



Department of Computer Science
King Abdullah II College of Information Technology
University of Jordan

حجزاتي
(A Mobile App)

Graduation Project

Supervised by:

Dr. Sherenaz

Prepared by:

Mohammad Mansour Alejil	2212168
Zaid Ghassan Farash	2200063
Raad Mohammad Alkhatib	2210056
Fares Idrees Haroun	0213025

Table Of Content

ABSTRACT	10
Chapter One: Introduction	13
1.1 Preamble:	13
1.2 Project Motivation:	13
1.3 Problem statement:	15
1.4 Project objectives	15
1.5 Project Scope	16
1.6 Project Software and Hardware Requirements	17
1.7 Project limitations	18
1.8 Project expected output	19
1.9 Project Schedule	20
1.10 Report outline	22
Chapter Two: Related Existing Systems	24
2.1 Introduction	24
2.2 Existing System	24
2.2.1 National Challenge: Systems in Jordan	24
2.2.2 International Challenge: Systems Worldwide	26
2.3 Overall Problem Statement	27
2.4 Overall Solution Approach	28

2.5 Summary	30
Chapter Three: System Requirements Engineering and Analysis	31
3.1 Introduction	31
3.2 Feasibility Study	31
3.2.1 Technical Feasibility	31
3.2.2 Operational Feasibility	33
3.2.3 Economic Feasibility	34
3.2.3.1 Project Cost	36
3.2.3.2 Operational Cost	39
3.2.3.3 Project Benefits	40
1. Economic Benefits	40
2. Operational Benefits	41
3. User Benefits	41
4. Social and Regional Benefits	42
Assumptions:	43
3.3 Targeted Users	43
3.4 Functional Requirements Definition	44
3.5 Functional Requirements Specification	46
1. User Account Management	46
2. Dashboard and Navigation	47
3. Venue and Service Listing	47

4. Booking Management	48
5. Payment and Financial Management	48
6. Security and Data Management	49
7. Logout	49
3.6 Non-Functional Requirements	50
3.7 Summary	52
CHAPTER FOUR: SYSTEM DESIGN	53
4.1 Context Level	53
4.2 Data Flow Diagram (DFD)	54
4.3 Entity Relationship Diagram (ERD)	55
4.4 UML Sequence Diagram	56
4.5 UML Class Diagram	57
4.6 UML use case diagram	58
4.7 Graphical user interface	60
4.8 Summary	69
Chapter 5: system implementation	70
5.1 Feature Extraction	70
5.2 Feature Selection	70
5.3 Feature Classification and Matching	71
5.4 Database Implementation	72
5.5 Graphical User Interface Design	74

Chapter 6: Testing	108
6.1 Introduction	108
6.2 Testing Methodology	108
6.2.1 Feature-Based Testing	108
6.2.2 Role-Based Testing	108
6.2.3 Cross-Device & UI Testing	109
6.2.4 Scenario-Based (End-to-End) Testing	109
6.2.5 Issue Tracking & Resolution	109
6.3 Testing Scope	109
6.4 Sample Test Cases	110
6.5 Bug Tracking & Fixes	111
6.6 Conclusion & Future Improvements	112
Chapter 7: Project Conclusions and Future Work	113
7.1 Conclusions	113
7.2 Strengths and Weaknesses	113
7.3 Future Work	114
7.4 Final Remarks	115
Chapter 8: references	116
8.1 Technical References	116
8.2 Testing & Deployment Tools	117
8.3 UI/UX Design Tools	118

8.4 Academic & Industry Resources	118
8.5 Additional Resources	119

Table Of Figures

Figure 1 Context Level Diagram for حجوزاتي App.....	53
Figure 2 Data Flow Diagram for "حجزاتي"	54
Figure 3 Entity Relationship Diagram for حجوزاتي App.....	55
Figure 4 UML Sequence Diagram for حجوزاتي App.....	56
Figure 5 UML Class Diagram for حجوزاتي App.....	57
Figure 6 User UML use Case Diagram for حجوزاتي App.....	58
Figure 7 Venue Owner UML use case diagram for حجوزاتي App.....	59
Figure 8 Greeting screen prototype	60
Figure 9 sign up screen prototype	61
Figure 10 login screen prototype.....	62
Figure 11 Home screen prototyp.....	63
Figure 12 venue list screen prototype	64
Figure 13 space type screen prototype	65
Figure 14 venue picture screen prototype.....	66
Figure 15 venue information screen prototype.....	67
Figure 16 venue add review screen prototype	68
Figure 17 Database Implementation	73
Figure 18 "حجزاتي" greeting page.....	75
Figure 19 "حجزاتي" signup page	76

Figure 20 email confirmation email	77
Figure 21 email confirmation succeed	78
Figure 22 fill profile info page	79
Figure 23 login page	80
Figure 24 home page.....	81
Figure 25 Create Space Category Page	82
Figure 26 Create Space Info Page	83
Figure 27 Create Space Pictures Page	84
Figure 28 Create Space Services Page	85
Figure 29 Create Space Cancelation Policy And House Rules	86
Figure 30 Create Space Review Page	87
Figure 31 Create Space Success Page.....	88
Figure 32 Categories.....	89
Figure 33 Space Info.....	90
Figure 34 Date And Time picker	91
Figure 35 Select Services.....	92
Figure 36 Review Booking	93
Figure 37 Payment.....	94
Figure 38 Booking Successful.....	95
Figure 39 My Bookings.....	96
Figure 40 Favourites	97
Figure 41 My Spaces	98
Figure 42 My Account	99
Figure 43 Edit Account	100
Figure 44 Filter Venues.....	101
Figure 45 Admin Panel	102

Figure 46 Venue Approval or Rejection	103
Figure 47 Reset Password.....	104
Figure 48 Verfiy OTP	105
Figure 49 OTP Email.....	106
Figure 50 Create New Password.....	107

Table of Tables

Table 1 Project Management.....	21
Table 2 Personal to develop the web	37
Table 3 Hardware Costs	37
Table 4 Software Costs	37
Table 5 Future Operational Costs	38
Table 6 Annual Operational Costs	39
Table 7 summarizes the benefits per year.....	42
Table 8 Functional Requirements	45
Table 9 Testing Scope.....	109
Table 10 Sample Test Cases	110
Table 11 Bug Tracking.....	111
Table 12 Technical Refrences	116
Table 13 Testing And Deployment Tools	117
Table 14 Ui/UX Design Tools.....	118
Table 15 Academic And Industry Resources	118

Table 16 Additional Resources.....	119
------------------------------------	-----

ABSTRACT

Effective event planning and venue management are critical to the success of diverse gatherings, including weddings, conferences, funerals, private meetings, photography sessions, entertainment events, and sports activities. Recognizing the growing demand for a streamlined and efficient solution, this project introduces "حجزاتي," a cutting-edge mobile application designed to revolutionize the reservation management process for venues and related services.

"حجزاتي" serves as a comprehensive platform where users can explore a diverse range of venues tailored to their specific event requirements. The app enables users to customize their bookings with optional services such as catering, decoration, photography, and equipment rental, ensuring a highly personalized and hassle-free experience. A key feature of the platform is its seamless reservation management system, allowing users to manage bookings interactively with minimal effort.

In addition to supporting event organizers, "حجزاتي" empowers venue owners and service providers by offering them the tools to list their spaces and services directly on the app. This inclusive approach creates a dynamic ecosystem where service providers can expand their market reach and visibility. The unified design ensures both users and providers benefit from a cohesive login and registration process, enhancing the platform's usability and accessibility.

Designed with scalability and user experience as priorities, "حجزاتي" leverages advanced technologies to provide real-time availability updates, secure transactions, and location-based search capabilities. By addressing key challenges in event planning—such as fragmented communication, limited visibility of services, and inefficient booking workflows—the app delivers a robust and reliable solution.

Ultimately, "حجزاتي" redefines how individuals and organizations manage event-related bookings by offering an intuitive, user-centric, and comprehensive mobile solution. By fostering seamless connections

between event organizers and venue providers, the platform simplifies the booking process while elevating the overall event planning experience.

ACKNOWLEDGMENTS

The successful completion of this project, "حجزاتي," would not have been possible without the collective efforts and support of numerous individuals and organizations. As a team, we are deeply grateful to everyone who contributed their time, expertise, and resources to make this endeavor a reality.

First and foremost, we would like to express our heartfelt gratitude to our academic advisor, **Dr. Sherenaz**, for her invaluable guidance, constructive feedback, and unwavering support throughout the development of this project. Her expertise and mentorship have been instrumental in shaping our ideas and bringing this project to fruition.

We are also thankful to our institution, University of Jordan, and the faculty members of the King Abdullah II School of Information Technology for providing us with the knowledge and skills necessary to undertake this work. The resources and learning environment they offered played a vital role in the project's development.

A special thank you goes to our **families and friends** for their encouragement, patience, and understanding during this challenging journey. Their unwavering belief in our abilities provided us with the strength and motivation to overcome obstacles and stay focused on our goals.

Additionally, we extend our sincere appreciation to our peers and colleagues who provided valuable feedback and insights that enhanced the quality of this project. Their collaborative spirit and critical input were invaluable.

Finally, we are grateful to all those who indirectly contributed to this project by offering inspiration, sharing expertise, or supporting us in various ways. This project is a testament to the collective effort and dedication of everyone involved.

Thank you all for your support and encouragement, without which this achievement would not have been possible.

Chapter One: Introduction

1.1 Preamble:

In today's fast-paced world, organizing events such as weddings, conferences, workshops, and private gatherings often involves significant challenges. Finding suitable venues, coordinating additional services, and managing reservations efficiently are critical for the success of these events. Despite the availability of various tools, there remains a lack of comprehensive platforms that cater to diverse event types and connect event organizers with venue providers seamlessly.

This project introduces "حجزاتي," a mobile application designed to address these challenges by providing a centralized platform for event planning and venue booking. By integrating advanced features such as real-time availability updates, location-based searches, and customizable booking options, "حجزاتي" aims to revolutionize how individuals and organizations manage their event-related bookings. The app also empowers venue owners to list and promote their spaces directly to potential customers, fostering a dynamic ecosystem that benefits all stakeholders.

1.2 Project Motivation:

The motivation for this project stems from the challenges faced by individuals and organizations in planning and managing events efficiently. Current solutions in the market often cater to specific event types or lack the integration necessary to streamline the booking and planning process for both users and

venue providers. This gap creates inefficiencies, increased costs, and limited accessibility to quality venues and services.

"حجزاتي" was conceived as a response to these challenges, driven by the need for a comprehensive, user-friendly, and reliable platform. The project is motivated by the following key factors:

1. **Rising Demand for Event Management Solutions:** With an increasing number of events, there is a growing demand for platforms that simplify the process of finding venues and booking additional services.
2. **Fragmented Market:** The existing market is fragmented, with few solutions that cater to diverse event types and connect users with venue providers in a seamless manner.
3. **Empowering Small Businesses:** Many venue owners and service providers lack the tools to reach a broader audience effectively. This project seeks to bridge that gap by offering them an inclusive platform.
4. **Technology as an Enabler:** Advances in mobile and web technologies present an opportunity to create an efficient and scalable solution that addresses the complexities of event planning.
5. **Enhanced User Experience:** By focusing on usability and convenience, "حجزاتي" aims to redefine the event planning experience, making it accessible and stress-free for everyone.

1.3 Problem statement:

Event planning, particularly for short-term gatherings such as weddings, conferences, workshops, funerals, private meetings, and sports events, presents significant challenges for both organizers and venue providers. These challenges often include:

1. **Lack of a Centralized Platform:** There is no comprehensive solution that caters to diverse event types while seamlessly connecting users with venue providers and related service offerings.
2. **Inefficient Booking Processes:** Current solutions often involve fragmented communication, manual coordination, and inconsistent availability updates, resulting in inefficiencies and user dissatisfaction.
3. **Limited Accessibility for Venue Providers:** Small and medium-sized venue owners frequently lack visibility and access to potential customers, limiting their market reach.
4. **Customizability of Services:** Many existing platforms fail to provide options for tailoring bookings to include additional services such as catering, decoration, or equipment rental, which are essential for a complete event experience.
5. **User Experience Challenges:** Existing tools often lack intuitive interfaces and user-friendly designs, making it difficult for users to navigate and manage their bookings effectively.

1.4 Project objectives

The primary objective of "حجزاتي" is to create a comprehensive and user-friendly mobile application that simplifies the process of booking venues and related services for a wide range of events. The project aims to address the challenges outlined in the problem statement by achieving the following specific goals:

1- Develop a Centralized Platform

Provide a unified platform where users can explore, compare, and book venues for diverse event types, including weddings, conferences, workshops, funerals, entertainment, and sports activities.

2- Enable Customizable Bookings

Incorporate features that allow users to personalize their bookings by adding optional services such as catering, decoration, photography, and equipment rental

3- Empower Venue Providers

Offer venue owners and service providers the ability to list their spaces and services, manage bookings, and gain visibility to a broader audience through a single, accessible platform.

4- Ensure Real-Time Availability and Updates

Implement advanced technologies to provide real-time availability updates, reducing the inefficiencies and frustrations associated with outdated or inaccurate information.

5- Promote Market Inclusion

Create an ecosystem that supports small and medium-sized venue providers, empowering them to compete in a growing market.

6- Foster Trust and Transparency

Enable user reviews and ratings to promote trust and informed decision-making, enhancing the overall reliability of the platform.

1.5 Project Scope

The scope of "جوزاتي" centers on providing a mobile-first platform for anyone planning events, from individuals to organizations, to easily find, book, and manage venues and related services. The app aims

to streamline the process with customizable bookings, real-time updates, and secure payments while enabling venue providers to manage their offerings effectively.

1. Unified Registration and Login: Single registration and login system for users and venue providers.
2. Venue Search and Booking: Search venues by event type, location, and availability with advanced filters.
3. Customizable Bookings: Add services like catering, decoration, or extra tables and chairs during booking.
4. Venue Management for Providers: Tools for managing venue listings, availability, and pricing.
5. Real-Time Updates: Live updates on venue availability and booking confirmations.
6. Secure Payment Integration: Built-in payment processing for seamless transactions.

Target Users:

Event Planners and Individuals: Anyone with an event requiring venue reservations.

Venue Providers: Owners looking to list and manage their spaces.

1.6 Project Software and Hardware Requirements

Software Requirements:

1. Development Frameworks: .NET MAUI or Android Java for mobile app development.
2. Database Management: SQL or Supabase for data storage and management.

3. Design and Documentation Tools: **Figma**: For UI/UX design and prototyping., **Lucidchart**: For creating system diagrams such as flowcharts, ERDs, and DFDs.
4. Version Control: **Git** and **GitHub**: For collaborative version control and code management.

Hardware Requirements:

1. Development Machines: Systems with at least 8GB RAM, i5 or equivalent processor, and SSD storage for running development tools efficiently.
2. Mobile Devices: Android and iOS devices for testing cross-platform compatibility.

Testing Tools:

Emulators and physical devices for Android and iOS testing.

1.7 Project limitations

The project limitations highlight the constraints and challenges that may impact the development and implementation of "جوزائی." These limitations help define the project's boundaries and guide future improvements.

Identified Limitations:

1. Limited Language Support: Initially, the app may only support Arabic and English, which might restrict access for non-speakers of these languages.
2. Resource Constraints: Limited development time and resources may restrict the implementation of advanced features in the initial release.

- 3. User Adoption:** As a new platform, initial user and provider adoption rates may be slow, impacting the app's functionality and value.
- 4. Device Compatibility:** Initial testing may not cover all potential device types, leading to compatibility issues on certain older devices.
- 5. Lack of Offline Functionality:** The app will require an active internet connection for most of its features, limiting accessibility in low-connectivity areas.
- 6. Data Protection Challenges:** Ensuring robust data security and user privacy with limited resources and expertise may be challenging, particularly in complying with industry standards and regulations.
- 7. Regional Availability of Services:** Finding suitable venues and service providers may be difficult in remote or less developed areas, limiting the app's effectiveness for users in such regions.³

Pricing Constraints: Managing agreements with venue providers and service professionals who may demand specific pricing structures could lead to challenges in maintaining competitive and transparent pricing.

1.8 Project expected output

The expected output of "حجزاتي" is a fully functional mobile application that simplifies venue and service booking for various events while fostering effective communication between users and providers. The key deliverables include:

- 1. User-Friendly Mobile Application:** A seamless and intuitive interface for users to explore and book venues, tailored to their specific event needs.

2. Unified Platform for Venue Providers and Users: A single platform where venue providers can manage listings and availability, and users can make reservations.
3. Real-Time Booking System: Integration of real-time availability updates and instant booking confirmations to enhance user convenience and reliability.
4. Customizable Booking Options: Features allowing users to add optional services such as catering, decoration, photography, and equipment rental during the booking process.
5. Direct Communication Feature: A built-in communication system enabling users to interact with venue providers for inquiries, clarifications, and coordination.
6. Secure Payment Processing: A secure and efficient payment gateway to handle transactions between users and venue providers.
7. User Feedback Mechanism: A system for users to review and rate venues and services, promoting trust and transparency.

1.9 Project Schedule

Project management is the discipline of planning, organizing, securing, and managing resources to achieve specific goals. Table (1) illustrates the time schedule of implementing the project.

Table 1 Project Management

Task	Task Name	Description	Dependencies	Duration
T1	Requirement Gathering and Analysis	Collect and analyze functional and non-functional requirements.	None	1 Week
T2	Use Case and Diagram Creation	Create use cases, user stories, and system diagrams (DFDs, ERDs).	T1	1 Week
T3	System Design	Design system architecture, database structure, and UI/UX prototypes using Figma.	T2	5 Weeks
T4	Backend and Database Setup	Set up the database (SQL or Firebase) and develop backend APIs.	T3	4 Weeks
T5	Frontend Development	Build the mobile app using .NET MAUI or Android Java and integrate with backend APIs.	T4	6 Weeks
T6	Integration Testing	Test the integration of frontend and backend, ensuring end-to-end functionality.	T4, T5	2 Weeks
T7	Bug Fixing and Optimization	Address issues identified during integration testing and optimizing performance.	T6	3 Days

1.10 Report outline

The report consists of four chapters, structured to provide a comprehensive overview of the development and implementation of "حجزاتي."

Chapter 1: Introduction

This chapter highlights the critical need for "حجزاتي," providing an overview of the problem statement, project objectives, and scope. It also includes the time schedule for implementation, emphasizing the project's focus on developing a mobile application that simplifies venue and service reservations for various events.

Chapter 2: Related Existing Systems

This chapter examines existing systems in the event booking and reservation industry. It analyzes their strengths, limitations, and relevance to "حجزاتي," drawing lessons learned to address existing gaps and improve the proposed solution.

Chapter 3: System Requirements Engineering and Analysis

This chapter outlines the system requirements and provides a detailed analysis of the functionalities needed for "حجزاتي." It defines and specifies both functional and non-functional requirements, offering a comprehensive overview of user and provider features.

Chapter 4: System Design

This chapter presents the system design in detail, including the architectural layout, database structure, and user interface. It features system diagrams such as use cases, data

flow diagrams (DFDs), and entity-relationship diagrams (ERDs) to illustrate the platform's structure and workflows.

Chapter Two: Related Existing Systems

2.1 Introduction

This chapter explores existing systems in the event booking and reservation domain, focusing on their functionalities, strengths, and limitations. By analyzing these systems, the chapter aims to identify gaps and challenges that "حجزاتي" seeks to address. This evaluation provides a foundation for understanding the need for a comprehensive platform like "حجزاتي" and informs the proposed solution's design and features.

2.2 Existing System

This section evaluates existing systems that offer event booking and reservation services, highlighting their strengths, limitations, and relevance to the objectives of "حجزاتي." The analysis is divided into two parts: systems in Jordan (national challenge) and systems worldwide (international challenge).

2.2.1 National Challenge: Systems in Jordan

Currently, there are no comprehensive platforms in Jordan that offer the full range of services "حجزاتي" provides. While event booking and ticketing services exist, they are generally limited to specific types of events or focus on certain features, leaving a significant gap in the market for a unified solution.

However, some systems and services are available in Jordan that partially address certain event-related needs:

- **eTathkara:** An e-ticketing platform for concerts, sports events, and other ticketed gatherings. It provides ticket sales but does not cover venue reservations or additional services such as catering or photography.
 - Website: etathkara.com
- **Platinumlist:** Offers event ticketing solutions for entertainment and sports events. It primarily focuses on ticket sales and does not handle venue bookings or event management services.
 - Website: platinumlist.net
- **Eventbee:** An online registration and ticketing platform catering to event organizers. It enables ticket sales but lacks venue and service management tools for comprehensive event planning.
 - Website: eventbee.com

Key Services Offered:

- **Event Ticketing:** Systems like eTathkara and Eventbee provide ticketing solutions for specific events.
- **Event Promotion:** Platforms such as Platinumlist focus on promoting and selling tickets to entertainment events.
- **Event Registration:** Eventbee offers registration tools, allowing users to sign up for events and manage attendee information.

Key Challenges in Jordan:

- **Fragmentation:** No centralized platform offering venue reservations, event management, and service bookings in one place.
- **Limited Customization:** Existing services do not allow for the booking of additional services like catering, decoration, or equipment rental.

- **Provider Visibility:** Smaller venue owners and service providers lack an effective platform to list and promote their offerings.

2.2.2 International Challenge: Systems Worldwide

Globally, several platforms offer event booking and management services, though many are tailored to specific niches or large-scale events. Some widely known systems include:

- **Eventbrite:** A popular event management platform that allows users to create events, sell tickets, and manage registrations. It lacks features for venue reservations or service bookings.
 - Website: eventbrite.com
- **OpenTable:** Primarily focused on restaurant reservations, OpenTable is widely used for dining reservations but does not support event booking or venue management.
 - Website: opentable.com
- **Cvent:** Provides event management solutions, including venue sourcing, registration, and event marketing. However, it is designed for large-scale corporate events, which may not suit smaller, individual events or gatherings.
 - Website: cvent.com

Key Services Offered:

- **Event Registration and Ticketing:** Platforms like Eventbrite provide event registration, ticketing, and marketing.

- **Restaurant and Dining Reservations:** OpenTable offers a reservation system for dining, but not for broader event management.
- **Large-Scale Event Management:** Cvent provides tools for handling large corporate events, including venue sourcing, registration, and attendee management.

Key Challenges Worldwide:

- **Complexity for Small Events:** Many global systems are designed for large-scale events, making them less accessible for smaller gatherings or personal events.
- **High Costs:** Subscription fees and service costs on some platforms may deter small-scale users.
- **Lack of Comprehensive Services:** Most global platforms focus on specific event-related functions (e.g., ticketing, venue booking) and do not integrate additional services like catering or photography.

By evaluating these systems, it becomes clear that while some platforms offer valuable features, there is a significant opportunity for "حجزاتي" to provide a more inclusive, user-friendly, and culturally adaptable solution tailored to the needs of users in Jordan and other regions.

2.3 Overall Problem Statement

Event planning and management, particularly in regions like Jordan, face significant challenges due to the lack of comprehensive and unified platforms. Existing solutions are either fragmented, focusing on specific event types or features, or inaccessible due to their complexity, cost, or lack of localization. These limitations create inefficiencies and obstacles for both event organizers and venue providers.

