

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

AN-NAJAH NATIONAL UNIVERSITY



**FACULTY OF ENGINEERING AND
INFORMATION TECHNOLOGY**

Computer Engineering Department

Software Graduation Project

My Look

Done by :

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Abstract

This project aims to streamline the process of booking hair and skincare sessions through a userfriendly application. The system consists of three main roles: the user (customer), the barber, and the administrator. The barber can create and manage various session types, including haircuts and skincare treatments, set their availability, and publish promotional content such as packages and social media. The user can browse barbers, view their ratings, book sessions, and make secure payments via Visa card. Customers can also follow their favorite barbers, receive updates on new offerings, communicate with barbers through an integrated chat feature, see barbers posts and interacts with them through like and comments. Both barber and users can donate to the application to support this project. The administrator oversees the entire platform, approving barbers based on verified credentials, monitoring statistics, and managing profits. The administrator also facilitates payments by transferring earnings to barbers' linked bank accounts while deducting a commission from each booking. The application supports appointment booking, cancellation, and rescheduling for both customers and barbers, ensuring flexibility. The platform includes: web-based admin panel, built with React, for system management, mobile application, developed using Flutter, for barbers and customers, backend, powered by Laravel with a MySQL database, ensuring seamless operation

1 Introduction

1.1 Problem Statement

For Customers:

Booking hair and skincare sessions is often a time-consuming and inefficient process, involving manual appointment scheduling, lack of access to real-time availability, limited payment options, and minimal engagement with service providers. Customers also struggle to stay updated on new offerings and promotions from their favorite barbers or skincare professionals. This lack of convenience and interactivity leads to poor user experience and reduced customer loyalty.

For Barbers:

Barbers and skincare professionals face challenges in managing their bookings, promoting their services, and maintaining consistent communication with clients. Without a centralized platform, they must rely on fragmented tools for appointment scheduling, customer interaction, and payments. This limits their ability to grow their client base, showcase their work, and ensure a steady income stream. Additionally, there's no streamlined method for sharing updates, engaging customers, or handling secure payments and withdrawals efficiently.

1.2 Project Objectives

The primary objective of this project is to develop a comprehensive digital platform that simplifies and enhances the process of booking and managing hair and skincare sessions for both customers and service providers (barbers). The specific objectives of the project are as follows:

- **Streamline Appointment Booking:**

Enable customers to easily browse available barbers, view services, check real-time availability, and book hair or skincare sessions through a user-friendly mobile application.

- **Empower Barbers with Management Tools:**

Provide barbers with a professional interface to create and manage their service offerings, define their availability, promote packages, and publish content such as photos and social media updates.

- **Secure and Convenient Payments:**

Integrate a reliable payment gateway to allow customers to pay securely via Visa card and enable barbers to receive their earnings through linked bank accounts after commission deductions.

- **Enhance Communication and Engagement:**

Implement an in-app chat feature and interactive social feed to allow customers and barbers to communicate directly, follow profiles, like posts, and comment on updates.

- **Support Booking Flexibility:**

Offer functionality for both customers and barbers to cancel or reschedule appointments, promoting flexibility and reducing scheduling conflicts.

- **Enable Community Support:**

Introduce a donation feature to allow both users and barbers to contribute to the platform's development and sustainability.

- **Ensure Effective Platform Oversight:**

Equip administrators with a web-based React admin panel to approve barber registrations, monitor performance metrics, manage users, and oversee financial operations including commission tracking.

1.3 Project Scope

This project aims to develop a digital platform that revolutionizes the way hair and skincare services are booked and managed in Palestine, addressing the unique needs of both customers and barbers. The system includes a mobile application for end-users (customers and barbers), and a web-based admin panel for platform administrators

2 Constraints and Course work

2.1 Constraints

2.1.1 geographical Limitation

The initial launch and service coverage are limited to **Palestine**. Availability outside this region will depend on future scalability and partnerships.

2.1.2 Time Limit

Developing the entire application within a four-month timeframe posed a significant challenge. This included learning new technologies and programming languages, conducting in-depth research, designing the user interface, and implementing both the mobile application and the web admin — covering both front-end and back-end development. Balancing this workload alongside our core courses added to the complexity of the project.

2.2 Earlier course work

During our studies in the Computer Engineering Department, we gained a solid foundation in key concepts that played a crucial role in the development of this application. Topics such as Object-Oriented Programming, Web Programming, Algorithms and Complexity, as well as Critical Thinking and Research skills, were particularly influential. Additionally, we enhanced our knowledge by completing online courses on Flutter, React, Laravel, which significantly supported the implementation and development of our project and helped us produce a thorough and well-structured report.

3 Literature Review

Online Appointment Scheduling Systems for Personal Services

Online appointment scheduling systems have become increasingly common in personal care services like salons and spas. A study by Al-Azzam et al. (2019) highlights how such platforms enhance customer convenience and business efficiency by automating booking, payment, and reminders. These systems not only reduce manual administrative work for service providers but also provide customers with 24/7 access to bookings. In the context of this project, implementing a similar digital booking system tailored for hair and skincare services allows users to schedule appointments, make secure payments, and interact with service providers, reflecting industry best practices.

Reference: Al-Azzam, M., Abu-Shanab, E., & Al-Gharaibeh, G. (2019). Online Appointment Scheduling Systems: A Literature Review. International Journal of Advanced Computer Science and Applications (IJACSA), 10(6), 367–374.

Mobile Applications in the Beauty and Wellness Industry

Recent developments in mobile application technology have revolutionized the beauty industry by providing platforms for service discovery, booking, and customer engagement. As noted by Sangwan et al. (2021), mobile apps offer a direct communication channel between customers and service providers, promoting customer loyalty and enhancing service personalization. This project aligns with these trends by offering an integrated mobile app for users and barbers that includes chat, social features (likes/comments), and personalized updates, contributing to an immersive and user-centered service experience.

Reference: Sangwan, A., Seema, M., & Yadav, S. (2021). Impact of Mobile Apps on Beauty and Wellness Industry. International Journal of Innovative Technology and Exploring Engineering (IJITEE), 10(4), 127–131.

4 Methodology

4.1 Introduction

This methodology outlines the design, architecture, technologies, and database structure used to implement a robust mobile platform for booking hair and skincare sessions. The system supports three main roles: customers, barbers, and administrators, each with distinct functionalities. The goal is to create a seamless, scalable, and interactive experience for all parties.

4.2 System Overview

The system architecture follows a distributed multi-tier design comprising:

- Frontend Clients:
 - Flutter Mobile Application: A cross-platform mobile client used by both barbers and customers.
 - React Admin Panel: A web-based dashboard for system administrators.
- Backend Services:
 - Laravel API: Core backend handling business logic, database operations, authentication, and RESTful services.
 - Spring Boot Microservice: Supports real-time text-based chatting using WebSocket for native compatibility.
- Databases and External Services:
 - MySQL Database: Central storage for all structured data.
 - Firebase Cloud Messaging (FCM): Handles push notifications.
 - Stripe: Manages all payment-related operations including bookings, donations, and ads.
 - Google Maps API: Provides location tracking and navigation.
 - DeepSeek AI: Powers AI chat assistant for skin and haircare inquiries.

