

at this example, since the delivery man city is 'Tulkarm', so all elements with their owner's city is Tulkarm appears here, grouped by destination cities, where the customer chooses to take the orders.

When pressing on the element pick-up location or recipient location, the app takes him to a map showing the locations on the map.

The delivery man can accept one group, and then his status become busy, and the group appears on accepted orders page.

Since the elements belong to different orders, so different customers, so the status buttons added for every element to choose if the customer takes the order or not, then the owners got feedback and gave the reports due to it.



Figure 94 Delivery- Accepted Normal Orders

The delivery chat is the same chat for other users, he can chat with the customers to arrange the recipient process.

Also, the delivery man can edit his delivery profile info from profile page:



Figure 95 Delivery man profile page

And that is all about the application!

3.3.2 Website

Our website uses the same APIs to build all its pages, and it includes all of the features and user interfaces of the mobile application.

- Welcome and Login Pages:

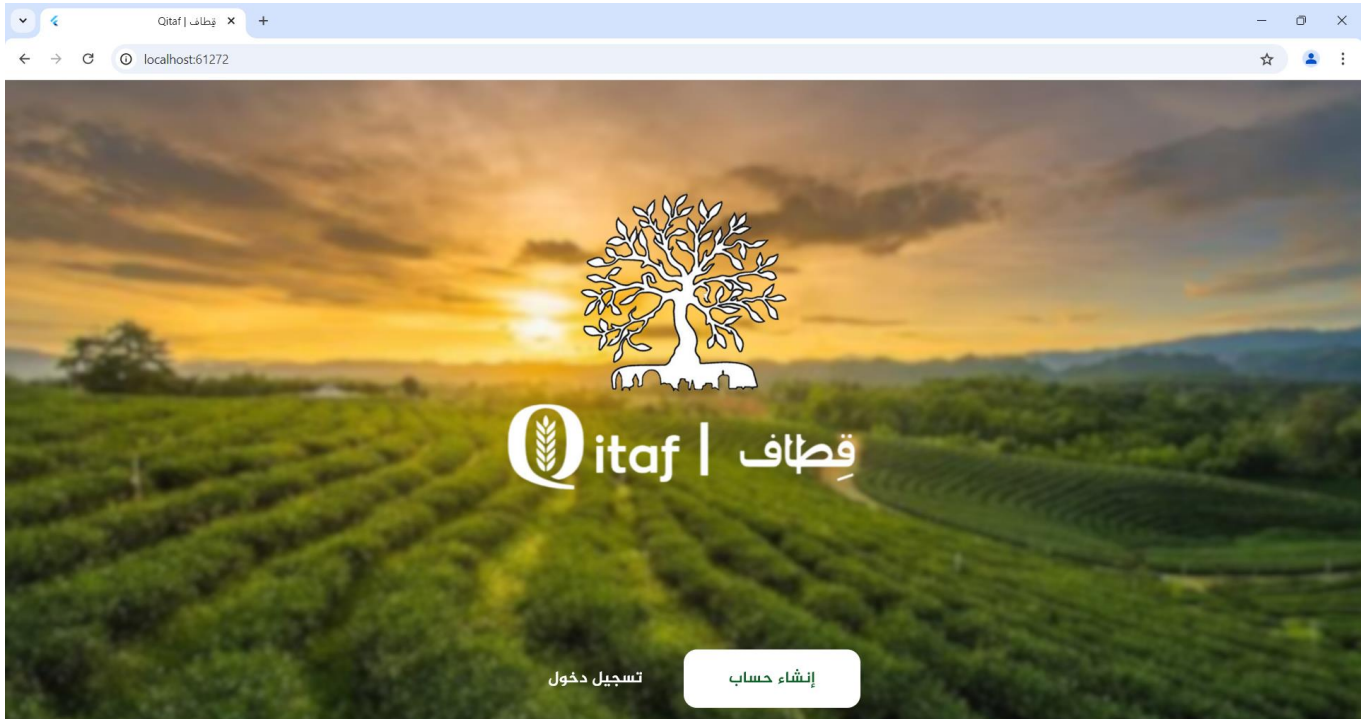


Figure 97 Website welcome page



Figure 96 Website login page

○ Sign Up Pages:

Qitaf | قطاف

localhost:61272

قم بإدخال بياناتك لإنشاء الحساب الخاص بك

الاسم
ورود

اسم العائلة
فوله

البريد الإلكتروني
woroudfouleh26@gmail.com

الهاتف
Code +970 569745986

كلمة السر
تأكيد كلمة السر

التالي

هل لديك حساب؟ تسجيل دخول

Qitaf | قطاف

localhost:61272

قم بإنشاء الحساب الخاص بك

الموقع
شارع 24

تاريخ الميلاد
2002 4 26

الجنس: ذكر أنثى

التالي

تسجيل دخول هل لديك حساب؟

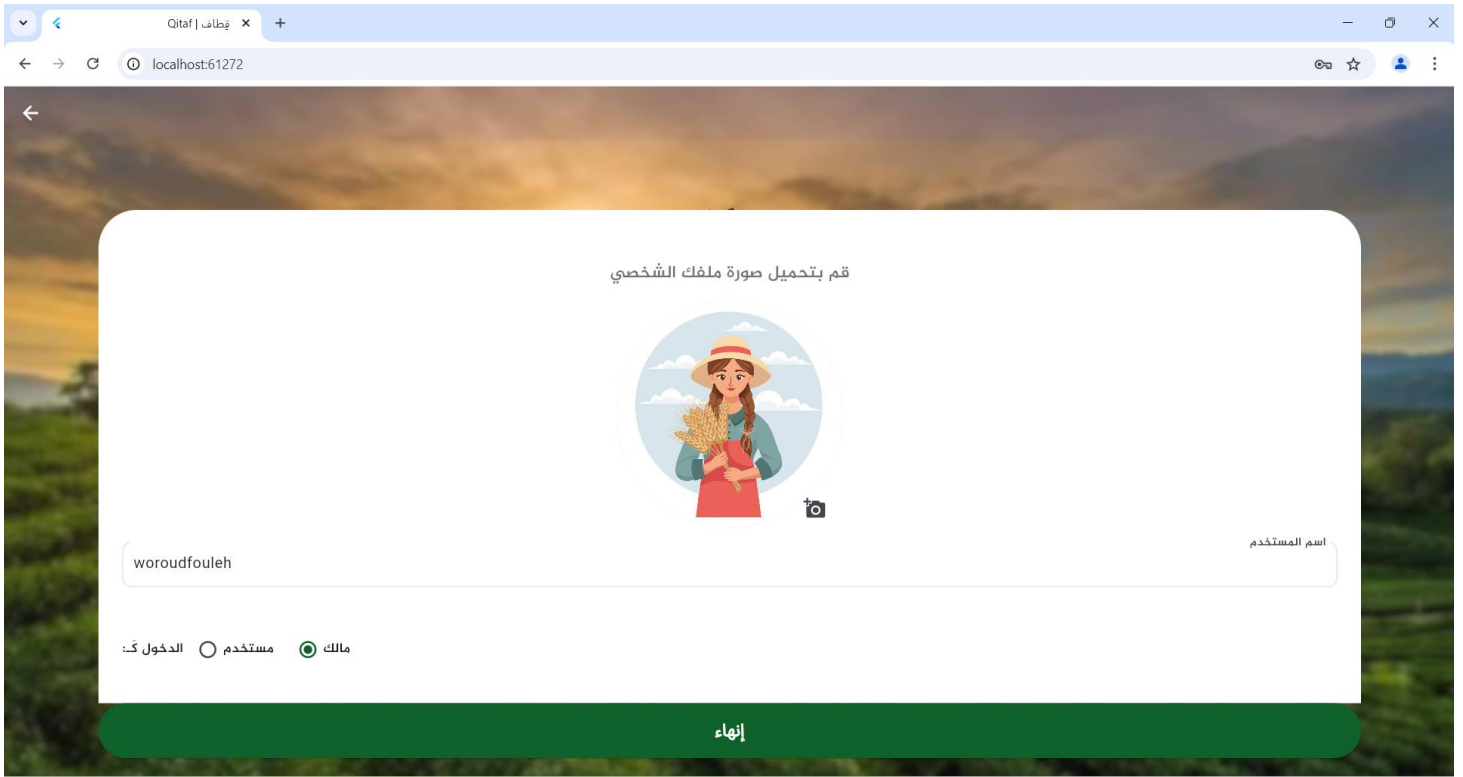
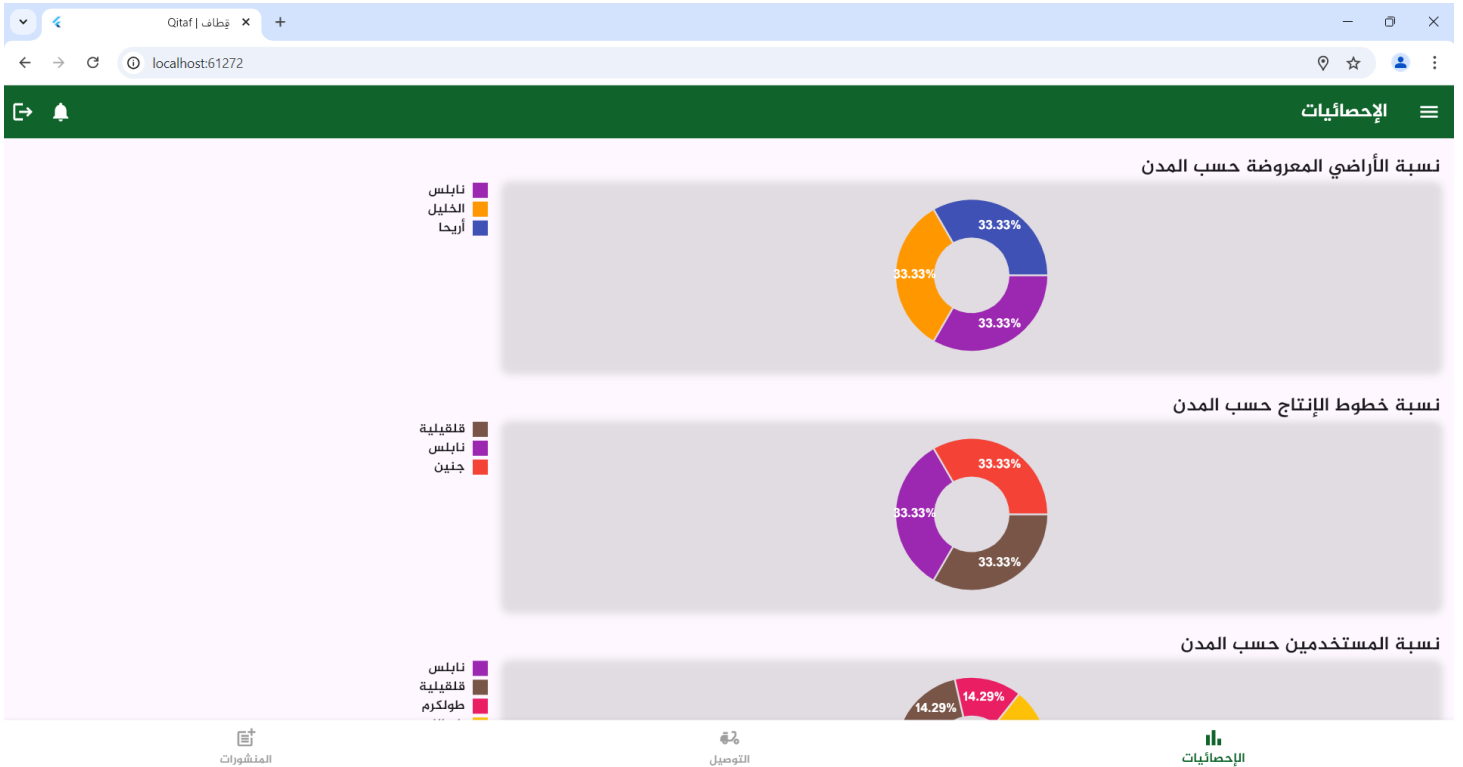