Key Problems Identified:

1. Lack of a Unified Platform:

There is no single system that integrates venue reservations, additional service bookings (e.g., catering, decoration, equipment rental), and real-time availability.

2. Limited Accessibility for Providers and Users:

Small and medium-sized venue owners and service providers often lack visibility and access to digital tools, making it harder to connect with potential customers.

3. Inefficient Booking Processes:

Current methods, often reliant on informal communication or multiple platforms, result in fragmented workflows and increased time consumption.

4. Cultural and Regional Gaps:

Many global systems fail to address the specific needs and preferences of users in regions like the Middle East, including Jordan, leaving a gap for localized solutions.

5. User Experience Challenges:

Existing platforms may lack user-friendly designs or mobile compatibility, creating barriers for users unfamiliar with complex systems.

6. Cost Barriers:

Subscription fees and commissions on international platforms can be prohibitive, especially for small-scale users and individual event planners.

2.4 Overall Solution Approach

To address the challenges identified in the overall problem statement, "جوزاتي" proposes a comprehensive, user-friendly, and adaptable mobile application designed to streamline event planning

and venue management. The solution aims to fill the gaps in existing systems by offering an inclusive platform that caters to both users and venue providers.

Proposed Solution Features:

1. Unified Platform:

A single, centralized system for venue reservations and additional service bookings, ensuring seamless integration and efficiency.

2. Accessibility for All Users:

Designed for individuals, small-scale event organizers, and large-scale planners, ensuring inclusivity for a broad audience.

3. Service Customization:

Options to add services such as catering, decoration, and equipment rental, allowing users to tailor bookings to their specific needs.

4. Real-Time Availability:

Live updates on venue and service availability to minimize double bookings and ensure accurate scheduling.

5. User-Friendly Design:

An intuitive mobile-first interface compatible with Android and iOS, ensuring easy navigation and engagement.

6. Localized Adaptation:

Features tailored to cultural and regional preferences in Jordan and similar markets, filling the gap left by international systems.

7. Affordable and Transparent Pricing:

Cost-effective solutions with clear pricing models, reducing financial barriers for users and providers.

By implementing these features, "حجزاتي" aims to create a scalable and reliable ecosystem that simplifies event planning while fostering better connections between users and service providers.

2.5 Summary

This chapter analyzed existing systems both in Jordan and globally, identifying key gaps and challenges in event planning and venue management. It highlighted the absence of a unified platform that integrates venue reservations, service bookings, real-time availability, and user-provider communication. The proposed solution, "حجزاتي," addresses these challenges through a comprehensive, accessible, and user-friendly mobile application tailored to meet the needs of users and service providers in Jordan and similar markets. This approach lays the foundation for an efficient and scalable system, bridging the gap left by fragmented or niche platforms.

Chapter Three: System Requirements Engineering and Analysis

3.1 Introduction

This chapter outlines the system requirements engineering and analysis process for "جوزاتي," detailing the necessary steps to define, evaluate, and specify the system's functionality. It begins with a feasibility study to assess the project's technical, operational, and economic viability, followed by an analysis of targeted users and their specific needs. Functional and non-functional requirements are defined and specified to ensure the system's design aligns with its objectives, providing a solid foundation for implementation.

3.2 Feasibility Study

The feasibility study evaluates whether the proposed "جوزاتي" platform can be successfully developed and implemented. It examines the technical, operational, and economic aspects of the project to ensure it is practical, achievable, and valuable.

3.2.1 Technical Feasibility

System Overview

"جوزاتي" is a mobile application designed to streamline venue and service booking for diverse events, such as weddings, funerals, private gatherings, and sports activities. The platform provides a unified experience for users and venue providers, enabling venue reservations, service customization (e.g.,

catering, decoration), real-time availability updates, and direct communication between users and providers. The system's core components include:

- **Frontend:** Built using .NET MAUI or Android Java to ensure compatibility with Android and iOS devices.
- **Backend:** Powered by a robust database system (SQL or Firebase) for managing user and provider data efficiently.
- **Integration:** Includes APIs for real-time booking, payment processing.

Key Technical Considerations

1. Development Tools and Frameworks:

- **Frontend:** .NET MAUI or Android Java for a responsive, mobile-first interface.
- **Backend:** SQL or Firebase for scalable database management.
- **UI/UX Design:** Figma for prototyping and design workflows.
- **Version Control:** Git and GitHub for collaborative code management.

2. Infrastructure:

- Cloud-based server hosting for backend services, ensuring scalability.
- Compatibility testing on Android and iOS devices to provide a consistent user experience.

3. Technical Expertise:

- Knowledge in app development frameworks, database systems, and API integration.
- Experience in designing intuitive user interfaces and managing real-time data synchronization.

Conclusion

The required tools, infrastructure, and expertise are readily available, making the project technically feasible. The use of proven technologies such as .NET MAUI, Android Java, SQL/Firebase, and modern design tools ensures the system can be developed and deployed effectively.

3.2.2 Operational Feasibility

This section evaluates the practicality of implementing and operating the "جوزاتي" platform, focusing on its alignment with user needs, ease of use, and operational sustainability.

Key Considerations:

1. System Usability:

- o The app is designed to cater to a diverse user base, including individuals, small event organizers, and venue providers.
- o Intuitive user interfaces ensure ease of navigation, minimizing the learning curve for users unfamiliar with technology.

2. User Engagement:

- o The platform addresses a pressing need for streamlined event booking, ensuring relevance and appeal.
- o Features such as service customization and secure payment integration promote user satisfaction and retention.

3. Provider Support:

- o Venue providers can easily list and manage their services, ensuring broad participation and an expansive marketplace.
- o The system includes tools for real-time availability updates and seamless coordination with users.

4. Operational Sustainability:

- o The platform's design minimizes manual intervention by automating processes such as booking confirmations and payment tracking.
- o Scalability ensures that the system can accommodate a growing user base without compromising performance.

Conclusion:

"حجزاتي" is operationally feasible due to its alignment with user needs and its design for sustainable, efficient operations. The platform bridges gaps in the current market, offering a streamlined solution for event planning and venue management.

3.2.3 Economic Feasibility

Economic feasibility evaluates whether the "حجزاتي" platform is financially sustainable and practical to implement. The app will remain free for users and venue providers, both at launch and in the future. Revenue generation will rely primarily on advertisements and a small commission on transactions.

Revenue Model:

1. Advertisements:

- o Revenue will be generated from in-app advertisements, providing visibility for event-related services, venues, and other relevant businesses.
- o Advertisers will pay based on ad impressions or clicks, ensuring a steady and scalable income stream.

2. Small Commission on Transactions:

- o A minimal commission (e.g., 1–2%) will be applied to transactions processed through the platform, ensuring affordability for users and providers while generating additional revenue.

Financial Parameters for Evaluation:

1. Internal Rate of Return (IRR):

The IRR will be evaluated to ensure long-term profitability, based on projected ad revenue and transaction commissions.

2. Net Present Value (NPV):

The NPV will be calculated to confirm the financial value of the platform exceeds its costs over time.

3. Benefit-Cost Ratio (B/C):

The B/C ratio will measure the return on investment, targeting a value greater than 1 to confirm financial feasibility.

4. Payback Period:

The time required to recover the initial investment will be minimized by leveraging early adoption and advertiser interest.

Initial and Ongoing Costs:

1. Development and Launch Costs:

- o Initial investments in development tools, server hosting, and testing.

2. Operational Costs:

- o Hosting and maintenance.
- o Marketing and user acquisition.

3. Ad Platform Integration:

- o Costs associated with integrating and managing an advertising platform.

Conclusion:

"حجوزاتي" offers a financially sustainable model by remaining free for users and providers while generating revenue through advertisements and small commissions. This approach ensures accessibility, promotes growth, and creates a scalable system that aligns with long-term profitability goals

3.2.3.1 Project Cost

Development/ Investment Cost

The total development (investment) cost is **13,500 JOD**, including future operational costs required for maintaining and scaling the platform.

Table 2 Personal to develop the web

Item	Quantity (days)	Cost (JOD/day)	Total Cost (JOD) per year
System Analyst	20	40	800
System Administrator	25	35	875
Programmer	100	50	5,000
Database Specialist	30	45	1,350
QA Tester	40	30	1,200
Total			9,225

Table 3 Hardware Costs

Item	Quantity	Cost per Unit (JOD)	Total Cost (JOD)
Development Computers	2	700	1,400
Development Server	1	900	900
Backup Storage Device	1	200	200
Total			2,500

Table 4 Software Costs

Item	Quantity	Cost (JOD)	Total Cost (JOD)

Firebase (if applicable)	---	200 annually	200
Figma	---	100 annually	100
GitHub(Team plan)	---	100 annually	100
Security Software	---	100 per year	100
Total			500

Table 5 Future Operational Costs

Item	Quantity	Cost (JOD)	Total Cost (JOD)
Marketing and Advertising	Per Year	1,000 annually	1,000
App Maintenance and Updates	Per Year	1,500 annually	1,500
Hosting and Cloud Services	Per Year	800 annually	800
Total			3,300 annually

Overall Total Cost:

- **Development Costs:** 9,225 JOD
- **Hardware Costs:** 2,500 JOD
- **Software Costs:** 500 JOD
- **Future Operational Costs (First Year):** 3,300 JOD
- **Grand Total (First Year):** 15,525 JOD

3.2.3.2 Operational Cost

The operational cost outlines the expenses required to maintain and support the "حجزاتي" platform after its development and deployment. These costs are crucial for ensuring the app's scalability, security, and reliability over time.

Table 6 Annual Operational Costs

Category	Description	Estimated Cost(JOD)
Hosting and Cloud Services	Server hosting, database storage, and backups	---
App Maintenance	Bug fixes, updates, and feature enhancements	1,500
Marketing and Advertising	Digital campaigns to attract users and providers	1,000
Customer Support	Dedicated resources to handle user inquiries	800
Security and Monitoring	Regular audits and security software updates	500
Total		2,900

Total Annual Operational Cost: 4,600 JOD

Key Operational Cost Drivers:

1. Scalability:

Costs may increase as the user base grows, requiring upgrades to hosting and server capacity.

2. User Engagement:

Marketing and advertising efforts will focus on retaining current users and attracting new ones, especially venue providers.

3. Security and Compliance:

Regular security updates and monitoring will ensure the app complies with data protection laws and remains secure against cyber threats.

4. Customer Support:

Support staff will be required to handle queries and assist users and venue providers effectively.

3.2.3.3 Project Benefits

The "حجوزاتي" platform offers significant benefits for both users and venue providers, contributing to its long-term success and financial viability. These benefits include economic, operational, and user engagement aspects.

1. Economic Benefits

- Revenue from Advertisements:**

- The platform will generate income through in-app advertisements, offering targeted ad placements to businesses related to events (e.g., catering, photography, and decoration services).
 - This creates a sustainable and scalable revenue stream without burdening users or venue providers with fees.

- Minimal Commission Revenue:**

- A small commission (e.g., 1–2%) on completed transactions ensures additional revenue while maintaining affordability for users and providers.

2. Operational Benefits

- **Market Expansion:**

- By attracting both individual users and venue providers, "حجز اني" establishes itself as a comprehensive marketplace for event planning.
- Small and medium-sized venue providers gain visibility, increasing their business opportunities.

- **Cost-Effective Operations:**

- Automating processes like bookings, payments reduces the need for extensive manual intervention, lowering operational expenses.

3. User Benefits

- **For Users:**

- Simplified venue and service bookings with real-time availability.
- Cost-effective event planning with a free platform model.
- Access to a wide range of venues and services tailored to diverse event needs.

- **For Venue Providers:**

- Increased visibility and access to a broader customer base.
- Tools for managing availability, bookings, and communications seamlessly.
- Zero initial costs for listing services on the platform.

4. Social and Regional Benefits

- Supporting Local Businesses:**

- o The platform promotes small and medium-sized venue providers and service professionals, boosting local economies.

- Encouraging Digital Adoption:**

- o Introducing a user-friendly digital tool encourages users and providers in Jordan and beyond to adopt modern, efficient practices for event planning.

Table 7 summarizes the benefits per year.

Year	Advertisement Revenue (JOD)	% of Transactions (JOD)	Total Benefits (JOD)
1	5,000	1,000	6,000
2	8,000	2,000	10,000
3	10,000	3,000	13,000
4	12,000	4,000	16,000
5	15,000	5,000	20,000
6	15,000	6,000	21,000
7	18,000	7,000	25,000
8	20,000	8,000	28,000
9	22,000	10,000	32,000
10	25,000	12,000	37,000

Assumptions:

1. **Advertisement Revenue** grows steadily as the user base and platform traffic increase.
2. **% of Transactions** is based on a 1–2% commission from the total value of bookings processed through the platform.
3. **Total Benefits** is the sum of advertisement revenue and transaction commission.

3.3 Targeted Users

"حجوزاتي" is designed to cater to a wide range of users, ensuring inclusivity and accessibility for both event organizers and individuals planning various types of gatherings. The platform also provides tools for service providers to expand their reach and streamline their operations.

Primary Target Users:

1. Individuals Planning Events:

- o Users hosting personal gatherings such as weddings, funerals, private meetings, or social events.
- o Sports enthusiasts or organizers of small-scale tournaments and cultural events.

2. Event Planners and Organizers:

- o Professionals managing events for clients who need seamless venue and service booking.
- o Corporate organizers hosting workshops, conferences, or team-building activities.

3. Small and Medium Venue Providers:

- o Owners of venues such as banquet halls, conference rooms, sports fields, or cultural spaces.
- o Providers looking to enhance their visibility and market reach without additional costs.

4. Service Providers:

- o Businesses offering complementary services such as catering, decoration, photography, and equipment rentals.
- o Freelancers or small-scale providers seeking a platform to promote their services.

Secondary Users:

1. Advertisers:

- o Businesses targeting event organizers or attendees, such as florists, event decorators, or party suppliers.
- o Local and regional brands seeking exposure through in-app advertisements.

2. Guests or Attendees:

- o Individuals looking to explore and book tickets for public events hosted through the app.

Conclusion:

"حجوزاتي" bridges the gap between event planners, venue providers, and service providers, creating a dynamic ecosystem that benefits all stakeholders. By focusing on accessibility and user-friendliness, the app is positioned to cater to a diverse audience, fostering growth and inclusivity.

3.4 Functional Requirements Definition

Table 8 Functional Requirements

User Interaction	
User Login	The system provides a secure single-login interface for users who can act as both customers and providers.
User Registration	Users can create a single account by providing necessary details such as name, email, and phone number.
Dashboard	Displays a personalized interface with options for booking venues, managing listings.
Service Listing	Allows users to browse and list venues or services based on category, location, and availability..
Service Booking	Enables users to book venues or services by selecting the provider, date, and additional options.
Service Tracking	Provides real-time updates on the status of booked services.

Payment Processing	
Payment Gateway Integration	Supports secure online payments through integrated gateways, allowing users to pay for bookings easily.
Transaction History	Maintains a log of all transactions accessible to users and providers for review and tracking

Security and Data Protection	
Data Encryption	Ensures sensitive user data is encrypted in transit and at rest to maintain privacy and security.

Access Control	Role-based access control allows users to access features based on their current role (customer or provider).
-----------------------	---

3.5 Functional Requirements Specification

1. User Account Management

1.1 User Registration

- Users can register with their email, phone number, or social media accounts by providing essential details such as name, email, phone, and password.

1.2 User Login

- Single account for all roles (customer or provider), allowing users to securely log in.

1.3 Forgot Password

- Allows users to reset their password via email or SMS.

1.4 Edit Profile

- Users can update their account information, including profile picture, contact details, and role preferences.

2. Dashboard and Navigation

2.1 Dashboard

- A personalized dashboard shows key information such as:
 - Upcoming bookings (for users as customers).
 - Booking requests and service management tools (for providers).

2.2 Role-Based Navigation

- Customers see options like "Search for Venues" and "My Bookings."
- Providers see options like "Manage Listings" and "Booking Requests."

3. Venue and Service Listing

3.1 Service Listing

- Providers can create and manage listings for venues or services with details such as:
 - Venue type, photos, pricing, descriptions, and availability.
 - Additional services like catering, decoration, or equipment rental.

3.2 Search and Filter

- Customers can search for venues or services using filters like:
 - Location, event type, capacity, price range, and availability.

3.3 Featured Listings

- Highlight promoted venues or services based on provider advertisements.

4. Booking Management

4.1 Booking Request

- Customers can send booking requests by selecting the venue/service, date, time, and additional features.

4.2 Booking Status

- Real-time updates on booking status:
 - Pending, Accepted, Declined, Canceled, or Confirmed.

4.3 Modification and Cancellation

- Customers can modify or cancel bookings, and providers can adjust booking details based on availability.

5. Payment and Financial Management

5.1 Payment Gateway Integration

- Secure payment options for customers to complete bookings, supporting:
 - Credit/debit cards, local payment methods, or cash on delivery (if needed).

5.2 Transaction History

- A detailed record of payments and refunds for both users and providers.

5.3 Commission and Advertisement Management

- Providers pay minimal commissions for transactions or choose to advertise their venues/services.

6. Security and Data Management

6.1 Data Encryption

- Encrypt sensitive data, including user information and payment details, during transmission and at rest.

6.2 Role-Based Access Control

- Adjust functionality and visibility dynamically based on whether the user is acting as a customer or provider.

6.3 Account Suspension and Reactivation

- Administrators can suspend accounts due to violations and allow reactivation after review.

7. Logout

7.1 Session Logout

- Users can securely log out, ensuring their session data is cleared.

7.2 Automatic Logout

- Automatically logs users out after a period of inactivity for security.

3.6 Non-Functional Requirements

Non-functional requirements define the quality attributes, operational standards, and constraints of the "حجزاتي" platform. These requirements ensure that the platform is reliable, secure, scalable, and provides seamless user experience.

3.6.1 Performance Requirements

The platform must ensure fast and efficient operations. The system should respond to user actions, such as searching for venues or booking services, within two seconds under normal conditions. Additionally, it must support up to 1,000 concurrent users without performance degradation. Data retrieval, such as loading search results, should not exceed three seconds, ensuring a smooth experience for users.

3.6.2 Scalability Requirements

The system must be designed to handle growth in user base and geographical reach. It should scale horizontally, accommodating an increasing number of users, venues, and services. The platform must also support regional adaptations, such as multiple languages and local currencies, to enable expansion to other markets in the future.

3.6.3 Usability Requirements

The platform's user interface must be intuitive and user-friendly, ensuring that users with varying levels of technical expertise can navigate it easily. Accessibility standards, such as WCAG 2.1, must be followed to accommodate users with disabilities. The system must also be fully responsive, providing a consistent experience across smartphones, tablets, and other devices.

3.6.4 Security Requirements

Data security is critical for "حجزاتي." All sensitive user data, including personal information and payment details, must be encrypted during storage and transmission. The system must implement role-based access

control, ensuring users only access features relevant to their roles. Additionally, audit logging must be implemented to record all critical actions, enhancing transparency and security.

3.6.5 Availability Requirements

The platform must maintain high availability, achieving an uptime of at least 99.9% annually. Failover mechanisms must be in place to ensure the system remains operational during server or network failures. Regular data backups must be conducted daily to prevent loss of critical information and ensure business continuity.

3.6.6 Maintainability Requirements

The system should be designed with modular architecture to facilitate easier updates and maintenance. This modular approach ensures that changes or improvements can be implemented without disrupting the entire platform. Comprehensive documentation, including technical and user manuals, must be maintained to support troubleshooting and future development.

3.6.7 Legal and Compliance Requirements

The platform must adhere to local and international laws regarding data protection and payment systems. For example, compliance with the General Data Protection Regulation (GDPR) is essential for protecting user privacy. Additionally, the platform must respect local regulations related to data storage and online transactions.

Conclusion

These non-functional requirements ensure that "حجز اتی" not only delivers its core functionalities but also meets high standards of performance, security, scalability, and usability. By adhering to these standards, the platform will provide reliable, user-friendly, and legally compliant experience for all stakeholders.

3.7 Summary

In this chapter, the functional and non-functional requirements of the "حجزاتي" platform were defined and specified to guide its development and ensure alignment with user needs and expectations. The functional requirements focused on the platform's core operations, such as user account management, venue and service listings, booking management, secure payments. These features are essential to delivering a seamless and efficient experience for both users and service providers.

The non-functional requirements outlined the quality attributes of the system, including performance, scalability, usability, security, availability, maintainability, and compliance. These requirements ensure the platform remains reliable, secure, and user-friendly while supporting future growth and adhering to legal and regulatory standards.

Together, these requirements form a comprehensive foundation for the "حجزاتي" platform, addressing both the operational and technical aspects of the system. They ensure that the platform will meet the needs of its users and stakeholders, while maintaining high standards of performance, security, and usability.

This chapter concludes the system requirements engineering and analysis, providing a clear roadmap for the system's design and implementation, which will be discussed in the next chapter.

CHAPTER FOUR: SYSTEM DESIGN

This chapter includes many important figures that describe our system process. It will include context diagram, data flow diagram (DFD), entity relation diagram (ERD), use cases diagrams, sequences diagrams and class diagrams.

4.1 Context Level

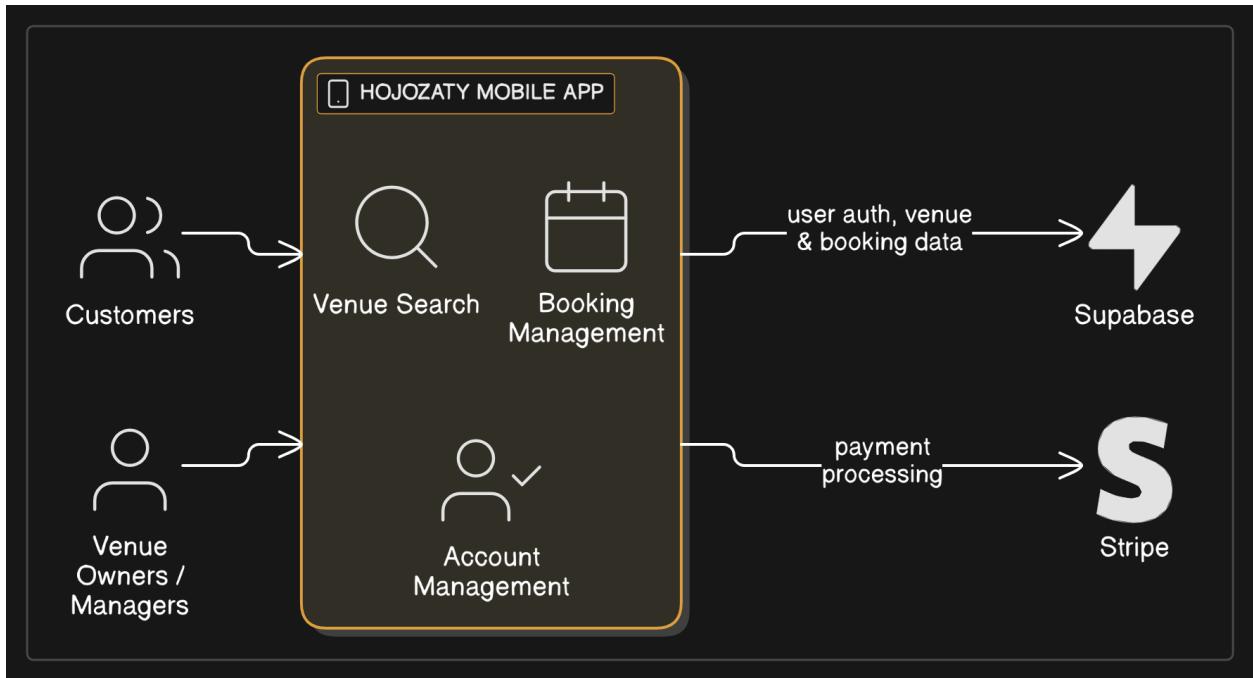


Figure 1 Context Level Diagram for حجوزاتي App.

