



CAPSTONE PROJECT SUBMITTED TO DOCTOR FAISAL ABU KHZAM IN  
FULFILLMENT OF THE REQUIREMENTS FOR THE COURSE CSC599:  
CAPSTONE PROJECT

PITCHPAL

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# Abstract

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Lebanon is home to a multitude of sports enthusiasts and athletes who regularly seek available sports fields to practice their sports activities. Conversely the sports centers owners seek to showcase and promote their facilities to a wider audience. Recognizing this dual demand, PitchPal aims to bridge the gap specifically between the football players' community and sports center owners, providing a seamless communication and coordination platform. PitchPal's array of features allows football players to create teams, discover nearby sports centers, invite fellow players to games, and make reservations for football fields. Additionally, sports center owners can utilize PitchPal to add their facilities to the system and manage reservations effectively. The application also incorporates features for players to review the fields they play on, rate other players and teams, fostering a sense of community and feedback within the football ecosystem. PitchPal thus emerges as a powerful solution to solve the complexities associated with reserving football fields, promote socialization, and enhance the overall football experience. This report presents the development and implementation of PitchPal, a comprehensive football game management platform available as both a mobile and web application for our capstone project.

# Introduction

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## Purpose

PitchPal's mission is to present a seamless communication and coordination platform for both football players and sports centers owners. It serves as a facilitator of efficient communication, accessibility to sports facilities, and fostering a thriving interconnected football community.

## Competitors

Platforms like SportCiety in our local context and Footy Addicts on the international scale share a similar mission like PitchPal's; however, a few noteworthy distinctions in terms of their areas of focus, functionalities, and target audience. Each platform offers unique capabilities to cater to the needs of their respective users.

- Target Audience:
  - o SportCiety connects the Lebanese with sports fields owners, trainers, and gyms.
  - o Footy Addicts, born in 2013, aims to connect the football community in England.
  - o PitchPal caters to football players in Lebanon, providing them with a platform to book sports fields advertised by field owners.
- Availability:
  - o SportCiety is exclusively available in Lebanon only accessible through a mobile application.
  - o Footy Addicts is available in the United Kingdom through both a web and mobile application.
  - o PitchPal is available in Lebanon accessible through both a mobile and web application.
- Sports:
  - o SportCiety gradually opens to certain sport types based on demand, including football, basketball, and gym training.
  - o Footy Addicts is created to solely serve the nation's favorite game - football.
  - o PitchPal is created to serve football players in Lebanon recognizing the challenges of organizing games.
- Reviews:
  - o SportCiety allows for clubs and trainers ratings, not the individual players.
  - o Footy Addicts enables users to rate both the sports fields and the players or participants in the game.
  - o PitchPal allows for ratings of both the sports centers and the participants of the football game, promoting trust, fair play, and informed decision-making of other users in future games.

## Motivation

PitchPal's creation was driven by a strong desire to encourage the growth of sports in our country where football holds a special place in the hearts of many. Our application does not only save time and transportation expenses, but also fosters a sense of trust and fair play amongst players.

The traditional approach of personally visiting a sports center and looking for the owner or manager to talk to and agree on its booking is pretty much time consuming and costly. PitchPal, on the other hand, revolutionizes this process by providing a platform where players can check for sport centers' availability, details and description and make reservations on the spot, saving time and resources. This way, PitchPal makes this game more accessible to all players.

Additionally, since we believe in fair play and trust, we incorporated PitchPal's comprehensive rating system allowing for transparency and accountability amongst the football community members. Through the players' ratings, the sports centers' owners can have a comprehensive way into accepting or rejecting the players' reservations. Moreover, this rating system serves as a tool for the players to make informed decisions when forming teams or joining games. PitchPal thus values creating a supportive and inclusive transparent community where players feel respected and motivated to continually improve their skills.

## Novelty

PitchPal stands out among other platforms by offering a user-friendly communication and coordination platform catering the needs of both football players and sports centers owners. Its unique features set it apart in the market, rendering it a novel innovative solution for the football community in Lebanon.