Figure 98 Website sign up pages

Admin Website Pages



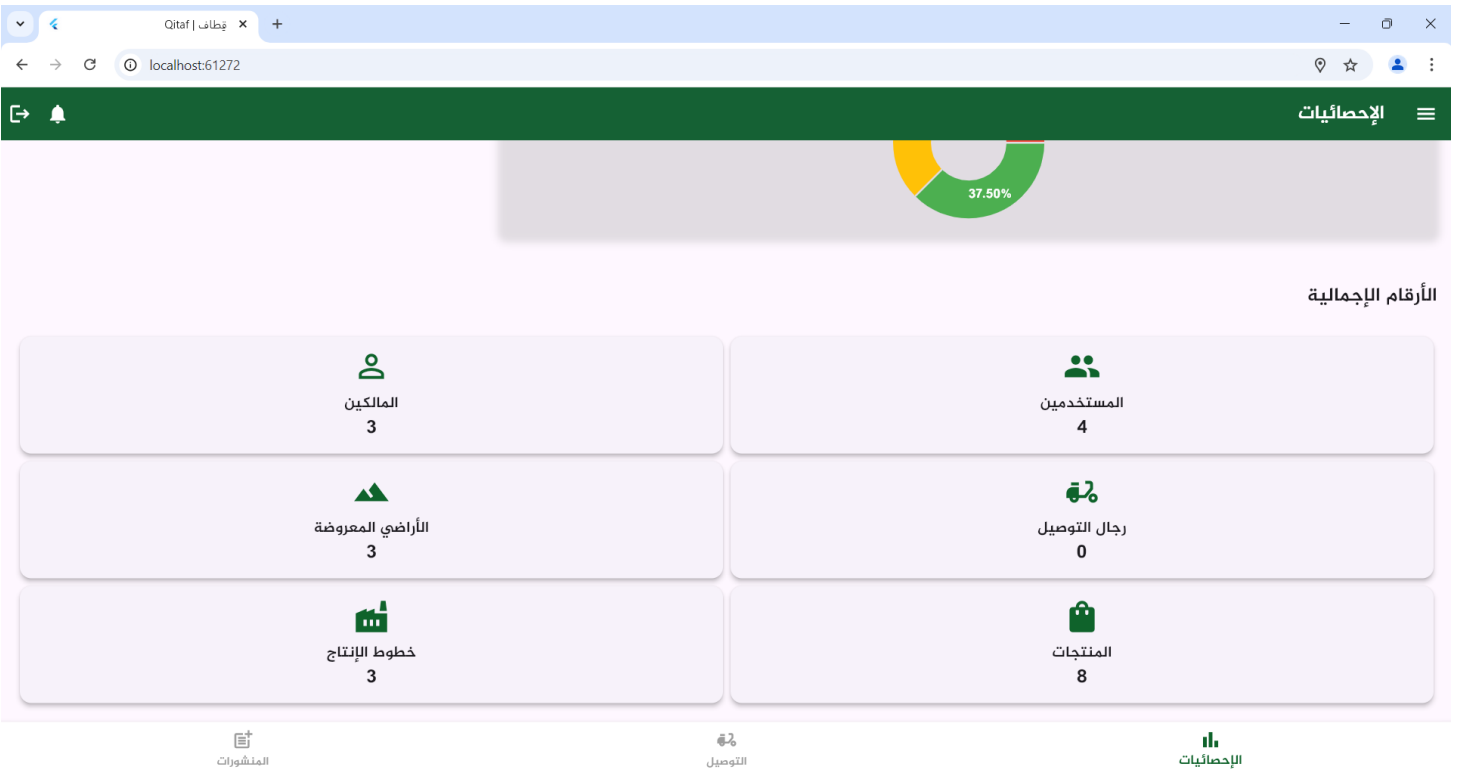
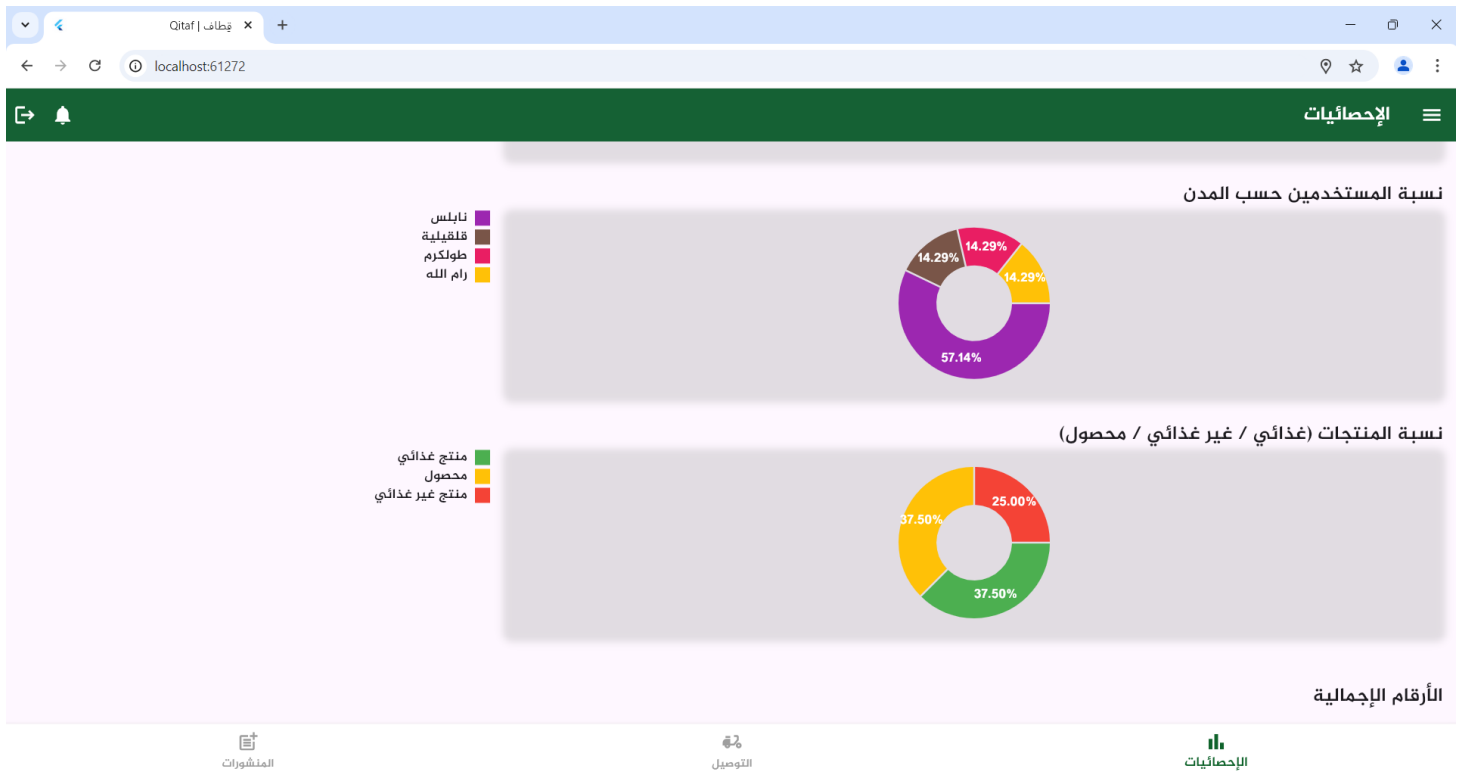


Figure 99 Admin Website Statistics Page

المشورات

خطوط إنتاج منتجات أراضي

اختر المدينة كل المدن

أرض العنب

woroud123

الخليل - اراضي عنب يطا

المساحة: 4

عدد العمال: 4

السعر: 30 / لكل ساعة

2025-01-26 - 2025-01-24

ساعات العمل: 8:00 AM ص - 4:00 PM م

ثمار عنب

أرض النخيل

woroud123

أريحا - دير القلط، ارض النخيل

المساحة: 2

عدد العمال: 1

المنشورات التوصيل الإحصائيات

المشورات

خطوط إنتاج منتجات أراضي

اختر الصنف منتج غذائي

مربي فراولة

التقييم: 4

الكمية: 2 علبة

السعر: 25 / لكل علبة

الوصف: مربي فراولة طبيعي

مدة جهوز الطلب: 2 أيام

اسم صاحب الأرض: woroud123

تاريخ النشر: 20-01-2025

زيت زيتون

التقييم: 5

الكمية: 47 لتر

السعر: 80 / لكل لتر

الوصف: زيت زيتون طبيعي نقي وطازج

مدة جهوز الطلب: 2 أيام

اسم صاحب الأرض: woroud123

تاريخ النشر: 24-01-2025

المنشورات التوصيل الإحصائيات



Figure 101 Admin Website posts page

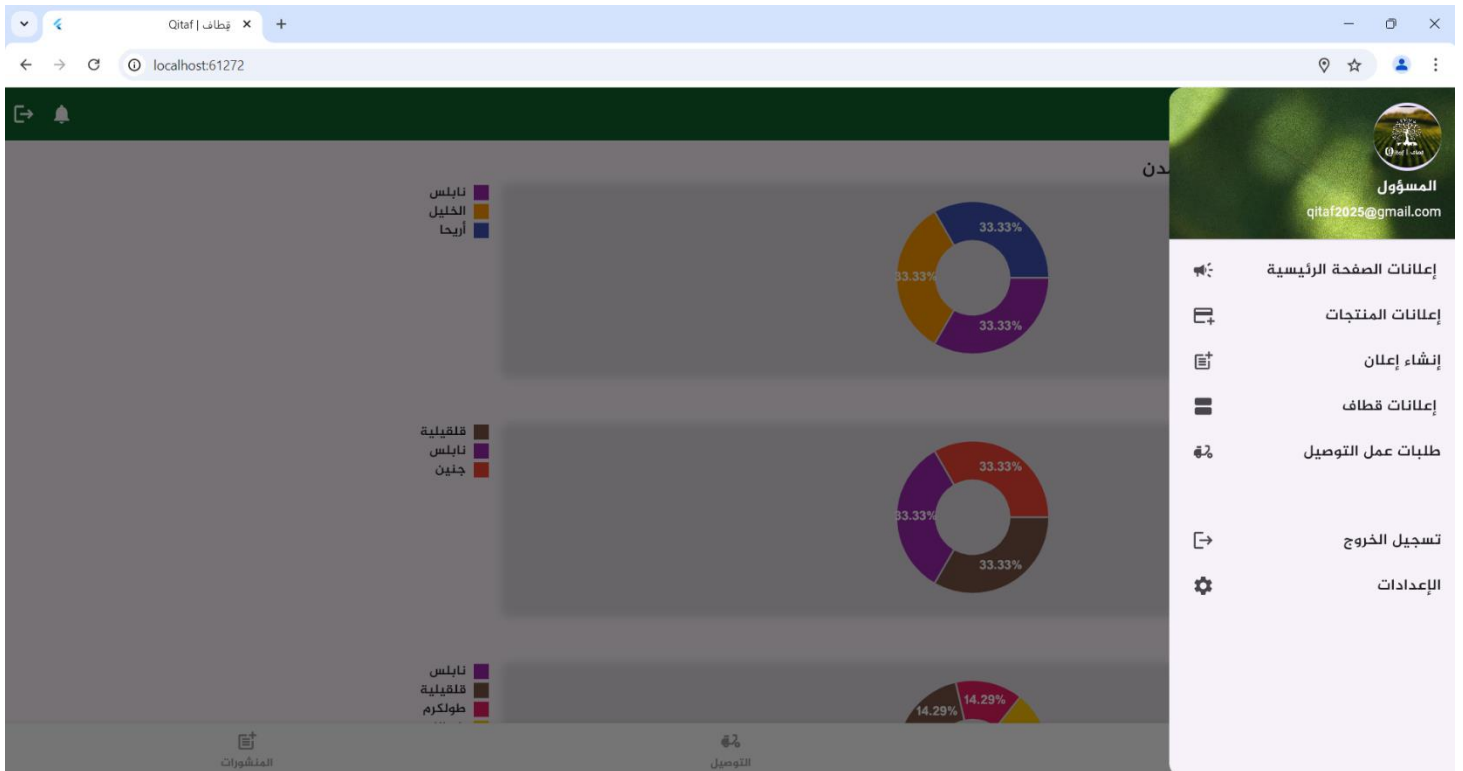
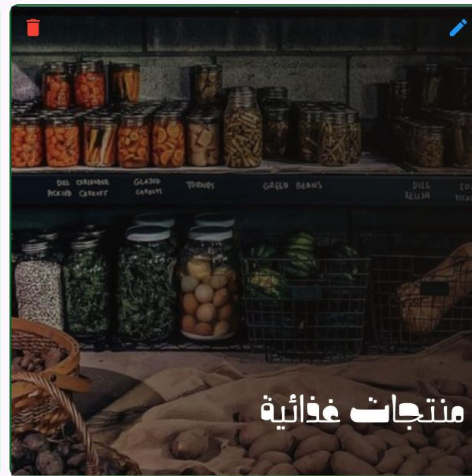