Description: This diagram provides a high-level overview of the system and its interactions with external entities (users, venue providers).

4.2 Data Flow Diagram (DFD)

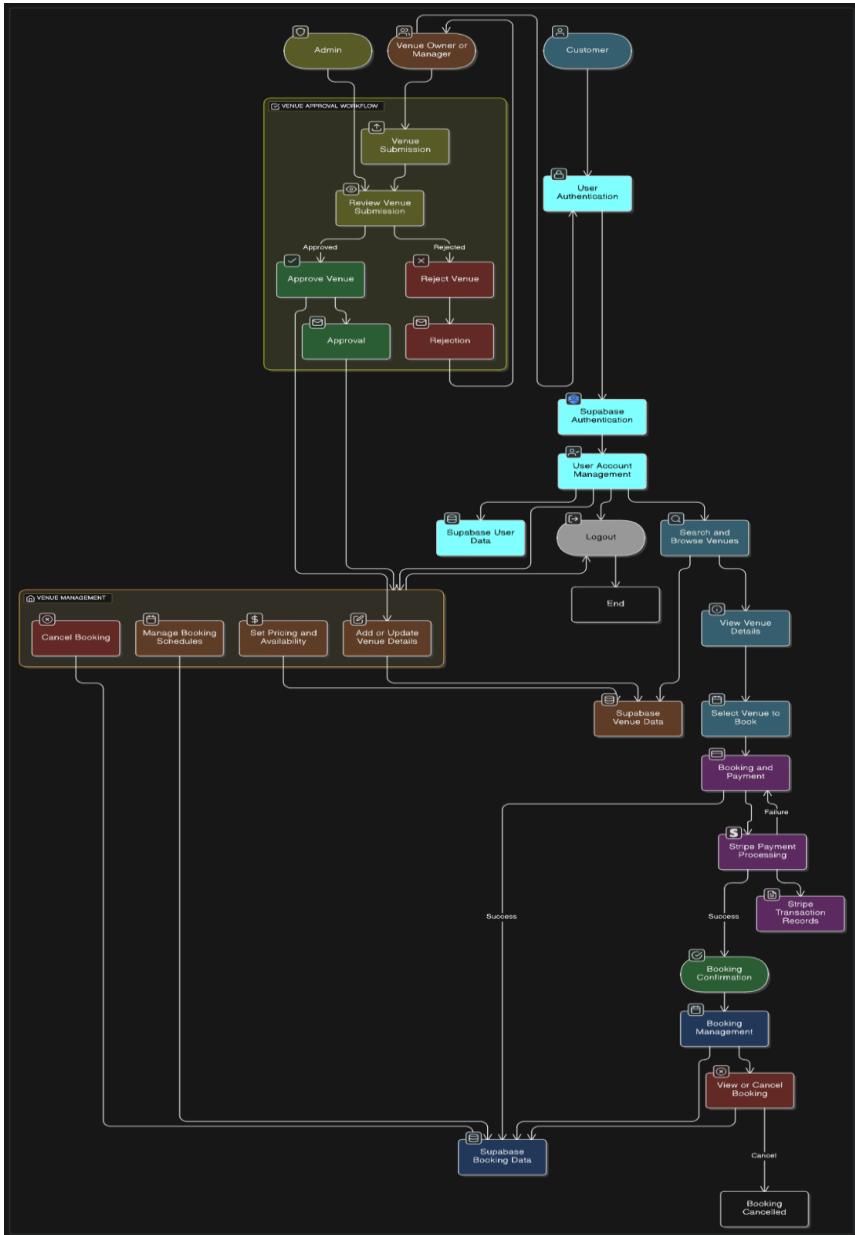


Figure 2 Data Flow Diagram for "حجزاتي"

Description: This diagram illustrates how data moves through the system processes within حجزاتي.

4.3 Entity Relationship Diagram (ERD)

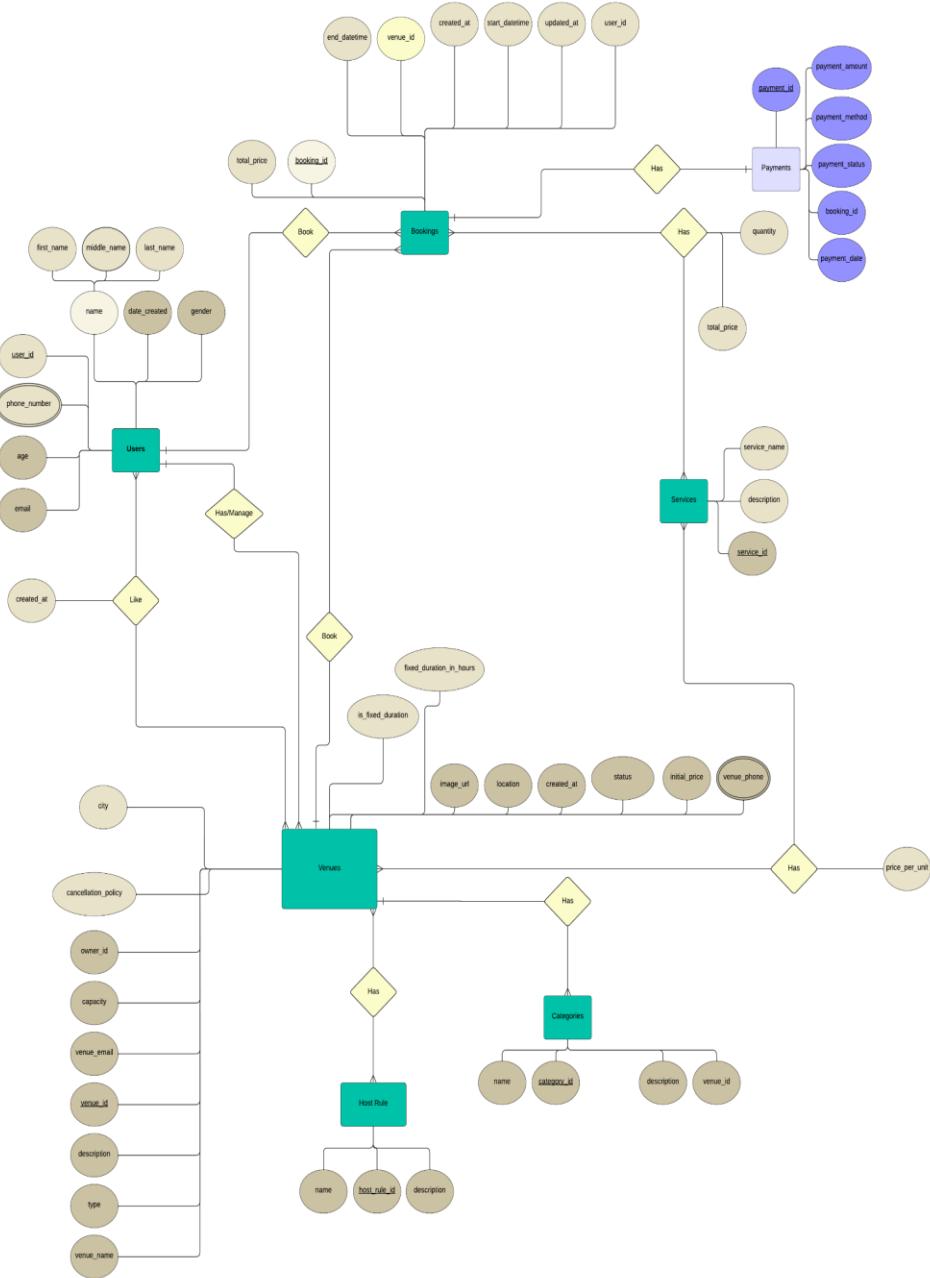


Figure 3 Entity Relationship Diagram for حجز‌آپپلیکیشن (Booking App).

Description: This diagram depicts the main entities (data tables) in the system and the relationships between them.

4.4 UML Sequence Diagram

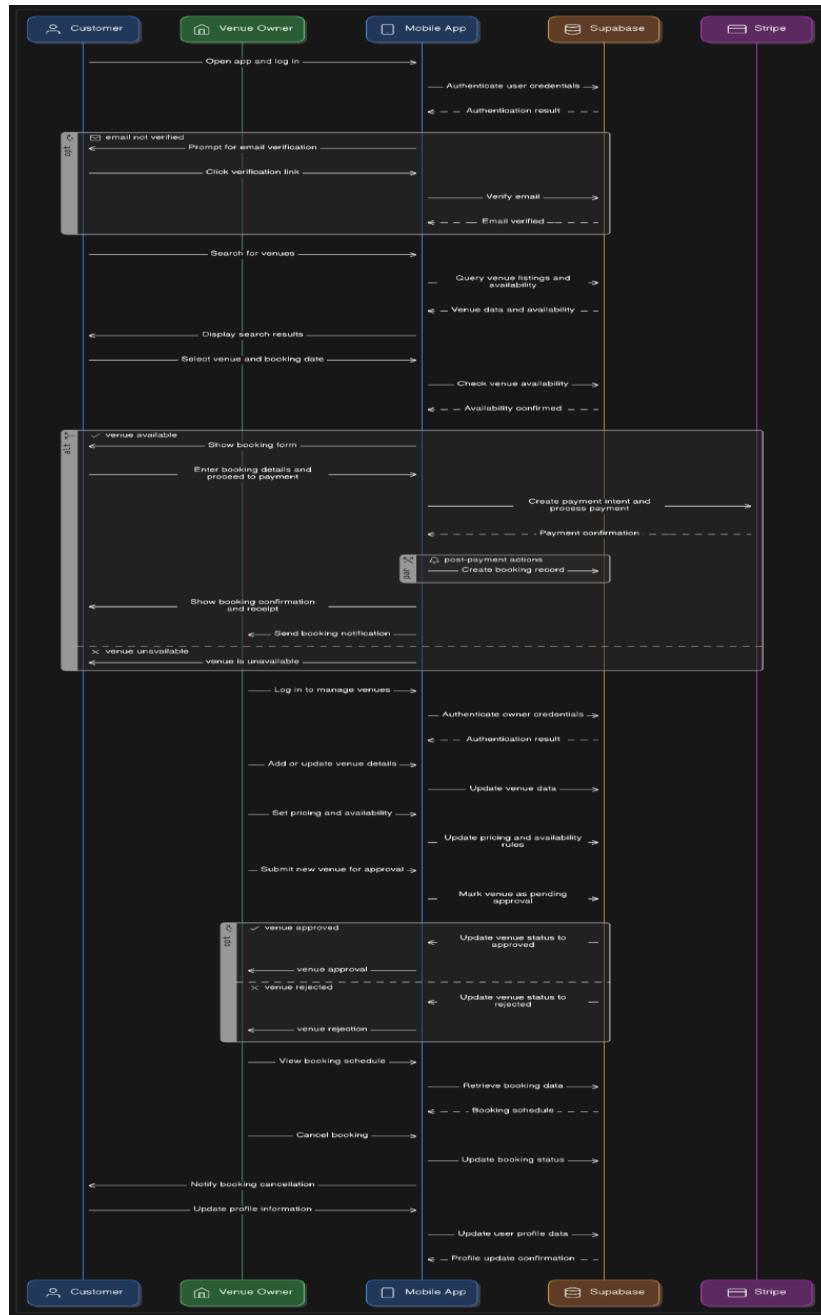


Figure 4 UML Sequence Diagram for حجوزاتي App.

Description: This diagram shows the interaction sequence between objects and users over time for specific processes.

4.5 UML Class Diagram

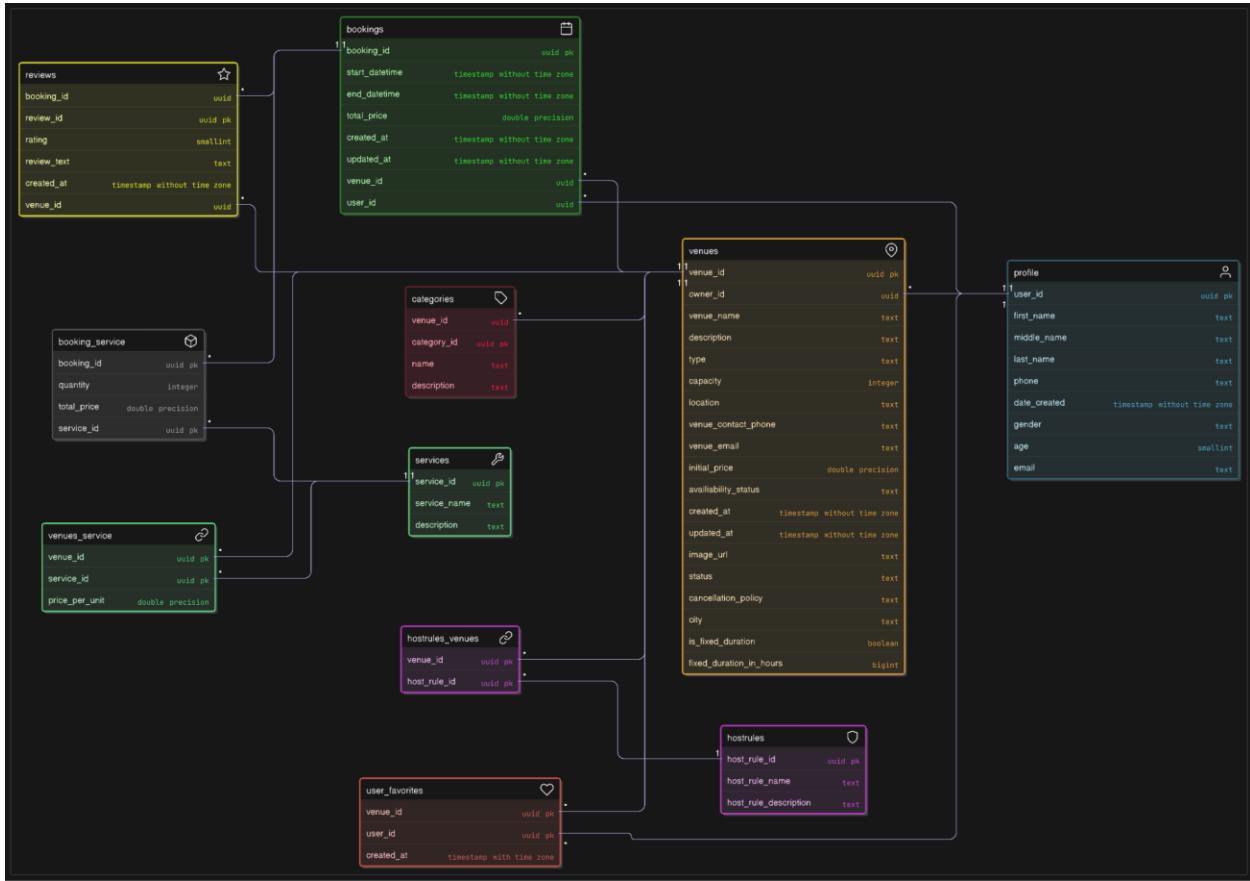


Figure 5 UML Class Diagram for حجوزاتي App.

Description: This diagram represents the structure of the system by showing classes, their attributes, and the relationships between them.

4.6 UML use case diagram

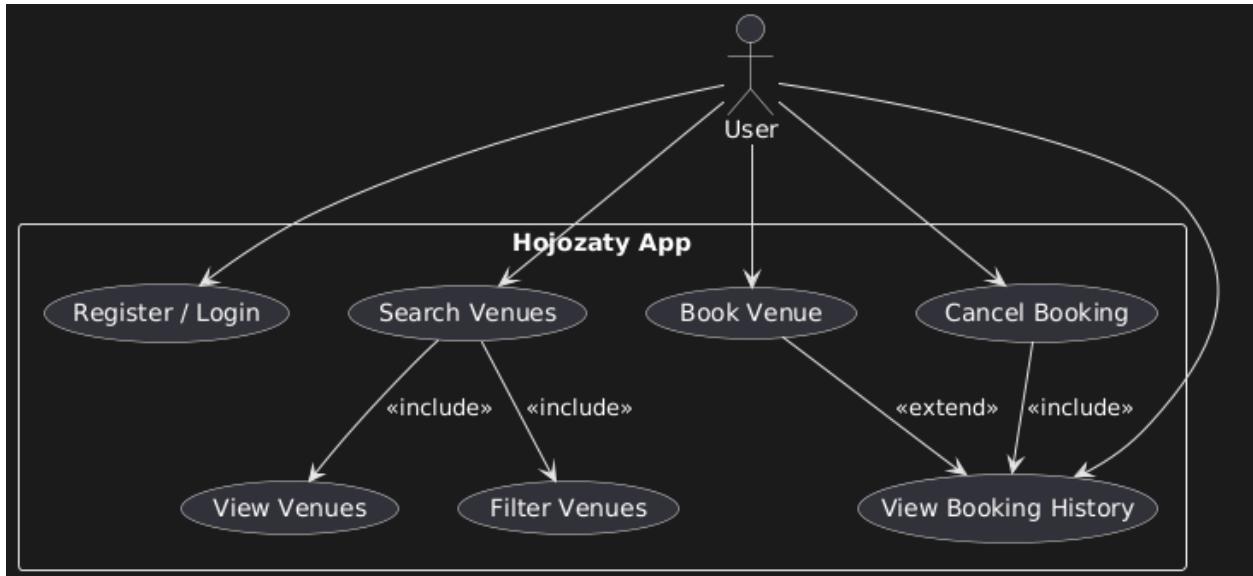


Figure 6 User UML use Case Diagram for حجوزاتي App.

Description: This diagram shows how a User interacts with the venue booking system. Key actions include searching venues, viewing details, booking ,canceling reservations, and Viewing Booking History.

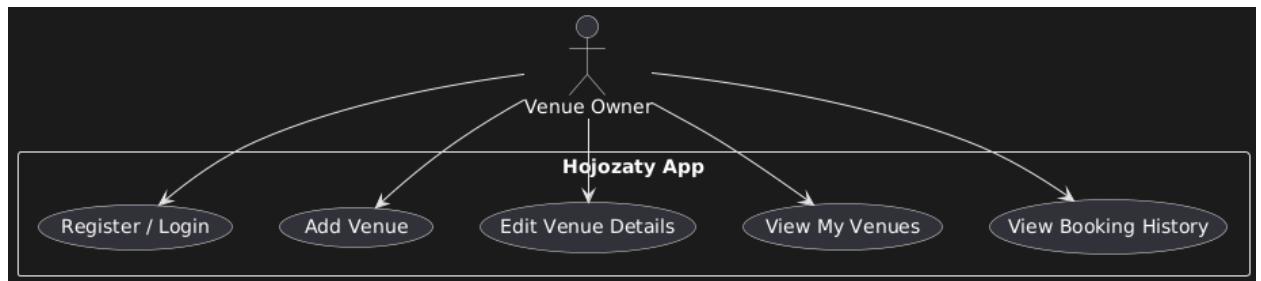
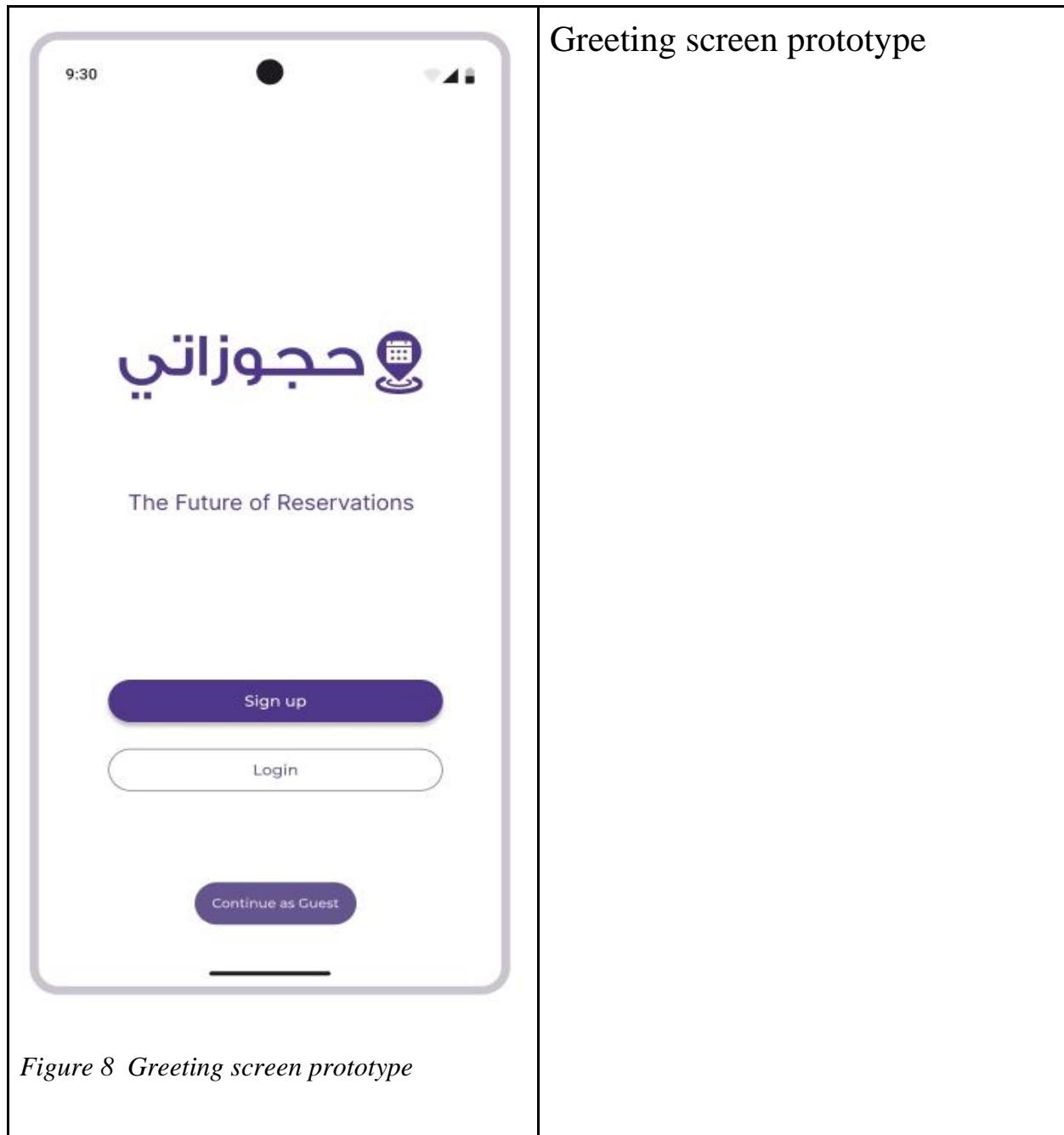
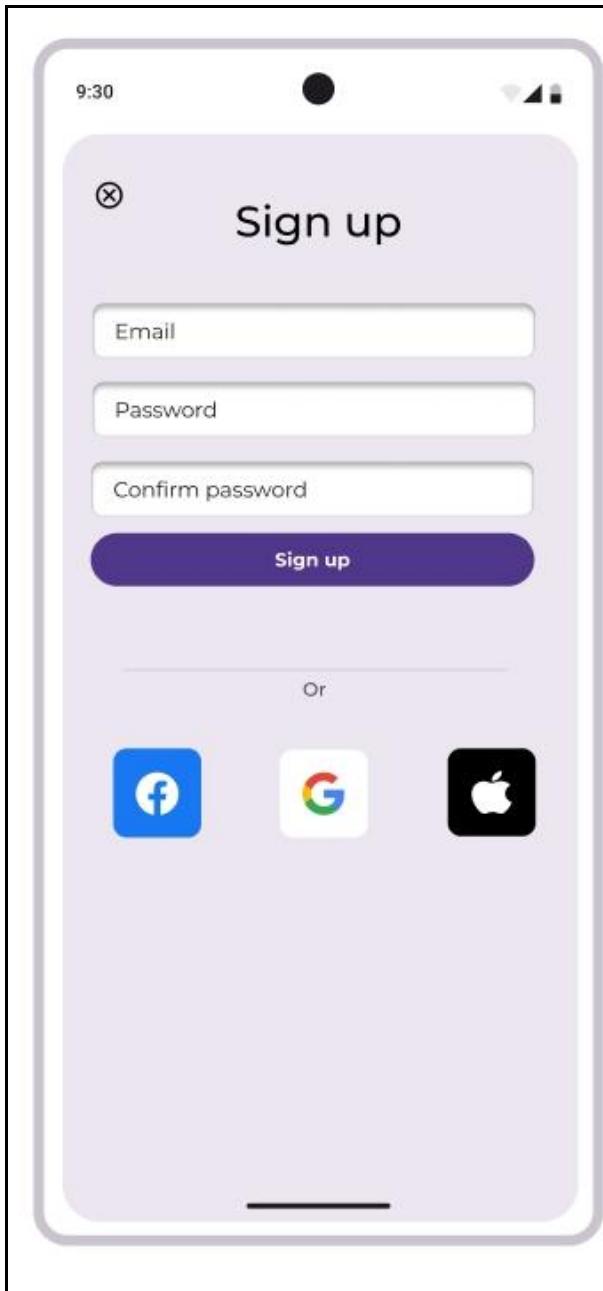


Figure 7 Venue Owner UML use case diagram for حجوزاتي App.