4.3 Functional Modules

- User Management
 - Users are categorized into three roles: admin, barber, customer.
 - Barbers must submit identity and certification documents, which are reviewed and approved by the admin.
 - Each user has a profile including name, photo, gender, DOB, city, contact information, and FCM token.
- Barber Features
 - Packages: Barbers define service packages with name, price, and feature list (stored as JSON).
 - Availability: Barbers create independent time slots using barber_time_slots table.
 - Posts and Reels: Barbers create promotional content (photo, text, or video type) using posts table.
 - Followers: Users can follow barbers, tracked via followers table.
 - Products: Barbers list products with category, features, description, and price.
- Booking Flow
 - Users browse barbers filtered by rating, city, or all.
 - Selecting a barber opens their profile with available packages and time slots.
 - Users pick a package and select date/time for booking.
 - Payment is made via Stripe, and booking is recorded in bookings table with in_progress status.
 - Until the appointment day, either party can cancel or reschedule.
 - After the appointment, either party can mark it as done.
 - Users rate the experience, stored in the rate field of the booking.

- Payment and Financials
 - Booking Revenue Split: Upon completion, 90% of the booking fee is added to barber's balance; 10% is retained by the app.
 - Cancellation Refunds: Refunded amount is credited to the customer.
 - Bank Accounts: Users add account number and IBAN in table `bank_accounts`.
 - Withdrawals: Users request fund withdrawal via `withdraw_requests`. Admins approve, reject, or complete these requests.
- Donations and Ads
 - Any user can donate to the application via Stripe. Records are stored in `donations`.
 - Admins upload image-based advertisements (`ads` table), which are displayed on the main customer screen.
- Store and Orders
 - Products added by barbers are globally visible in the store.
 - Users add items to cart and submit an order with address and city.
 - Orders are grouped and submitted to respective barbers.
 - Barbers fulfill the order and update the status (pending, completed, canceled).
- Chat and Social Features
 - Real-time 1-on-1 messaging is supported via `chat_room` and `chat_message` tables powered by Spring Boot.
 - Users can interact with barber posts via likes (`likes` table) and comments (`comments` table).

4.4 Database Schema Overview

The MySQL schema follows a normalized design with foreign key constraints to ensure referential integrity. Major tables include:

- users: Stores user credentials and profile data.
- barbers: Barber-specific data including location and verification.
- packages, bookings, barber_time_slots: Manage session offerings and appointments.
- posts, likes, comments, followers: Enable social interactions.
- products, categories, cart, orders: Support e-commerce functionality.
- chat_room, chat_message: Facilitate real-time communication.
- conversations: store deepseek chats.
- table_bank_accounts, withdraw_requests, donations: Handle financial transactions.
- ads: Manage promotional content.

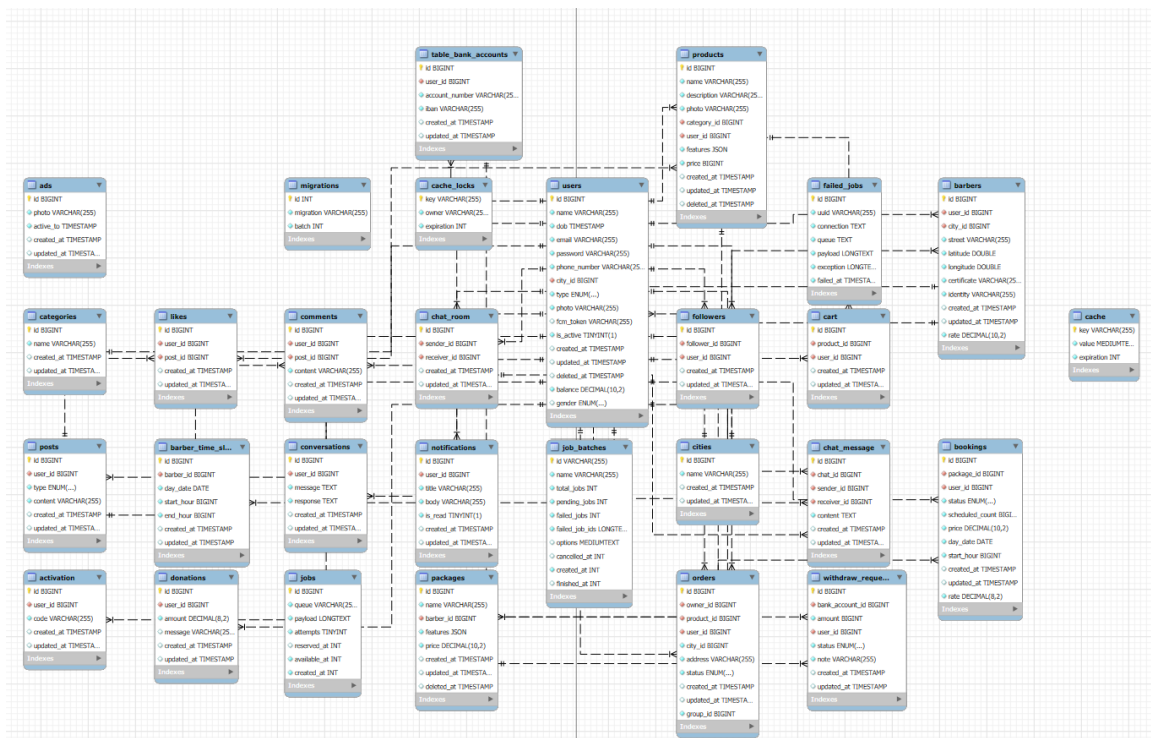


Figure 1 Database Schema

1 Results and Discussion

1.1 Authentication Flow

The users can login and register, customers can directly log in but barbers need admin to approve them after identity and qualification verification, reset password will send code to email and user should submit this code to reset the password.