Figure 100 Admin Website Custom drawer

إعلانات الصفحة الرئيسية



إعلانات المنتجات



إضافة صورة حفظ التعديلات

Qitaf | قطاف x +

localhost:61272

← إنشاء إعلان جديد

عنوان الإعلان
أدخل عنوان الإعلان

نص الإعلان
أدخل نص الإعلان

نص الزر
أدخل نص الزر

إضافة صورة
إضافة صورة للإعلان

إنشاء الإعلان

Qitaf | قطاف x +


localhost:61272

← إعلانات قطاف

تعديل الإعلان
حذف الإعلان

Qitaf | قطاف

مطلوب عامل توصيل
مطلوب عامل توصيل



انضم إلينا

Figure 102 Admin Website Ads pages

○ Customer Pages

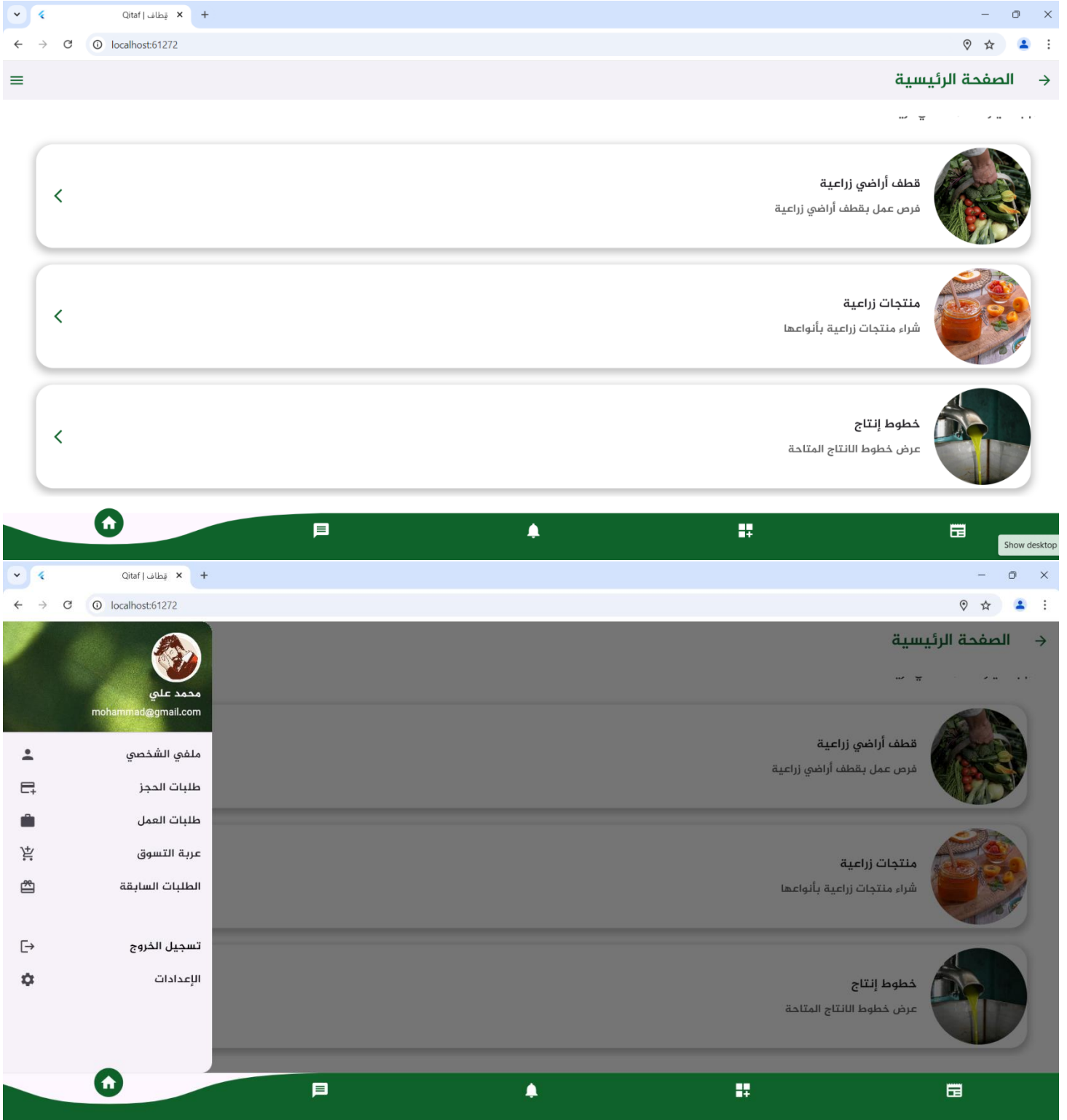


Figure 103 Website Customer pages I



التقييم: 5 عدد النقاط: 2

✎	الاسم الأول محمد
✎	الاسم الأخير علي
✎	كود الدولة 970+
✎	رقم الهاتف 598753985
✎	المدينة

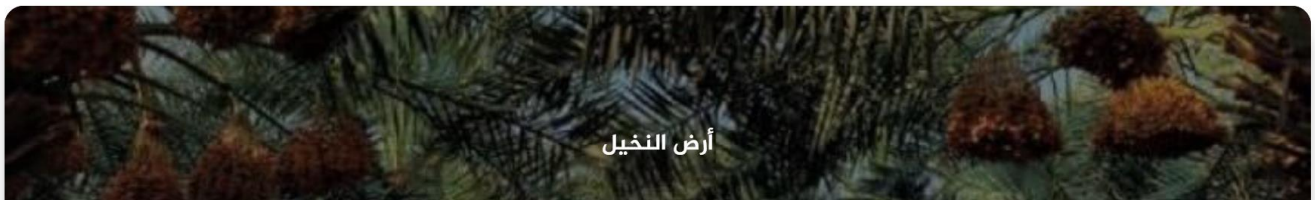
✎	علي
✎	كود الدولة 970+
✎	رقم الهاتف 598753985
✎	المدينة طولكرم
✎	الشارع شارع نابلس
✎	البريد الإلكتروني mohammad@gmail.com

حفظ التغييرات

تغيير كلمة السر

ابحث حسب المحصول المحصول

الأراضي الزراعية المتاحة للقطف





ورود فوله
woroud123

أرض النخيل

بلح 🍏 أريحا , دير القلط , ارض النخيل

عدد العمال: 1 👤 المساحة: 2 دونم 📏

أيام العمل : (2025-01-21) - (2025-01-23) 📅

أوقات العمل : 5:00 PM - 9:00 AM 🕒

طلب الإنضمام إلى العمل 🏠

20 / ساعة 🕒



ورود فوله

المنشورات | دردشة مع المالك
11 | 🗨️

معلومات المالك

✉ woroudfouleh26@gmail.com

☎ +972 569706470

📍 نابلس , نابلس شارع 24

Figure 104 Website Customer pages2

Qitaf | قطاف × +

localhost:61272

شراء منتجات زراعية →

متج غير غذائي متج غذائي محاصيل

البحث باستخدام اسم المنتج 🔍

هم التفاصيل



محاصيل زراعية طازجة



منتجات غذائية



مواها خام زراعية

أجدد المحاصيل



Qitaf | قطاف × +

localhost:61272

شراء منتجات زراعية →

متج غير غذائي متج غذائي محاصيل

أجدد المحاصيل



ليمون
ليمون طازج بأقل الأسعار
5 ريال كيلو



بندورة
بندورة طازجة بأرخص الأسعار
7 ريال كيلو



خيار بلدي
خيار طازج
8 ريال كيلو

Qitaf | قطاف × +

localhost:61272

← → ↻ 📍 ☆ 👤 ⋮

🍽️ **شراء منتجات زراعية** →

منتج غير غذائي **منتج غذائي** محاصيل

أجدد المحاصيل

دبس رمان
دبس رمان يتميز بطعمه الفريد ويتم انتاجه وقت الطلب ليكون ذو جودة
12 ₪ علبة