Description: This diagram outlines **Venue Owner** functionalities, such as registering venues, managing bookings and updating **Venue Details**.

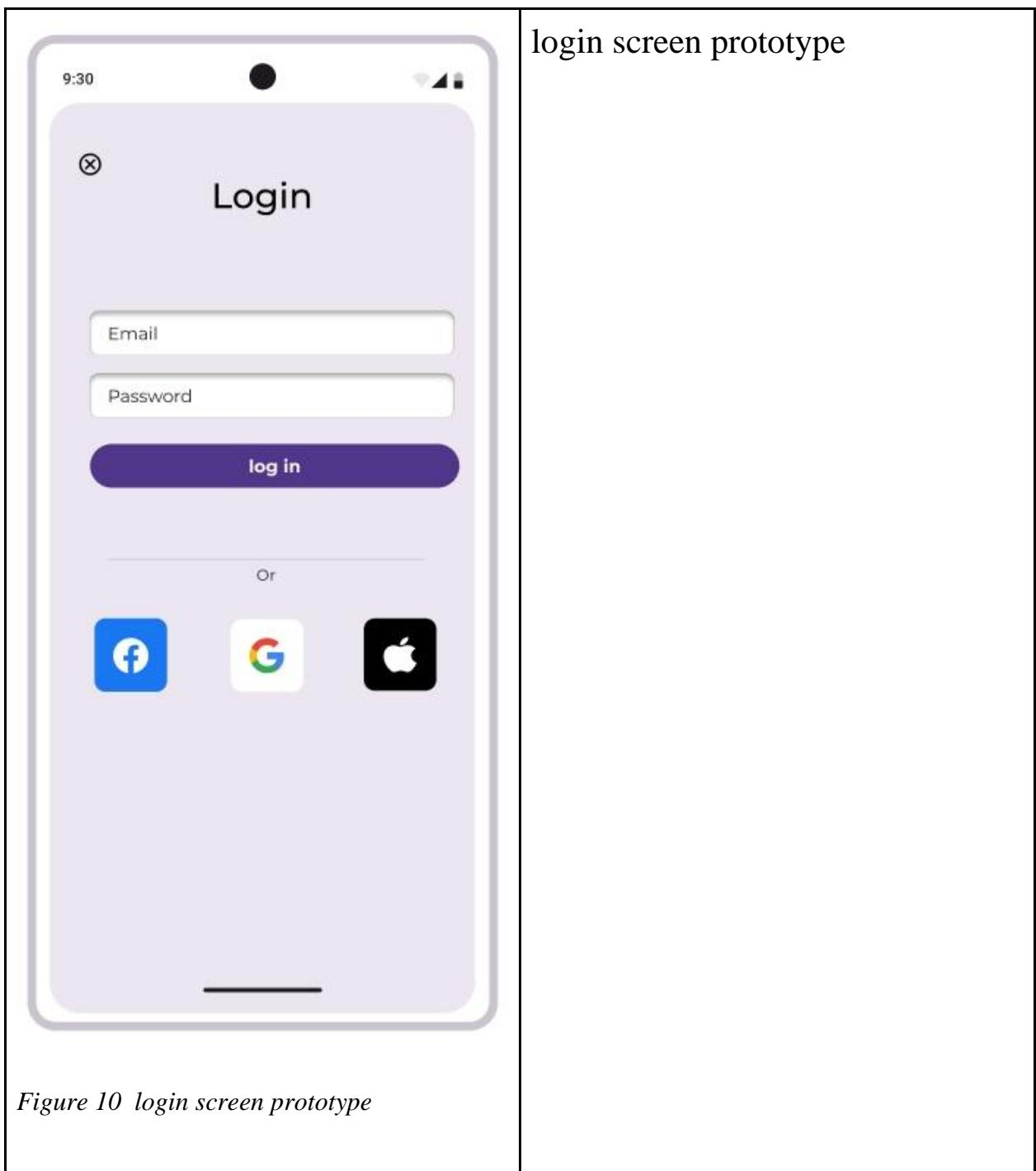
4.7 Graphical user interface





sign up screen prototype

Figure 9 sign up screen prototype



Home screen prototype

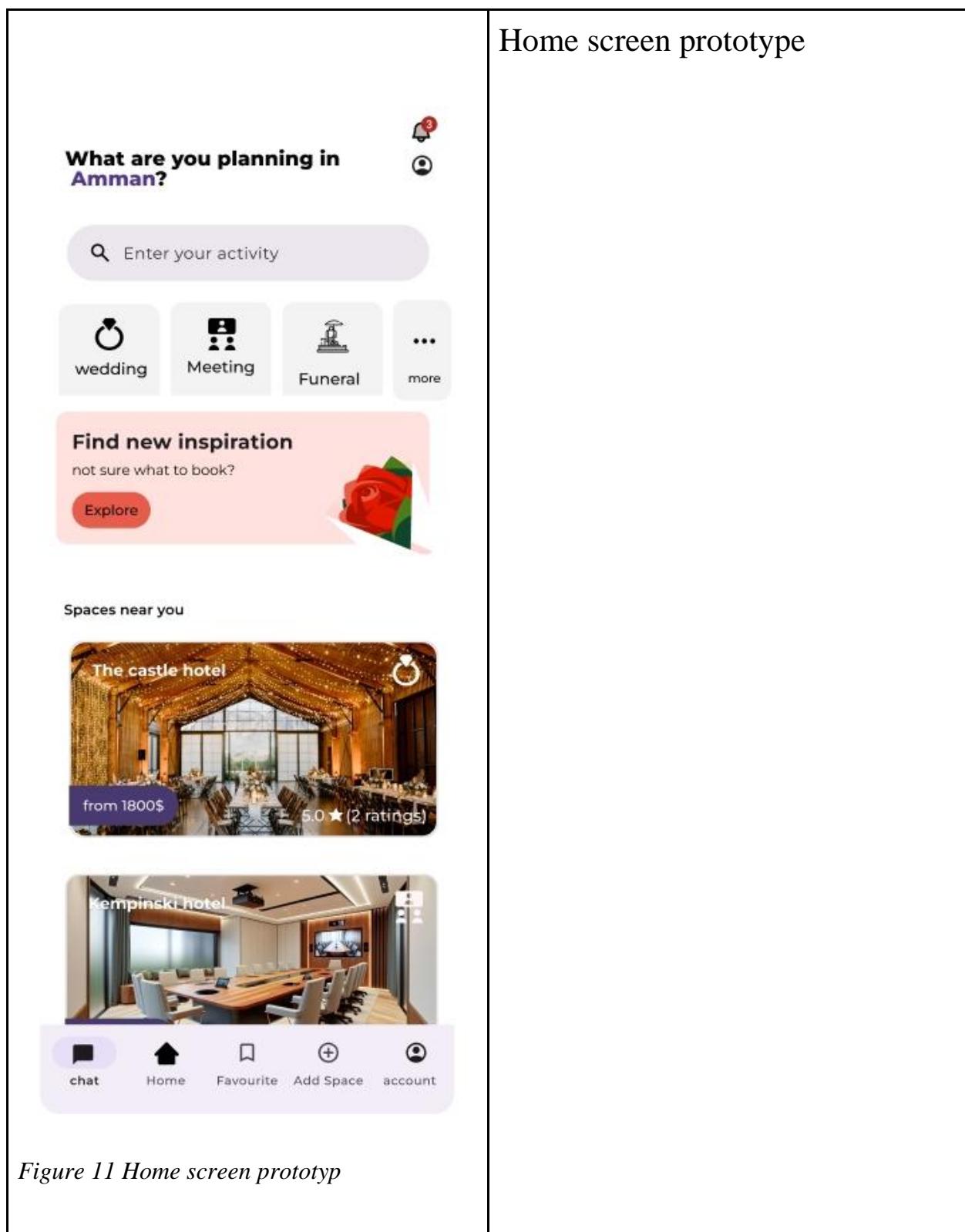
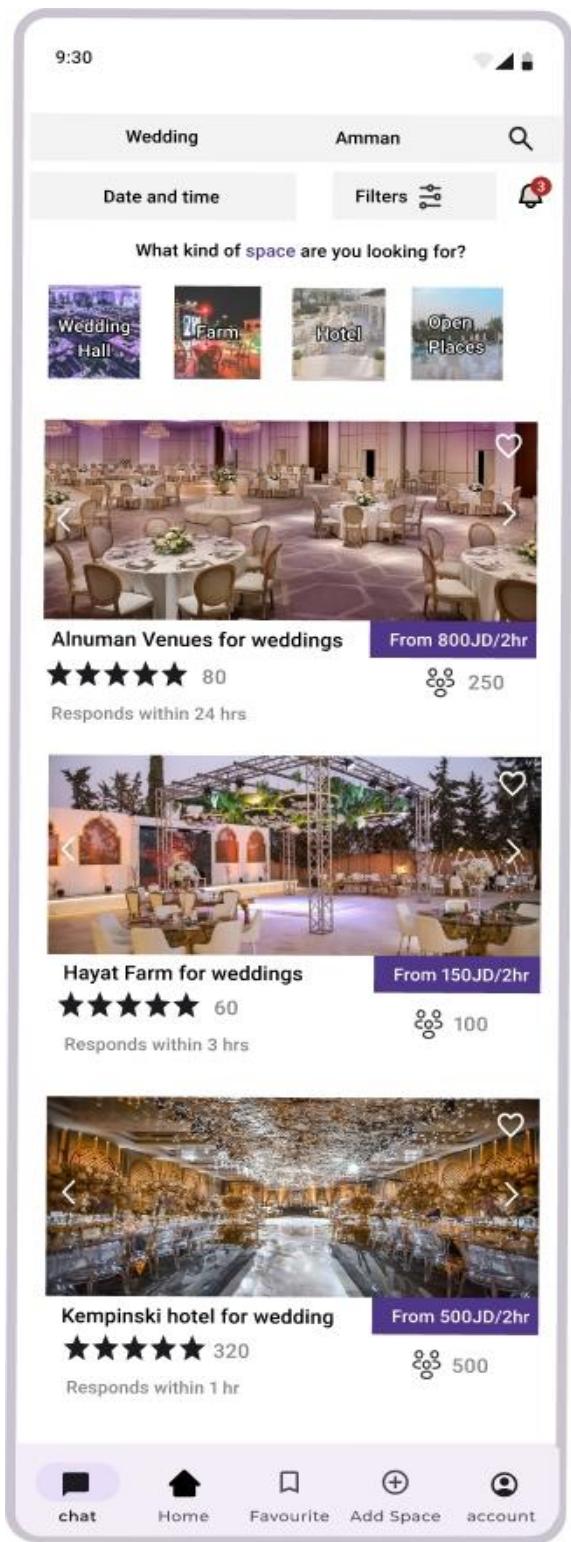


Figure 11 Home screen prototyp



venue list screen prototype

9:30

Wedding

Amman

Date and time

Filters

What kind of space are you looking for?

Alnuman Venues for weddings

From 800JD/2hr

★★★★★ 80

250

Responds within 24 hrs

Hayat Farm for weddings

From 150JD/2hr

★★★★★ 60

100

Responds within 3 hrs

Kempinski hotel for wedding

From 500JD/2hr

★★★★★ 320

500

Responds within 1 hr

chat

Home

Favourite

Add Space

account

Figure 12 venue list screen prototype

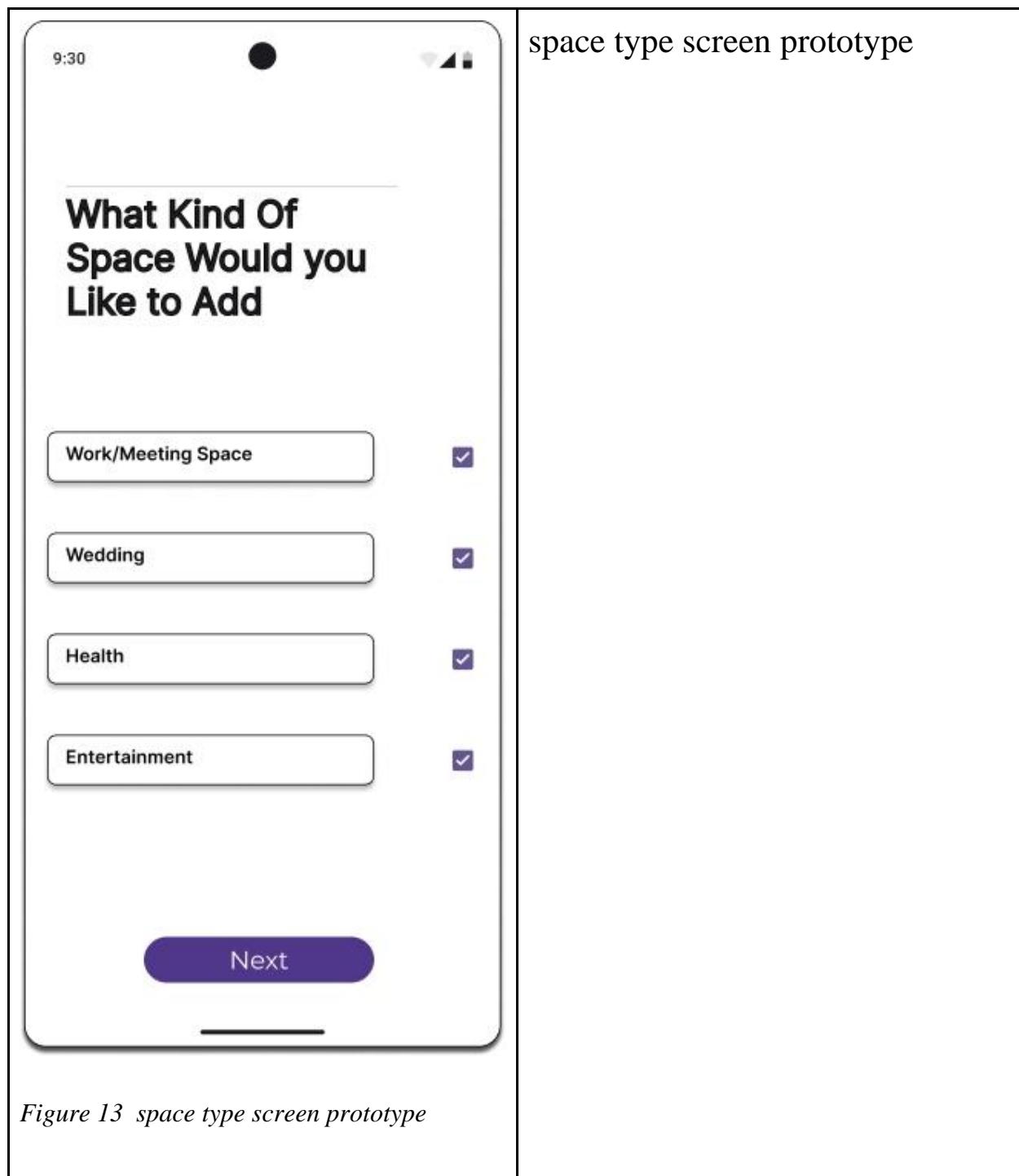


Figure 13 space type screen prototype

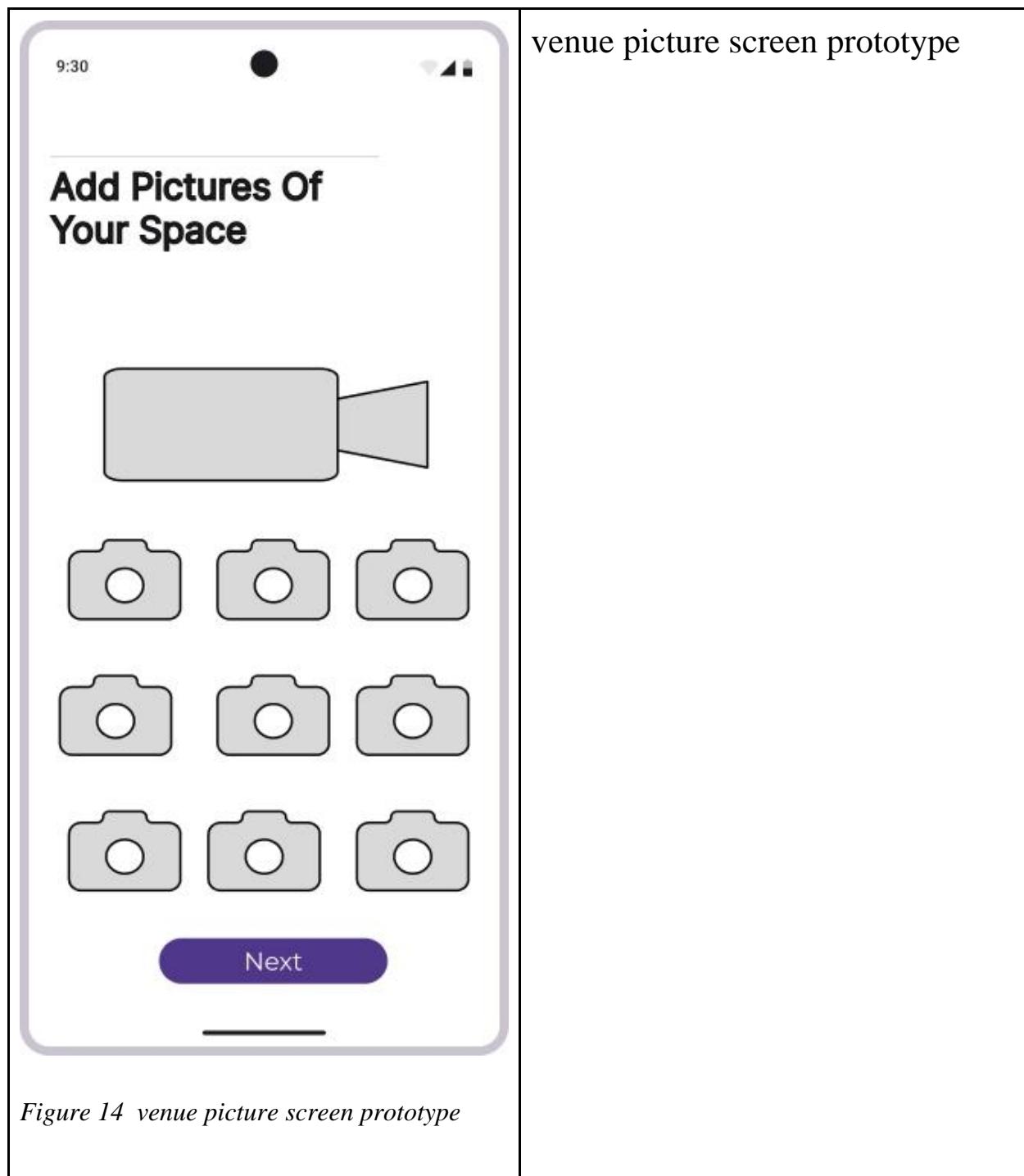
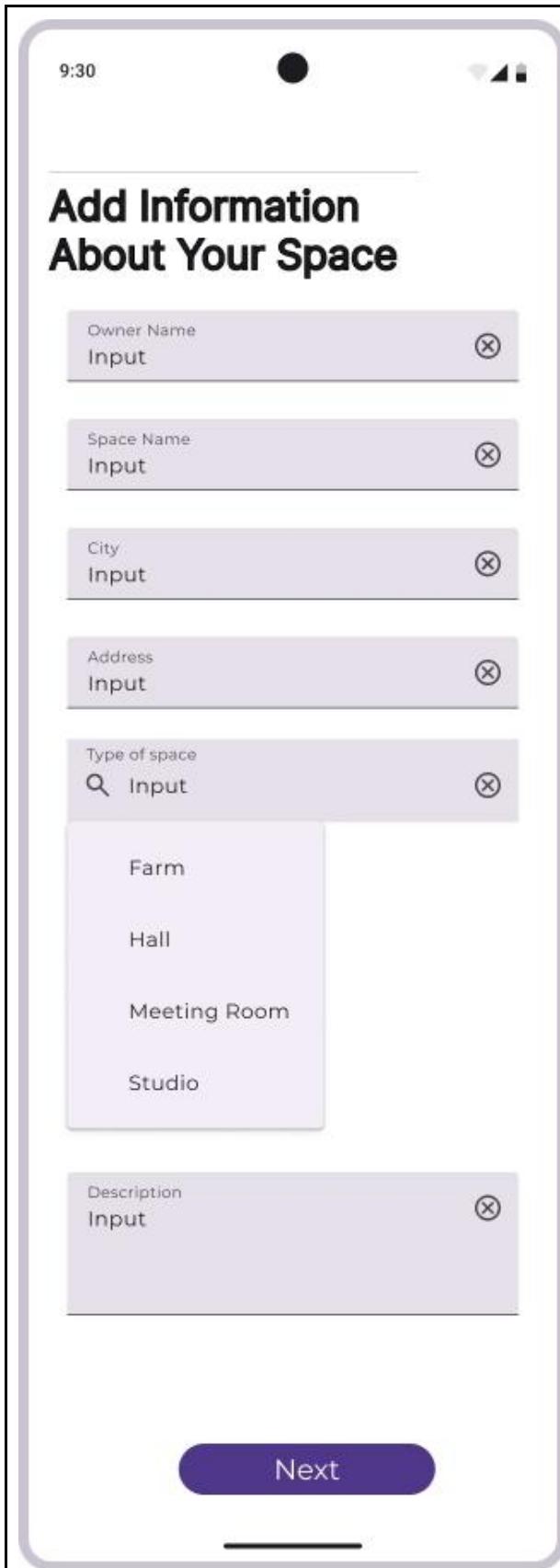


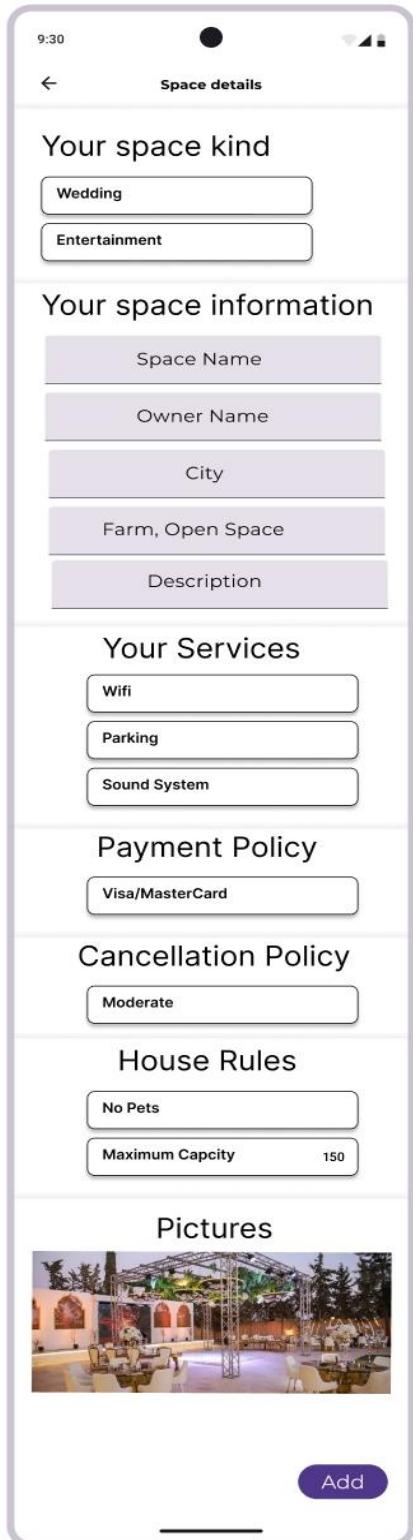
Figure 14 venue picture screen prototype



venue information screen

prototype

Figure 15 venue information screen
prototype



venue add review screen prototype

Figure 16 venue add review screen prototype

4.8 Summary

Chapter 4 presents the key design diagrams for the "حجزاتي" platform, offering a visual blueprint for its implementation. The diagrams include:

- **Context Diagram:** Illustrates system interactions with external entities.
- **DFD:** Maps data flow and processing within the system.
- **ERD:** Defines the database structure and entity relationships.
- **Use Case Diagrams:** Captures user interactions and functional scenarios.
- **Sequence Diagrams:** Details step-by-step processes for critical features.
- **Class Diagrams:** Outlines the object-oriented structure of the system.
- **GUI:** design for how the mobile app will work and the user interface that will appear for the user.