Our application provides a distinctive combination of tools and functionalities for its users. It encourages trust and fair play which makes it stand out in the market which only care about game organization and field bookings. PitchPal emphasizes user feedback on both the sports centers and the participants of a game. It also recognizes the sports centers owners offering them a dedicated platform to not only showcase their facilities, but also manage reservations increasing their visibility to a wider audience.

## Contribution Compared to Existing Work

PitchPal offers several key contributions compared to existing platforms in the market. First and foremost, it caters specifically to the Lebanese football community, recognizing the unique needs and preferences of local football players. Unlike other platforms that have a broader scope, PitchPal focuses on providing a tailored experience for the Lebanese football enthusiasts.

Another significant contribution is that PitchPal is available as both a mobile and web application. This multi-platform approach ensures that users can access the application conveniently, regardless of their preferred device or internet connectivity. By offering both mobile and web versions, PitchPal expands its reach and accessibility, providing a seamless experience to a wider range of users.

Furthermore, PitchPal addresses the challenges of traditional field reservations by streamlining the process through its user-friendly interface. The application simplifies the search for suitable football fields by providing comprehensive information about nearby fields, including amenities and schedules. Users can effortlessly make reservations with just a few taps, saving time and effort compared to the traditional method of making multiple phone calls or visiting fields in person.

Pitch-Pal also promotes socialization and community-building among football players. The platform allows users to create teams, connect with fellow enthusiasts, and engage in friendly competition. By fostering these social connections, PitchPal enhances the overall football experience and creates a sense of belonging within the community.

Additionally, the comprehensive review system in PitchPal sets it apart from other platforms. Users can share their experiences and provide ratings for both football fields and fellow players. This feedback system promotes trust, fair play, and accountability within the community, enabling users to make informed decisions and fostering a positive environment for all participants.

In summary, PitchPal's contributions lie in its specific focus on the Lebanese football community, its availability as both a mobile and web application, its streamlined field reservation process, its emphasis on socialization, and its comprehensive review system. These unique features distinguish Pitch-Pal and make it a valuable and user-friendly platform for football players in Lebanon.

# Structure

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The architecture of the Pitch-Pal application revolves around two types of users: players and field managers, each with distinct roles and functionalities. Players are the primary users of the application who reserve football fields, create and join matches, and socialize with other players. Field managers, on the other hand, oversee the sports centers and manage reservations and schedules.

The reservation process serves as a vital connection point between players and field managers. Players can browse and search for available fields, view their schedules, and request reservations through the application. These reservation requests are then sent to the field managers for approval. Once approved, players receive confirmation of their reservations, allowing them to secure their desired time slots and enjoy their games.

To ensure trust and reliability within the community, Pitch-Pal incorporates a rating system. Players can provide ratings and reviews for each other and their teams. They can also review sport-centers and their staff. These reviews help with reflecting on the players' experiences and interactions. This rating system allows players to make informed decisions when selecting fields or joining matches, promoting a sense of transparency and accountability. Positive ratings and reviews also help build trust between players and field managers, fostering a reliable and quality-driven environment.

Pitch-Pal goes beyond being just a reservation platform by fostering socialization among players. Through the application's social features, players can connect with fellow enthusiasts, form teams, and join public matches. This socialization aspect enriches the overall football experience, creating a sense of community and camaraderie among players.

By structuring the application to accommodate the distinct roles of players and field managers, connecting them through the reservation process, implementing a rating system for trust, and promoting socialization among players, Pitch-Pal creates a cohesive and engaging ecosystem that caters to the needs of both users and enhances the overall football community.