زيت زيتون
زيت زيتون طبيعي نقي وطازج
80 ₪ لتر

مربى فراولة
مربى فراولة طبيعي
25 ₪ علبة

Qitaf | قطاف × +

localhost:61272

← → ↻ 📍 ☆ 👤 ⋮

زيت زيتون

ورود فوله

02

★★★★★

المدة الزمنية لتحضير الطلب: 2 أيام

زيت زيتون طبيعي نقي وطازج

إضافة إلى سلة المشتريات

80 ₪ / لتر

Figure 105 Website Customer pages3

خطوط الإنتاج →

ابحث حسب المادة الخام نوع المادة الخام

خطوط الإنتاج المتوفرة



ورود فوله
woroud123

انتاج مخلات



خط انتاج مخلل خيار شههي وذو جودة

عدد ساعات جهوزية الطلب: 7 أيام

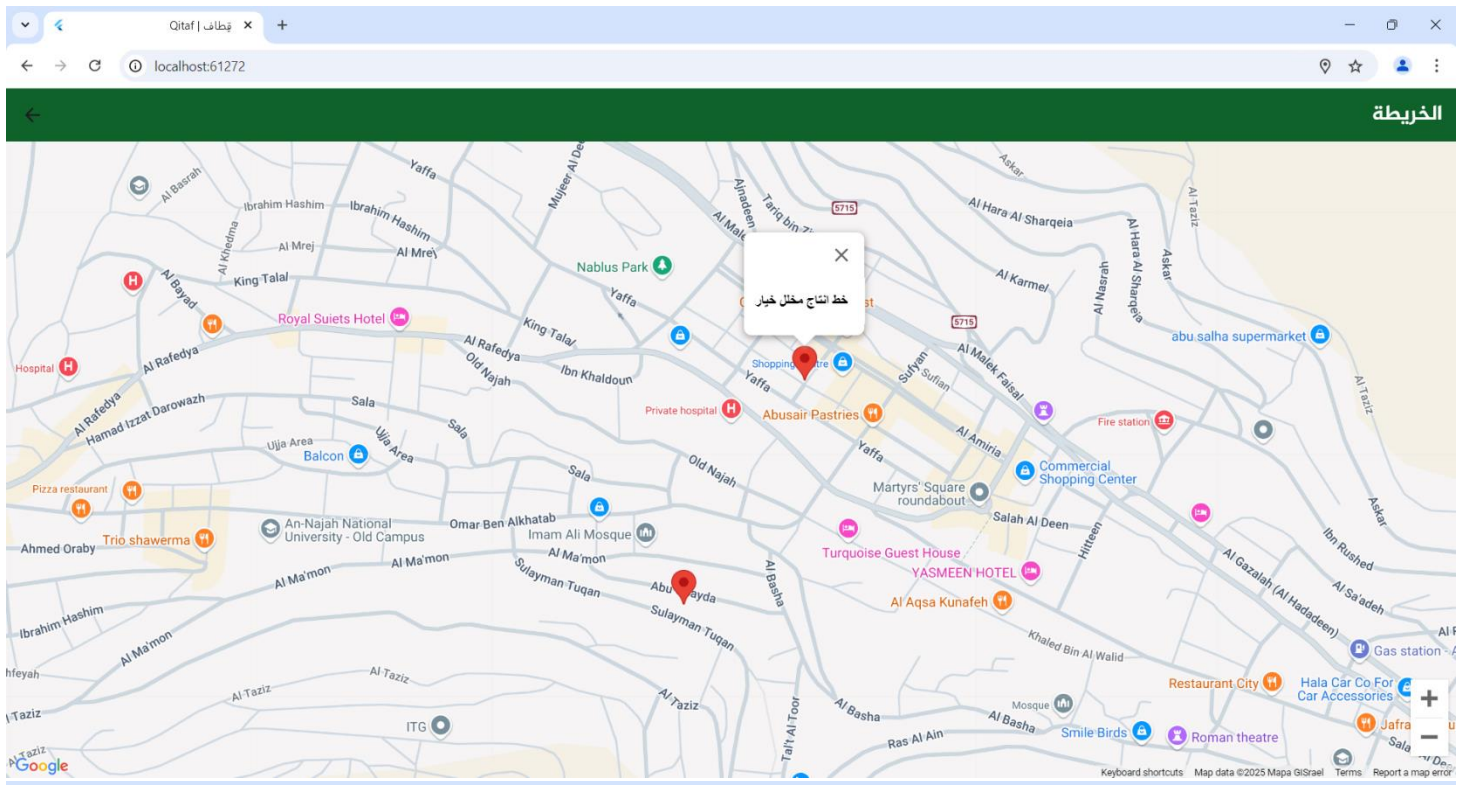
خيار , جنين , خط انتاج مخلل خيار

أيام العمل: [الأحد، الإثنين، الثلاثاء، الأربعاء، الخميس]

وقت الدوام: 08:00 - 18:00

10 / كيلو



إضافة حجز



الإثنين الثلاثاء الأربعاء الخميس	ساعات العمل 08:00 - 18:00
<input type="text"/>	0569874123
<input type="text" value="كيلو"/>	5
<input type="text"/>	خيار
<input type="text" value="2025-01-26"/>	
<input type="button" value="إضافة موعد"/>	
50 ₪	الإجمالي الفرعي:
2.5 ₪	ربح للمنتجة (5%):
52.5 ₪	المبلغ الكلي:
<input type="button" value="تأكيد الحجز"/>	



Figure 106 Website Customer pages4

-  زيت زيتون
2 لتر
160.00 ج.د.
-  بندورة
3 كيلو
21.00 ج.د.