These diagrams provide a comprehensive framework for developing a scalable, functional, and well-structured platform.

Chapter 5: system implementation

The implementation of the “حجوزاتي” venue booking application was carried out through a structured and iterative process that emphasized the integration of modern software development tools and techniques. This chapter details the components that formed the core of the implementation phase, including feature extraction, feature selection, feature classification, feature matching, database implementation, and graphical user interface (GUI) design. The project was developed using .NET MAUI for cross-platform user interface development and Supabase as a backend-as-a-service solution.

5.1 Feature Extraction

Feature extraction involved identifying the key requirements and functionalities needed to address the core problem of inefficient venue booking. Initial requirements were gathered through user interviews, competitive analysis, and exploratory testing. These requirements were translated into functional modules such as:

- Venue browsing and search
- Filter by date, type, and capacity
- Booking confirmation and conflict detection
- User registration and authentication

By identifying these core features, the team was able to focus development efforts on the most impactful aspects of the user experience.

5.2 Feature Selection

After extracting the relevant features, a prioritization process was conducted to select which features to implement in the initial MVP (Minimum Viable Product). Features were ranked based on user value, development complexity, and technical feasibility. Key selected features included:

- Dynamic venue listing with images and location tags
- Time-slot based booking with conflict prevention
- Real-time calendar integration
- Secure user login via Supabase Auth
- Booking history and management for users and venue owners

This process ensured that development efforts were focused on delivering essential functionality with the highest return on investment for users.

5.3 Feature Classification and Matching

Feature classification involved grouping the selected features into functional domains: user management, booking logic, data synchronization, and interface rendering. This modular approach allowed the development team to build and test each section independently.

Feature matching played a critical role in the booking logic. It enabled users to input criteria such as preferred date, venue type (e.g., hall, outdoor, meeting room), and number of attendees. The system then queried Supabase's database and returned available venues that matched the criteria. This was made efficient through indexed queries and pre-validated time-slot entries.

5.4 Database Implementation

The backend of “حجزاتي” was implemented using **Supabase**, which offered a robust PostgreSQL-based database with real-time features and built-in authentication. The database schema was designed with normalization and scalability in mind. Below is a detailed breakdown of the core tables:

- **Profile:** Stores user information including names, contact details, gender, age, and date of profile creation.
- **Venues:** Contains venue-specific details such as name, description, type, capacity, location, contact info, pricing, images, and booking rules.
- **Bookings:** Records every booking event made by users, linking to users and venues with start and end timestamps and pricing.
- **Booking_Service:** Manages services requested as part of a booking and their pricing.
- **Services:** Lists available services that venues can offer, such as catering, AV equipment, etc.
- **Venues_Service:** Maps services to specific venues and includes price per unit.
- **Categories:** Defines types or categories of venues and their descriptions.
- **HostRules:** Stores general rules defined by hosts such as noise restrictions, operating hours, etc.
- **HostRules_Venues:** Associates specific rules with particular venues.
- **Reviews:** Collects user feedback and ratings based on bookings.
- **userFavorites:** Tracks user-favorited venues for easier access and future bookings.

These tables were interconnected through UUID-based primary and foreign keys, ensuring data integrity

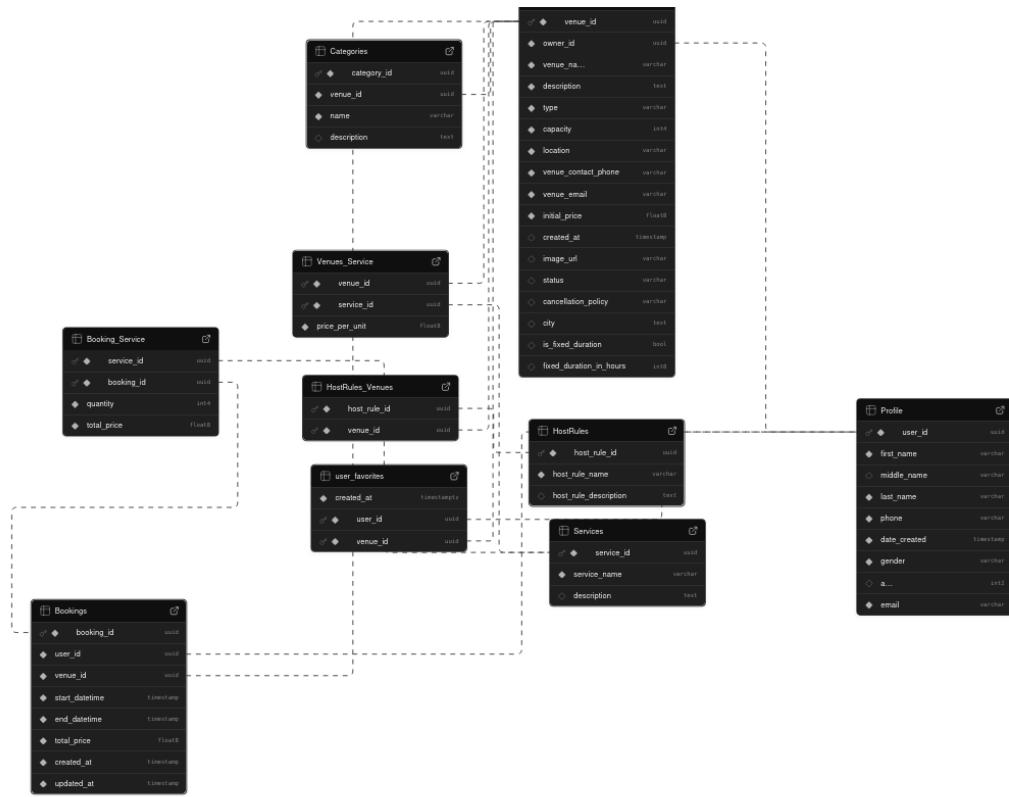


Figure 17 Database Implementation

5.5 Graphical User Interface Design

The frontend interface was developed using **.NET MAUI (Multi-platform App UI)** to ensure cross-platform compatibility across Android, iOS, and future desktop environments. The UI was designed following Material Design and usability best practices to provide a seamless and intuitive experience. With components implemented using XAML in MAUI and synchronized with backend data using Supabase SDKs.

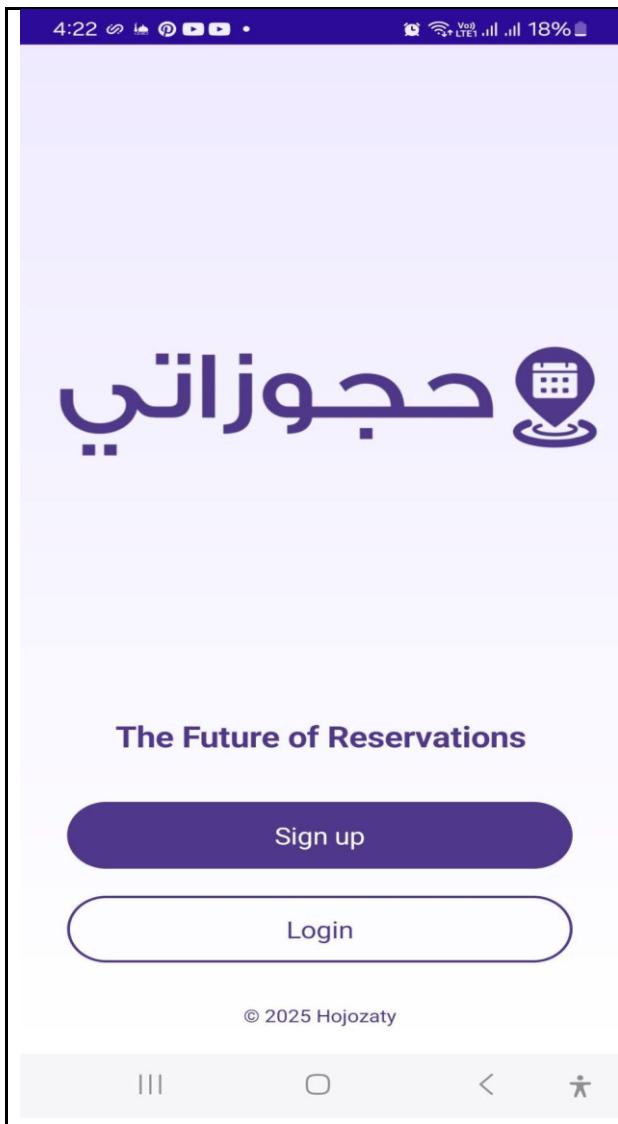


Figure 18 "حجزاتي" greeting page

The "حجزاتي" greeting page features Login and Signup buttons.

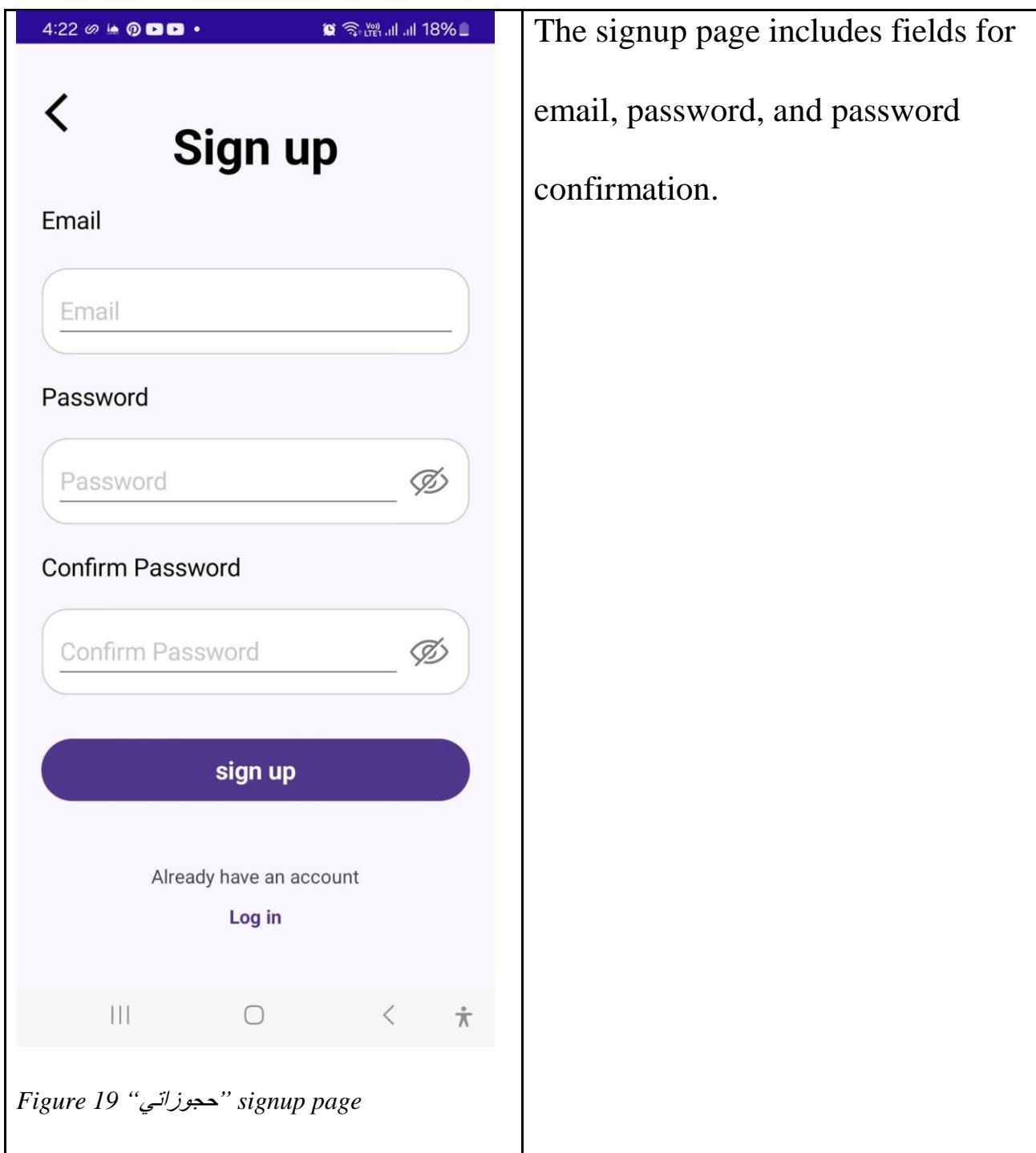
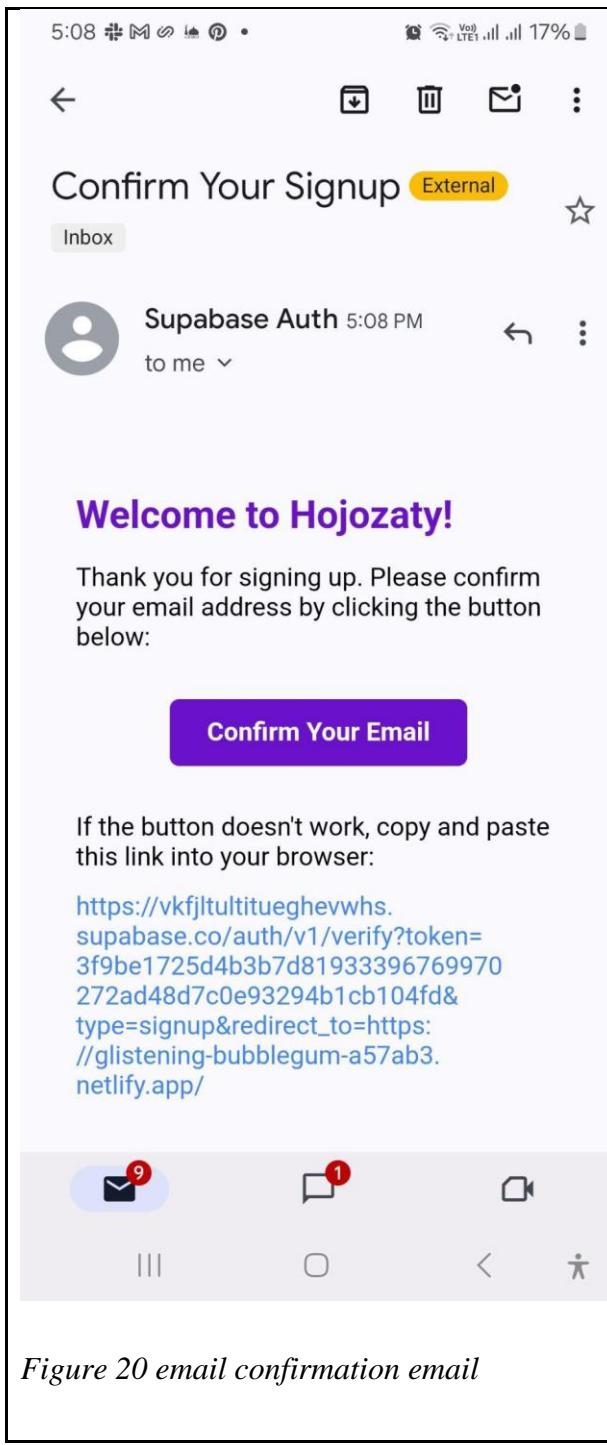


Figure 19 “حجزاتي” “signup page



An email for confirming the user's
email address.

Figure 20 email confirmation email

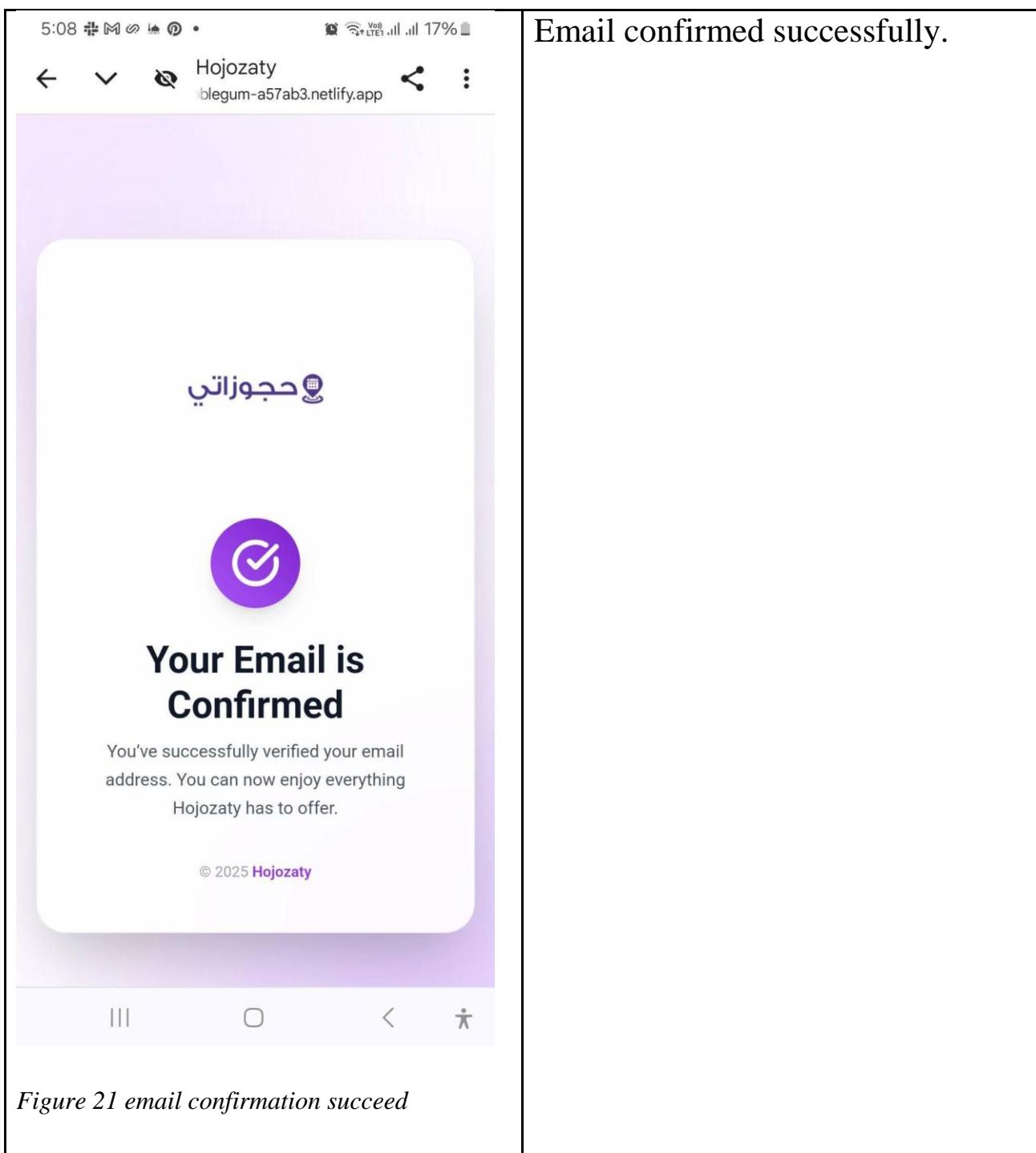


Figure 21 email confirmation succeed

8:03 8:03 4G+ LTE1 48% 48%

Profile info

First Name

Middle Name

Last Name

Phone Number

Age

female

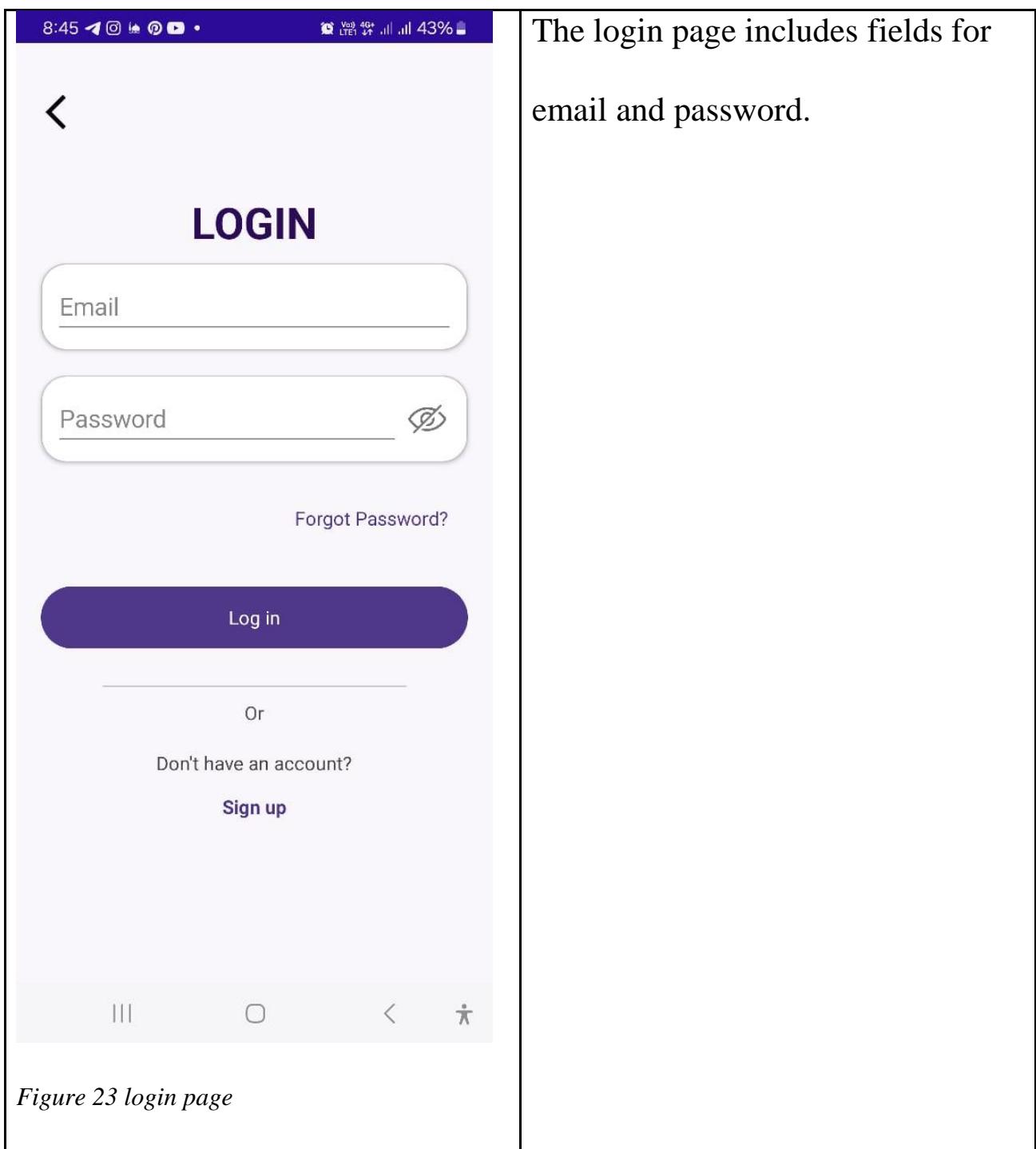
male

Cancel

Next

After confirming their email, the user is redirected to complete their profile information.