# Features

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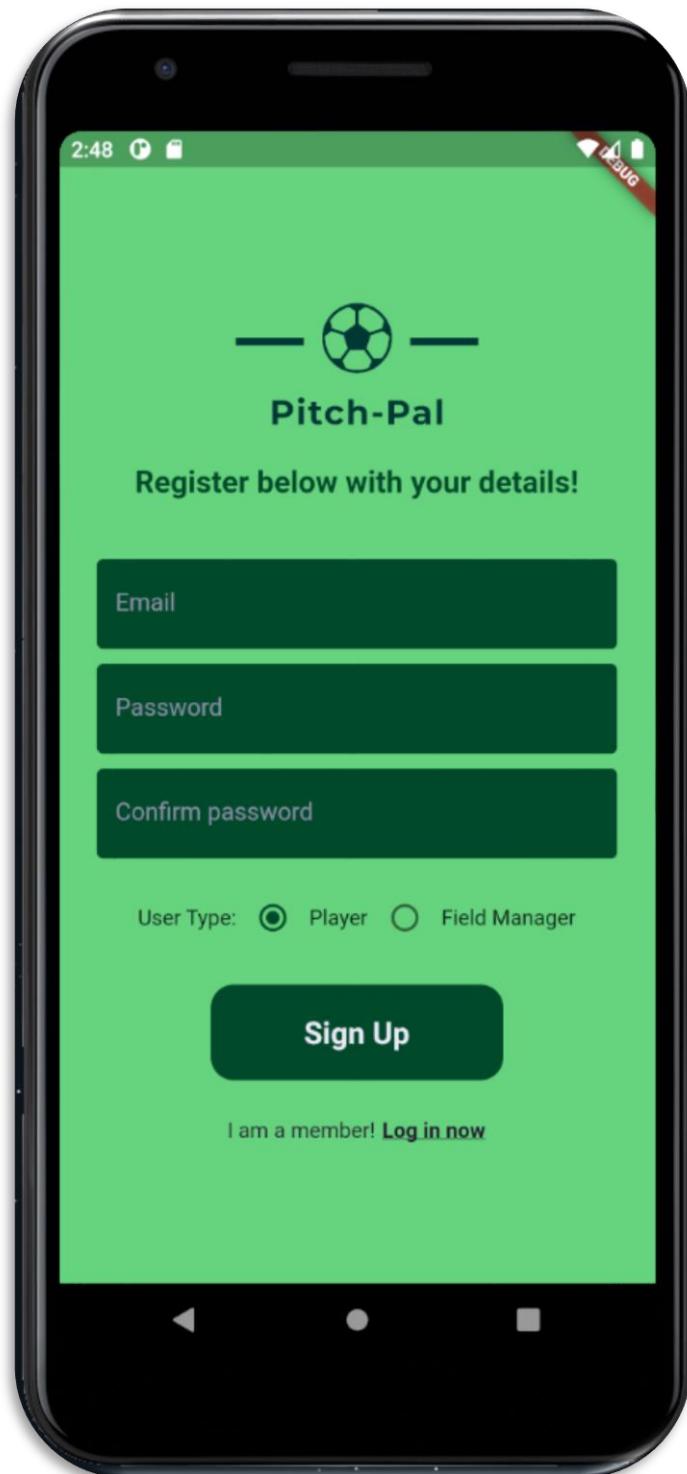
## User Authentication- Sign Up/ Log In