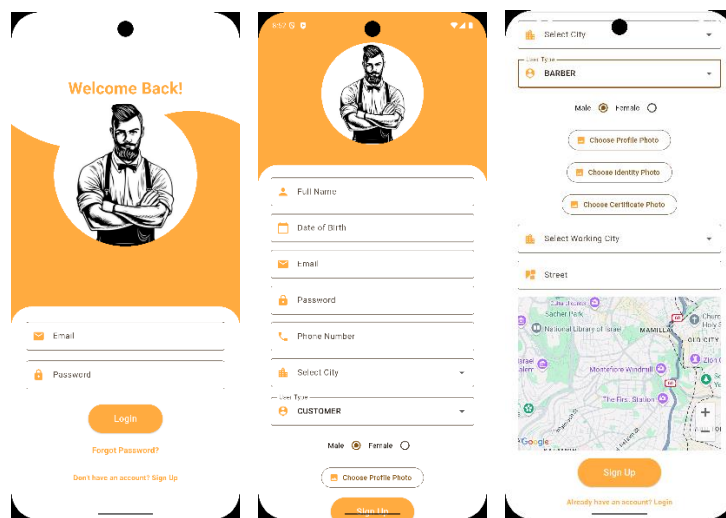


Figure 2 Authentication

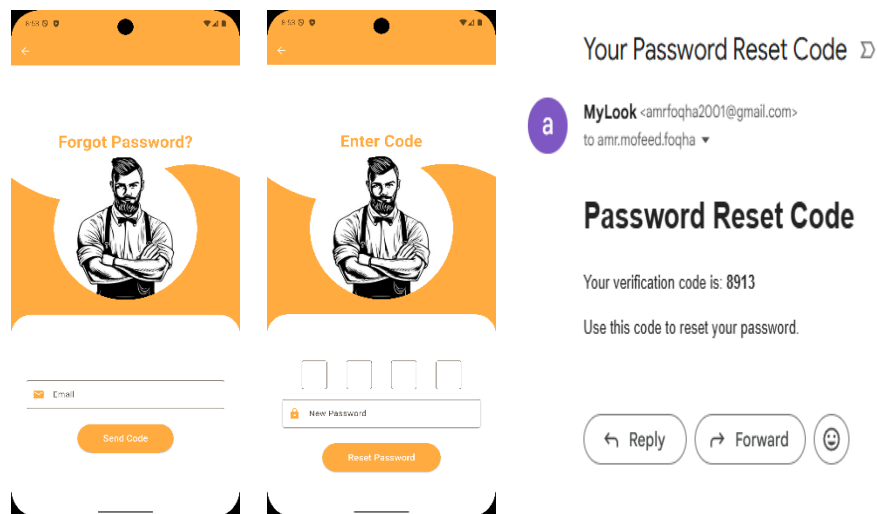


Figure 3 Reset Password

1.2 Customer Home

In this page customer can see added ads by admin, top rated barbers, barbers in the same city and all, the customer can search and filter them by rate, city and availability.

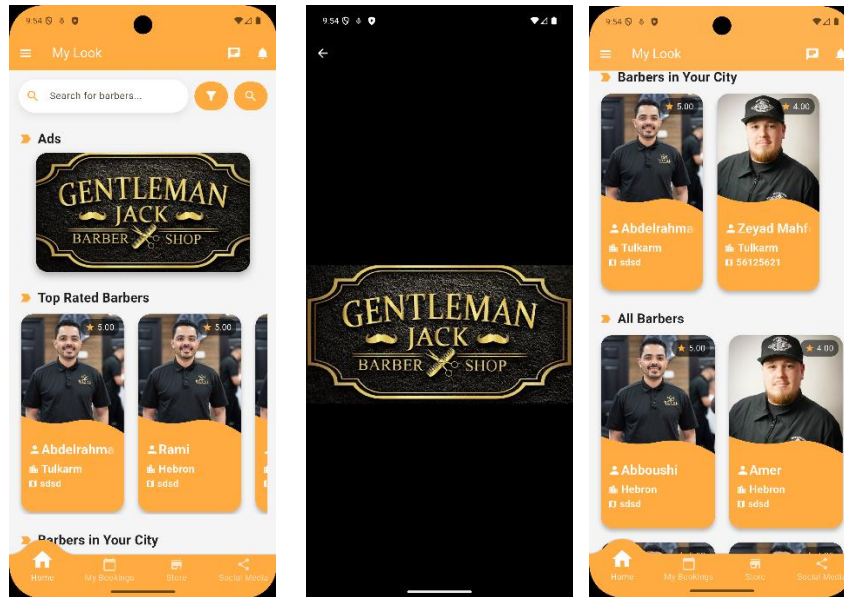


Figure 4 Customer Home

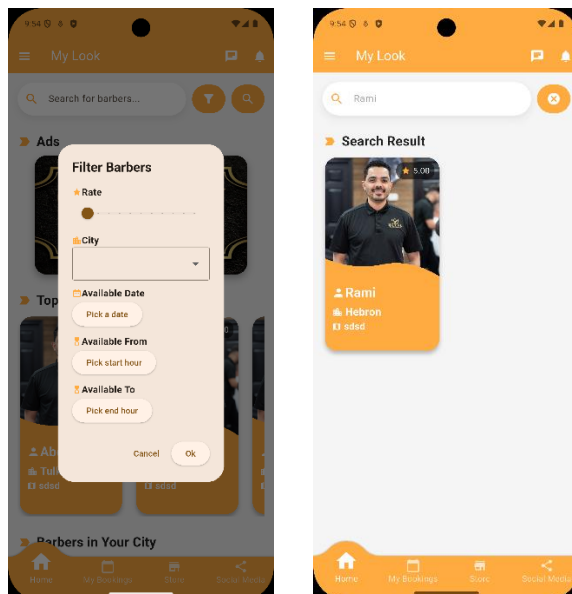


Figure 5 Customer Barber Search

1.3 Barber Profile

In this page the customer can see barber details, contact information, map navigation, follow on social page, send messages and see packages and book one.

When press on follow button then on social page the customer can see barber posts and interact with through comments and likes.

When press on message then he can chat with barber.

When press on navigation then will see map navigation page.

Packages which include details like name, features and price, if press book now then he will see barber available dates and time and can select one, if everything ok then he should pay using visa card through stripe service.