قم بتعبئة تفاصيل الطلب

اختر مدينة الاستلام
نابلس

رفيديا بجانب التل الاخضر

0569852963

طريقة التوصيل

- توصيل سريع
- توصيل عادي - قطع منفردة

طريقة الدفع

- \$ الدفع عند الاستلام
- فيزا 2187

الإجمالي الفرعي: 181

تكلفة التوصيل: 30

الإجمالي: 211.00

اطلب الآن

قطف | Qitaf

localhost:61272

طلباتي السابقة

مستلم رقم الطلب: 1
السعر: 49.0

تفاصيل تاريخ الطلب: 24-01-2025

غير مستلم رقم الطلب: 2
السعر: 211.0


تفاصيل تاريخ الطلب: 25-01-2025

قطف | Qitaf

localhost:61272

تفاصيل الطلب

211	السعر الإجمالي للطلب
غير مستلم	حالة الطلب
2025-01-25	تاريخ الطلب




زيت زيتون

2 لتر
160

0

+



بندورة

3 كيلو
21

0

+

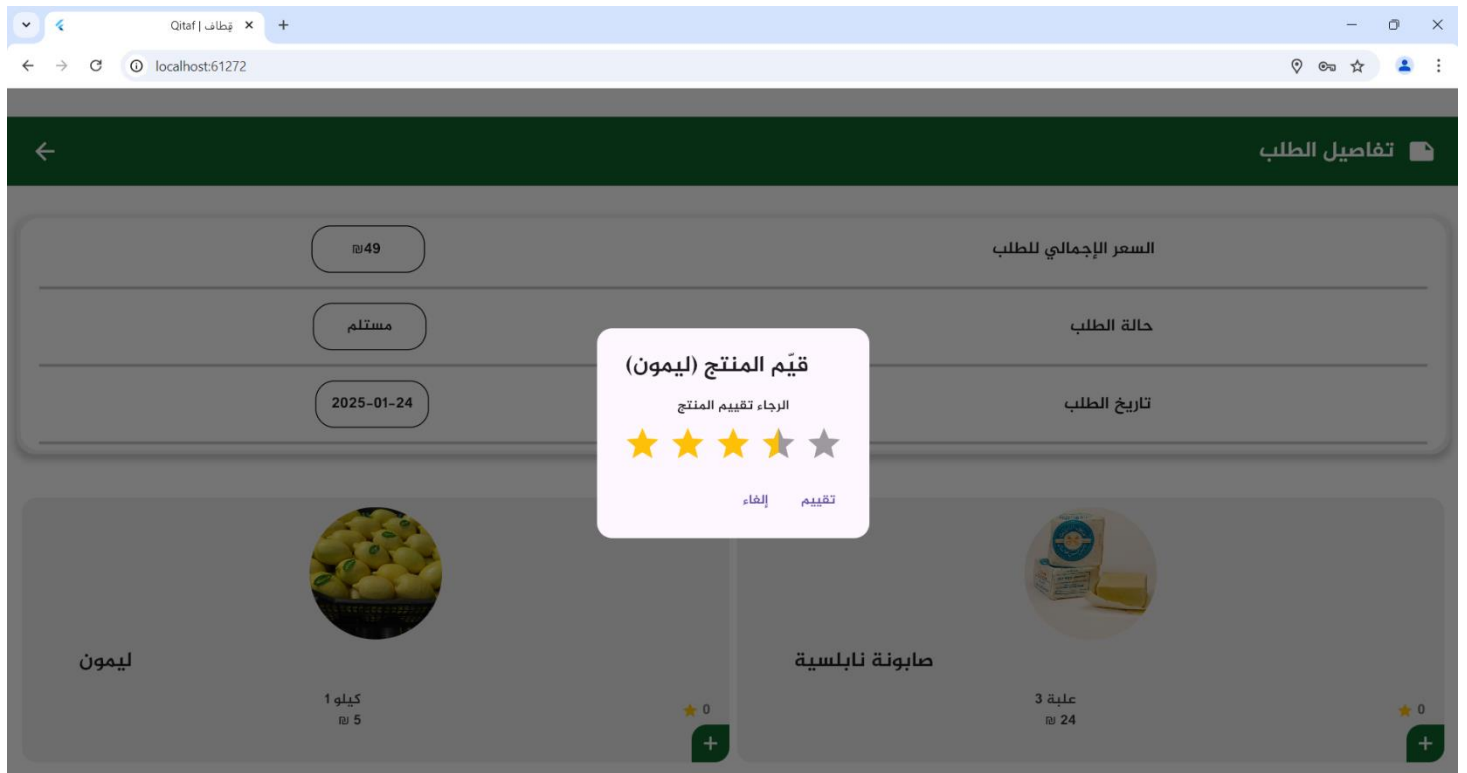


Figure 107 Website Customer pages5

حجوزاتي

مشمش مجفف 4.25 ★

المادة الخام: مشمش

تاريخ الحجز: 24-01-2025

وقت الحجز: 10:00 - 12:30

الكمية: 5 كيلو

السعر: NIS 78.75

حساب مالك خط الإنتاج: narjesadham

ملفي

انتاج مخللات 4.25 ★

المادة الخام: خيار

تاريخ الحجز: 25-01-2025

وقت الحجز: 10:00 - 10:35

الكمية: 5 كيلو

السعر: NIS 52.5

حساب مالك خط الانتاج: woroud123

طلبات العمل

ارض زيتون

نايلس , ارض زيتون نرجس

أيام العمل: 24-01-2025 إلى 26-01-2025

أوقات العمل: 8:00 AM إلى 3:30 PM

أجرة العامل: 20 ₪ / ساعة

المحصول: زيتون

حساب مالك خط الإنتاج: narjesadham

تاريخ تقديم الطلب: 24-01-2025

تم القبول

أرض النخيل

أريحا , دير القلط , ارض النخيل

أيام العمل: 21-01-2025 إلى 23-01-2025

أوقات العمل: 9:00 AM إلى 5:00 PM

أجرة العامل: 20 ₪ / ساعة

المحصول: بلح

حساب مالك خط الإنتاج: woroud123

Qitaf | قطاف

localhost:61272

أرض زيتون

نايلس , أرض زيتون نرجس

أيام العمل: 24-01-2025 إلى 26-01-2025

أوقات العمل: AM 8:00 إلى PM 3:30

أجرة العامل: 20 ساعة / ساعة

المحصول: زيتون

حساب مالك خط الإنتاج: narjesadham

تاريخ تقديم الطلب: 24-01-2025

تم القبول

أرض النخيل

أريحا , دير القلط , أرض النخيل

أيام العمل: 21-01-2025 إلى 23-01-2025

أوقات العمل: AM 9:00 إلى PM 5:00

أجرة العامل: 20 ساعة / ساعة

المحصول: بلح

حساب مالك خط الإنتاج: woroud123

تاريخ تقديم الطلب: 25-01-2025

بانتظار الرد

Figure 108 Website Customer pages6

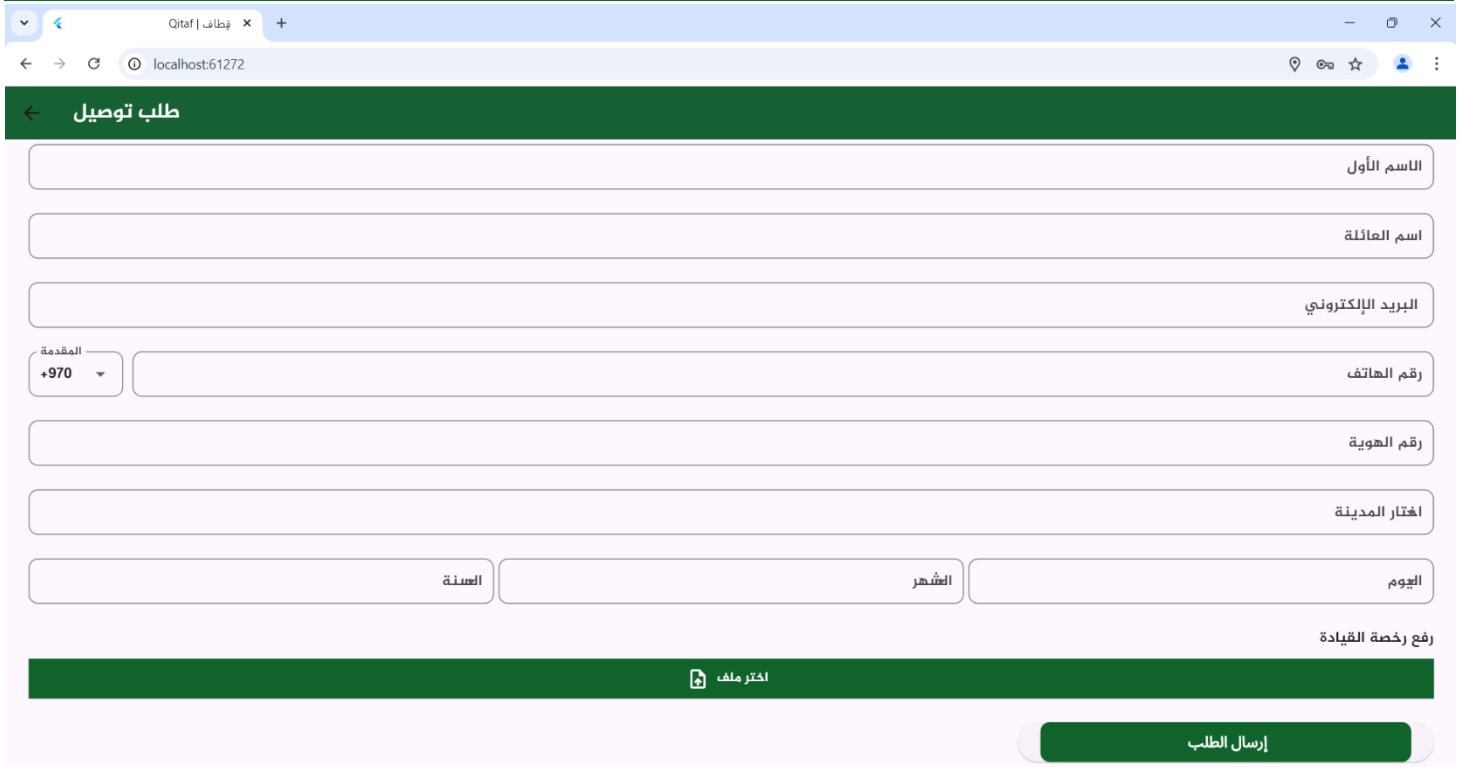
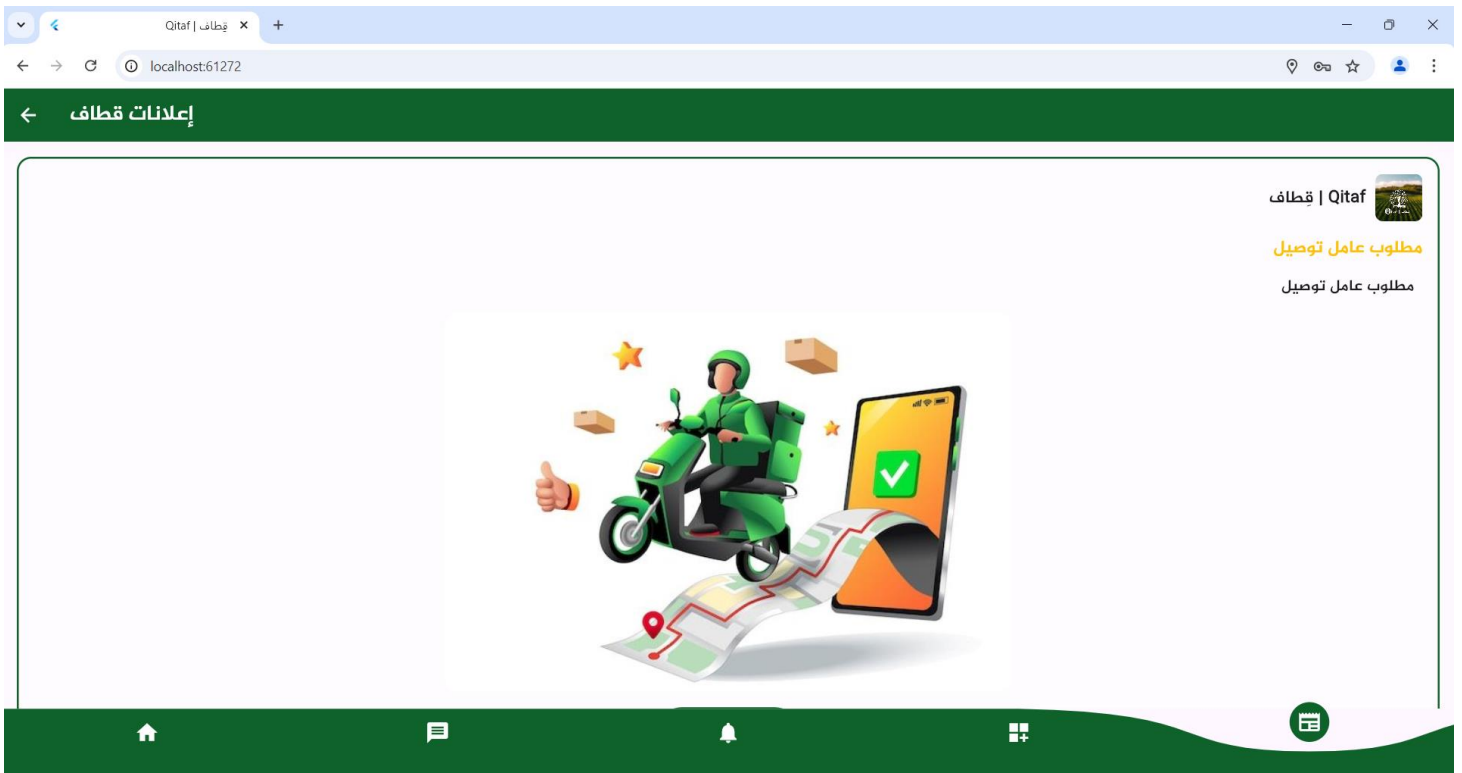


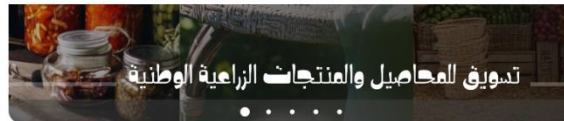
Figure 109 Website Customer pages7

- Owner pages:

أهلاً بك في تطبيق قطاف!



قم باختيار القائمة التي تريدها



قم باختيار القائمة التي تريدها

< منتجات زراعية
شراء منتجات زراعية بأنواعها

< خطوات إنتاج
عرض خطوات الانتاج المتاحة



Figure 110 Website Owner pages1

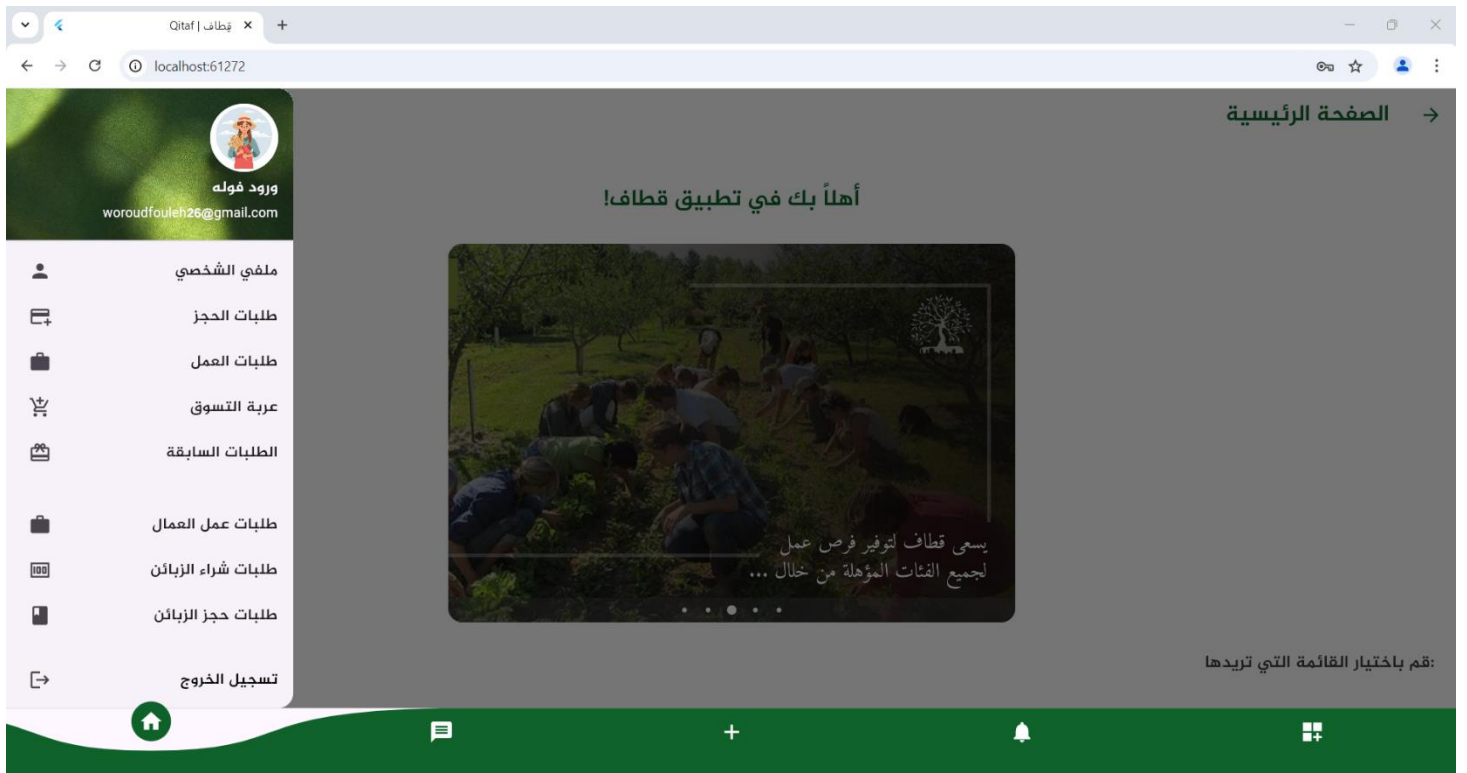


Figure 111 Website Owner pages2



ورود فوله
woroud123

عدد المنشورات: 11 عدد النقاط: 2 التقييم: 5 ★



خط إنتاج

منتجات

أراضي



ورود فوله
woroud123

عدد المنشورات: 11 عدد النقاط: 2 التقييم: 5 ★



خط إنتاج

منتجات

أراضي

بندورة
تاريخ النشر: 24-01-2025

خيار بلدي
تاريخ النشر: 20-01-2025


مربي فراولة
تاريخ النشر: 20-01-2025



Qitaf | قطاف × +

localhost:61272

الملف الشخصي →



ورود فوله
woroud123



★ التقييم: 5 عدد النقاط: 2 عدد المنشورات: 11

منشوراتي

خط إنتاج

منتجات

أراضي



Qitaf | قطاف × +

localhost:61272

Click to go back, hold to see history

تعديل معلومات الأرض →



عرض العمال

<input type="text"/>	اسم الأرض أرض النخيل
<input type="text"/>	ثمار المحصول بلح
<input type="text"/>	المدينة أريحا
<input type="text"/>	الموقع دير القلط، ارض النخيل