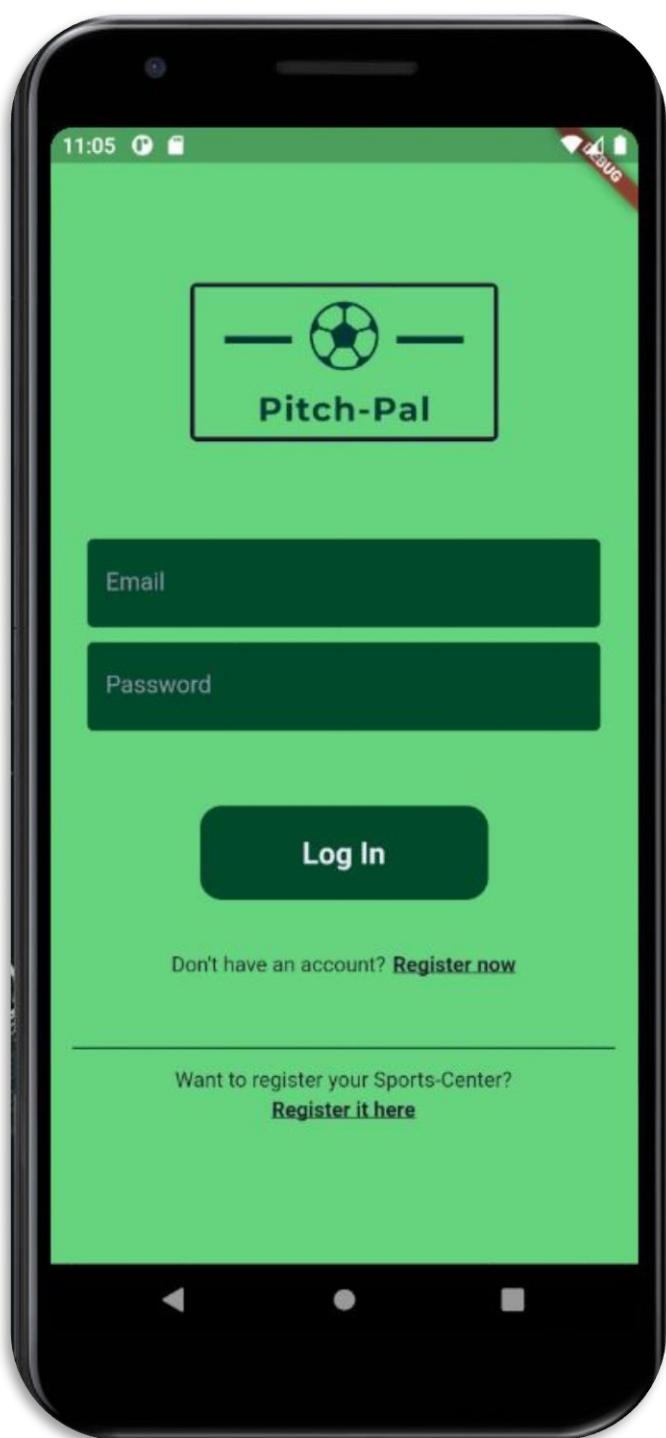
### Description

The login and signup system in PitchPal plays a crucial role in providing a secure and personalized experience for users. The login process requires users to enter their email and password, ensuring the authenticity and privacy of their accounts. By utilizing this information, PitchPal can authenticate and grant access to registered users, allowing them to enjoy the various features of the system. On the other hand, the signup process serves as a gateway for new users to join the PitchPal community. During signup, users are prompted to enter their email, choose a password (entered twice for confirmation), and specify their role as either a player or a field manager. This role distinction is important as it helps streamline the user experience and provides appropriate functionality based on their needs. Whether they are players looking to connect and reserve sports centers or field managers wanting to oversee and manage their center schedules, PitchPal ensures that each user is assigned the appropriate role upon signup, tailoring their access and privileges accordingly.