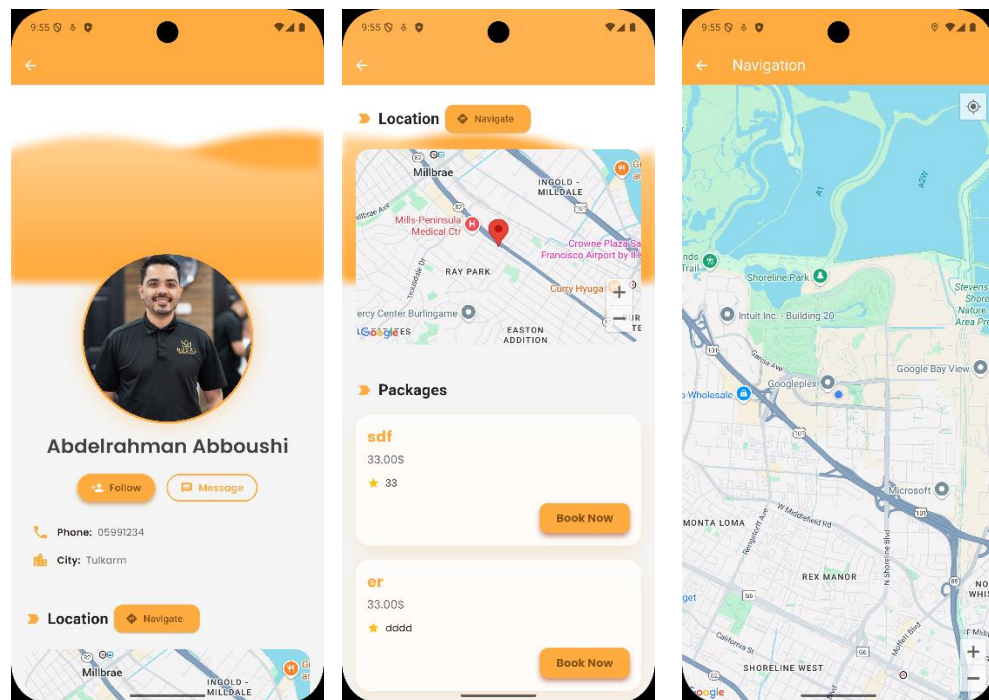


Figure 6 Barber Profile

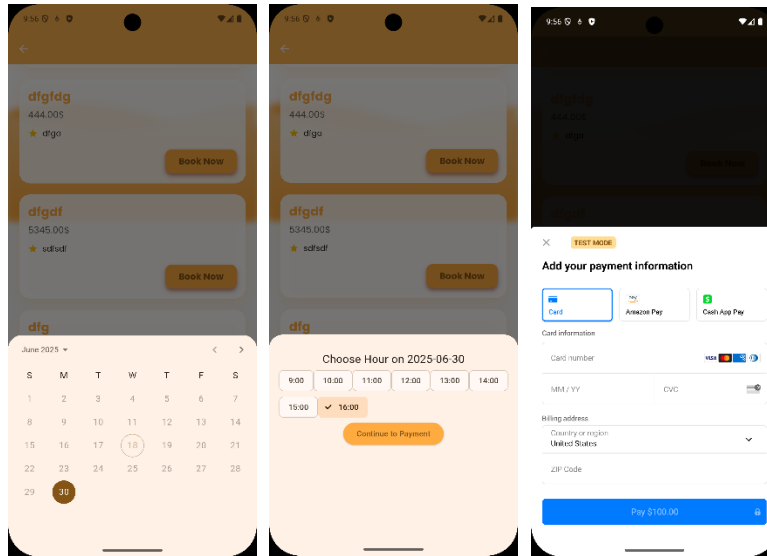


Figure 7 booking steps

1.4 Booking page(common)

in this page both barber and customer can see booking, and the other side information and take actions like cancel, reschedule while current date is not the same day of booking, and after booking time is started, they can mark it as read, in additional buttons for customers like rate barber after package is done and navigate button for navigation page, in addition to search and filters.

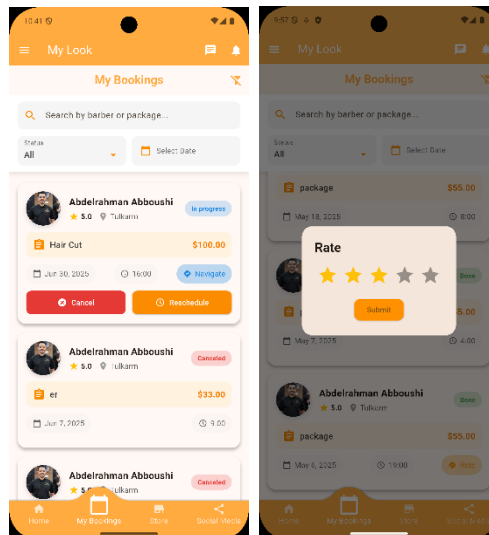


Figure 8 Booking Page

1.5 Store Page

In this page customer can see skin and hair care products which is published by barbers, can add to cart and search and products organized into categories sections.

When open cart page then user can submit his delivery information and barbers will process their orders and update statuses.

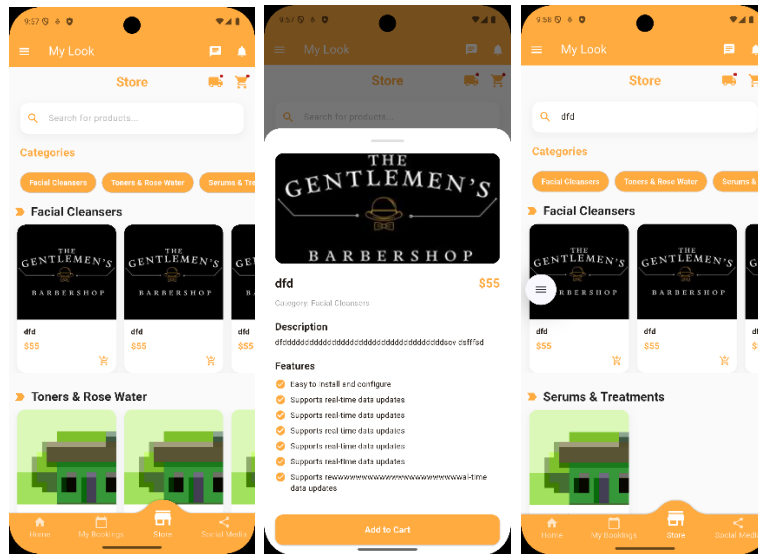


Figure 9 Store Page

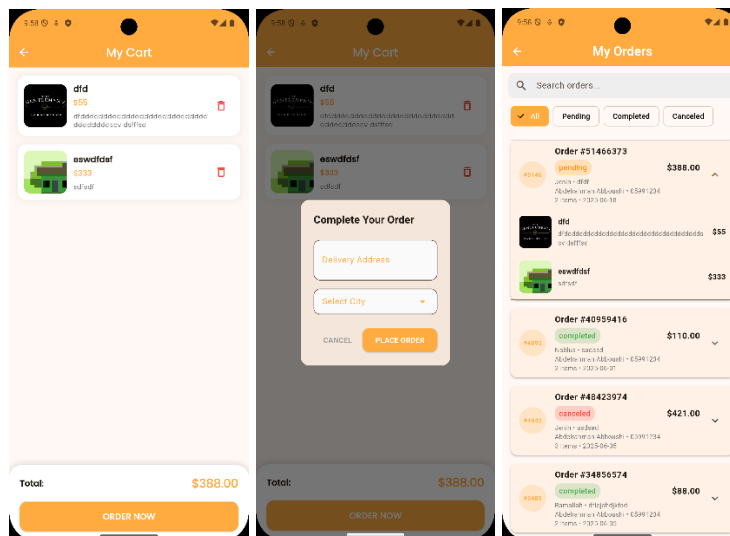


Figure 10 Order Products Procedure

1.6 Social Page

In this page the customer can see followed barber posts and interact with them through like and comments and can delete his comments.