Figure 22 fill profile info page



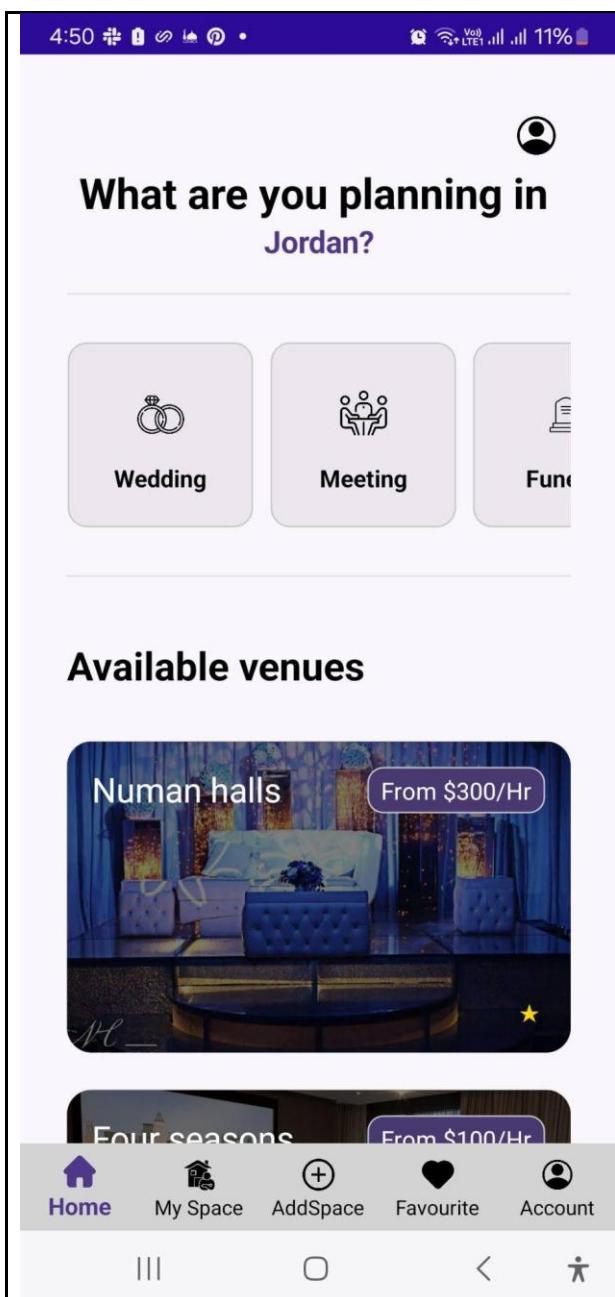
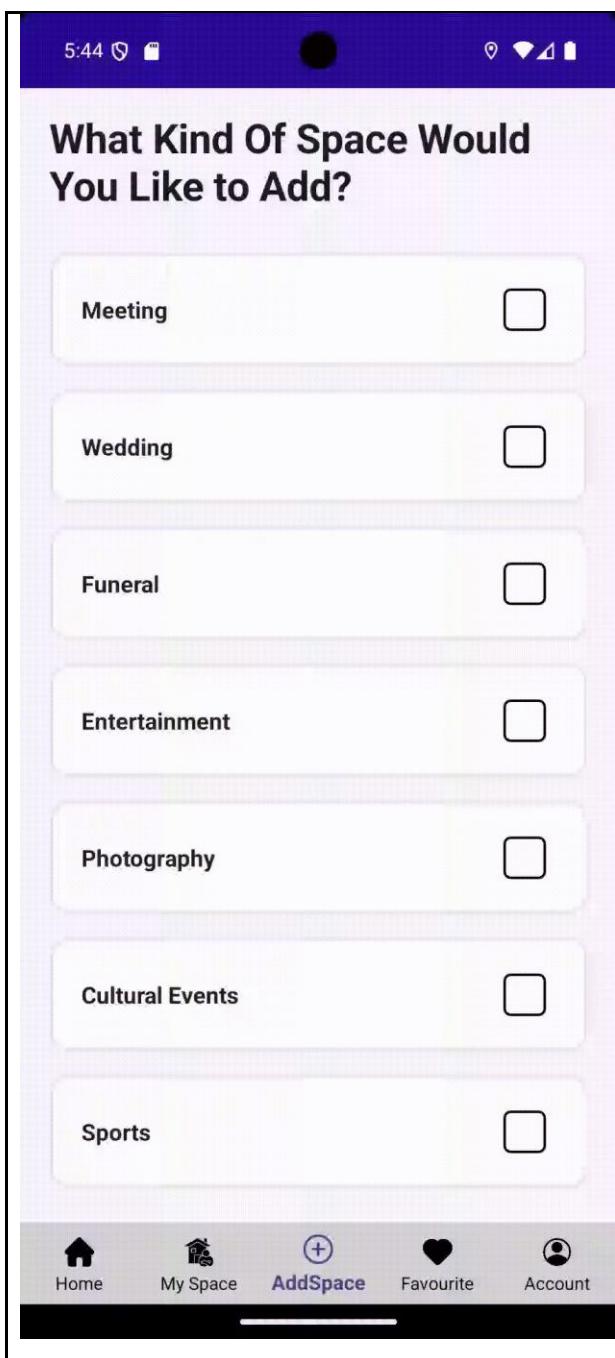


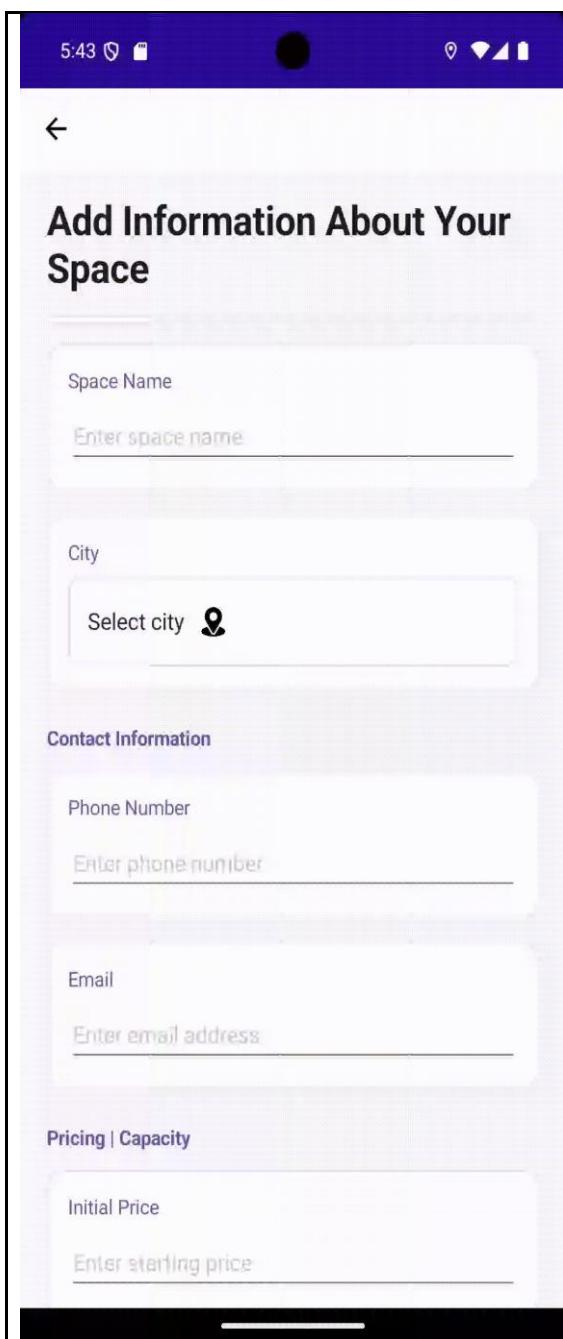
Figure 24 home page

The Home page displays the tab bar, venue categories, and suggested venues.



When the user presses 'Add a Space', they are redirected to select the venue's main category.

Figure 25 Create Space Category Page



The user proceeds to provide information about the venue.

Figure 26 Create Space Info Page

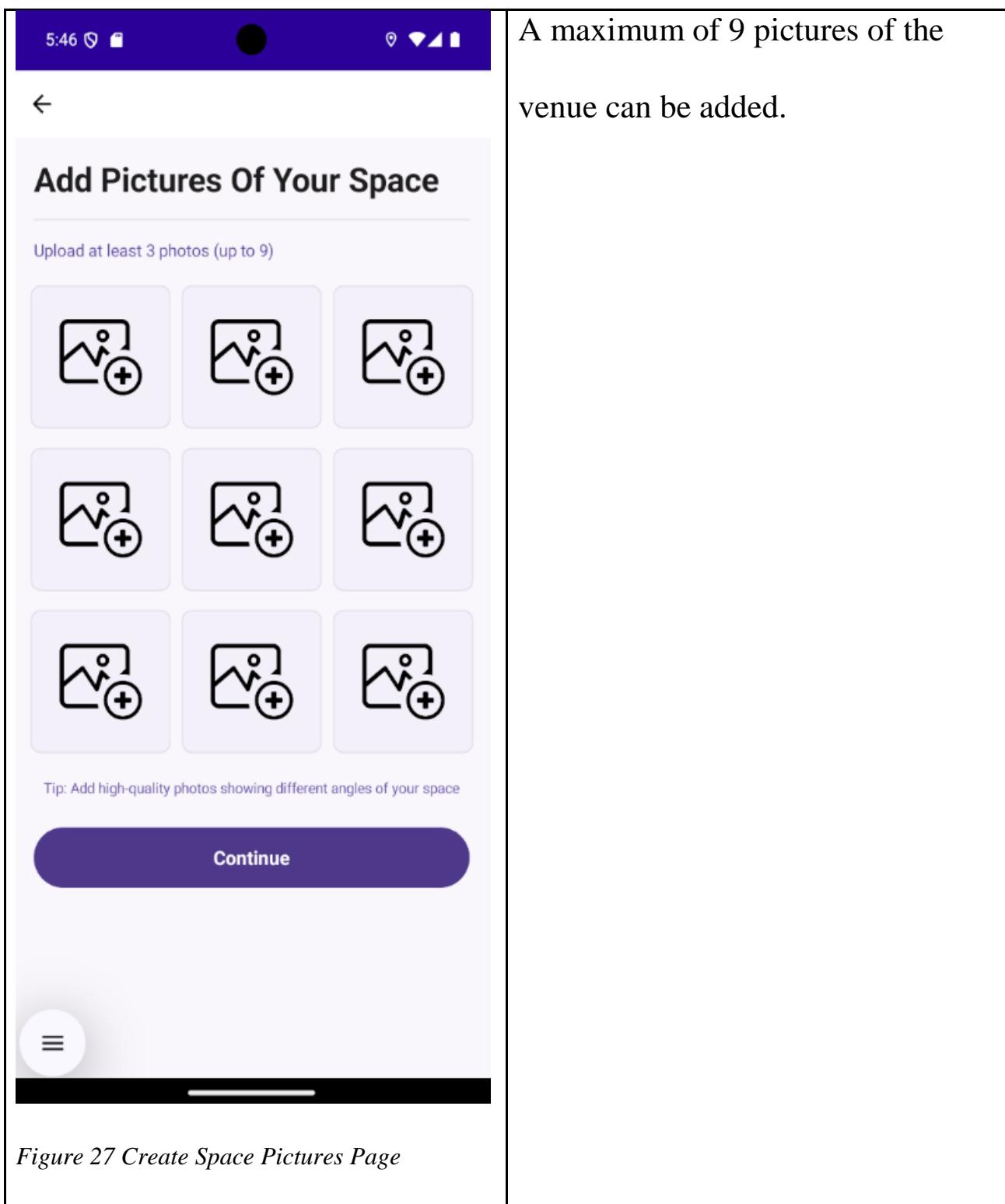


Figure 27 Create Space Pictures Page

←

Add Your Services

Add New Service

Service name _____ Price _____

Add Service

catering 20 JOD

valet 50 JOD

Continue

Include the services provided by
the venue.

Figure 28 Create Space Services Page

The screenshot shows a mobile application interface for managing space policies. At the top, there is a header bar with icons for time (5:54), signal strength, and battery level. Below the header, a back arrow is visible. The main content area is titled "Space Policies".

Cancellation Policy

- Flexible**
The guest receives a full refund.
You will not keep any part of the payment if the guest cancels.
- Moderate**
The guest receives a 50% refund.
You will keep half of the reservation amount if the guest cancels.
- Strict**
The guest receives only 30% back.
You will keep 70% of the payment if the guest cancels.

Fixed Duration

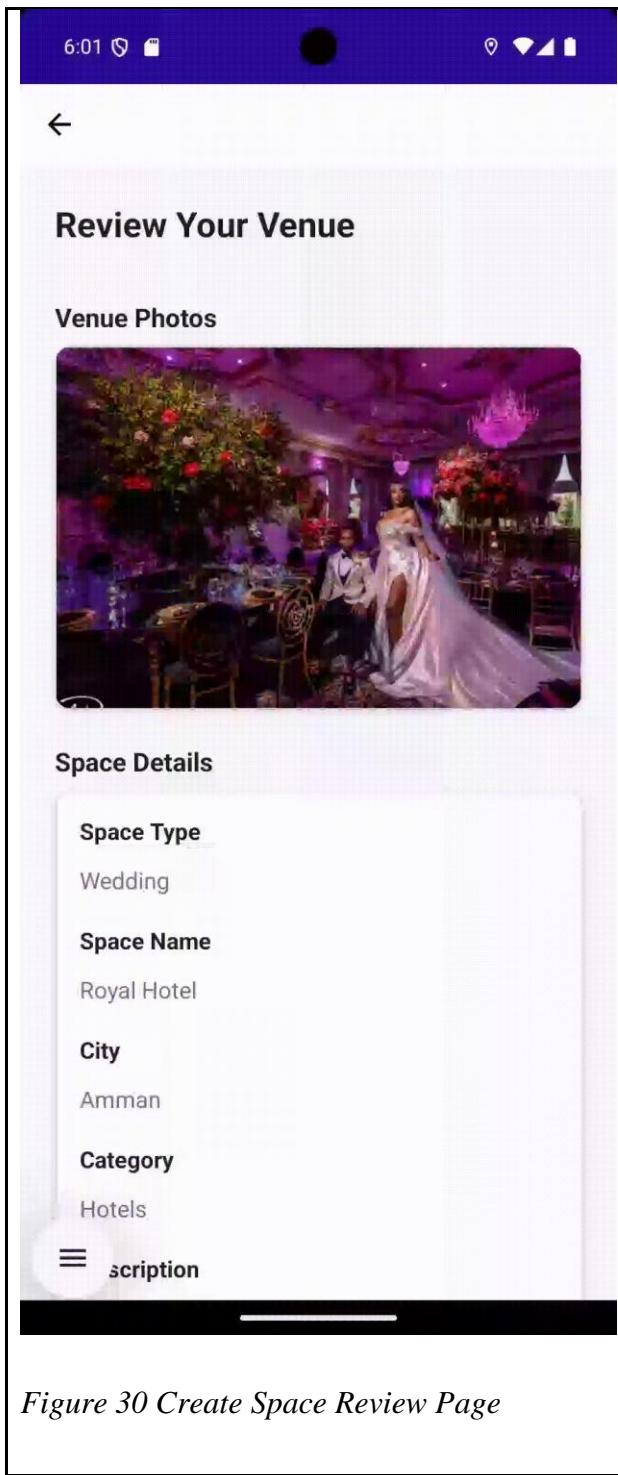
Is Duration Fixed?

House Rules

Rule name: _____

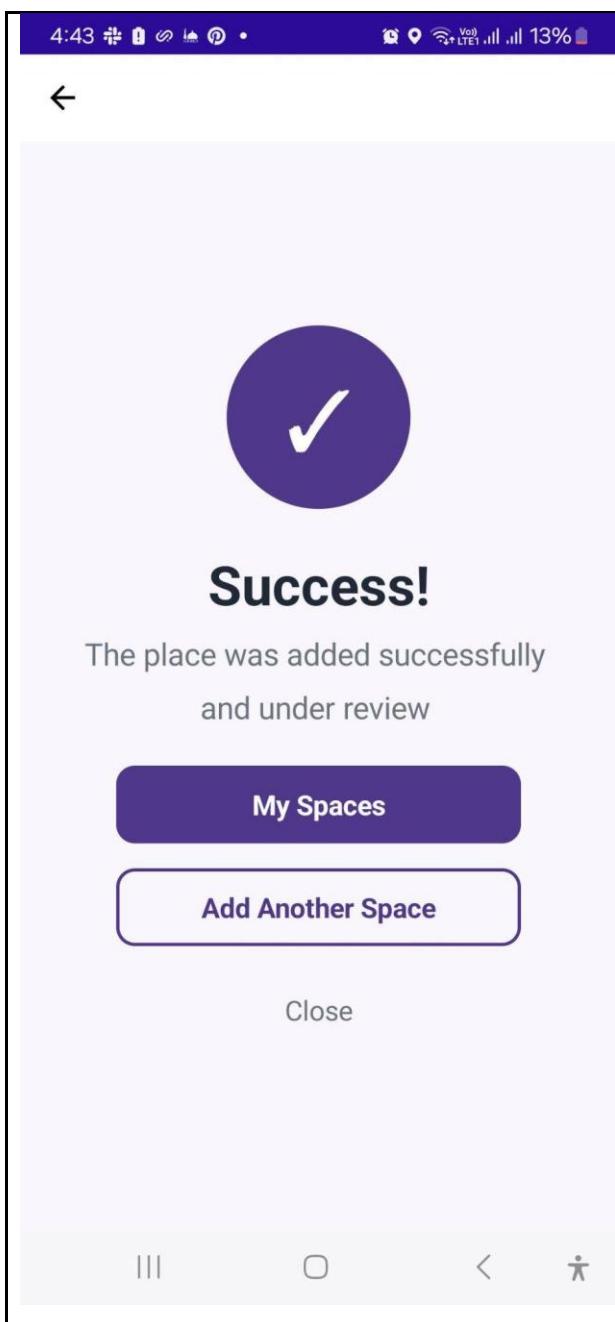
Figure 29 Create Space Cancelation Policy And House Rules

Cancellation Policy and House Rules



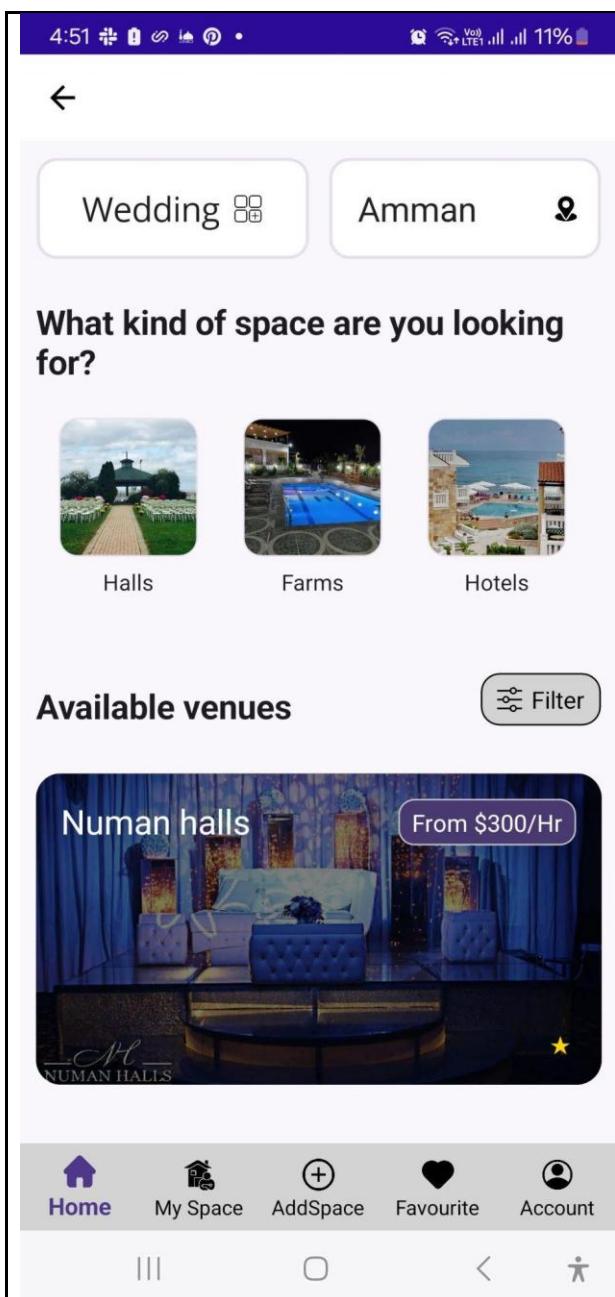
A summary page where the user can review all provided information

Figure 30 Create Space Review Page



The venue has been successfully added and is awaiting admin approval.

