An-Najah National University

Faculty of Engineering and
Information Technology Computer
Engineering Department

Graduation Project I

Aklati (أكلاتي)

Accomplished By

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**Presented in partial fulfillment of
the requirement for Bachelor
degree in Computer Engineering**

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Acknowledgment :

First, last, and always, thanks and gratitude to God; who gave us the strength to complete this project, titled “Aklati” under the supervision of Dr Abdallah Rashed, we would like to thank and appreciate him and his great efforts with us .

Thank our parents for their constant support and encouragement and their deep belief in our abilities, which gave us patience and persistence despite the difficulties we faced.

We want to thank our friends and everyone who helped us and whose name was not mentioned, thank you all.

Disclaimer Statement:

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Contents

Chapter 1

Abstract

The demand has increased in recent times for homemade food on all occasions and at any time, and people might face difficulty finding delicious , clean food .

We will provide in this application the ability to display some pages that deal with homemade food for the user, including regular foods ,sweets

and pastries , with the possibility of ordering and adding to his shopping cart.

The user can search about any dish he wants , he can know its description and ingredients, he can see the dishes with the highest rating and which have a discount, and can track the status of the order from the time of the request until it is completed.

In this application, we also aim to help page owners by publishing their dishes and introducing them, Where the owner of the page receives requests through the notification and confirms or rejects them, and the customer can also communicate with him directly through chat.

Chapter 2

Introduction

2.1 Problem

In Palestine, people's interests, occasions, and celebrations have increased in clean homemade food, and need to order

homemade food from various pages. One of the problems facing those who think of ordering food from a home page is not knowing most of the pages or not finding a page for homemade food that is concerned with it, especially when there is a celebration that needs food with different types, it is possible that you will not be able to access all pages.

Owners of home food pages face several problems, including their inability to display their items to the largest number of targeted people. There are pages whose items are of high quality, but are not known to customers because they do not publish the page correctly.

2.2 Objective

The main goal of our project is to create a platform that includes owners of pages for home food and includes various food items to save time and effort for the user on all his occasions and days, as he can order multiple items of dishes from the same application and evaluate them after ordering, and he can also create an account as an owner of an eating page And publish his dishes that he offers.

2.3 Scope of the Work

Our application generally focuses on home food pages, providing the user with the opportunity to display his dishes that the page contains, making discounts and offers on all occasions, and receiving requests from customers who can evaluate and request items.

2.4 Importance

This application is designed to help people find dishes for the food they want with less time and effort, as well as help owners of home food pages by publishing their page and introducing people to them and the items they offer.

2.5 Report Organization

This report is organized as the following, ,abstract of our project,
then an introduction and overview of the importance and scope of this project, the problems and constraints that we faced in this project,literature review,the methodology used to complete the project, result and discussion, Finally, conclusion and future work development goals.

Chapter 3

Constraints, Standards and Earlier coursework

3.1 Constraints and limitations

1- Time constraint: The team had limited time to complete the project, which added pressure and necessitated efficient learning and implementation.

2- Lack of prior knowledge: we did not have prior experience with programming languages such as Dart, Node JS, and mobile frameworks like Flutter, which posed a challenge.

3- Learning new languages and frameworks: we had to invest time and effort into learning and becoming proficient in Dart, Flutter, Node JS, JavaScript,and MongoDB.

3.2 Standards

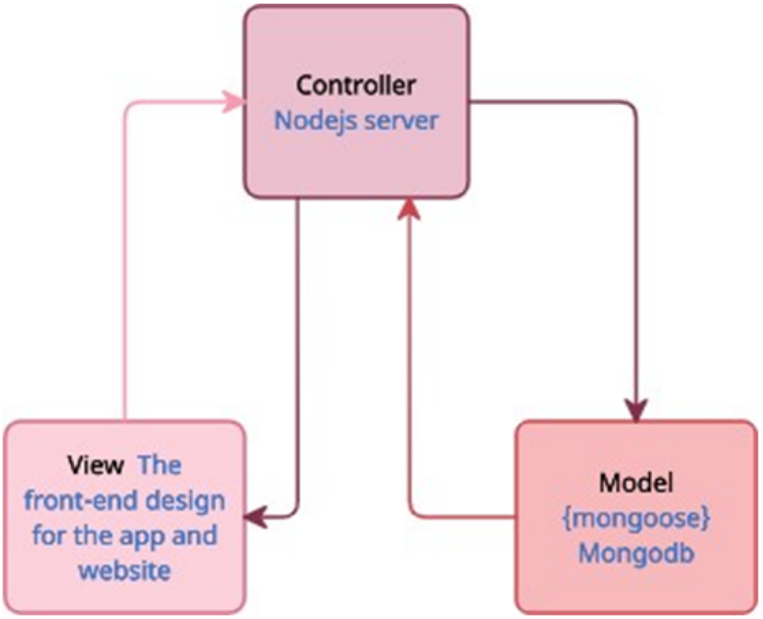
3.2.1 MVC (Model View Controller)

We can divide the entire project into three sections to make tracking the flow easier. These parts are as follows:

- The Model: Represents the database we used, MongoDB. It will respond to both the view request and the controller request to keep updating itself.

- The View: This is the graphical user interface (GUI) that users and administrators will use to display and modify data.

. - Controller: This is the Node Js-based back-end server for the application .



3.3 Earlier coursework

During our computer engineering studies, we took many courses in which we learned many things,and that that added a lot of knowledge and Skills such as:

- Object-Oriented Programming.
- Web Programming.
- Artificial intelligence.

Plus, we've taken online courses at:

- Node.js.
- Flutter.

Chapter 4

Literature review

Numerous studies have highlighted the rising consumer demand for homemade food. These demands stem from factors such as health consciousness, taste preferences, and the desire for customized meals. Research suggests that consumers perceive homemade food as healthier, fresher, and more trustworthy compared to commercially prepared options (Lobb et al., 2019). The increasing trend of consumers seeking homemade food options has paved the way for the development of dedicated applications catering to this demand.

Features of Homemade Food Applications:
Homemade food applications typically offer a range of features to enhance user experience. These features include:

a. Dish Display and Description: Applications allow users to browse through various pages displaying homemade dishes, including regular foods, sweets, and pastries. Users can view descriptions and ingredients for each dish, helping them make informed choices.

b. Ordering and Shopping Cart: Users have the convenience of placing orders directly through the application. They can add desired dishes to their shopping cart, select quantities, and proceed to checkout.

c. Dish Ratings and Discounts: The application provides users with the ability to view dishes with the highest ratings and identify those available at discounted prices. This feature enables users to explore popular and cost-effective options.

d. Order Tracking: Users can track the status of their orders, from the time of request until completion. This transparency enhances the overall user experience and reduces uncertainty.
Benefits for Users:
Homemade food applications offer several benefits to users, including:
a. Convenience: Users can access a wide range of homemade food options through a single platform, eliminating the need to search for multiple providers. The ability to order and track meals enhances convenience further.

b. Information and Customization: Users can access detailed dish descriptions, ingredient lists, and ratings, enabling them to make choices that align with their preferences and dietary restrictions. This information empowers users to personalize their food selections.

c. Quality Assurance: Homemade food applications often emphasize the use of fresh ingredients and adherence to hygiene standards. Users can have confidence in the cleanliness and quality of the food they order.

Chapter 5

Methodology

5.1 Tools, Programming Languages, APIs Technologies

We have many options for application development , in addition to the basic and irreplaceable parts of building mobile applications and websites, such as frameworks, programming languages, and tools.
Here is an explanation for that:

5.1.1 client Side:

- **Design:** We had to have a simple, user-friendly, and uncomplicated application, so that the user can understand the application and navigate between the interfaces simply and we chose the color of the basic application that is comfortable to look at.

- **Frameworks:** We have chosen the Flutter framework to build our homemade food application , because by choosing Flutter, you can achieve cross-platform compatibility, fast development cycles, visually appealing interfaces, high performance, and

access to native features, all supported by a growing community and Google's commitment to the framework's future.

Some of the top reasons why teams Choose Flutter App Development:

1- Cross-platform Development.

2- Hot Reload.

3- Single Codebase.

4- Beautiful and Customizable UI.

5- Fast Performance.

6- Access to Native Features and APIs.

7- Strong Developer Community and Support.

- **Programming languages:**Flutter uses Dart, a programming language developed by Google that targets web and mobile application developers. We saw that Dart is very similar to Java, which is the most familiar language we have, which reduces the difficulty of learning a new language and makes it straightforward and easy.

5.1.2 Server Side:

- **Frameworks:** For the server side, we used the open-source Node.JS frame- work for mobile apps.
  Node.js is a popular choice for server-side development in mobile app projects due to its JavaScript-based nature, asynchronous and non-blocking capabilities, fast performance, strong community support, rich package ecosystem, and suitability for building scalable and real-time applications.

- **Programming Languages**: Node.js uses JavaScript as its core. JavaScriptit helps you develop great front-end as well

as back-end software using different JavaScript based frameworks Node.JS etc.

5.1.3 IDEs and Code Editors:

We used VS code for the front-end for programming and used Android studio to create an emulator and APK Analyzer for testing,
and For back-end we utilized VS code since it's a fantastic choice to deal with JavaScript and Node.JS, It includes a number of built-in tools, including a class designer, database schema designer, web designer, and Support for Git.

5.1.4 Version Control:

We were working on a team, so we used GitHub to share work and integrate code. We created two repositories for this, one for the back-end and one for the front-end.

5.1.5 API Endpoints Testing:

In order to ensure the functionality and integrity of our application's RESTful API, we conducted thorough testing of each endpoint before integrating it with the client. For this purpose, we opted to use Postman, a highly effective tool for analyzing and testing RESTful APIs.

Postman offers a wide range of capabilities that enable us to execute various request methods such as PUT, PATCH, DELETE, and more. It provides a comprehensive set of functionalities that cover almost every need a developer may have when interacting with APIs. By utilizing Postman, we were able to dissect and evaluate the performance and accuracy of our API endpoints, ensuring they functioned as intended.

5.2 Database Structure:

We can't develop a mobile phone or build a website without a database that saves and stores everything that is used in the app,and it makes the application meaningful and we can back up data. We used a NoSQL database because the relationships between different collections were few and were also easy to use when using the API.