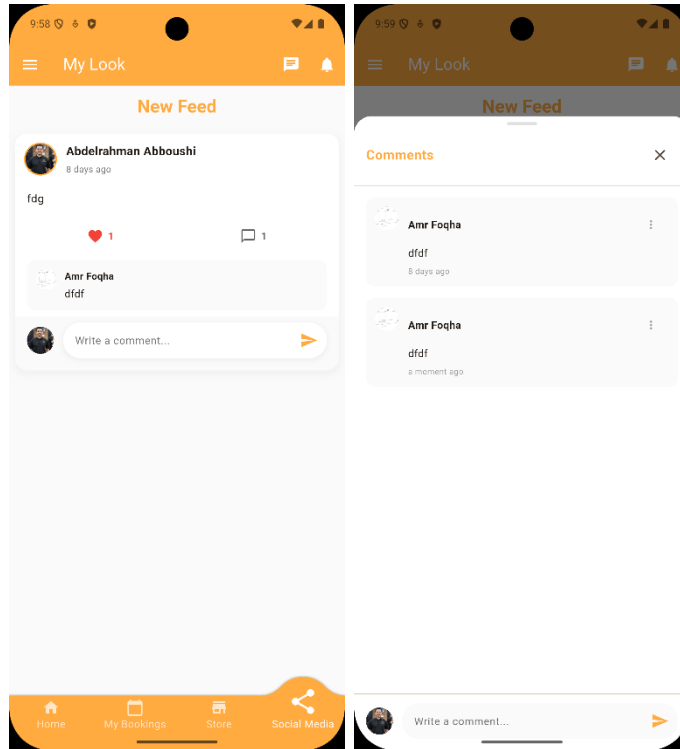


Figure 11 Social Page

1.7 Chatting

In this page customers and barbers can see their chats and interact with each other's using real time text messaging.

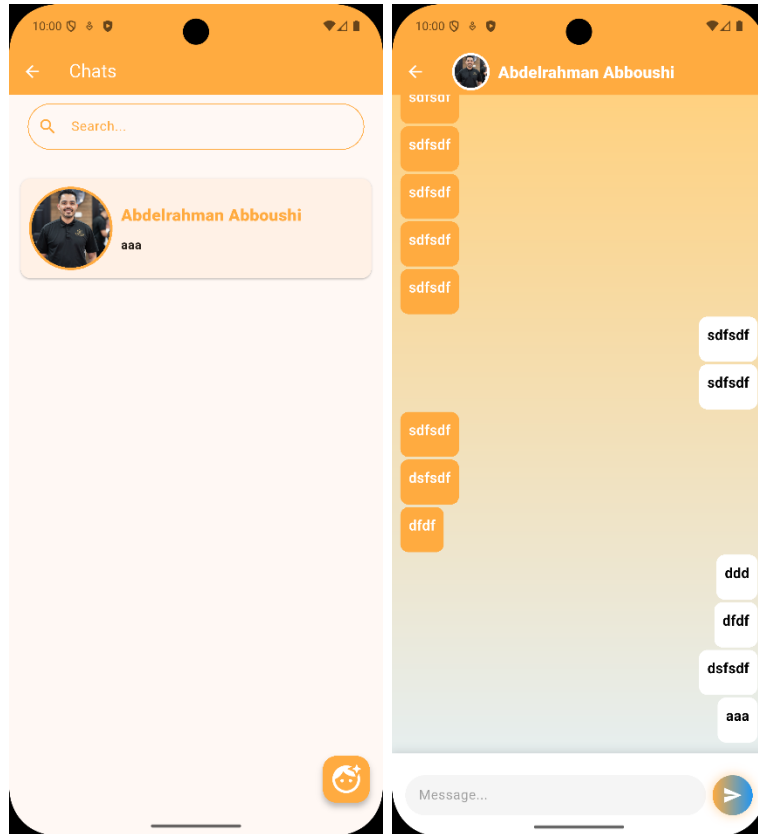


Figure 12 Real Time Chatting

1.8 Hair & Skin Care AI Bot

In the list of chats page there is floating button this will route you to our chatting bot which is integration with deepseek we used appropriate prompt so that customers and barbers can ask questions about skin and hair care.

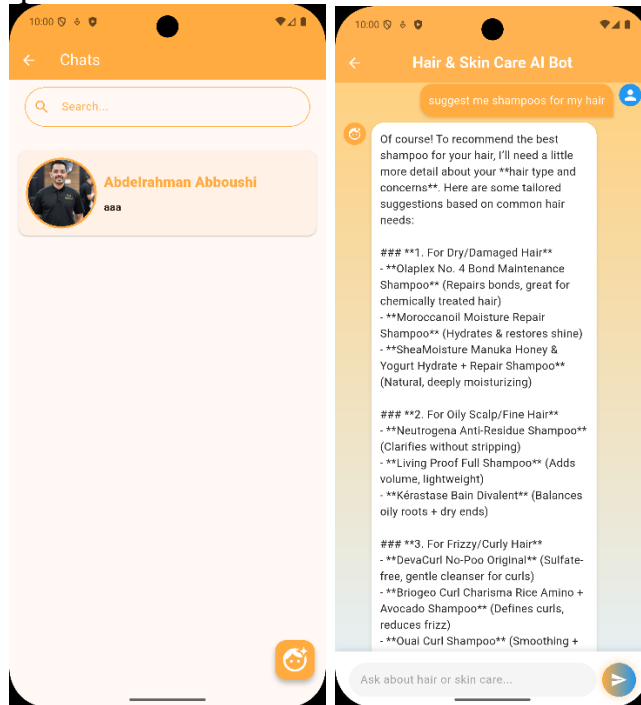


Figure 13 Hair & Skin Care AI Bot

1.9 Sidebar

If user or barber press on burger menu then side bar will appear, and can navigate to some options: profile, bank account, donation and logout.

For profile user or barber can edit their information, for barbers will see more data to edit which customer don't have.

For bank account if user don't have one then he will see page to create one then he can navigate to withdrawal page in which can see his balance and request withdraw money too his bank account and admin will process that, the balance for customers can be added when cancel a package by customer or barber then the price he paid will be added to his balance and for barbers the balance will be added which is the price of done booked package after taking 10% for application.

In donation page any user can donate to application to support it, the donation option is through visa card through stripe.