Figure 31 Create Space Success Page



When a venue category is selected, it displays the venues within that category.

Figure 32 Categories

The screenshot shows a mobile application interface for a venue. At the top, there's a header bar with icons for time (4:51), signal strength, battery level (10%), and a back arrow. Below the header is a large image of a wedding hall interior with blue lighting and decorations. The title "Numan halls" is displayed in a bold, dark font. Below the title is a location pin icon followed by the address "Tla al-Ali, Amman, Amman Governorate". A table provides basic information: "TYPE Wedding" and "CAPACITY 500".

About This Venue

Numan Wedding Halls is a premier event venue offering elegant spaces for weddings, receptions, and special occasions.

Host Rules

- **booking** – Events must start and end at the agreed time.

Overtime is subject to additional charges.

Services

catering	JOD 22.00
valet	JOD 2.00

Starting from
300 JOD/hour

Book Now

At the bottom, there's a navigation bar with icons for Home (selected), My Space, AddSpace, Favourite, and Account.

Figure 33 Space Info

When a venue is selected, all relevant information is displayed.

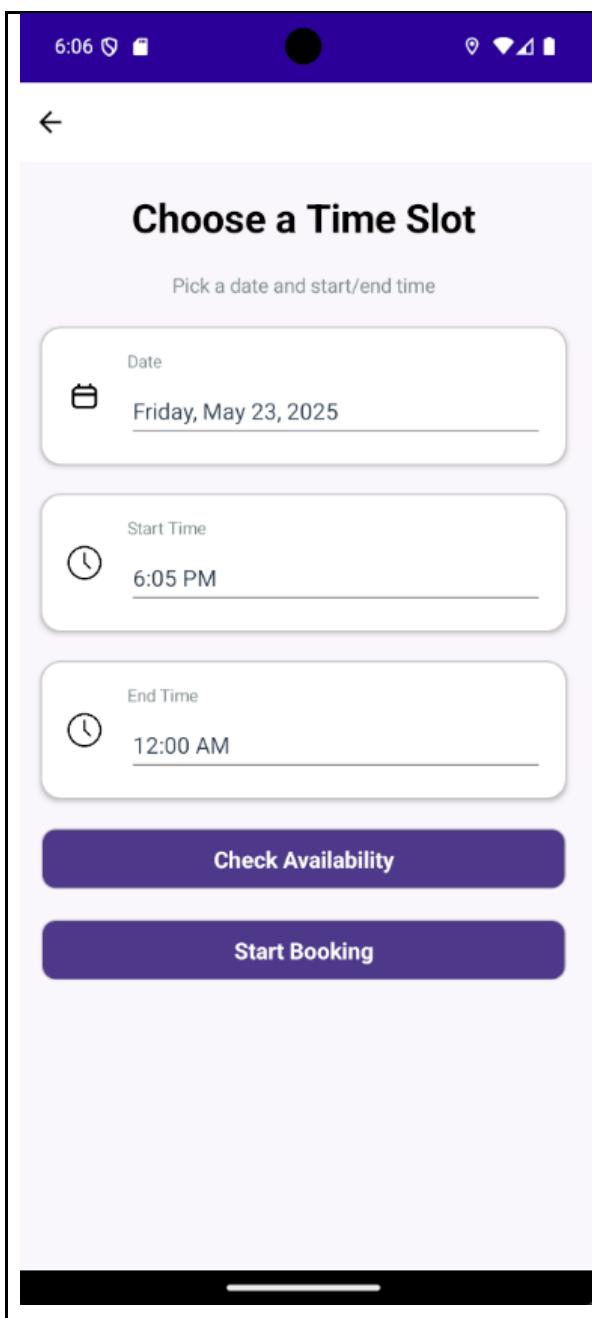
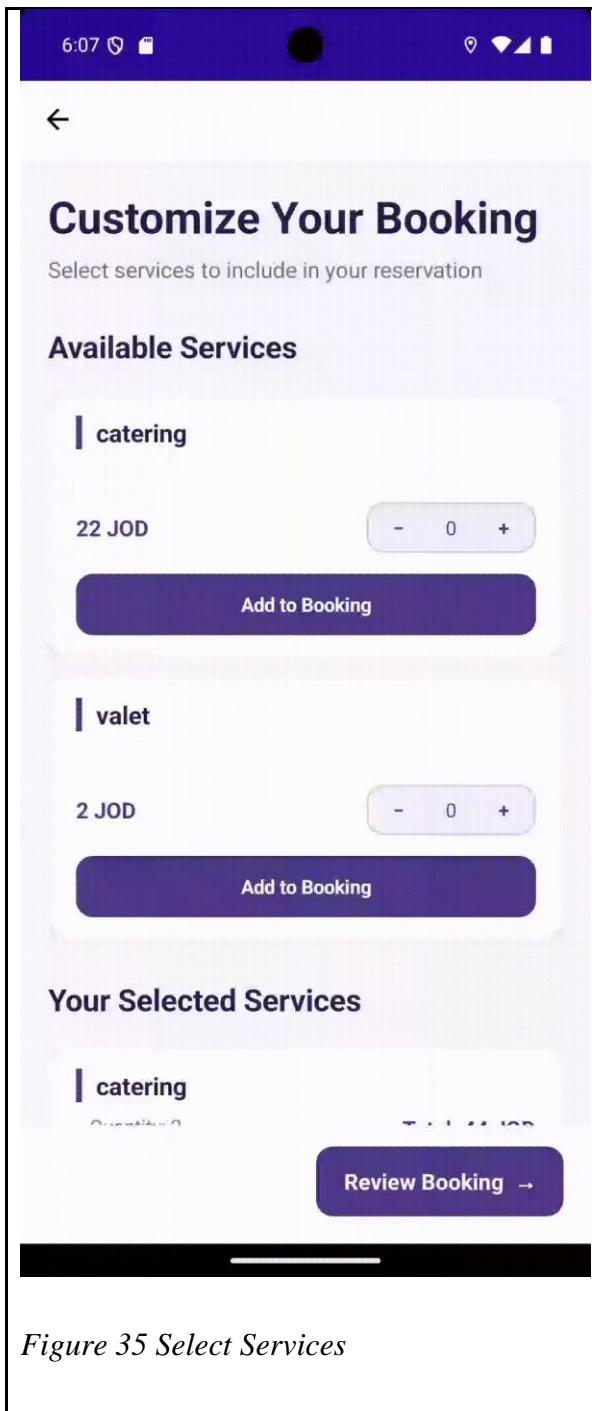


Figure 34 Date And Time picker

Venue booking begins with the user selecting a date and time.



The user chooses services and indicates how many of each are needed.

Figure 35 Select Services

6:08 60% 60% 60%

← Review Booking

Review Your Booking

Venue Details

Numan halls

Location: Tla al-Ali, Amman, Amman Governorate

Phone: 0791810859

Email: numan@hall.com

Numan Wedding Halls is a premier event venue offering elegant spaces for weddings, receptions, and special occasions.

Booking Time

Start Time: 5/31/2025 7:00:00 PM

End Time: 5/23/2025 6:06:49 PM

Duration: hours

Selected Services

catering

Quantity: 2 • Total: 44 JOD

Home My Space AddSpace Favourite Account

review booking information prior to submission

Figure 36 Review Booking

The user is forwarded to Stripe to complete the payment.

venue
\$22.00

Email
email@example.com

Payment method

Card    

 Amazon Pay

 Cash App Pay

Securely save my information for 1-click checkout
Pay faster on New business sandbox and everywhere Link is accepted.

Continue

Pay

Home My Space AddSpace Favourite Account

Figure 37 Payment

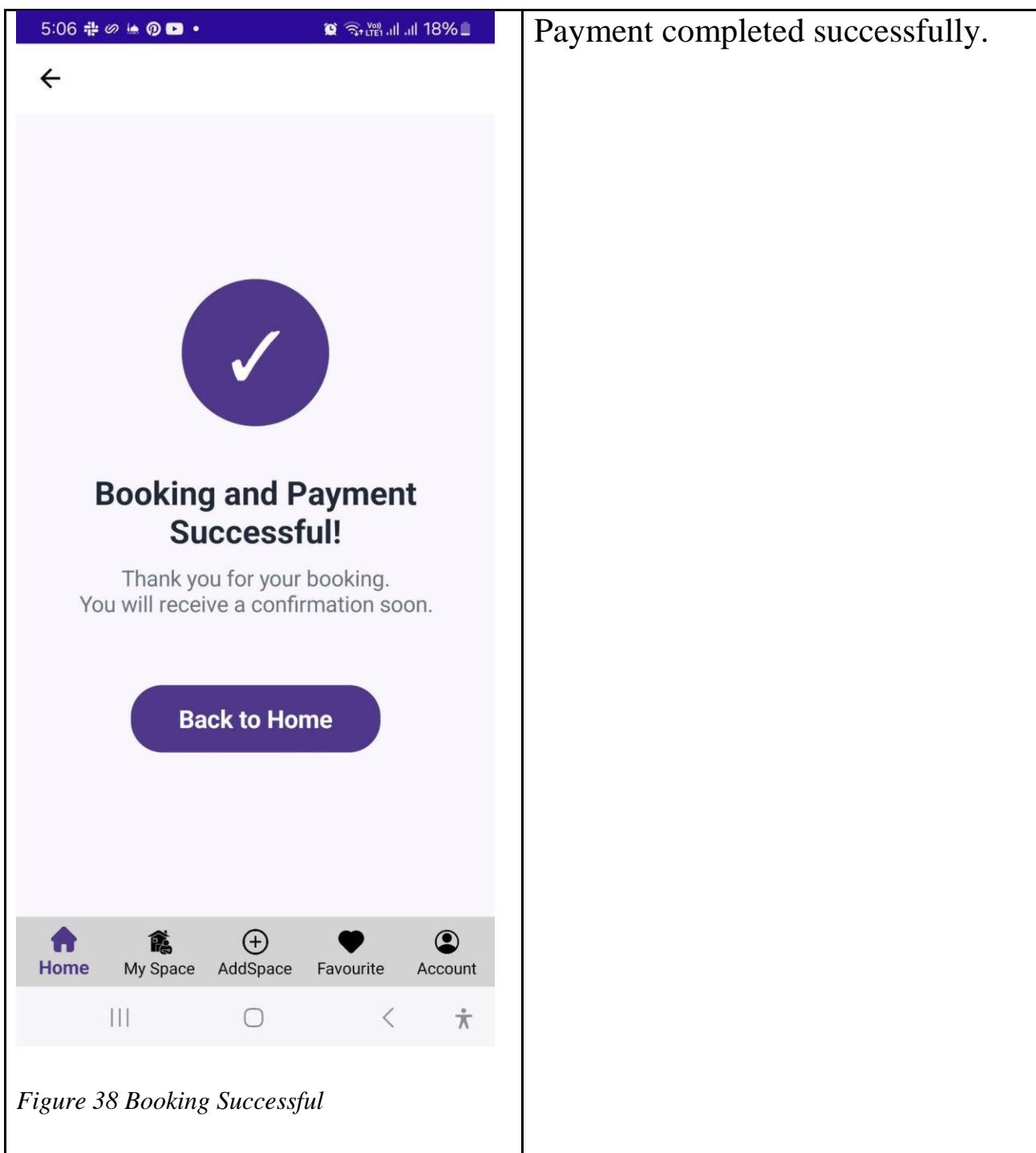


Figure 38 Booking Successful

5:07 5G 18% •

18% 5G LTE

←

My Bookings



Numan halls

Tla al-Ali, Amman, Amman Governorate

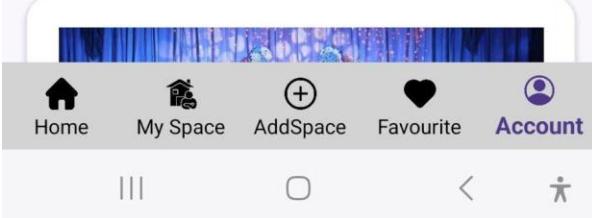
From: May 24, 2025 · 10:51 AM

To: May 24, 2025 · 12:00 PM

Total: 324 JOD Capacity: 500

Contact: numan@hall.com Booked on: May 22, 2025

Edit **Delete**



Home My Space AddSpace Favourite Account

Figure 39 My Bookings

The user is able to access and review their bookings.

The screenshot shows a mobile application interface. At the top, there is a status bar with icons for signal strength, battery level (18%), and other system notifications. Below the status bar is a large image of a room with blue lighting and a white sofa. The room has a sign that says 'Numan halls'. Below the image, the venue name 'Numan halls' is displayed, followed by the category 'Wedding'. A location pin icon and the coordinates '31.9901273, 35.8451072' are shown. To the left of the price, it says '300 JOD per hour'. To the right of the price is a purple button labeled 'View Details'. At the bottom of the screen is a navigation bar with several icons: Home (house), My Space (person in a room), AddSpace (plus sign), Favourite (purple heart), and Account (person icon). Below the navigation bar are three small, unlabeled icons.

Venues marked as favorites by the user

Figure 40 Favourites

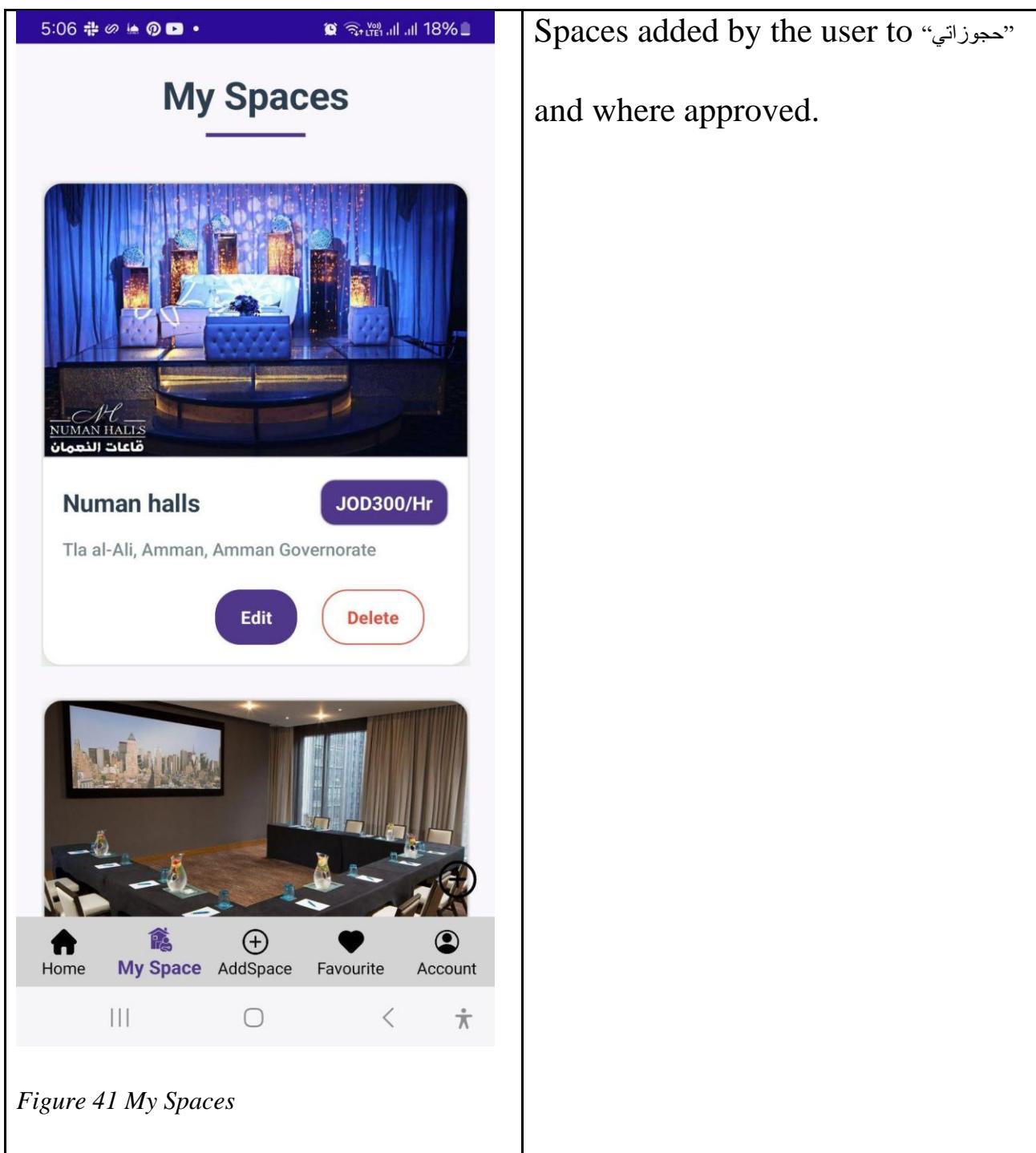


Figure 41 My Spaces

”جوزاتي“ and where approved.

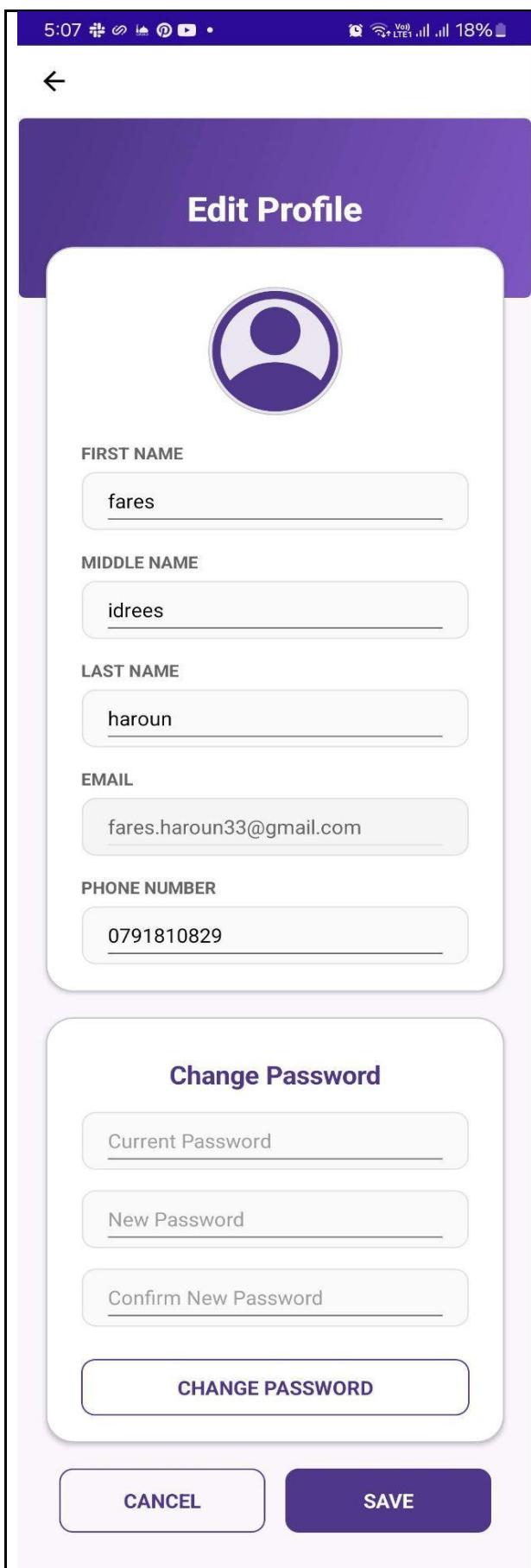
The screenshot shows the 'Account' page with the following structure:

- Spaces**:
 - [My Spaces](#)
 - [Add A Space](#)
 - [My Bookings](#)
- Preferences**:
 - [Favourites](#)
- Account**:
 - [Logout](#)

At the bottom is a navigation bar with icons for Home, My Space, AddSpace, Favourite, and Account. The 'Account' icon is highlighted with a blue border.

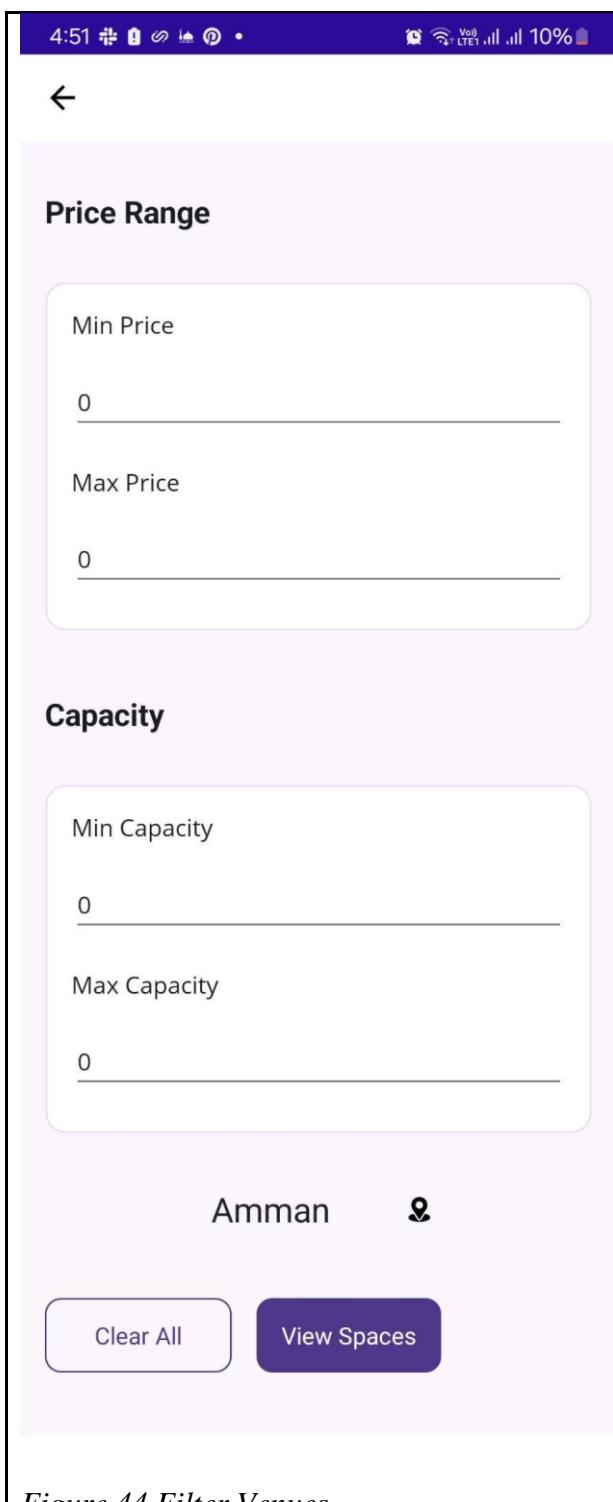
Account page provides users with access to key personal and space-related actions.