MongoDB stores documents in JSON format, a JavaScript-based format that is simpler than XML.The backend of our application will be built using Node.js, and MongoDB is an excellent tool for prototyping Node.js applications.

5.3 Features of The Application:

5.3.1 Search box for searching for a specific item.

5.3.2 Display all items to the user and the possibility of displaying them according to the chosen category.

5.3.3 Filtering by highest rate.

5.3.4 Add items to favorites and control them by removing or adding.

5.3.5 Discounts and offers system: user can see all offers available in the application.

5.3.6 tracking orders status:

To ensure the best order process between the customer and the owner of the page, we used the case of requests.

The system is as follows:

-Waiting: After the customer confirms his order, the status of the order will be set “Waiting” as long as he is waiting, he can make changes to the order such as changing the quantity, adding a note, or even canceling

- Accepted, Rejected: pending requests can be accepted or rejected by the owner of the page.

In the event of acceptance, it will appear to the user that the request is in progress, and the user's authority to modify or delete the request will be revoked.

In case of rejection, it will show the user that the request was rejected

-Ready: The order has been prepared and will be delivered via delivery, and the rate status will appear

5.3.7 Five stars rating system: user allowed to rate the service after the status of his order becomes done

5.3.8 Chat system: available between users and owner page.

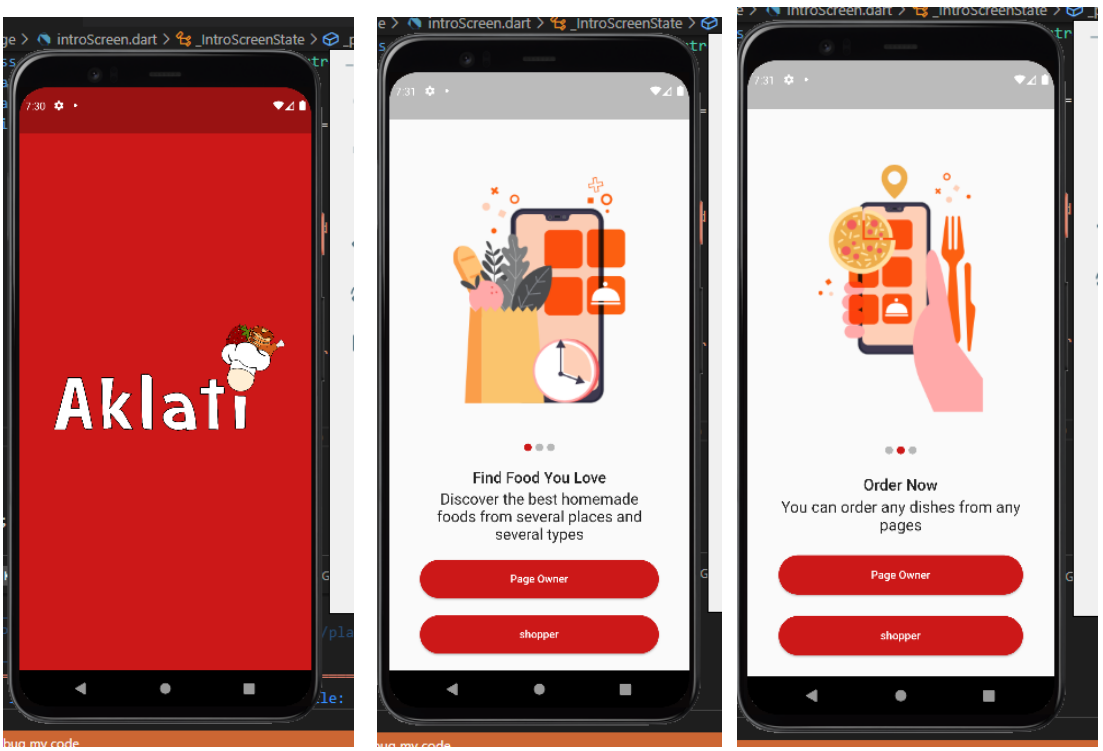
5.3.9 Notifications: available between owner page and users.

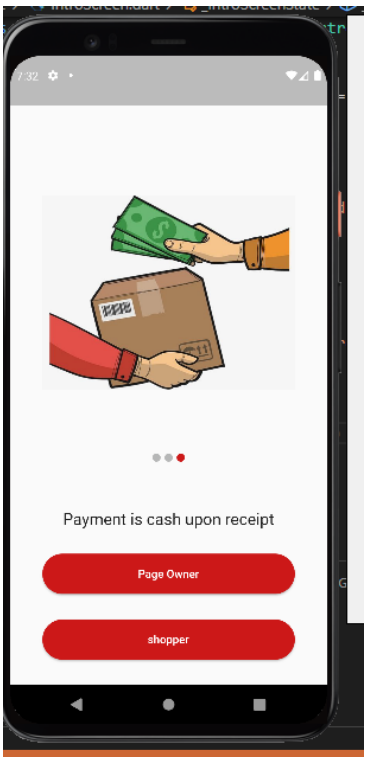
5.4 Implementation

5.4.1 Mobile Application:

Welcome screen:

These screen appear before the user logs in or sign up and contains a scroll bar of images used to briefly identify the application,also user can choose to enter the application as page owner or customer.

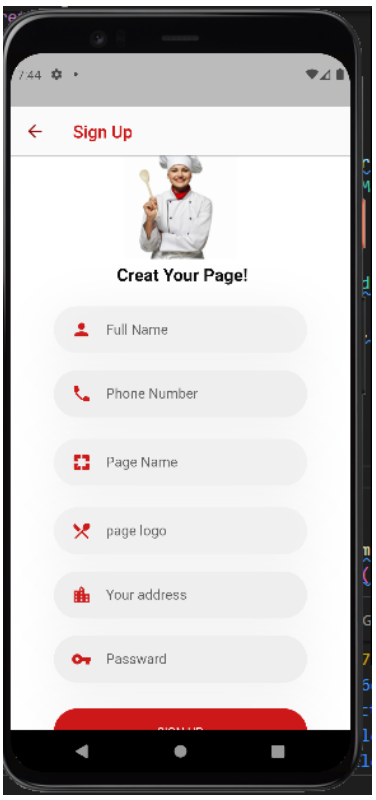




page owner side

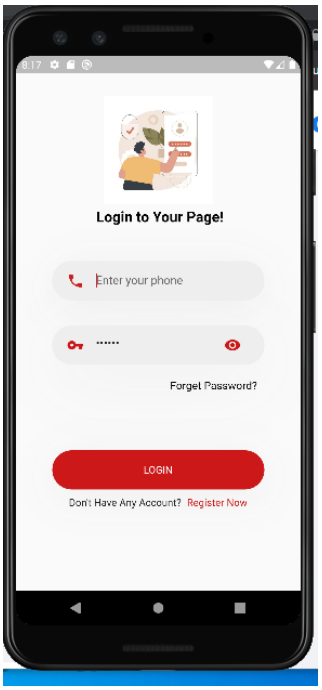
Sign-up screen

In the sign up page the page owne enters the required information, which are: Full name,phone number,page name, page logo,Address, and password.



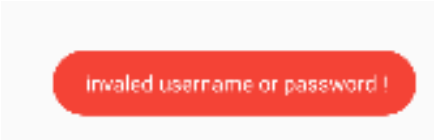
Log-in screen

The page owner must enter his correct information



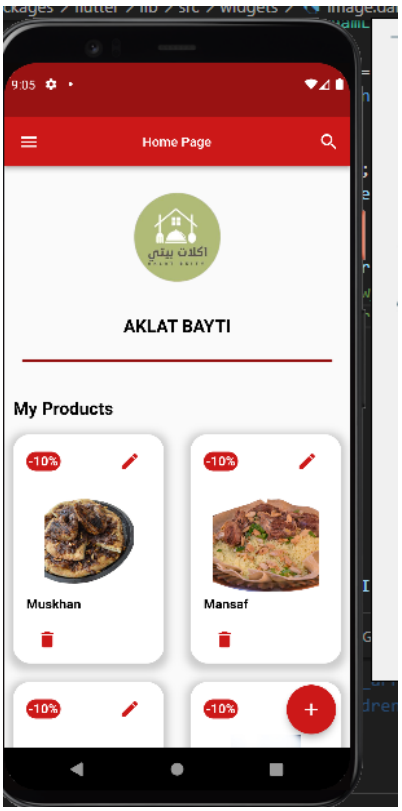
If he entered the correct information, a message will appear below that the log-in was successful

But if he entered incorrect information, a message will appear below that the registration failed



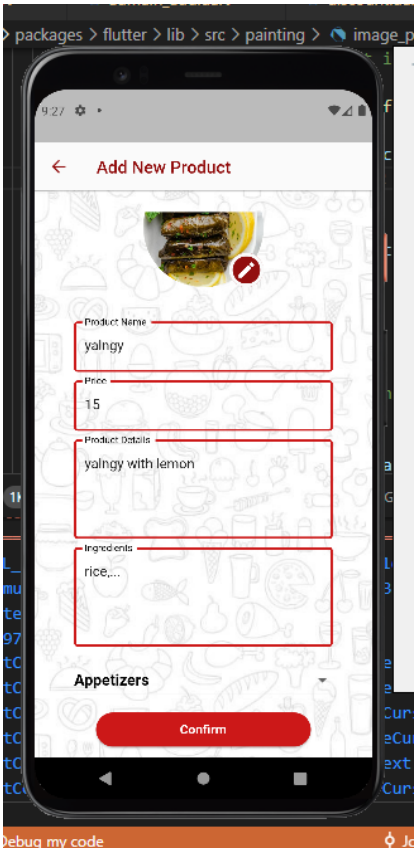
Home Screen :

After the page owner enters his page, his added food items will appear in the homepage