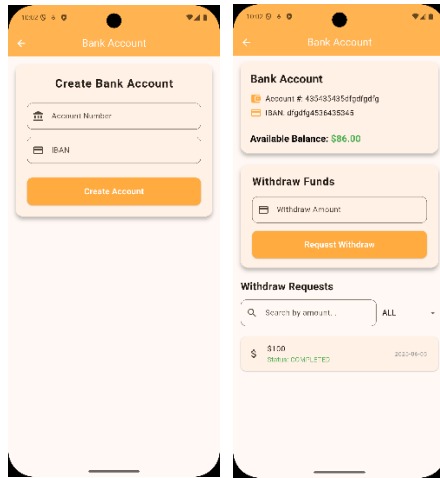


Figure 16 Bank Account

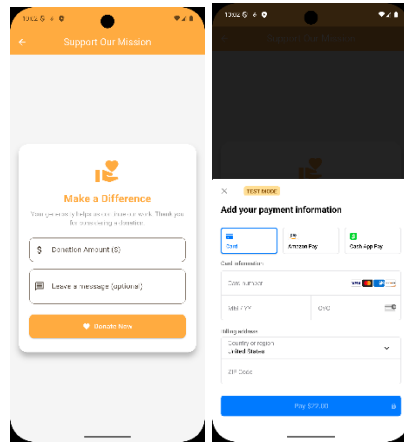


Figure 17 Donation

1.10 Barber Calendar Screen

in this page barber can manage his availability dates and hours so when customers try to book a package, they will see dates and hours entered by the barber in this page.

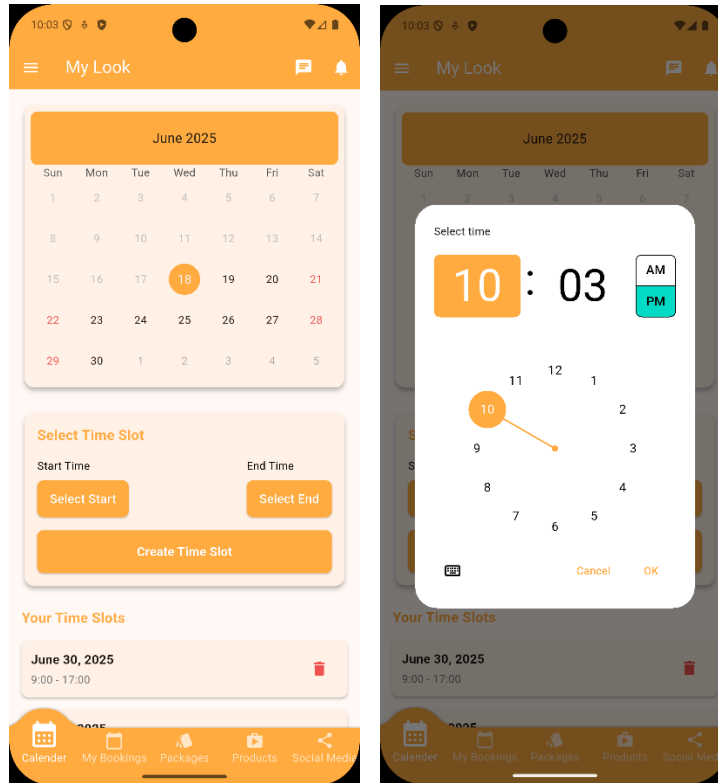


Figure 18 Barber Calendar

1.11 Packages Page

In this page barber can create and see and delete his packages and search them.

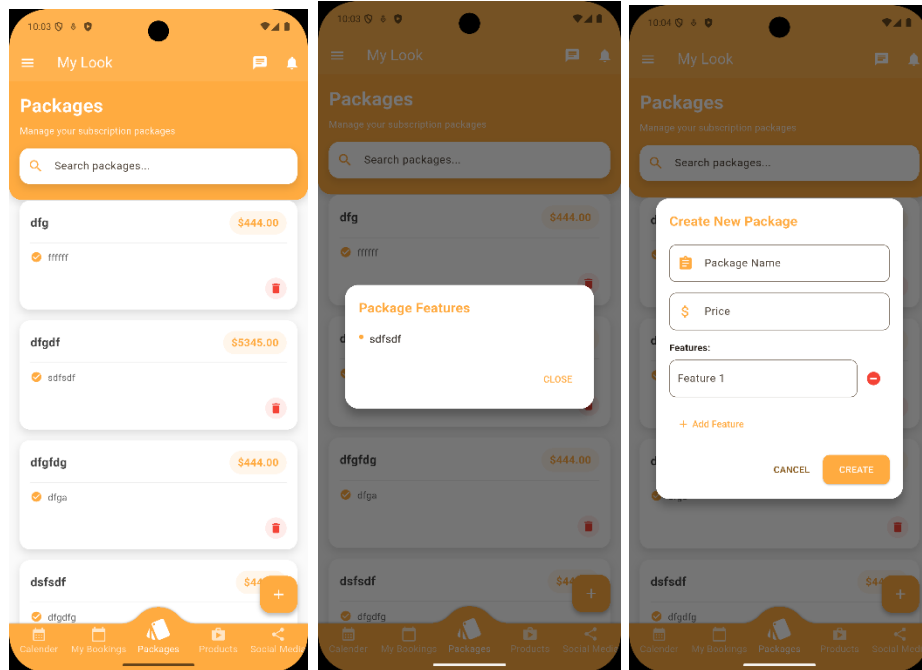


Figure 19 Packages Page

1.12 Products Page

In this page barber can create products, search and filter them, delete and managing orders and update statuses.

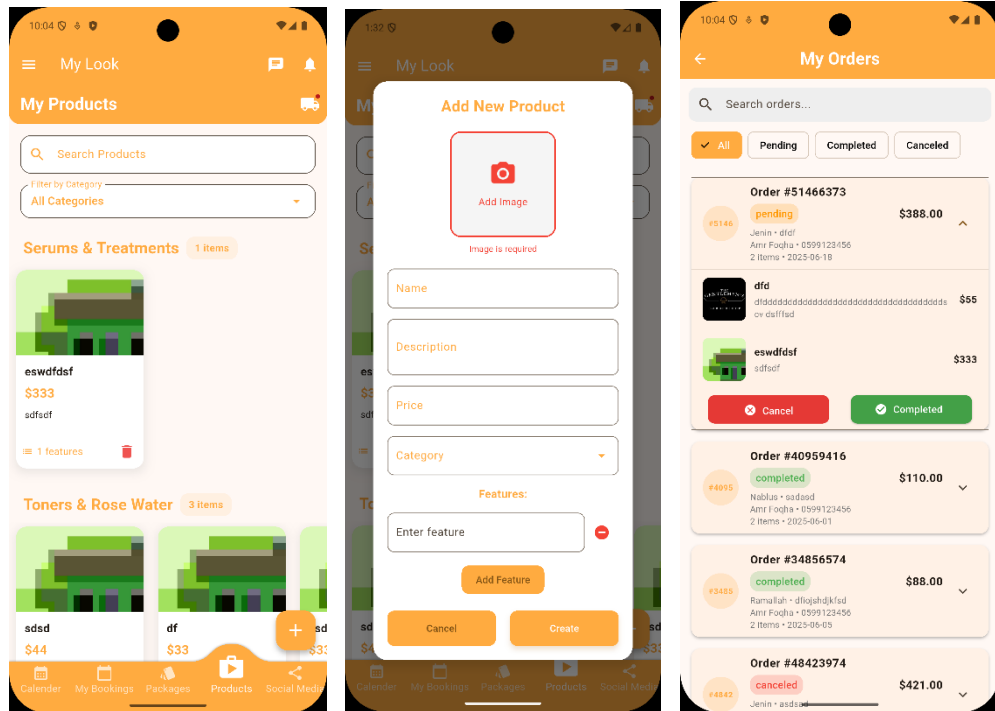


Figure 20 Barber Products Page

1.13 Barber Social Page

In this page barber can create posts and see his posts and comments, can list one also can delete any post or comment.