تعدیل معلومات الأرض →

عدد العمال 1

تاریخ بداية العمل 2025-01-21

تاریخ نهاية العمل 2025-01-23

ساعة بداية العمل AM 9:00

ساعة نهاية العمل PM 5:00

حفظ التغييرات

حذف المنشور

تعدیل معلومات الأرض →

قائمة العمال

العمال الذين تم قبولهم

عمیر فوله

أبلغ عن

قيم

محمد علي

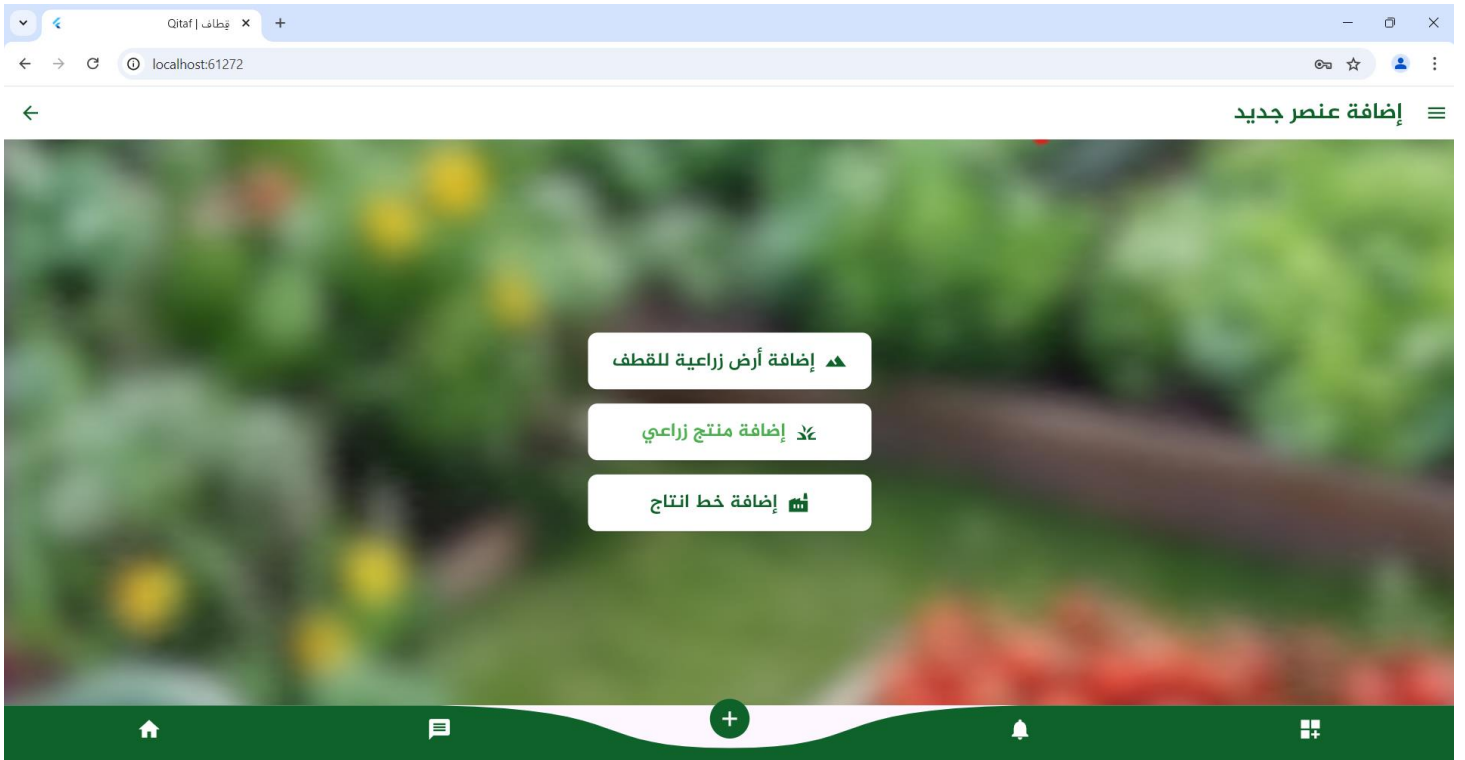
أبلغ عن

قيم

إغلاق

الموقع
دير القلط، أرض النخيل

Figure 112 Website Owner pages3



إضافة أرض زراعية

إضافة صورة

اسم الأرض

اسم المحصول

اختار مدينتك

وصف الموقع

مساحة الأرض (دونم)

أجرة العامل/ساعة

عدد العمال

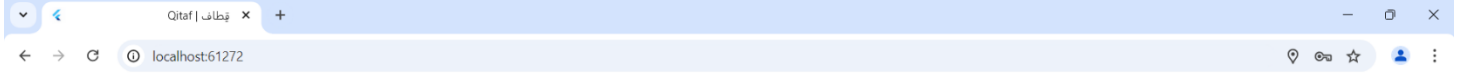
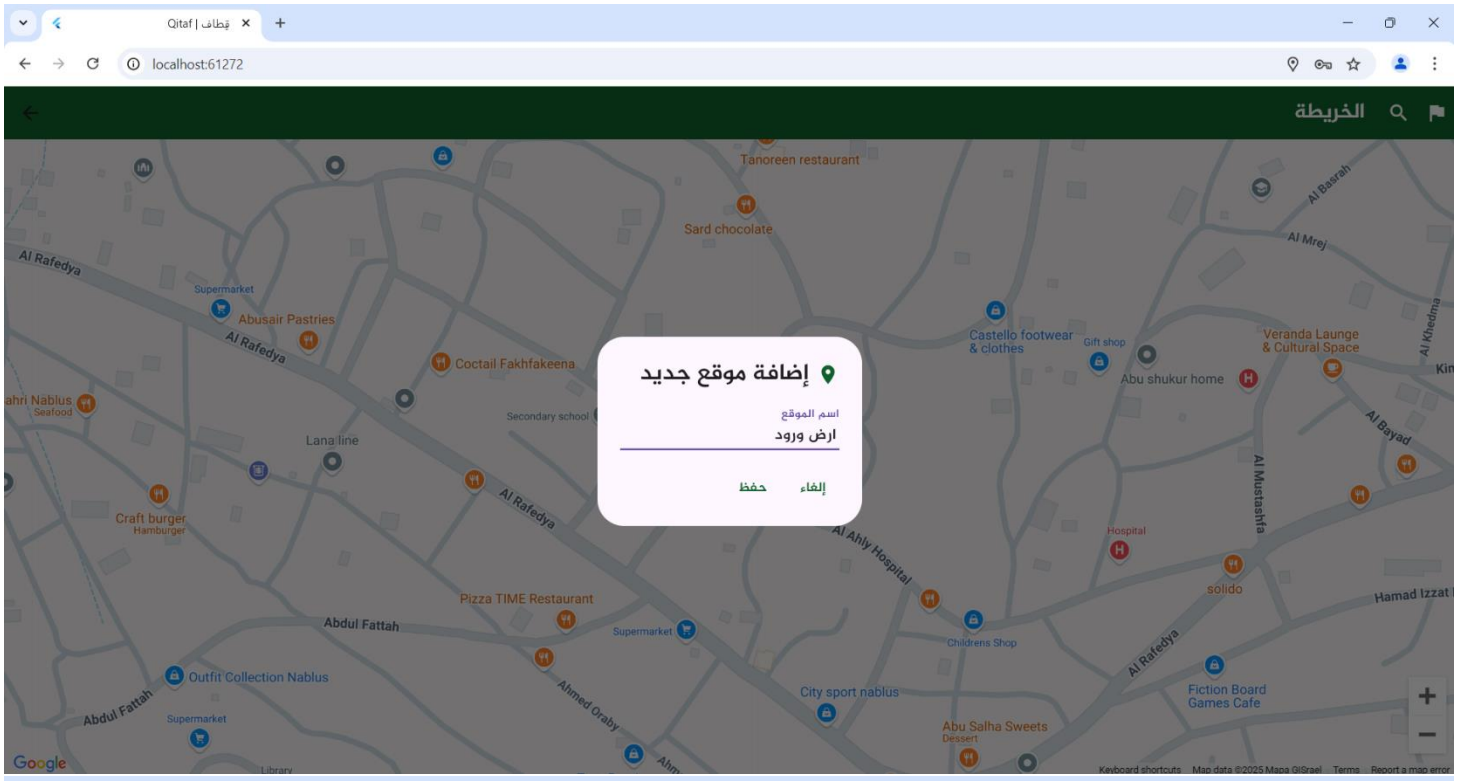
حدد تاريخ البدء

حدد تاريخ الانتهاء

حدد وقت البدء

حدد وقت الانتهاء

إضافة



إضافة منتج زراعي

إضافة صورة

صنف المنتج	الاسم
الوحدة	الكمية
	السعر بالشيكول
الخطير المدينة	
	وصف الموقع
وحدة الزمن	مدة تحضير الطلب

Qitaf | قطاف x +

localhost:61272

إضافة خط إنتاج

إضافة صورة

المادة الخام المطلوبة

اسم خط الإنتاج

وصف خط الإنتاج

رقم الهاتف للتواصل

المدينة

الموقع

وحدة الزمن

عدد ساعات جهوز الطلب

السعر

الوحدة

إلى الساعة

من الساعة

السبت الأحد الإثنين الثلاثاء الأربعاء الخميس الجمعة

إضافة

Figure 113 Website Owner pages4

طلبات عمل العمال



عمير فوله
omierfouleh



اسم الأرض: أرض العنب

عدد العمال المتبقي: 4

أجرة العامل بالساعة: 30 شيكل

الموقع: الخليل

تاريخ الطلب: 25-01-2025

رفض ✕

قبول ✓

سجل شراء الزبائن

assalazawawi

2025-01-24

3 كيلو

21 \$

جاهز للاستلام ✓

لم يتم التوصيل بعد



خيار بلدي

raghadmatar

2025-01-20

1 كيلو

8 \$

جاهز للاستلام ✓

الزبون لم يستلم الطلب

Qitaf | قطاف x +

localhost:61272

سجل حجز الزبائن

نرجس أدهم
narjesadham

اسم خط الإنتاج: معصرة زيتون
تاريخ الحجز : 20-01-2025
وقت الحجز : 09:00 - 10:30
المادة الخام: زيتون
الكمية : 6 كيلو
السعر الكلي : 252 ر.
تاريخ إرسال الطلب : 24-01-2025

تمت ✓

عمير فوله
omierfouleh

اسم خط الإنتاج: معصرة زيتون
تاريخ الحجز : 29-01-2025
وقت الحجز : 09:05 - 11:35
المادة الخام: زيتون
الكمية : 10 كيلو

نرجس سامي
narjesamiam

اسم خط الإنتاج: معصرة زيتون
تاريخ الحجز : 20-01-2025
وقت الحجز : 09:00 - 10:30
المادة الخام: زيتون
الكمية : 6 كيلو
السعر الكلي : 252 ر.
تاريخ إرسال الطلب : 24-01-2025

تمت ✓

عمير فوله
omierfouleh

اسم خط الإنتاج: معصرة زيتون
تاريخ الحجز : 29-01-2025
وقت الحجز : 09:05 - 11:35
المادة الخام: زيتون
الكمية : 10 كيلو
السعر الكلي : 420 ر.
تاريخ إرسال الطلب : 25-01-2025

لم يتحقق بعد

Figure 114 Website Owner pages5

Qitaf | قطاف x +

localhost:61272

صندوق الرسائل

الرسائل

مجموعات

منذ 23 ساعة

نرجس أدهم
مرحبيا ورود

منذ 2 يوم

رغد مطر
تمام وانت ✓

الآن

نرجس فوله
شو الاخبار ✓

Home, Messages, Add, Notifications, App Store

Qitaf | قطاف x +

localhost:61272

رغد مطر

الحمد لله تمام وانت

أهلا رغد، اتفضلي؟
تم الإرسال


كيفك ورود

الحمد لله

مرحبيا

هاي ورود

اكتب رسالة...