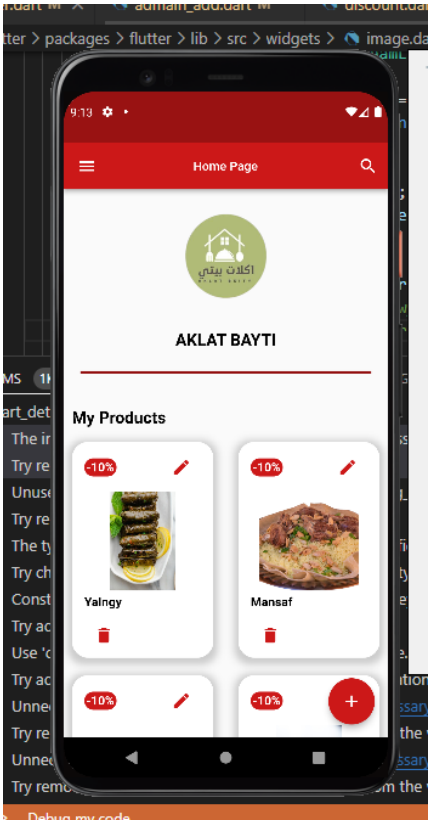


When he presses the plus button, the Add New Product page appears, and he

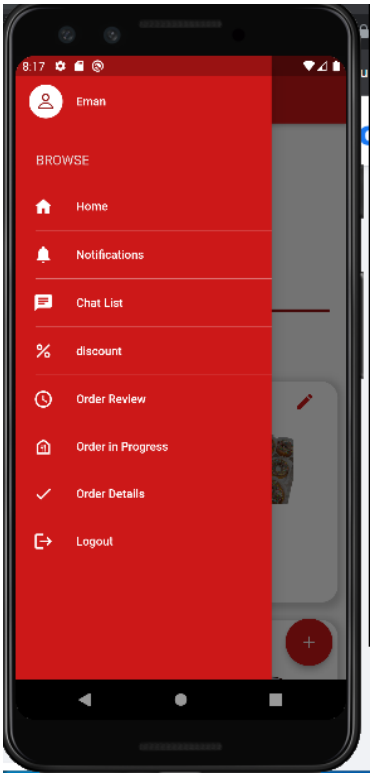
fills in the required information for the new item, consisting of:name, price, description, ingredients, and its classification.



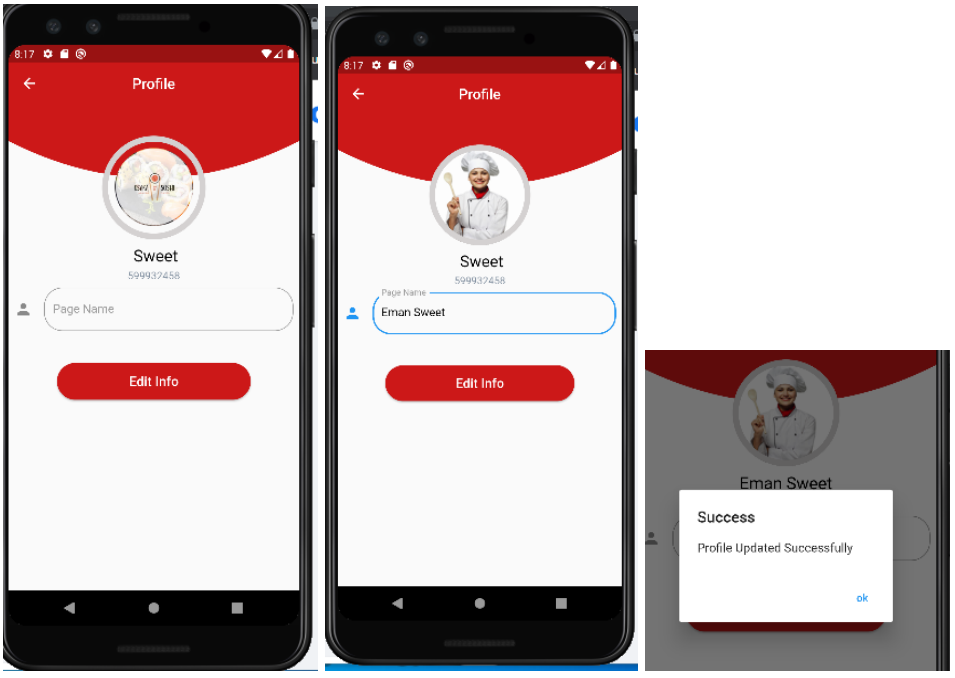
Then it appears on his homepage



The homepage also contains a menu consisting of several sections:

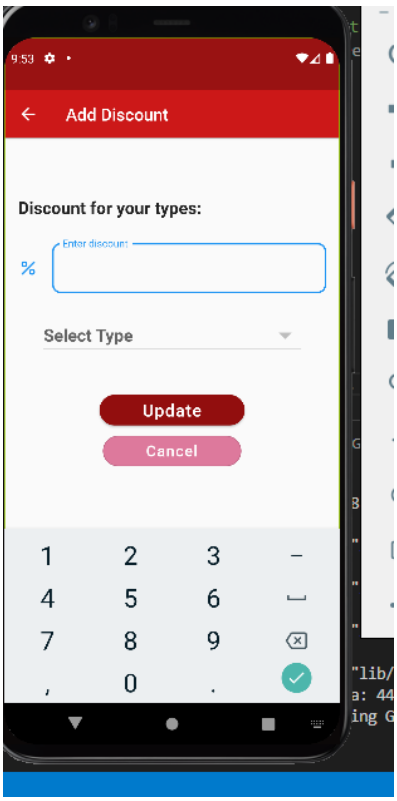


The owner page can change his logo and the name of his page

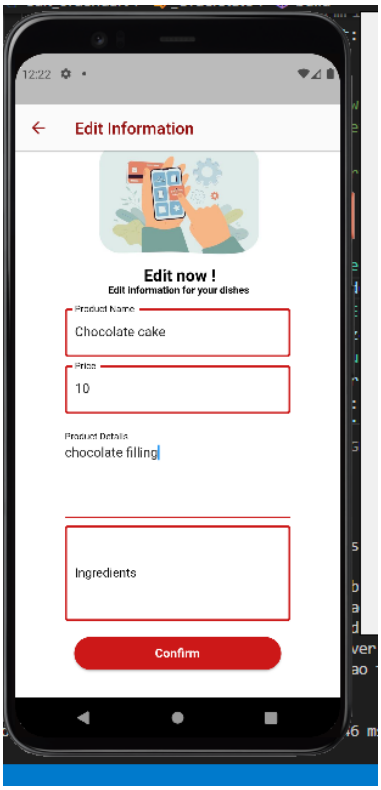


The owner of the page can add an offer to any product on his page

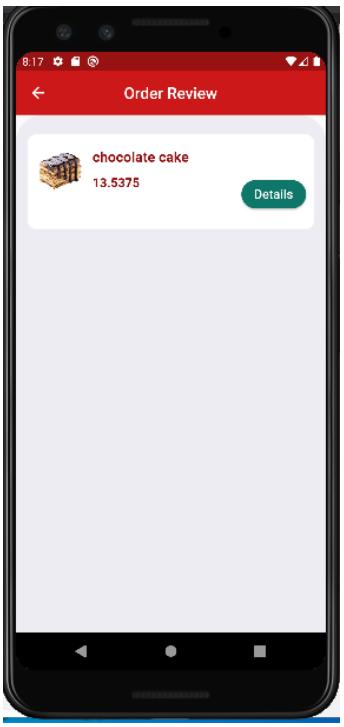
By specifying the name of the item and specifying the percentage of the discount



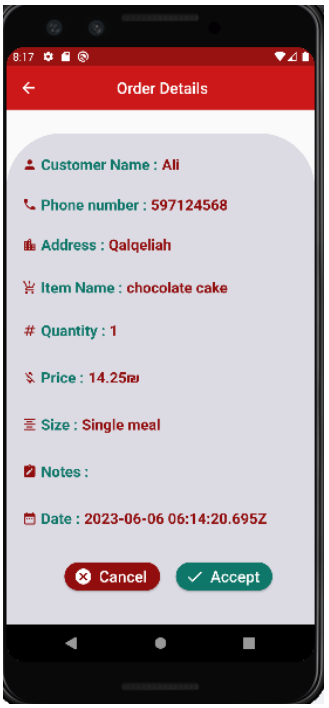
The owner of the page can modify a item he has it in Homepage



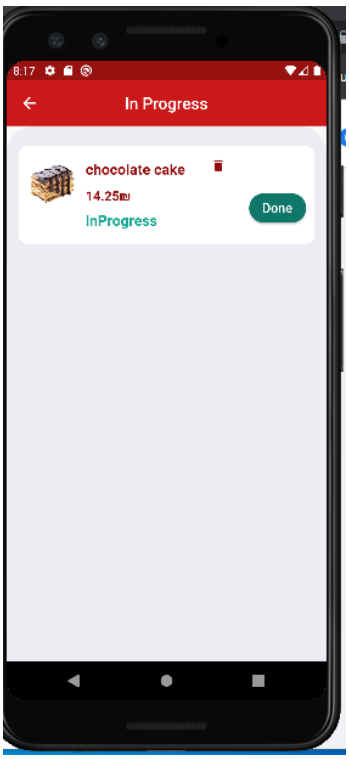
When you click on the Order Review in the menu, the orders received from the customers will appear



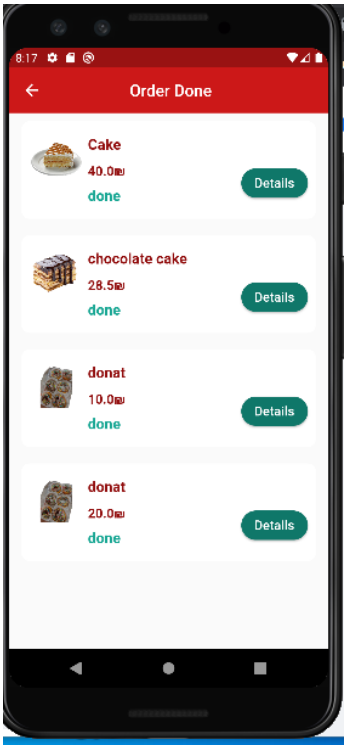
When clicking on the Details button, the customer's information and order details will appear, so the page owner can cancel the order or accept it.