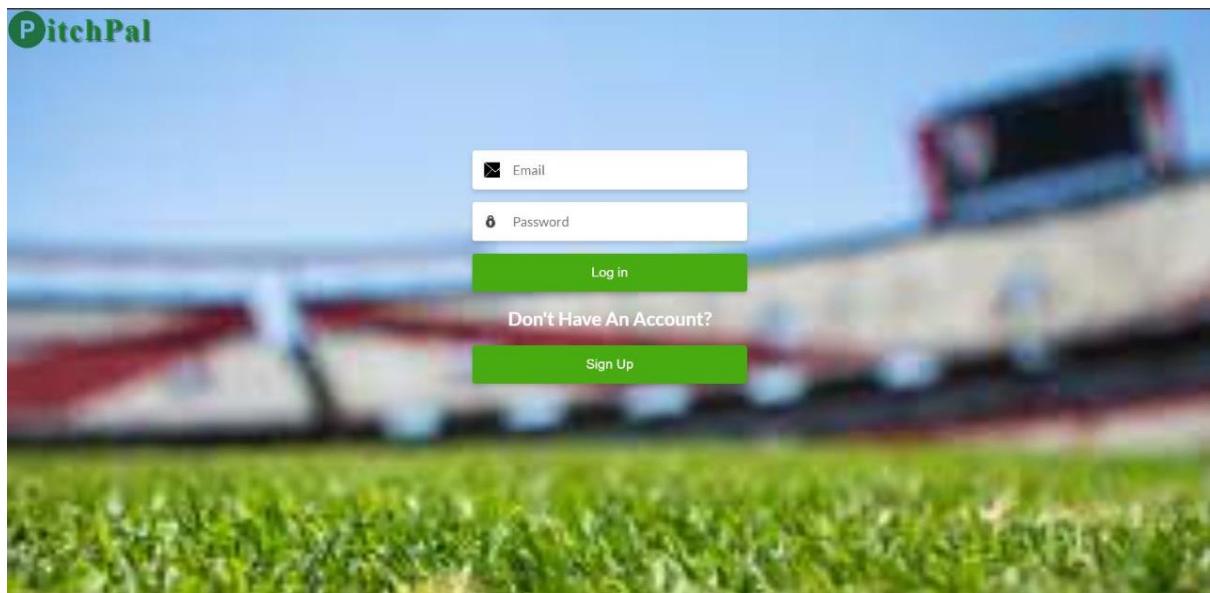
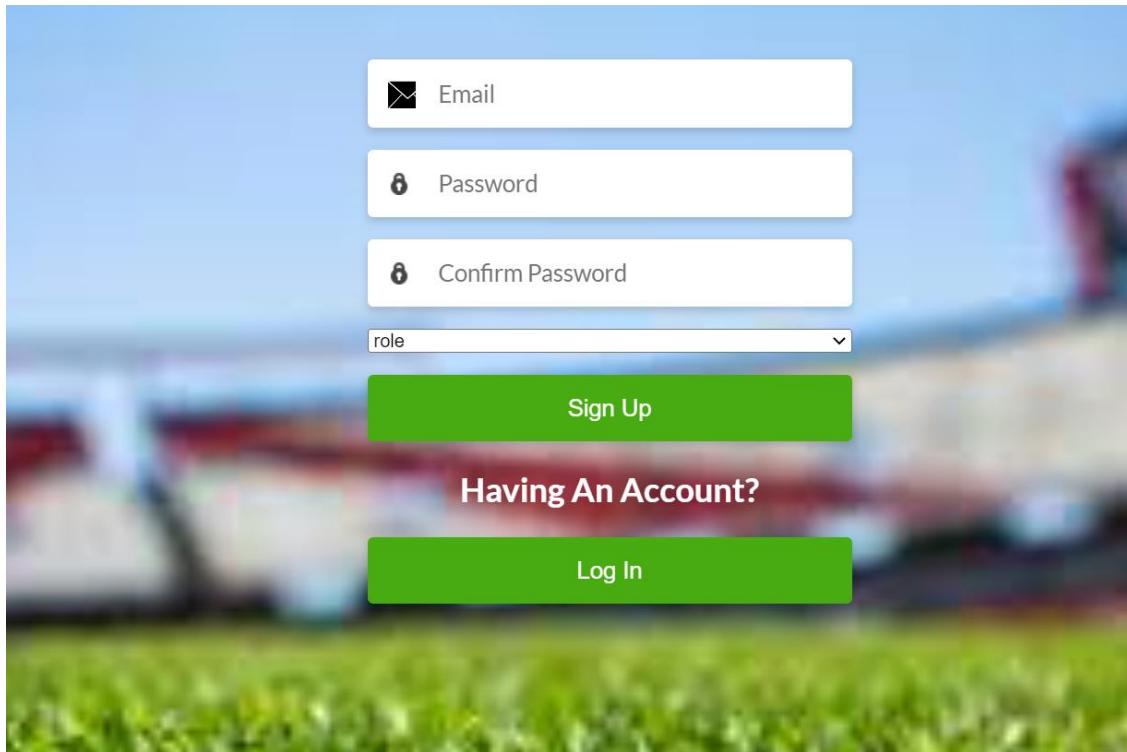
## Screenshots