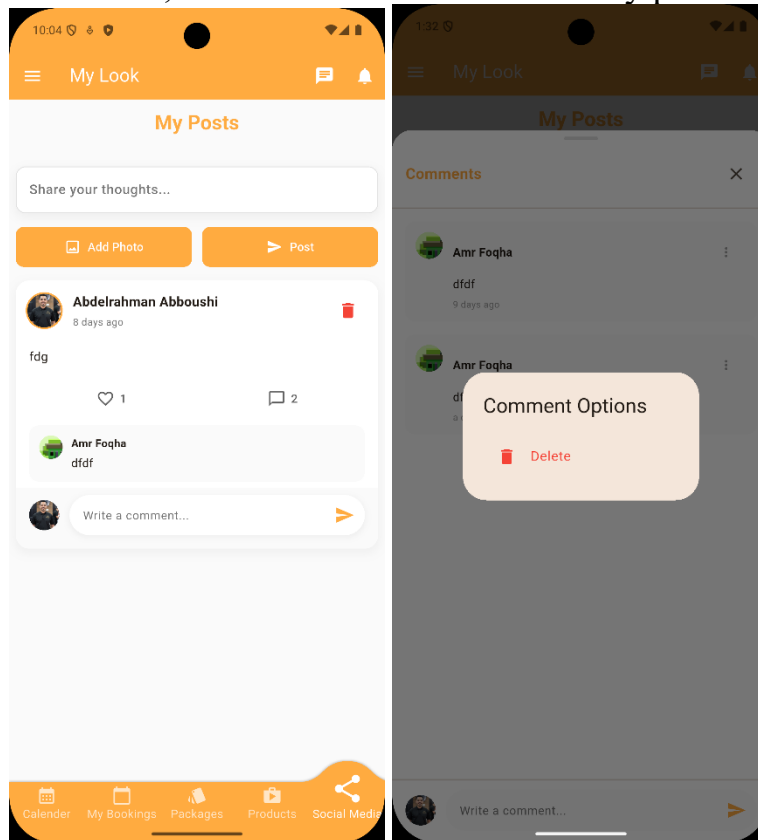


Figure 21 Barber Social Page

1.14 Notifications

There is many notifications, messages, followers, comments, likes, booking, update booking statuses, update order statuses, create orders.

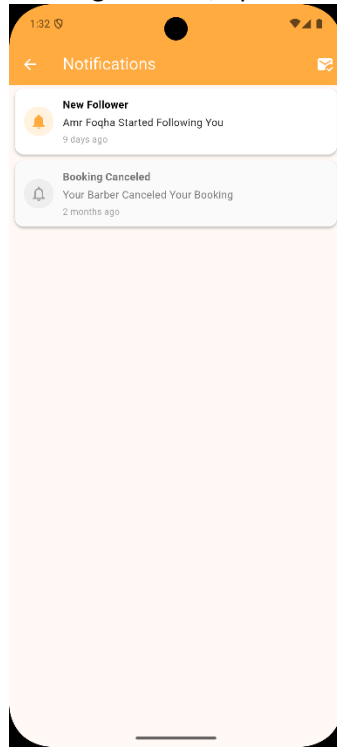


Figure 22 Notifications Page

1.15 Admin

The admin can see statistics on system, managing users and new barbers and approve them, disable or enable users, manage withdraw requests, categories and cities, creating ads, list donations.

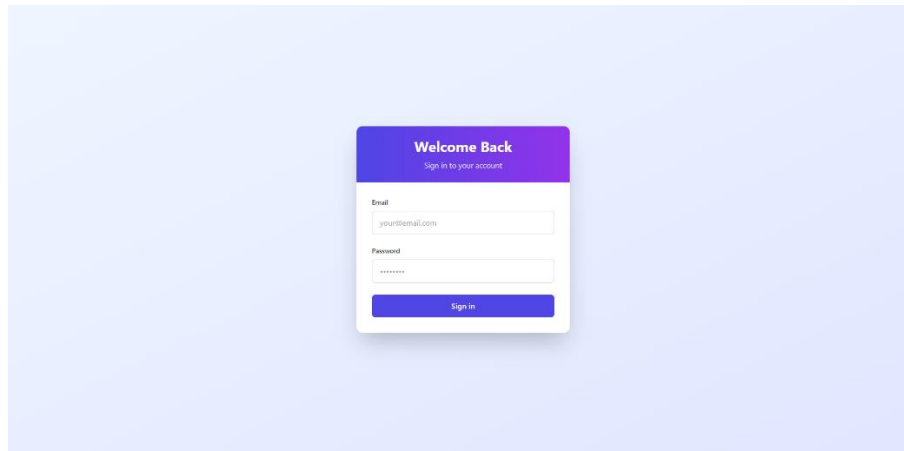


Figure 23 Admin Login

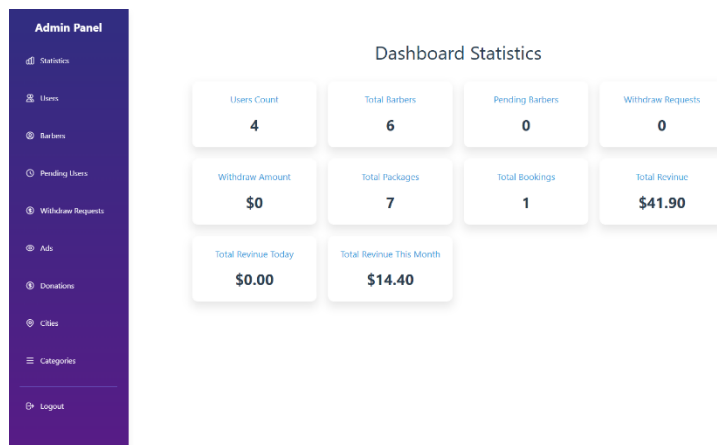


Figure 24 Admin Statistics

Admin Panel

- Statistics
- Users
- Barbers
- Pending Users
- Withdraw Requests
- Ads
- Donations
- Cities
- Categories
- Logout