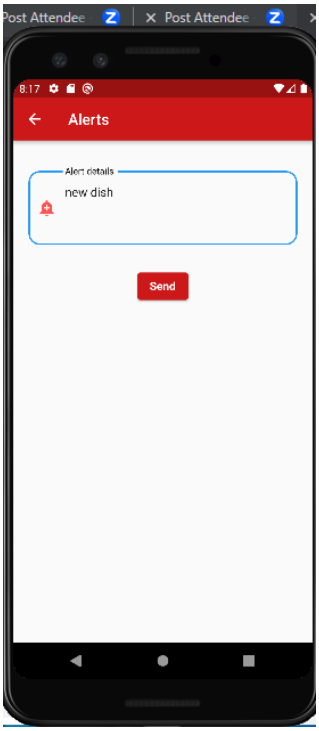
If the owner page accepts the request, it will appear on the In Progress page, and when it is finished, he presses the done button.



The owner page can refer to the Orders that he approved and see the details of each Order

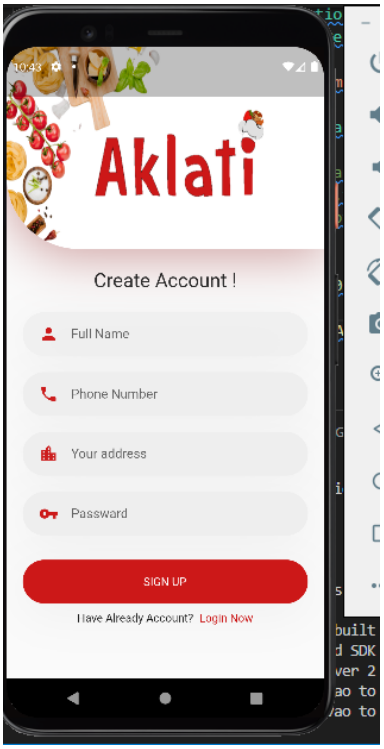


The owner page can send notifications to users:

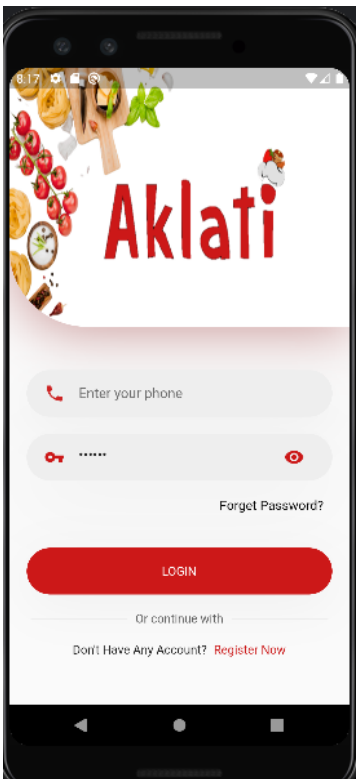


User side:

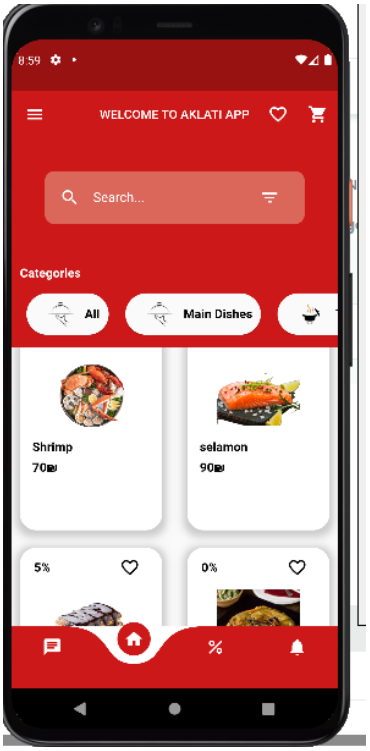
sign-up:



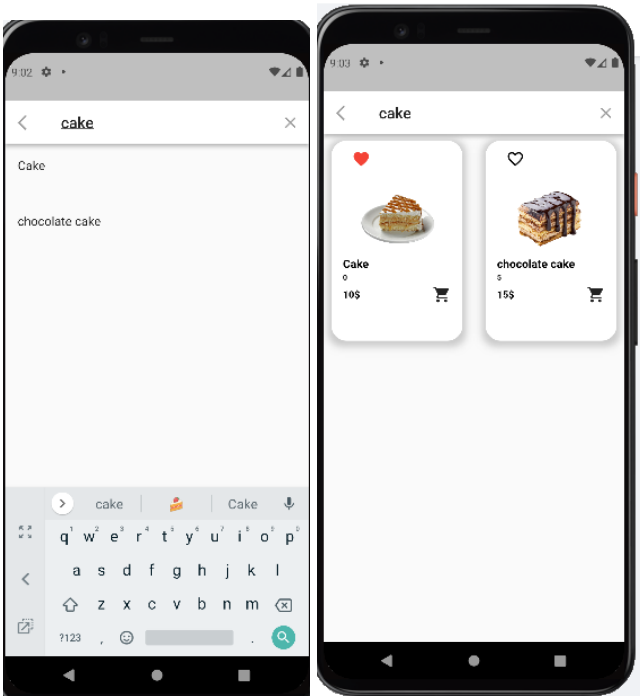
Log-in:



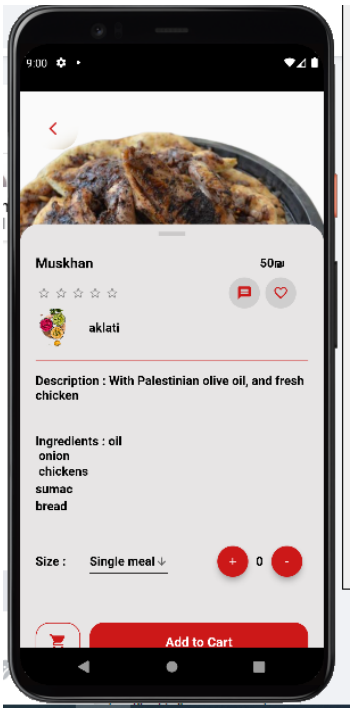
The home page for the user contains all the items in the application from different pages. Also, the user can choose the category he wants, then the category items appear in the home page.



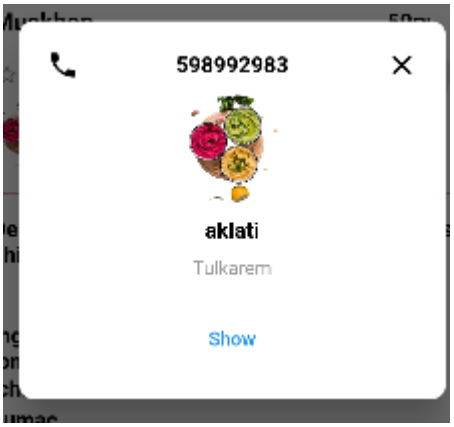
At the top there is a search box , when the user searches for any specific item, it appears to him quickly , and when he clicks on a filter icon , the items are filtered according to the top rate.

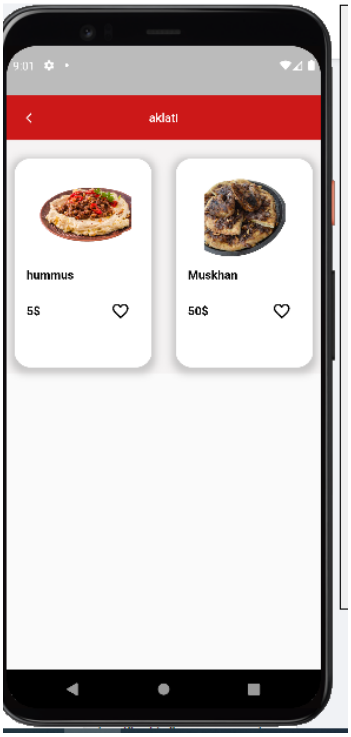


And If he clicks on a specific item, details about the item will appear, followed by any page, a description of it, the ingredients and its price, and he can also order it, specify the quantity and size, put it in the favorites, and message the page

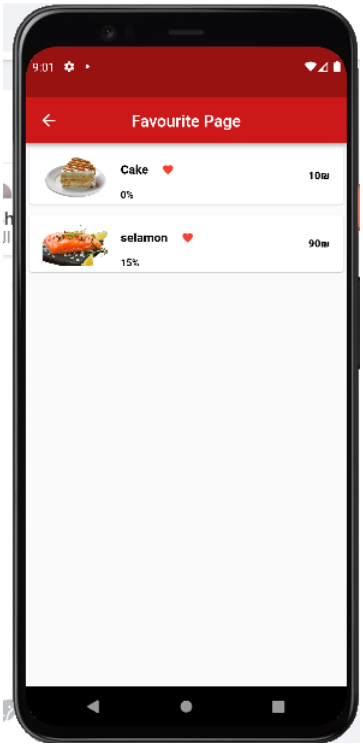


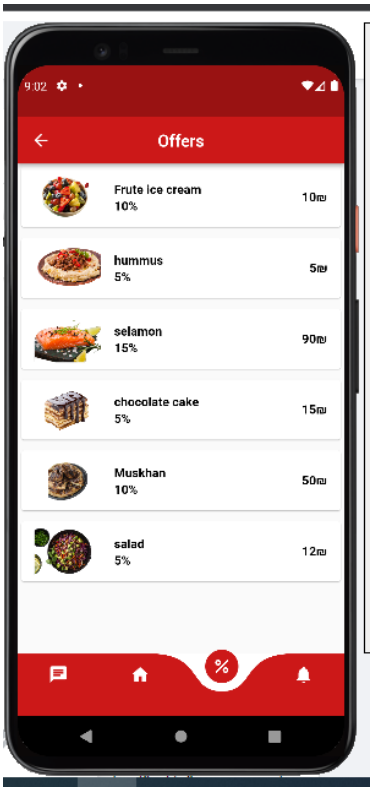
When you click on the page logo then click on show