Qitaf | قطاف

localhost:61272

صندوق الرسائل

الرسائل

مجموعات

منذ 23 ساعة

ارض النخيل

محمد: وعليكم السلام

Home, Messages, Add, Notifications, App Store

Qitaf | قطاف

localhost:61272

ارض النخيل



ورود قوله

السلام عليكم

ورود قوله

بكرة رح تبدأوا في قطف أشجار النخيل، مستعدين؟



محمد علي

وعليكم السلام

عمير قوله

وعليكم السلام

اكتب رسالة...

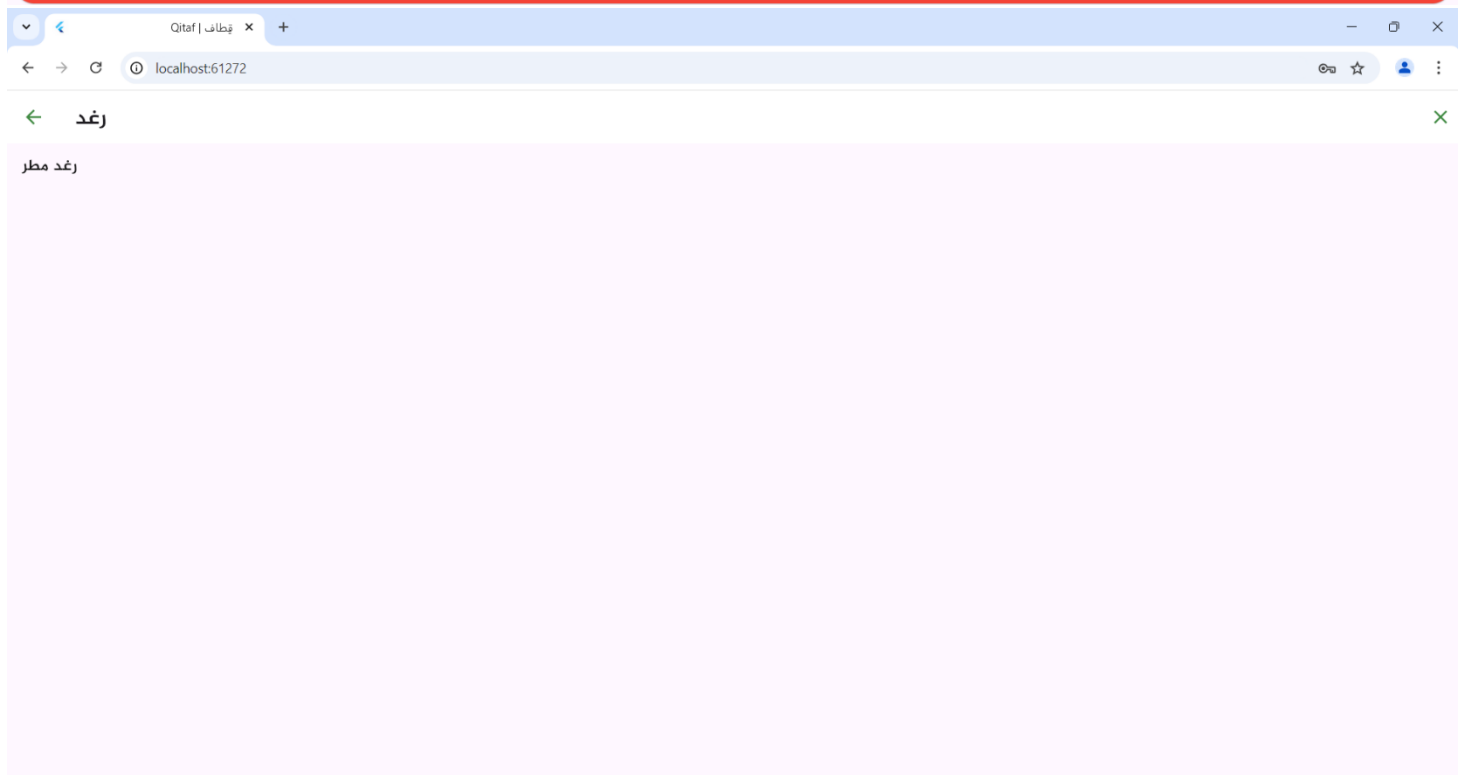
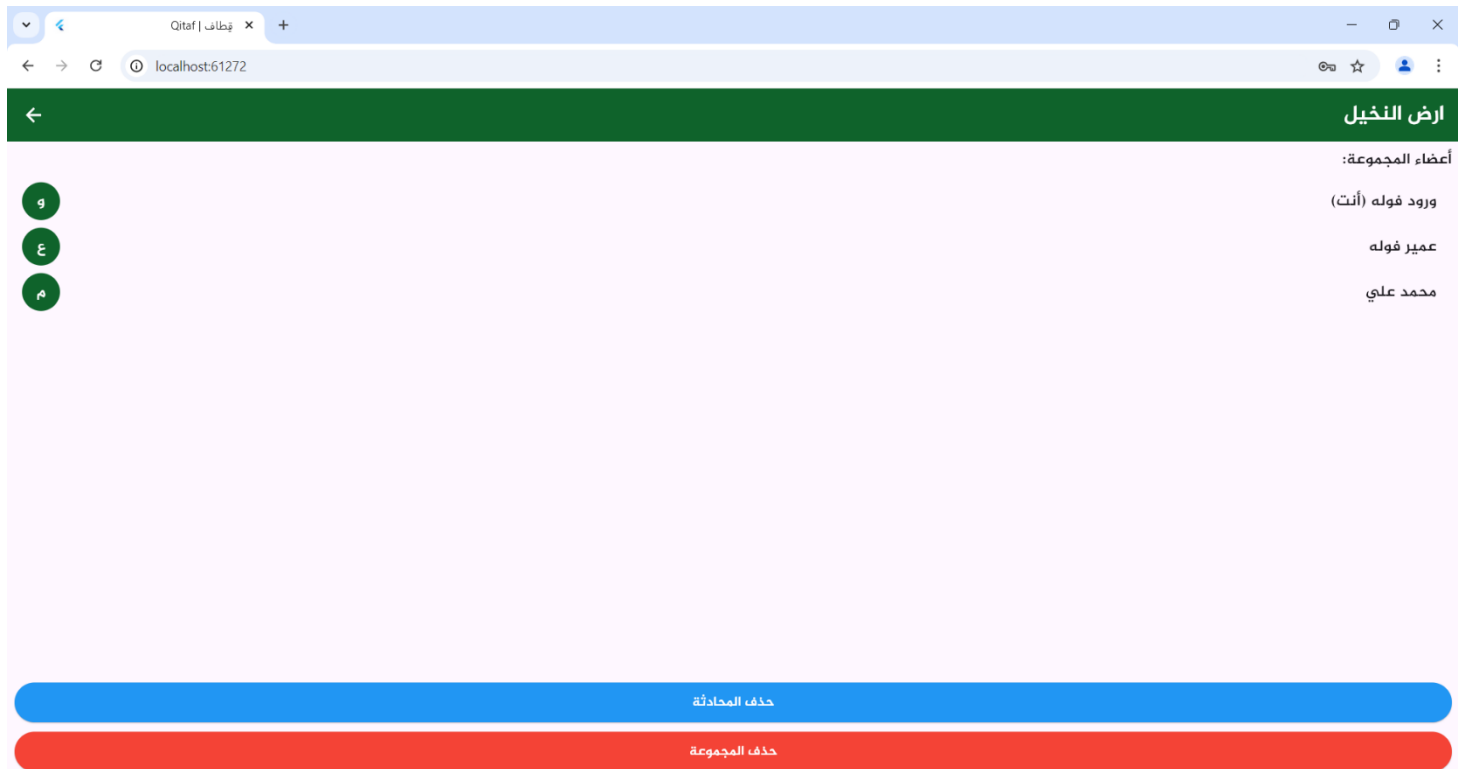