Figure 42 My Account



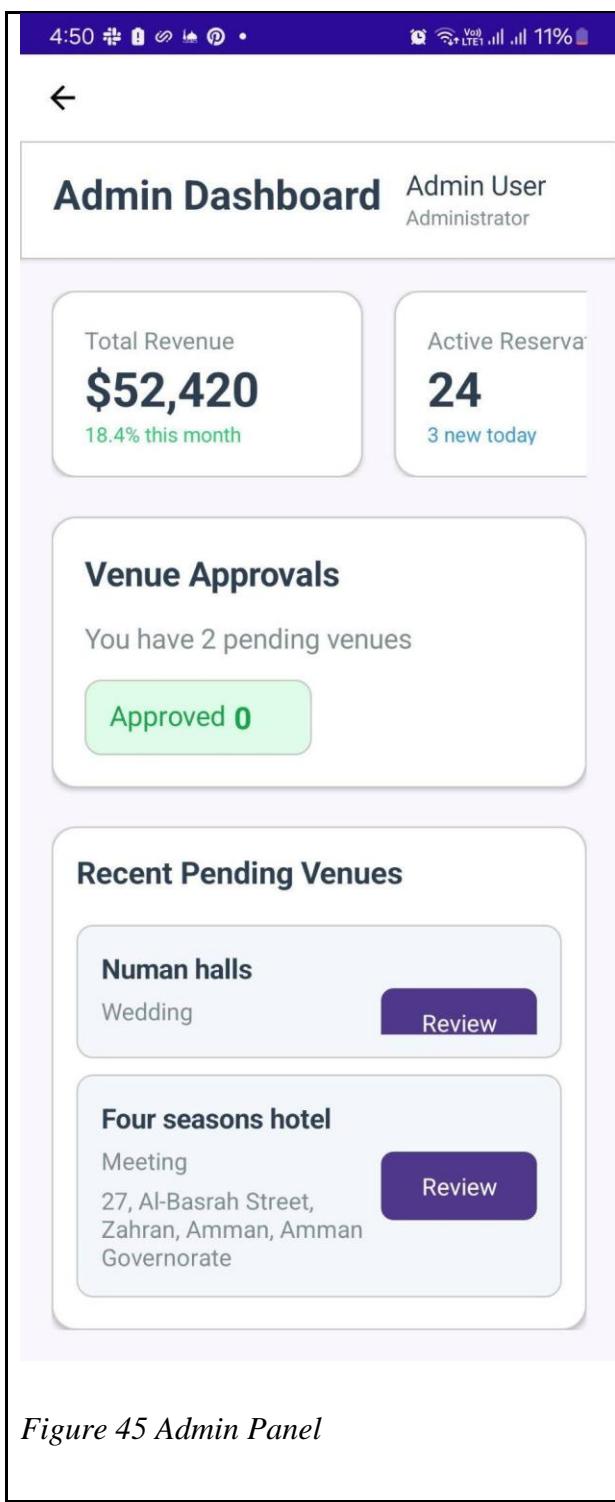
Users are able to update their profile details and change their password.

Figure 43 Edit Account



Users are able to apply filters to venues based on price and capacity.

Figure 44 Filter Venues



admin page provides tools for managing venue submissions

Figure 45 Admin Panel

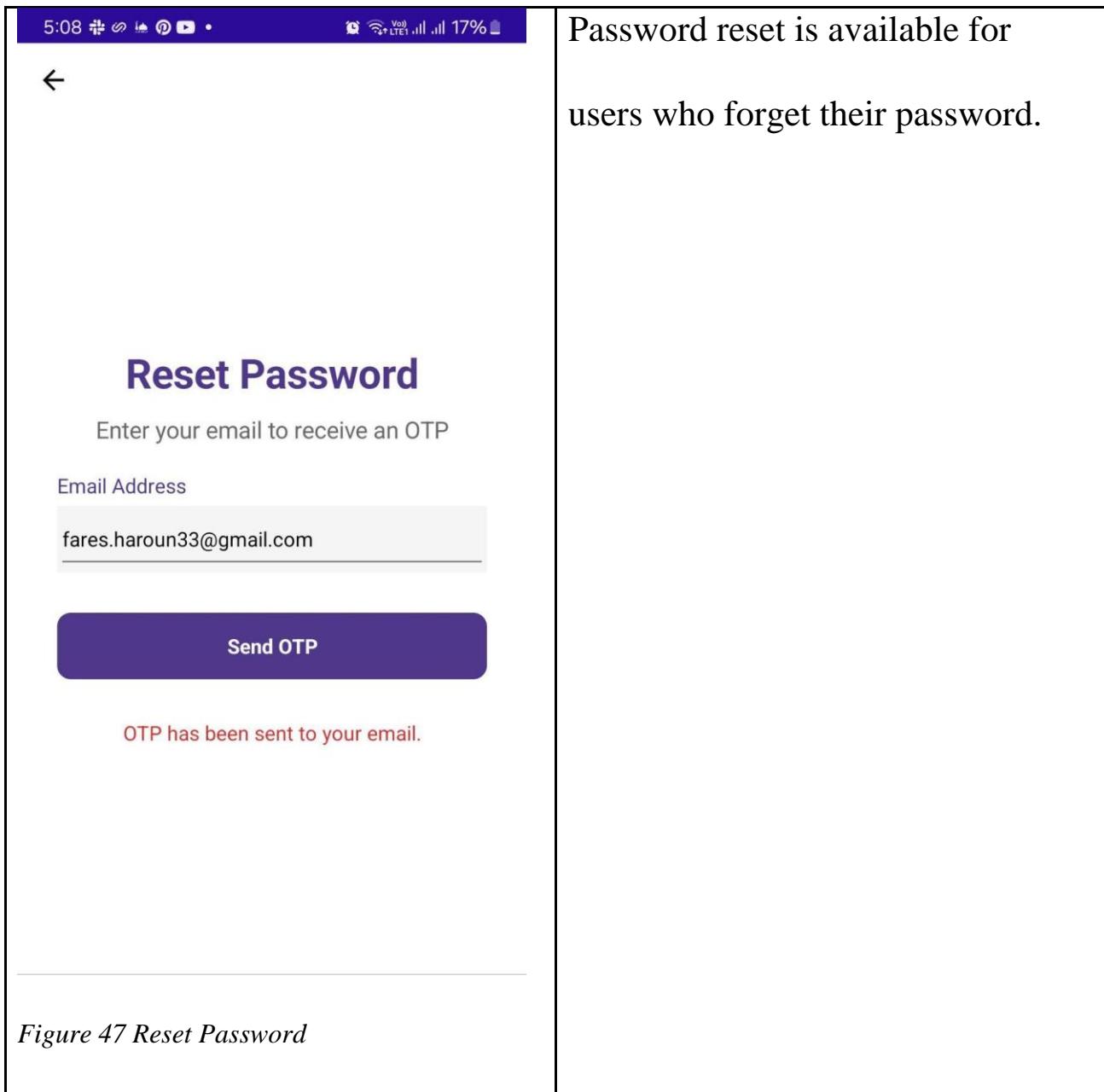
An admin has the option to either approve or reject the venue.

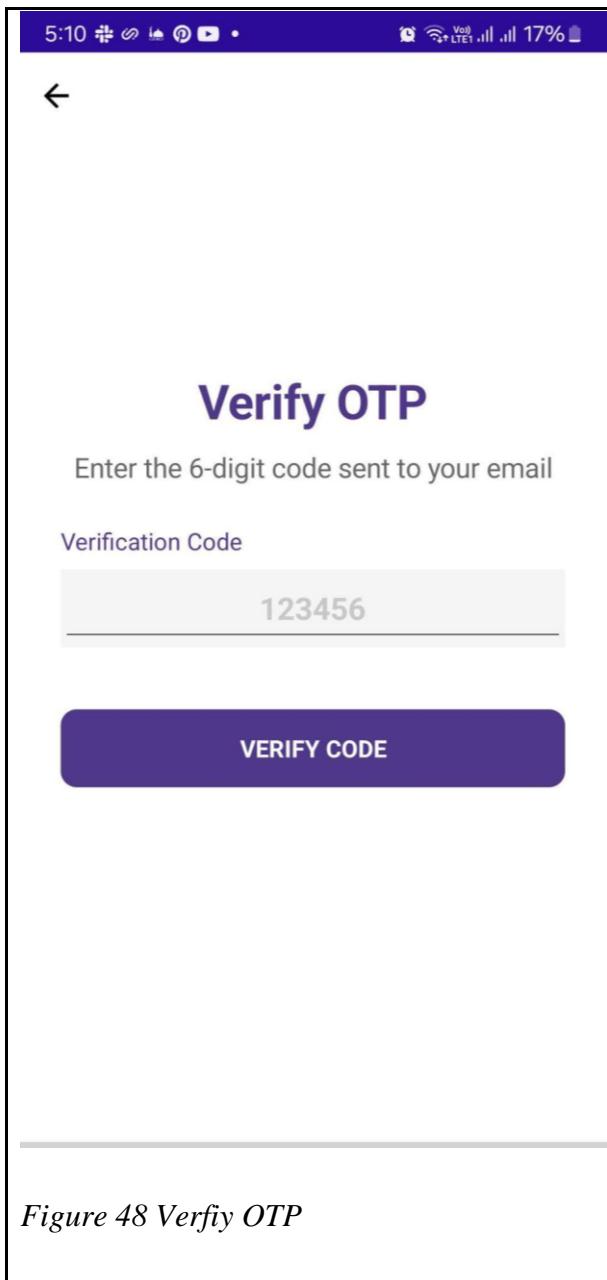
The screenshot shows a mobile application interface for a venue review. At the top, there is a navigation bar with a back arrow and the text "Venue Review". Below this, a yellow banner displays the status "Pending Review" with a small hourglass icon. The main content area starts with a section titled "Venue Photos:" followed by a large image of a well-decorated wedding stage with blue lighting and a bed-like setup. Below the photo, the venue's name "Numan halls" is displayed in a bold font, with "Numan Halls" in English and "قاعات النعمان" in Arabic underneath. A detailed information card follows, listing the venue's details:

Venue Type:	Wedding
Location:	Tla al-Ali, Amman, Amman Governorate
Capacity:	500
Phone:	0791810859
Email:	numan@hall.com
Initial Price:	\$300.00
Cancellation Policy:	Flexible
Description:	Numan Wedding Halls is a premier event venue offering elegant spaces for weddings, receptions, and special occasions.

At the bottom of the screen, there is a "Review Decision" section containing the text: "Please review the venue details carefully before making a decision." Below this text are two buttons: a green "Approve Venue" button and a red "Reject Venue" button.

Figure 46 Venue Approval or Rejection





The sent OTP must be entered to proceed.

Figure 48 Verify OTP

The screenshot shows an email inbox interface with a single message from 'Supabase A...' titled 'Reset Your Password'. The message content is as follows:

Hojozaty Password Reset

Use the One-Time Password (OTP) below to reset your Hojozaty account password:

434996

This OTP is valid for a limited time. Please do not share it with anyone.

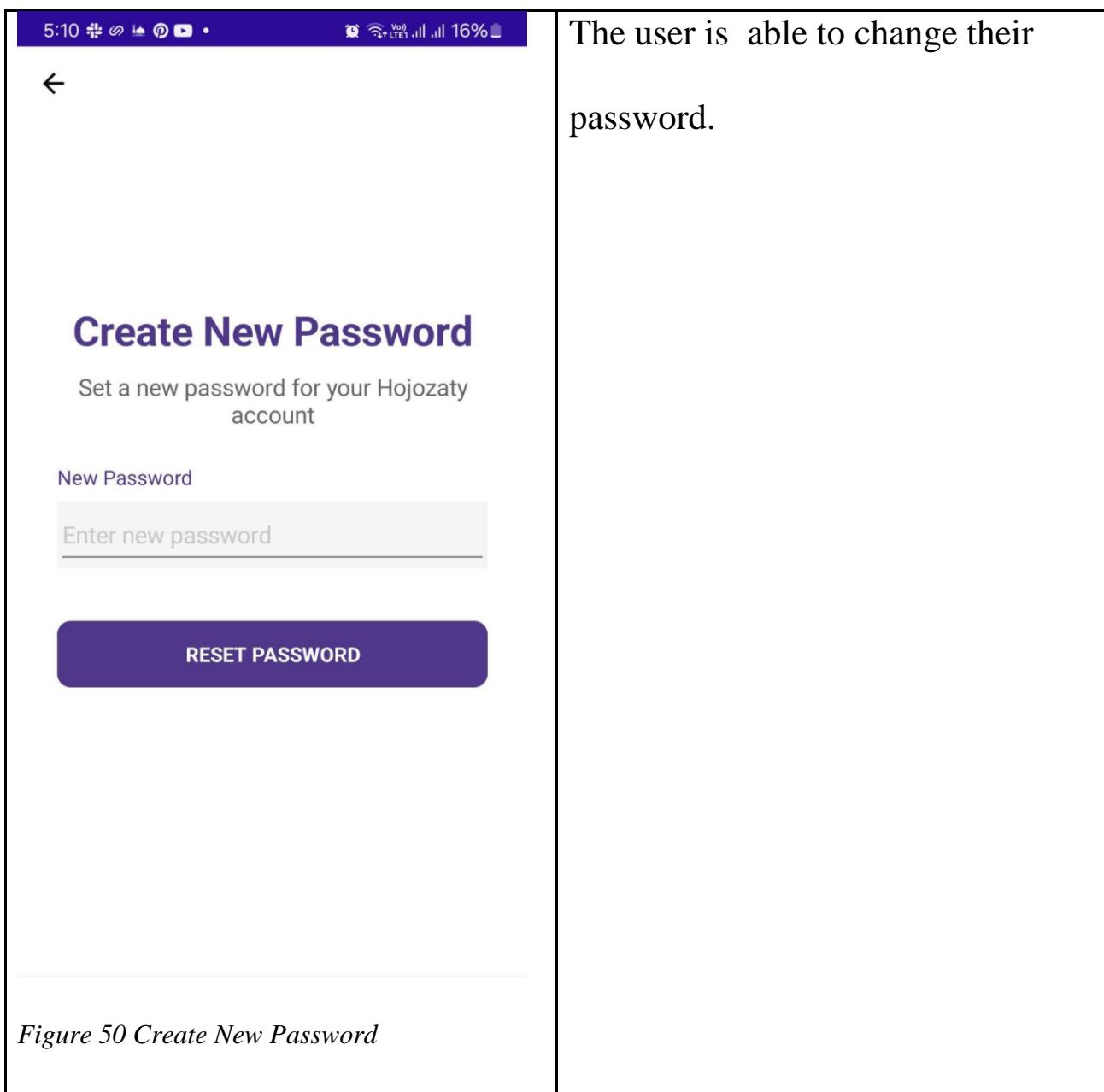
© 2025 Hojozaty. All rights reserved.

You're receiving this email because you signed up for an application powered by [Supabase](#) ⚡

At the bottom, there is a navigation bar with icons for mail (99+), refresh, search, and user profile.

An annotation on the right side of the screenshot states: "An email containing the OTP code is sent to the user."

Figure 49 OTP Email



Chapter 6: Testing

6.1 Introduction

Testing is a critical phase in ensuring "جوزاتي" operates reliably, securely, and delivers a seamless user experience. As an event booking platform handling transactions, user interactions, and provider management, even minor defects could lead to **failed payments, incorrect bookings, or degraded usability**. To mitigate risks, **manual testing was rigorously conducted** across all core functionalities, supplemented by **scenario-based validations** to verify system stability before deployment.

6.2 Testing Methodology

Testing was performed manually by the development team using a structured approach:

6.2.1 Feature-Based Testing

- Each module was tested in isolation (e.g., **booking, payment, authentication**).
- **Input validation, error handling, and edge cases** were prioritized.

6.2.2 Role-Based Testing

- Validated workflows for **customers, providers, and admins** with role-specific permissions.

- Ensured **data isolation** (e.g., providers cannot access other providers' bookings).

6.2.3 Cross-Device & UI Testing

- Tested on **real Android devices (Samsung, Google Pixel, Xiaomi)** and **emulators (Android Studio)**.
- Verified **responsive design** across different screen sizes (mobile, tablet).

6.2.4 Scenario-Based (End-to-End) Testing

- Simulated **real-world user journeys**, such as:
 - Search → Book → Pay → View History**
 - Provider Submission → Admin Approval → Public Listing**
- Ensured **data consistency** between frontend and backend.

6.2.5 Issue Tracking & Resolution

- Identified defects** were logged in a **shared tracking sheet** with severity classifications.
- Developers addressed issues** in priority order, followed by **re-testing** until resolved.

6.3 Testing Scope

Table 9 Testing Scope

Module	Key Tested Features
Authentication	Email signup/login, OTP verification, password reset, session management.

Module	Key Tested Features
Venue Search	Filters (price, capacity), category browsing, real-time search results.
Booking System	Date/time selection, service add-ons, confirmation flow, cancellation handling.
Favorites	Adding/removing venues, synchronization across devices.
Payments (Stripe)	Card processing, success/failure handling, refund verification.
Admin Functions	Venue approval/rejection, user management, content moderation.

6.4 Sample Test Cases

Table 10 Sample Test Cases

Feature	Test Case	Expected Result	Status
User Registration	Register with valid email & password.	Account created; OTP sent for verification.	<input checked="" type="checkbox"/> Pass

Feature	Test Case	Expected Result	Status
Booking Flow	Complete booking with payment.	Booking appears in history with "Paid" status.	<input checked="" type="checkbox"/> Pass
Venue Filtering	Apply price & capacity filters.	Results match selected criteria.	<input checked="" type="checkbox"/> Pass
Admin Approval	Approve a pending venue submission.	Venue becomes publicly visible.	<input checked="" type="checkbox"/> Pass

6.5 Bug Tracking & Fixes

Table 11 Bug Tracking

Issue	Root Cause	Resolution
Booking allowed for past dates.	Missing frontend validation.	Added date-checking logic on submit.
Favorites list not updating.	State not synced with	Implemented real-time API sync .

Issue	Root Cause	Resolution
	backend.	
Admin panel missing pending venues.	Incorrect SQL query filtering.	Fixed database query logic .
OTP errors not displayed.	No error feedback mechanism.	Added toast messages for failures.

6.6 Conclusion & Future Improvements

Manual testing confirmed "حجزاتي" **core functionalities meet requirements with all critical issues resolved**. The system is **stable, secure, and ready for production release**.

Recommendations for Future Testing:

- **Automated Testing:** Integrate UI automation (**Espresso**) and API testing (**Postman**) for regression.
- **Load Testing:** Assess performance under **high user traffic**.
- **Beta Testing:** Gather feedback from **real users** before full rollouts

Chapter 7: Project Conclusions and Future Work

7.1 Conclusions

The development of "جوزاتي" has successfully addressed critical gaps in event planning and venue management by providing a unified, user-friendly mobile platform. Key achievements include:

- **Centralized Booking System:** Streamlined venue reservations and service customization (e.g., catering, decoration) into a single platform.
- **Empowerment of Local Providers:** Enabled small and medium-sized venue owners to expand their market reach.
- **Real-Time Functionality:** Implemented live availability updates and secure payment processing via Stripe.

The project met its core objectives, demonstrating technical feasibility through .NET MAUI and Supabase, while adhering to non-functional requirements like scalability, security, and usability.

7.2 Strengths and Weaknesses

Strengths

- ✓ **User-Centric Design:** Intuitive UI/UX validated through testing.
- ✓ **Cost-Effective Model:** Revenue from ads/commissions ensures sustainability.
- ✓ **Modular Architecture:** Facilitates future updates and feature additions.

Weaknesses

- ✖ **Limited Language Support:** Currently only supports English.
- ✖ **Offline Accessibility:** Requires internet connectivity for most features.
- ✖ **Device Fragmentation:** Untested on older Android/iOS devices.

7.3 Future Work

To enhance "حجوزاتي" the following directions are proposed:

- 1. Feature Expansion**
 - Integrate **AI-driven recommendations** for venues/services.
 - Add **offline mode** for basic functionalities (e.g., viewing bookings).
- 2. Technical Improvements**
 - Adopt **automated testing** (e.g., Xamarin.UITest) to reduce manual effort.
 - Expand device compatibility testing.
- 3. Market Growth**
 - Partner with **local event planners** to onboard more venues.
 - Introduce **multi-language support** (e.g., French, Kurdish).
- 4. Research Opportunities**
 - Study **user behavior analytics** to refine personalization.
 - Explore **blockchain** for secure contract handling between users/providers.

7.4 Final Remarks

"حجوزاتي" lays a strong foundation for revolutionizing event planning in Jordan and similar markets. By addressing current limitations and leveraging future opportunities, the platform can evolve into a globally competitive solution.

Chapter 8: references

8.1 Technical References

Table 12 Technical References

Category	Reference	Description
.NET MAUI	Microsoft. (2023). <i>Introduction to .NET MAUI</i> . https://learn.microsoft.com/en-us/dotnet/maui/	Cross-platform framework for mobile app development.
Supabase	Supabase. (2023). <i>Supabase Documentation</i> . https://supabase.com/docs	Open-source Firebase alternative for backend services.
Stripe API	Stripe. (2023). <i>Stripe API Documentation</i> . https://stripe.com/docs/api	Payment processing integration.
Postgrest .NET	Supabase Community. (2023). <i>Postgrest .NET Client</i> . GitHub	Supabase API client for .NET.
Community Toolkit	.NET Foundation. (2023). <i>CommunityToolkit.MVVM</i> . GitHub	MVVM pattern implementation for

Category	Reference	Description
		.NET MAUI.

8.2 Testing & Deployment Tools

Table 13 Testing And Deployment Tools

Tool	Reference	Usage
Visual Studio	Microsoft. (2023). <i>Visual Studio</i> 2022. https://visualstudio.microsoft.com/	Primary IDE for .NET MAUI development and debugging.
Supabase Studio	Supabase. (2023). <i>Database Management</i> . https://supabase.com/docs/guides/database	Real-time database management interface.
AppCenter	Microsoft. (2023). <i>AppCenter CI/CD</i> . https://appcenter.ms/	Mobile app deployment and testing pipeline.

8.3 UI/UX Design Tools

Table 14 *Ui/UX Design Tools*

Tool	Reference	Usage
Figma	Figma. (2023). <i>Design Prototyping.</i> https://www.figma.com/	UI/UX prototyping and collaboration.
Canva	Canva. (2023). <i>Graphic Design.</i> https://www.canva.com/	Logo and promotional material design.

8.4 Academic & Industry Resources

Table 15 *Academic And Industry Resources*

Source	Reference	Relevance
Mobile App Usability	Nielsen Norman Group. (2022). <i>Mobile UI Design Best Practices.</i> https://www.nngroup.com/	UI/UX best practices for mobile applications.
Event	Peerspace. (2023). <i>Venue Booking</i>	Benchmark for venue

Source	Reference	Relevance
Management Systems	<i>Platform.</i> https://www.peerspace.com/	booking workflows and features.

8.5 Additional Resources

Table 16 Additional Resources

Resource	Reference	Usage
GitHub	GitHub. (2023). <i>Version Control.</i> https://github.com/	Collaborative code management.
Stack Overflow	Stack Overflow. (2023). <i>Developer Q&A.</i> https://stackoverflow.com/	Troubleshooting and community support.