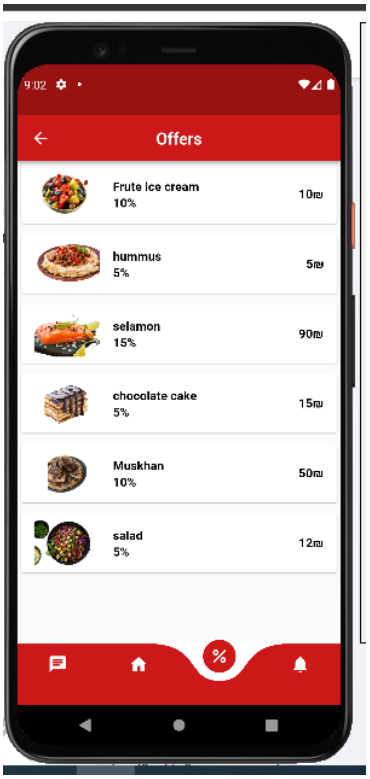


When adding the item to favorites

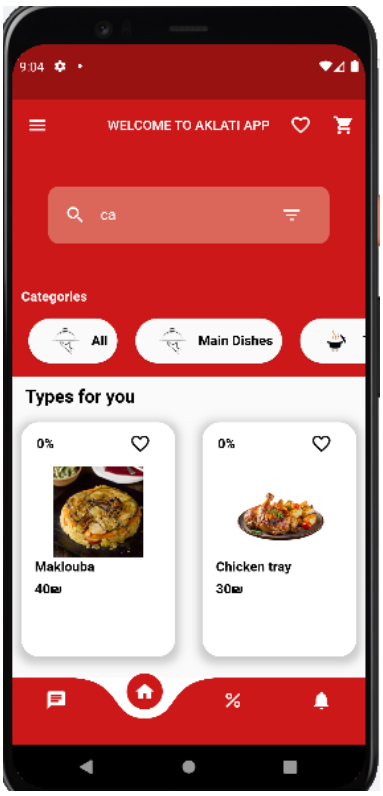




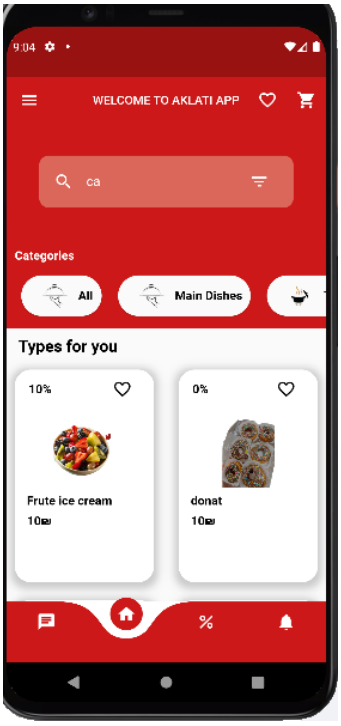
The user can see all offers in the application



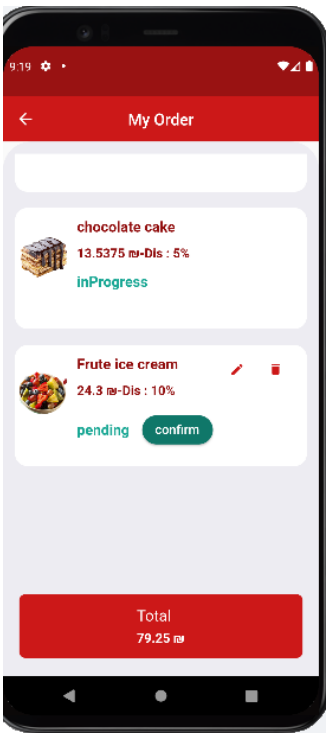
Filter by Category:



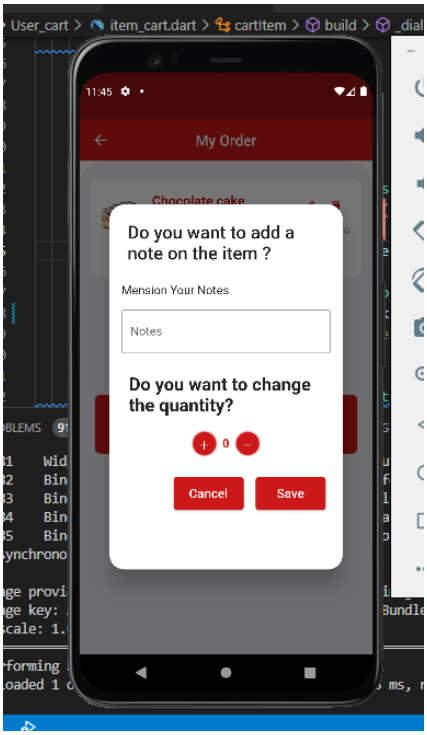
Filter by highest rating



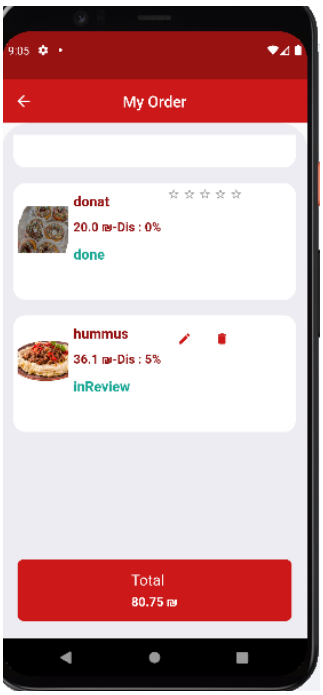
When click on Add to Cart for any Item



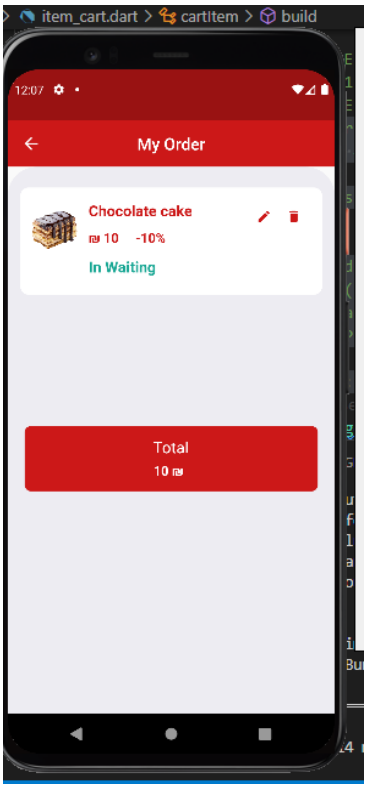
the order still pending and you can click on edit for edit count or add note , it will be added to your Order



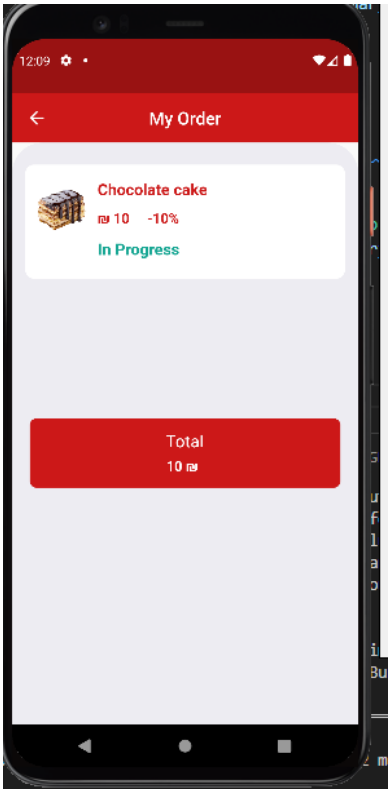
When you click on confirm it will be waiting for the owner page to approve the request



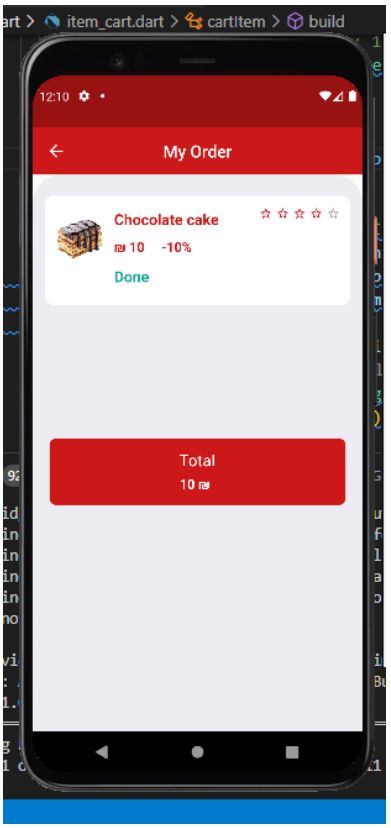
In the case of waiting, the user can delete his request or edit it



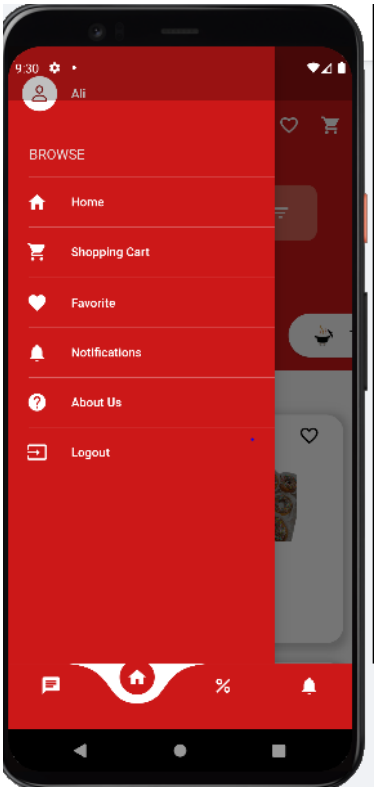
If admin approves the request, the user cannot delete or modify his request