### Mobile





## Web



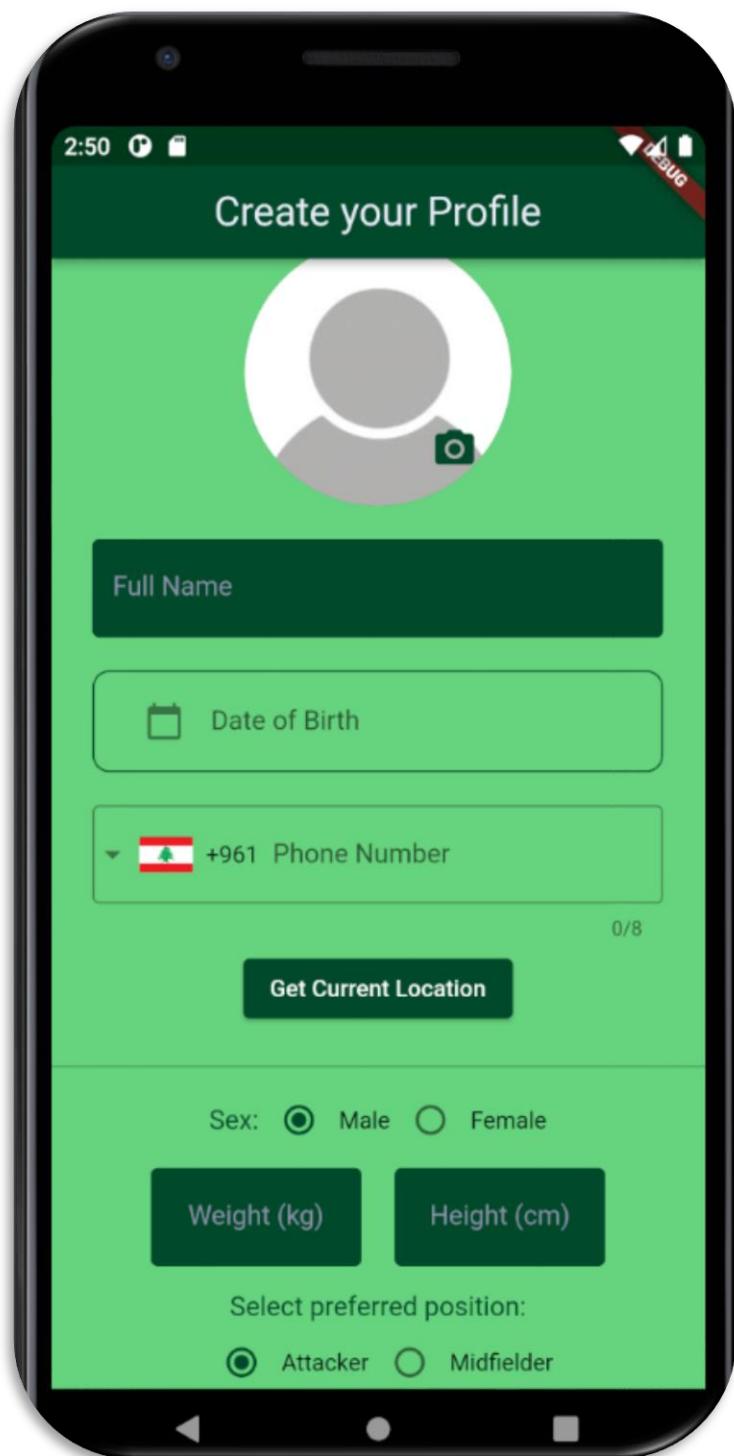
## Profile (Player and Field Manager)