Users

Name	Date of Birth	Gender	City	Email	Phone	Actions
Mahmoud	2000-01-26 00:00:00	Female	Qalqiya	sdfsdf@dsfsdf.com	059872323	Disable
Ahmad	2000-01-19 00:00:00	Female	Jenin	ertert@dfgdfg.com	0595812123	Disable
Tareq	2000-01-27 00:00:00	Male	Tulkarm	gfdgdf@scfsdfg.com	059992323	Disable
Amr Feqha	2000-01-19 00:00:00	Male	Tubas	test@test.com	0599123456	Disable

Figure 25 Admin Users

Admin Panel

- Statistics
- Users
- Barbers
- Pending Users
- Withdraw Requests
- Ads
- Donations
- Cities
- Categories
- Logout

Barbers

Name	Date of Birth	Gender	City	Working City	Street	Email	Phone	Certificate	Identity	Actions
Rami	2000-01-19 00:00:00	Male	Hebron	Hebron	sdsd	sdfsdf.refsaidsd@gmail.com	0599224	Download	Download	Disable
Noor	2000-01-19 00:00:00	Male	Hebron	Hebron	sdsd	sdfsdf.refsaidsd@gmail.com	0599223	Download	Download	Disable
Amer	2000-01-19 00:00:00	Male	Hebron	Hebron	sdsd	sdf.refsaidsd@gmail.com	059922	Download	Download	Disable
Zeyad Mahfouz	2000-01-19 00:00:00	Male	Salfit	Tulkarm	56125621	test3@test.com	0599123458	Download	Download	Disable
Abdelrahman Abboushi	2001-03-31 00:00:00	Male	Tulkarm	Tulkarm	sdsd	test1@test.com	05991234	Download	Download	Disable

Figure 26 Admin Barbers

Admin Panel

- Statistics
- Users
- Barbers
- Pending Users
- Withdraw Requests
- Ads
- Donations
- Cities
- Categories
- Logout

Pending Users

Name	Date of Birth	Gender	City	Working City	Street	Email	Phone	Certificate	Identity	Actions
Abboush	2000-01-19 00:00:00	Male	Hebron	Hebron	sdsd	sdfsdfb.refsafdsd@gmail.com	0599226	Download	Download	Activate

Figure 27 Admin Pending Users

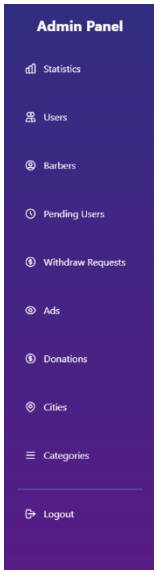
Admin Panel

- Statistics
- Users
- Barbers
- Pending Users
- Withdraw Requests
- Ads
- Donations
- Cities
- Categories
- Logout

Withdraw Requests

Name	Email	Phone Number	Account Number	IBAN	Amount	Action
Amr Foqha	test@test.com	0599123456	435435435dfgdfgdfg	dfgdfg4536435345	100\$	Accept Reject
Abdelrahman Abboush	test1@test.com	05991234	1212121212121212	fgdfgdfg934245234	10\$	Accept Reject

Figure 28 Admin Withdraw Requests

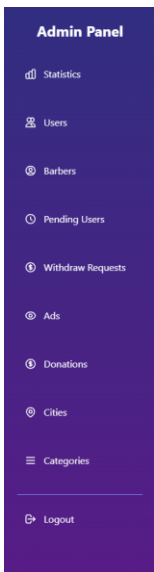


Create Ad

Ads

Start Date	Active To	Ad	Actions
2025-06-09	2025-06-25	Show	Delete

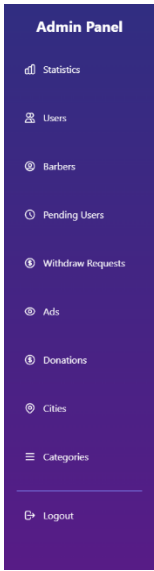
Figure 29 Admin Ads



Donations

User	Email	Phone	Amount	Message	Donation Date
Amr Fogha	test@test.com	0599123456	22.00	thank you	2025-06-18
Amr Fogha	test@test.com	0599123456	50.00	thank you	2025-06-05
Abdelrahman Abboushi	test1@test.com	05991234	22.00		2025-06-02
Amr Fogha	test@test.com	0599123456	55.00		2025-06-01
Abdelrahman Abboushi	test1@test.com	05991234	55.00		2025-05-18
Abdelrahman Abboushi	test1@test.com	05991234	44.50	thank you	2025-05-17
Abdelrahman Abboushi	test1@test.com	05991234	33.00		2025-05-17

Figure 30 Admin Donations

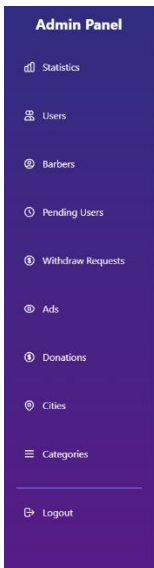


Create City

Cities

Name
111111
dlgdlg
Jericho
Tubas
Salft
Qalqilya
Tulkarm
Jenin
Nablus
Ramallah
Jerusalem
Bethlehem
Hebron

Figure 31 Admin Cities



Create Category

Categories

Name
2112
Others
Hair Oils
Conditioners
Shampoos
Serums & Treatments
Toners & Rose Water
Facial Cleansers

Figure 32 Admin Categories

5 Conclusions and Recommendations

5.1 Summary

This project successfully delivers a comprehensive, multi-role mobile application for managing hair and skincare service bookings. By combining modern technologies such as Flutter, Laravel, Spring Boot, and MySQL with third-party services like Stripe, Firebase, and Google Maps, the system offers a smooth user experience for customers, barbers, and administrators alike.

Key features include:

- A flexible booking system with real-time updates and secure payments.
- Social media-like engagement tools (posts, likes, comments, follow system).
- Full support for e-commerce with a product store.
- Real-time chat and AI-driven skin/hair care assistance.
- Financial management, including wallet balances, withdrawals, and donations.

The normalized and relational database design ensures high data integrity, while the modular architecture promotes maintainability and scalability. The integration of real-time features and automated workflows further enhances user satisfaction and operational efficiency.

5.2 Future Work

While the current system covers a wide range of functionalities, there are several opportunities for enhancement and expansion:

- **Analytics Dashboard for Barbers and Admins**
Introduce detailed analytics such as revenue trends, customer engagement metrics, and performance reports.
- **AI Recommendation System**
Leverage machine learning to suggest barbers or packages based on user behavior, location, and ratings.
- **Subscription-Based Premium Features**
Offer premium features for barbers, such as priority ad placement, access to extended analytics, and profile boosts.
- **Multi-language Support**
Add localization features to support multiple languages, improving accessibility for diverse user bases.
- **Video Consultation Feature**
Allow barbers to offer virtual consultations using embedded video calling APIs.