When the request is done, User can Rate the order

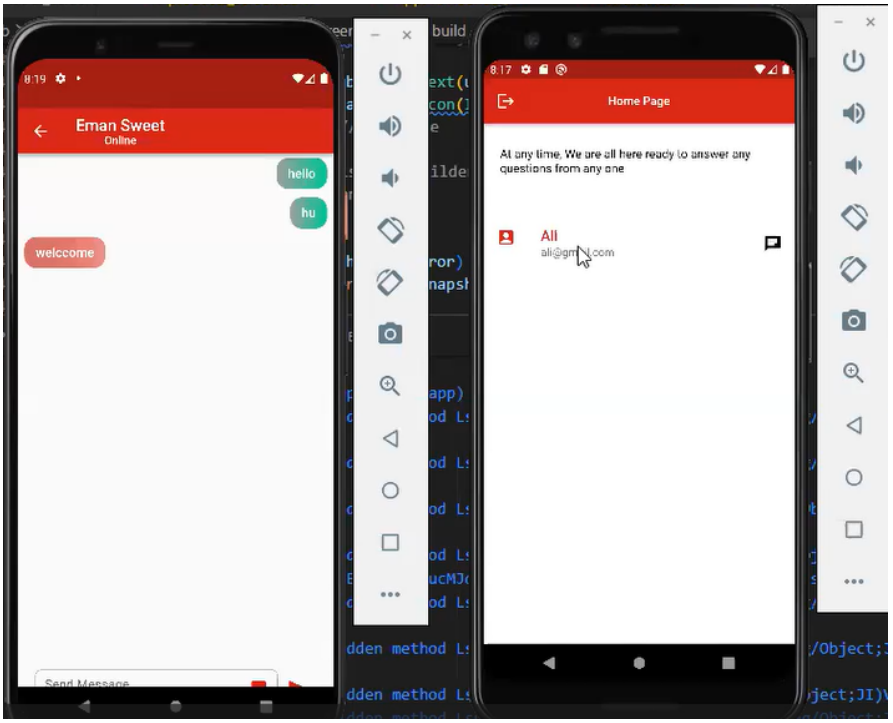


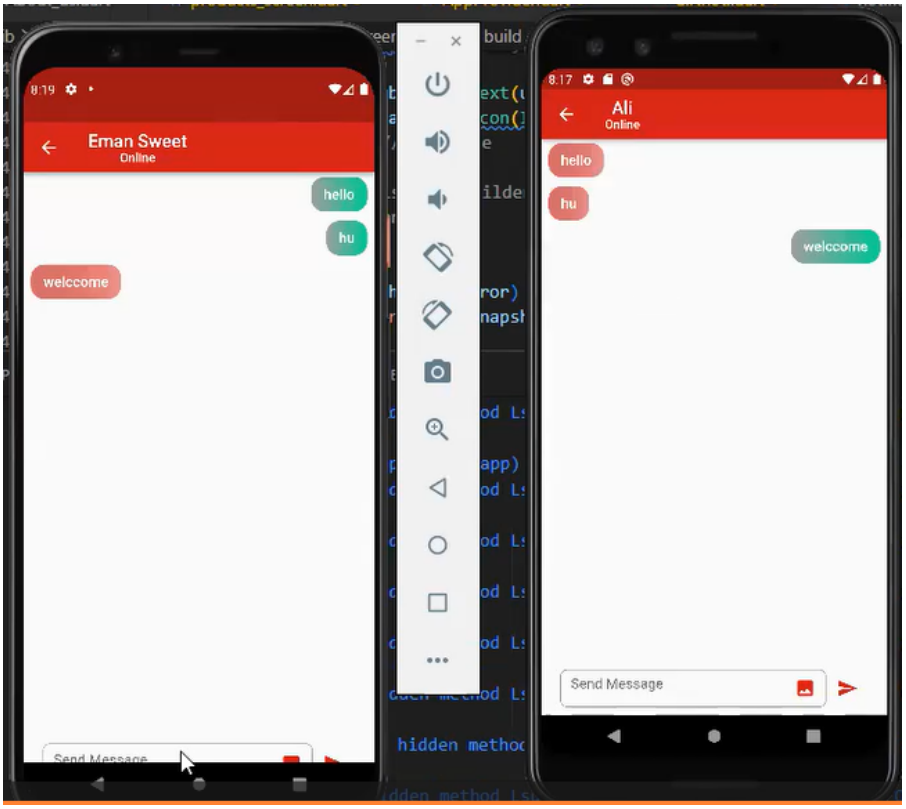
And here menu for user to make it easier for him to access the pages he needs:



Chat System

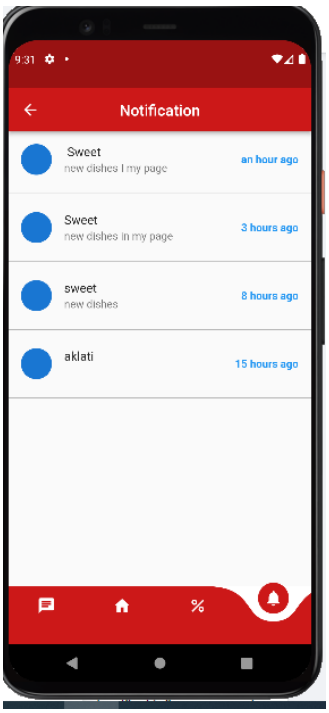
user can connect directly with any page he want to order homemade food or for any other services:





Notifications:

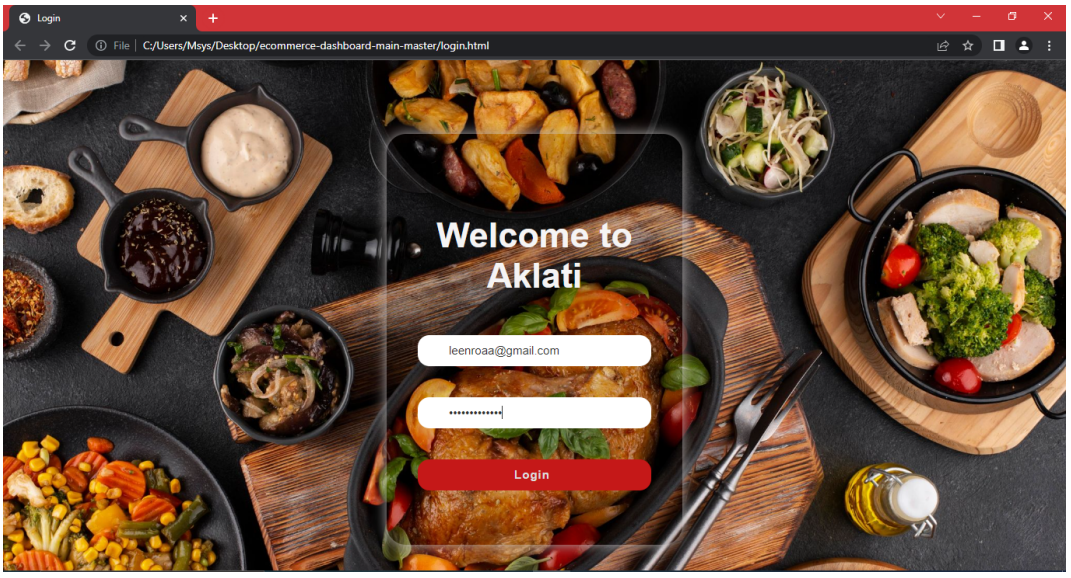
Notifications appeared to the user coming from the owners pages



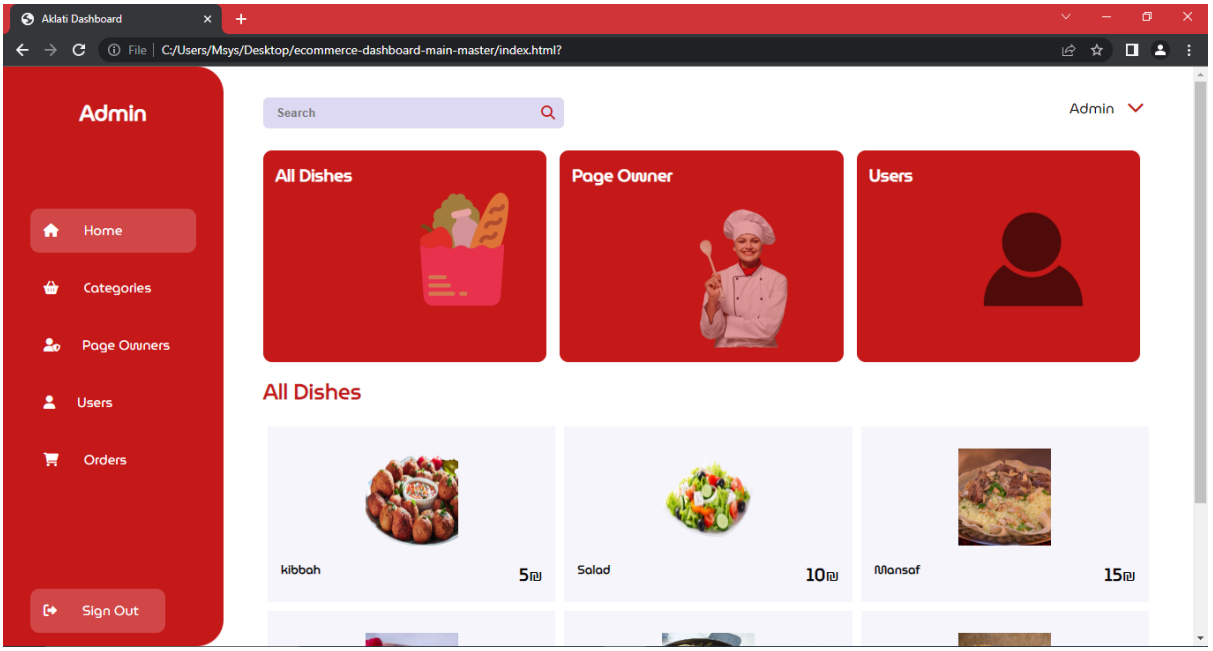
5.4.2 Website:

Website made to control and monitor all data of application, as tables and statistics.