Figure 115 Website Chat pages

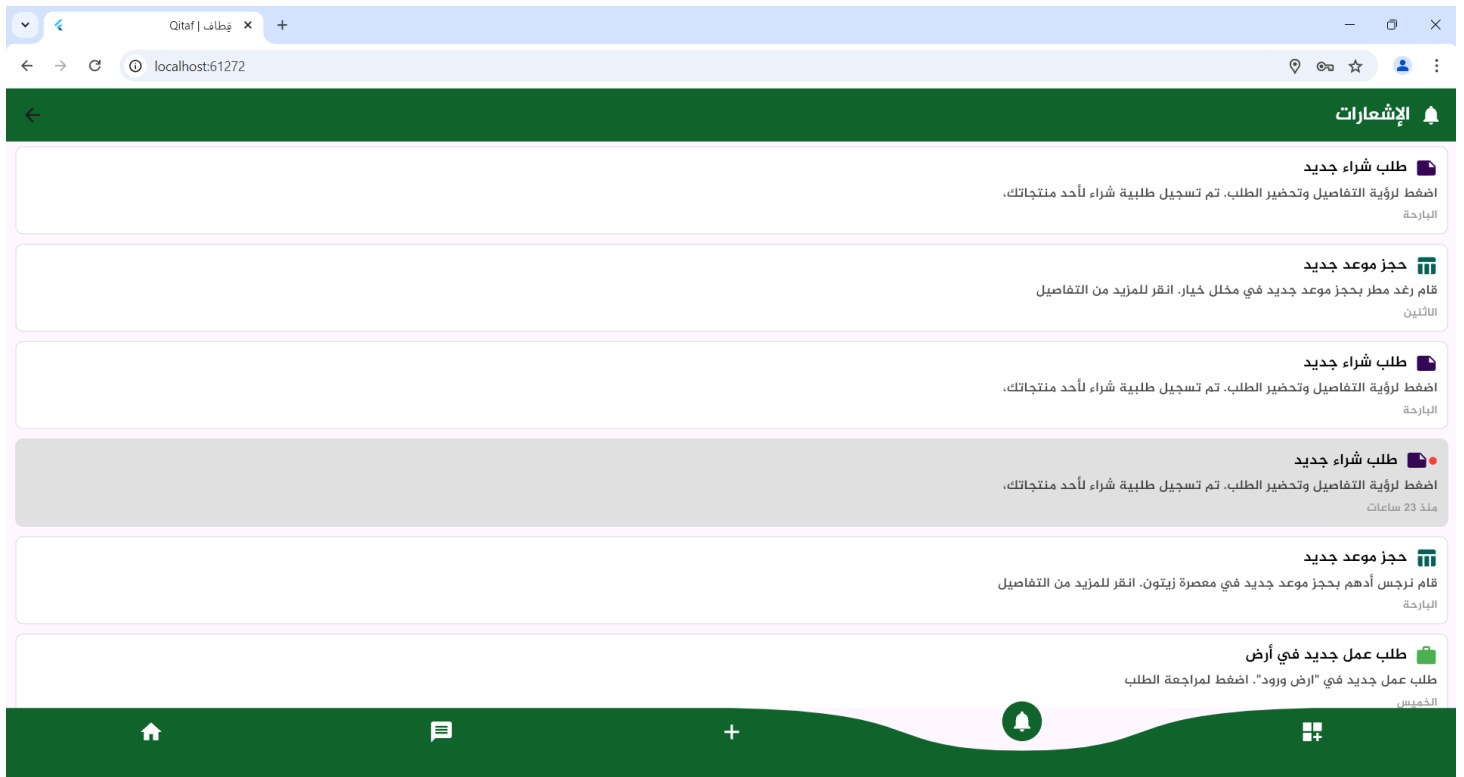


Figure 116 Website Notifications page

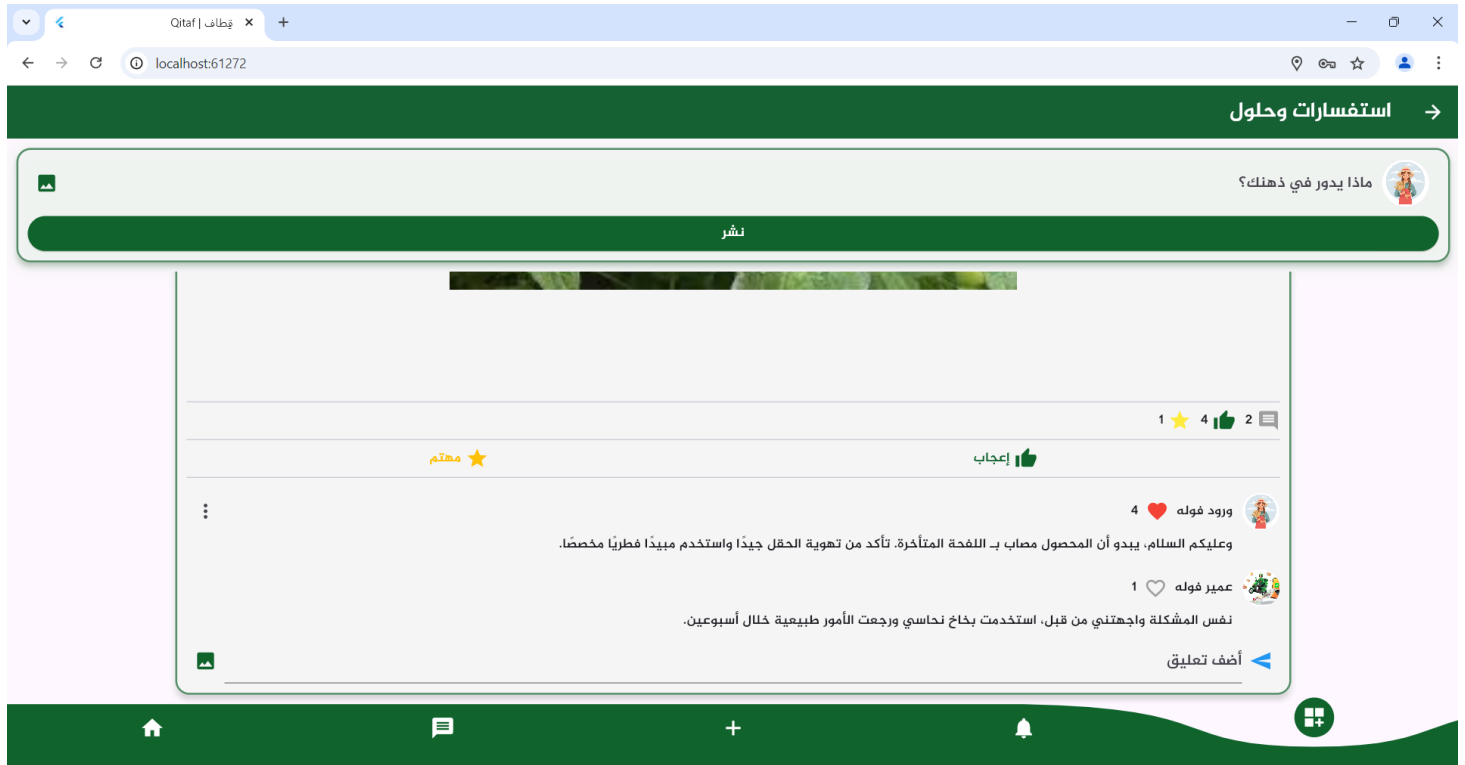
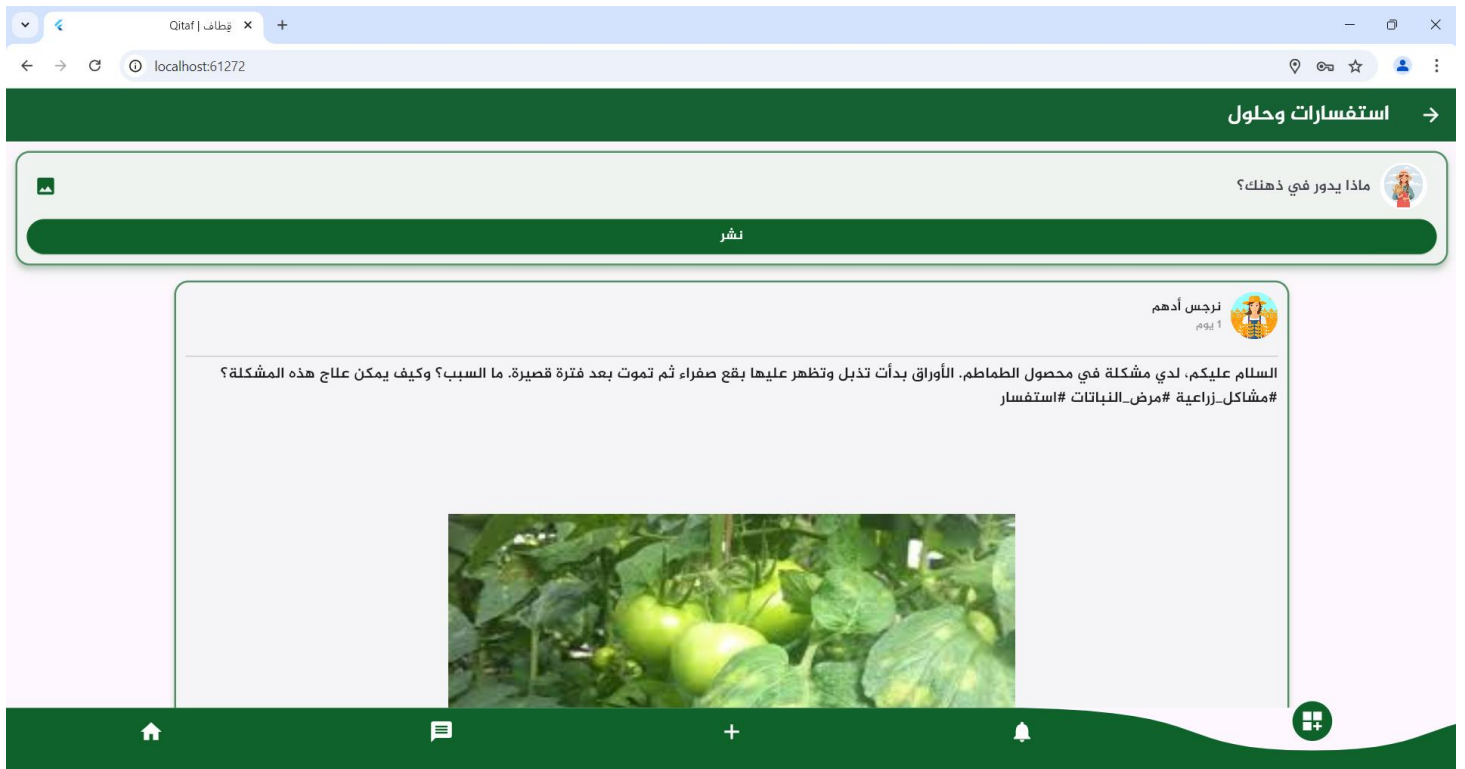


Figure 117 Website Forum pages

4 Results and Discussion

In the pursuit of the goals of the project, we managed to attain the following objectives at the end of the project. Our work identifies and addresses all the concerns by having developed a Host Site Dashboard, Farmer Dashboard, and Customer Dashboard to effectively support the twin objectives of organizing the farming system and direct selling of the products to the customers through efficient and convenient procedures for land acquisition, labor employment, product listing, and delivery.

The platform avails and enables the landowners who utilize the platform to better operate and manage the lands, hire workers and list products effectively. Customers get the advantages of easy ordering options, geographic searches and a delivery model that is customizable according to the customer's needs.

Qitaf also afford workers the best opportunity of getting employment in agricultural fields by directly connecting them to the landowners. In addition, the forum feature makes the achievement of the community goal possible due to the fact that users can come together to find solutions to agricultural problems and in the process share their experience.

Realizing that the work of users may be time consuming and labour intensive, Qitaf provides the mechanism with sophisticated search engine, filter bar and real time notification system to allow users find what they want in the shortest time possible. The functionality of mapping and the route optimization feature erases difficulty that operates potentially tedious and slows down delivery processes and joining the consumer satisfaction.

Therefore, Qitaf is an enabling platform for the farming stakeholders hence effectively fostering interaction, productivity and prosperity within the Palestinian agriculture sector and overcoming some the major issues faced by the Palestinian farming fraternity.

4.1 Constraints

- Firebase integration was rather challenging; we had to install so many configuration files and scripts for the project to work on both mobile and web.
- We needed CORS or Cross Origin Resource Sharing to enable the communication between our client web application and Node JS resources.
- Some dependencies caused a system crash. To resolve this, we changed the Android Gradle files.
- There was a lot of work in building up a logical and complete database.
- Designing the application in Arabic led to several difficulties, including font alignment and translating the months and days of the calendar, as well as difficulty in using components.
- Using the map using the external API from Google Cloud Console and determining the current location

5 Conclusion and Recommendation

a. Summary

Qitaf Application — Solution for economic & Agricultural Problem of Palestinian by Landowner ◦ Agricultural Product Owner → Job Seeker in single platform The app stands for economic empowerment, food security and community involvement. It includes tools for land, product and production line listings; job postings and production line pre-bookings; e-commerce functionality with payment and delivery options; interactive mapping for location tracking. Qitaf provides functionalities that include chat (horizontal), an agricultural forum, scores and rating-return-as well as computation system. Admin tools to ensure smooth user, ad and delivery management that further strengthen the agricultural value chain and local economy.

b. Recommendations

- Be informed about current updates regarding the software you use.
- Read through the documentation of plugins and dependencies before using them in your project.
- Take care and choose the technology you are going to use in a wise manner, considering your needs.

c. What we have learned

- How to use Flutter framework using Dart.
- Integrating Firebase into Flutter.
- Fire base features usage as storage and living messaging.
- What is CORS.

d. Future Work

- Add recommendation system.
- Tracking special order by owner and customer.
- Add delivery man tracking system.

References

- [1] The World Bank. (2020). *Agriculture and Economic Development in Palestine*.
- [2] Mukherjee, A., Singh, V., & Mukherjee, D. (2020). Kisan Network: Empowering Indian Farmers. *Journal of Agricultural Systems*, 15(2), 67-80. Retrieved from ScienceDirect.
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