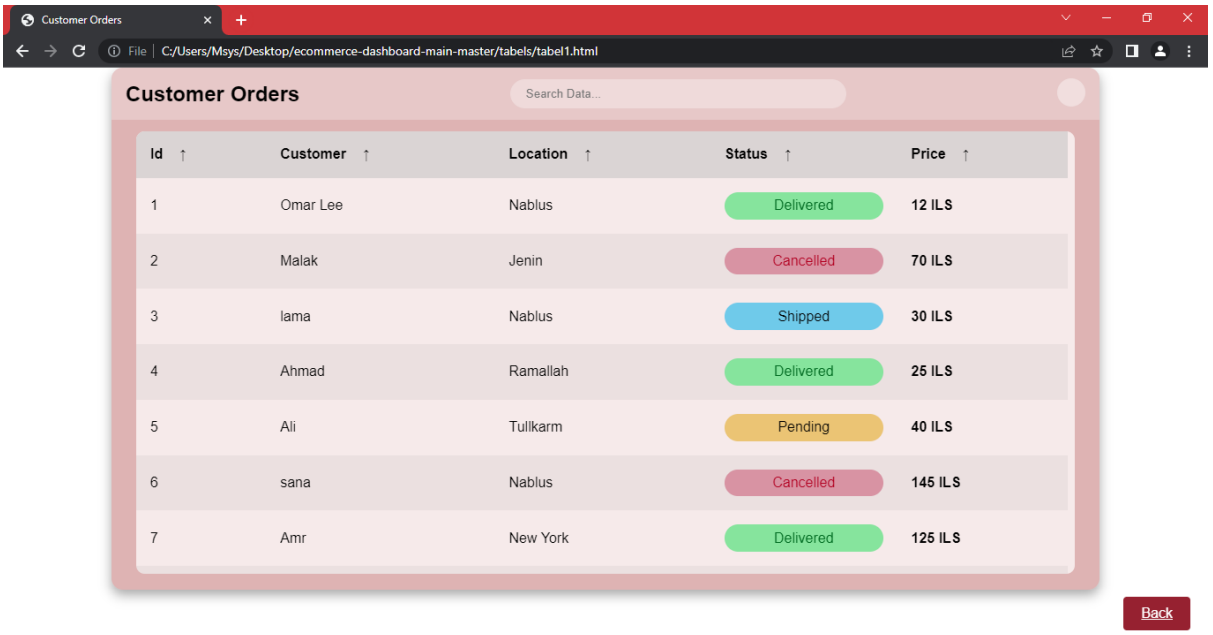
log-in as Admin



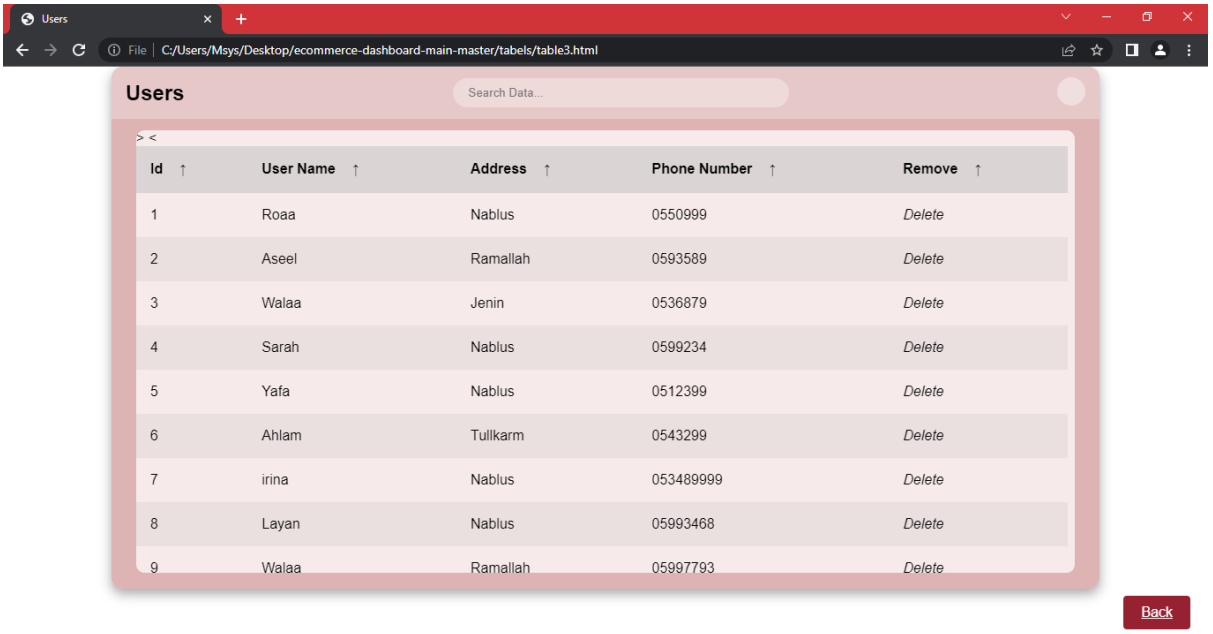
Intro Page



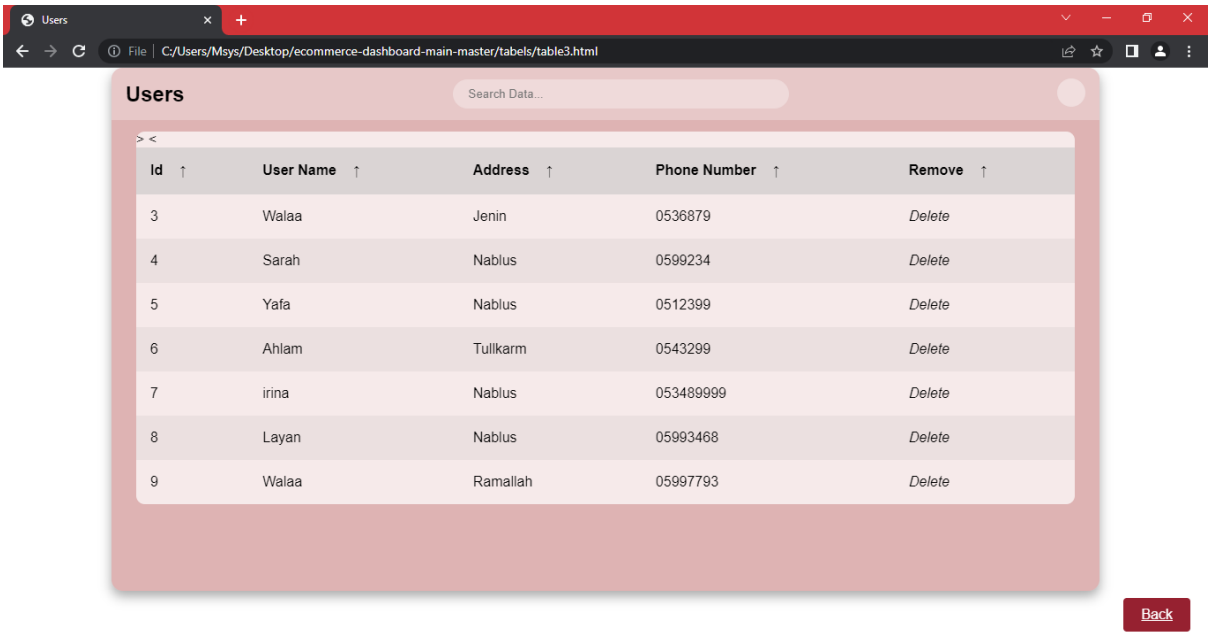
Customer Orders



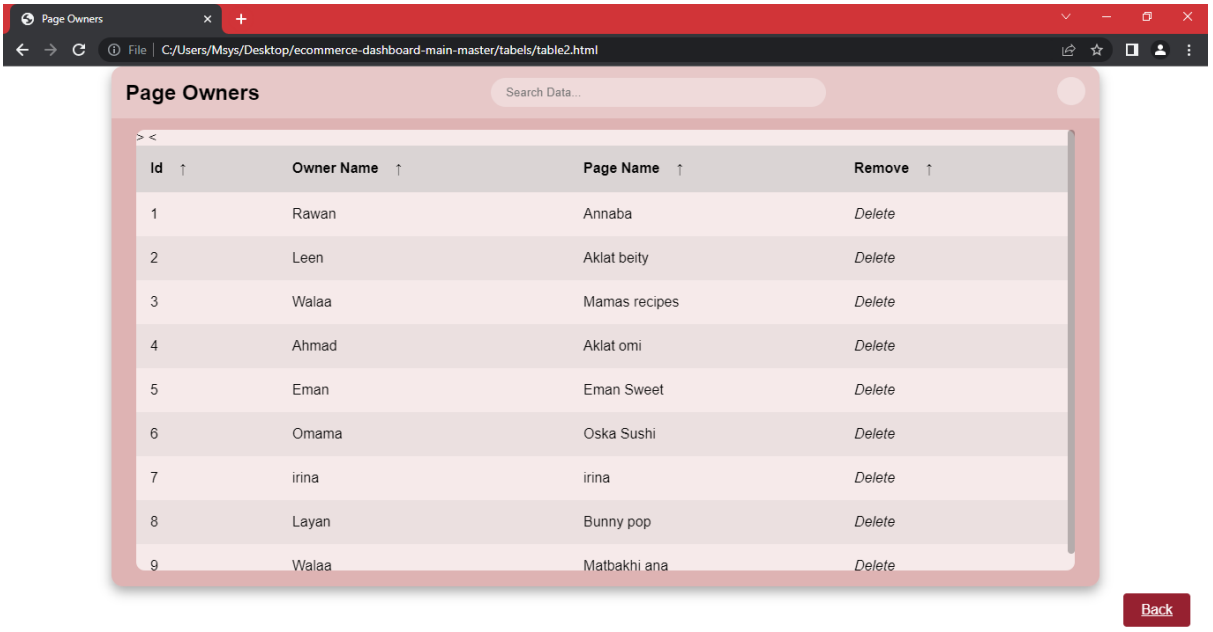
Users



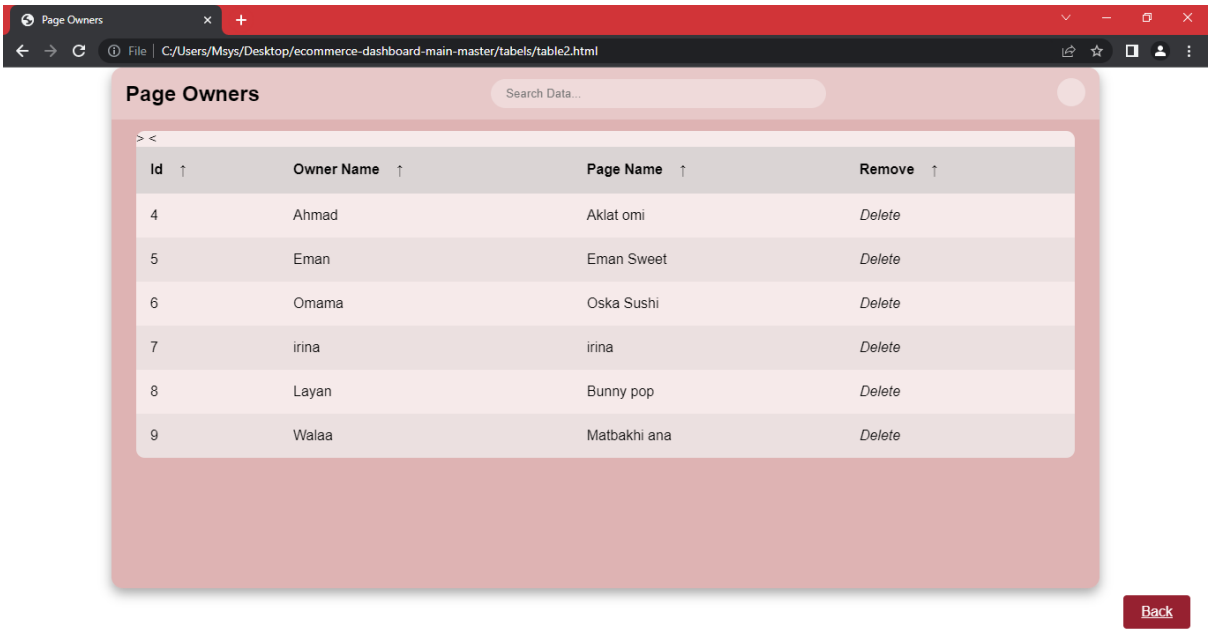
Admin can delete any User



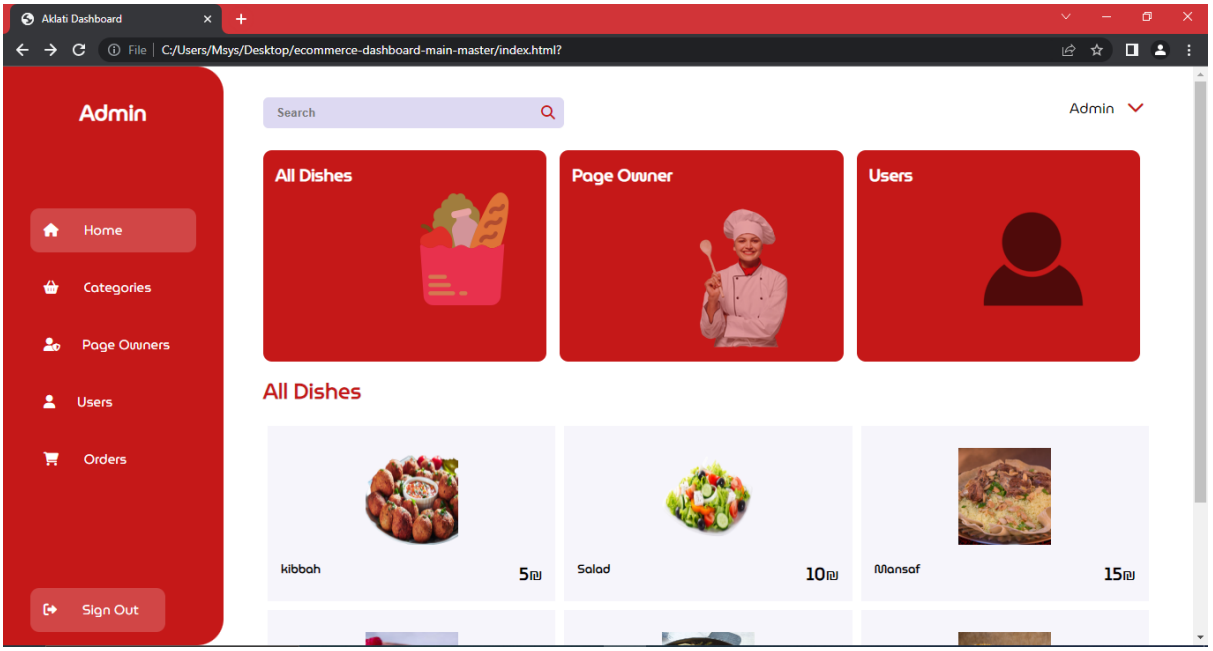
Page Owners

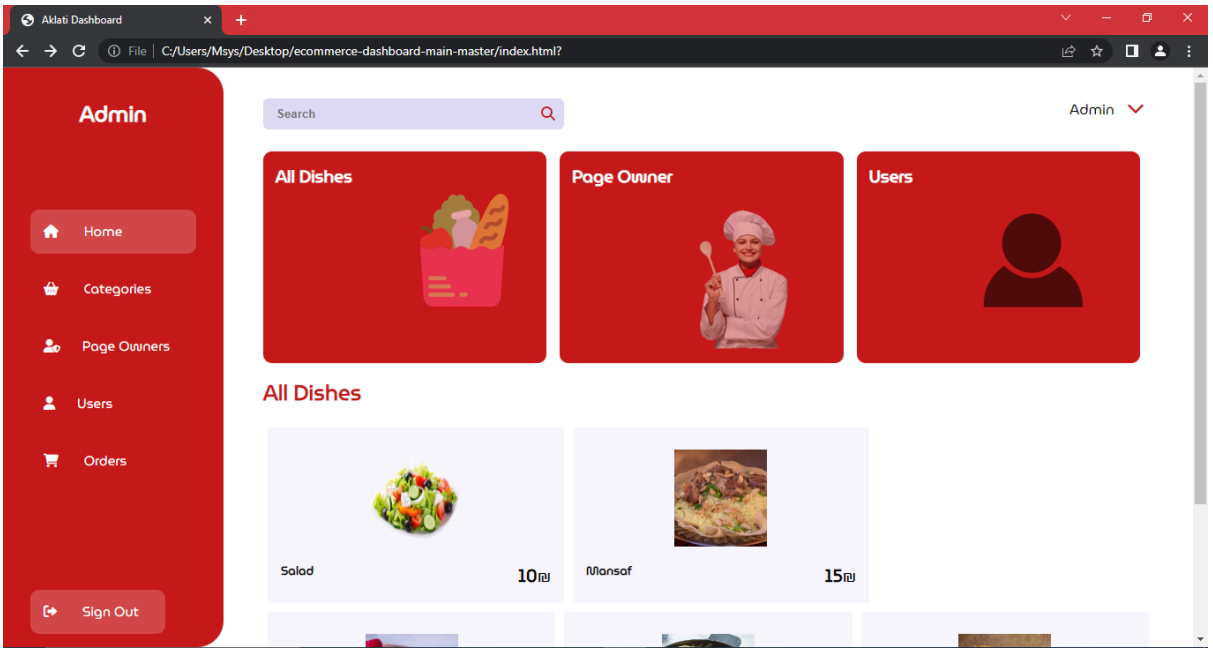


Admin can delete any Page Owner



Admin can delete any Item


Aklati Dashboard
File | C:/Users/Msys/Desktop/ecommerce-dashboard-main-master/index.html?
Admin
Search
Admin
Home
Categories
Page Owners
Users
Orders
Sign Out
All Dishes
Page Owner
Users
All Dishes
kibbah
5₪
Salad
10₪
Mansaf
15₪


Aklati Dashboard
File | C:/Users/Msys/Desktop/ecommerce-dashboard-main-master/index.html?
Admin
Search
Admin
Home
Categories
Page Owners
Users
Orders
Sign Out
All Dishes
Page Owner
Users
All Dishes
Salad
10₪
Mansaf
15₪

Chapter 6

Results and Discussions

We used a variety of tools and languages, including flutter and NodeJS, as well as two databases,the main database was MongoDB and Firebase .
We created a user-friendly application in which By bringing together page owners and users, the platform aims to facilitate a seamless and efficient process for ordering homemade food. Users can explore a wide range of food items, place orders for multiple dishes, evaluate their experiences, and even connect directly with page owners. This comprehensive approach enhances user satisfaction and promotes engagement between page owners and their customers.. We created an easy-to-use website for administrators to display and edit information in a straightforward manner.

- **Learning**

  To build the application, the team chose Flutter as the framework for the front-end development, and Node.js for the back-end. This decision involved learning and adapting to new programming languages and frameworks, which posed a challenge during the implementation phase. The team had to invest additional effort into understanding the intricacies of these technologies and effectively applying them to the project.

- **Challenges**

1- Using new frameworks and programming languages, it was hard to implement.

2- Heavy editors and simulations which caused problems in our laptops.

3- Variety features from different fields delayed our work.

Chapter 7

Conclusion

7.1 Summary

Our project involves the development of a platform that caters to the increasing demand for homemade food. The application serves as a one-stop solution for users, allowing them to explore and order a wide variety of homemade dishes. Additionally, the platform supports page owners by providing them with a space to showcase and promote their dishes to potential customers. The application also offers features such as search functionality, detailed dish information, order tracking, and direct communication between customers and page owners.

7.2 Things we learned:

During the development of our homemade food application, we gained valuable insights and acquired new skills:

- Mobile app development using Flutter: We became proficient in using the Flutter framework to create a user-friendly and responsive mobile application.

- Backend development with Node.js: We successfully utilized Node.js as the backend technology for our application, enabling us to handle

data processing, database management, and user interactions.

- Order tracking and status management: We developed mechanisms to enable users to track their orders in real-time, enhancing transparency and customer satisfaction.

- Communication system implementation: We integrated a chat feature that allows customers to directly communicate with page owners, fostering engagement and addressing customer inquiries.

- Collaboration with Flutter packages: By utilizing various Flutter packages, we enhanced the application's functionality and incorporated additional features seamlessly.

7.2 Things we learned:

7.3 Recommendations:

As the hub of development in our world and a field that helps both students and society as a whole, mobile app development is recognized as a crucial subject in computer science and engineering departments. It merits greater attention.

For example, it will shorten the time and effort needed for students to learn how to create an application and ease the challenges they will face.

The difficulties that their civilizations have encountered will also be addressed, along with contemporary remedies.

7.4 Future Work:

- Adding delivery in the application and a map that enables the user to track his order and deliver it at the required time.
- Making the app more like social media by including the story function, following/unfollowing.
- .

Chapter 8

References

- https://play.google.com/store/apps/details?id=com.ubs.midecare&hl=ar&gl=US
- *Node.js documentation.* Retrieved Jan, 2023 from https://nodejs.org/en/docs/
- https://flutter.dev/
- https://www.mongodb.com/docs/manual/