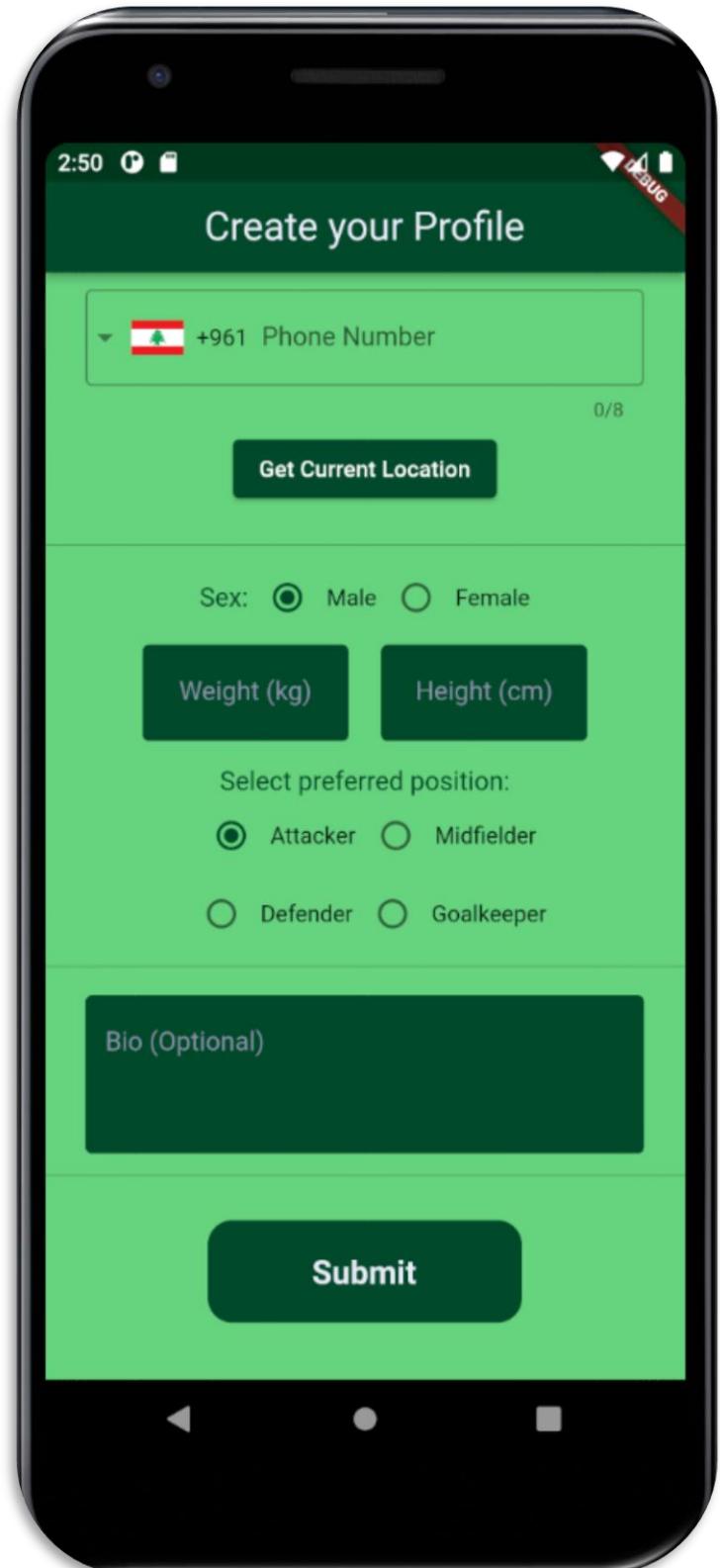
### Description- Player Profile

Upon signing up for the first time and subsequently logging in, players will be directed to a personalized page where they can provide additional information about themselves (location info, contact info, and player attributes). This page serves as a platform for players to enhance their profiles and create a more engaging experience within the PitchPal system. While some information is mandatory to ensure effective functionality, such as the player's name, email, and phone number, other details are optional and can be filled in at the player's discretion. One crucial mandatory aspect is the player's location, which can be obtained by the user clicking on the "Get Location" button. By utilizing a free API that takes the longitude and latitude attributes, PitchPal can retrieve the name of the player's location, enabling the system to calculate distances accurately for future features. Additionally, players have the option to provide non-mandatory information, such as their date of birth, age, height, uploading profile picture and bio, which can help personalize their profiles and foster a sense of community within the PitchPal platform. By allowing players to share these optional details, PitchPal creates opportunities for users to connect on a more personal level, share common interests, and facilitate more meaningful sports engagements.

## Screenshots

### Mobile





# Web

USER INFORMATION

Profile Picture



Name \*

Email address \*

Date Of Birth

dd/mm/yyyy

Sex \*

Male

CONTACT INFORMATION

Address \*

Get My Location

Phone Number \*

ABOUT ME

About Me

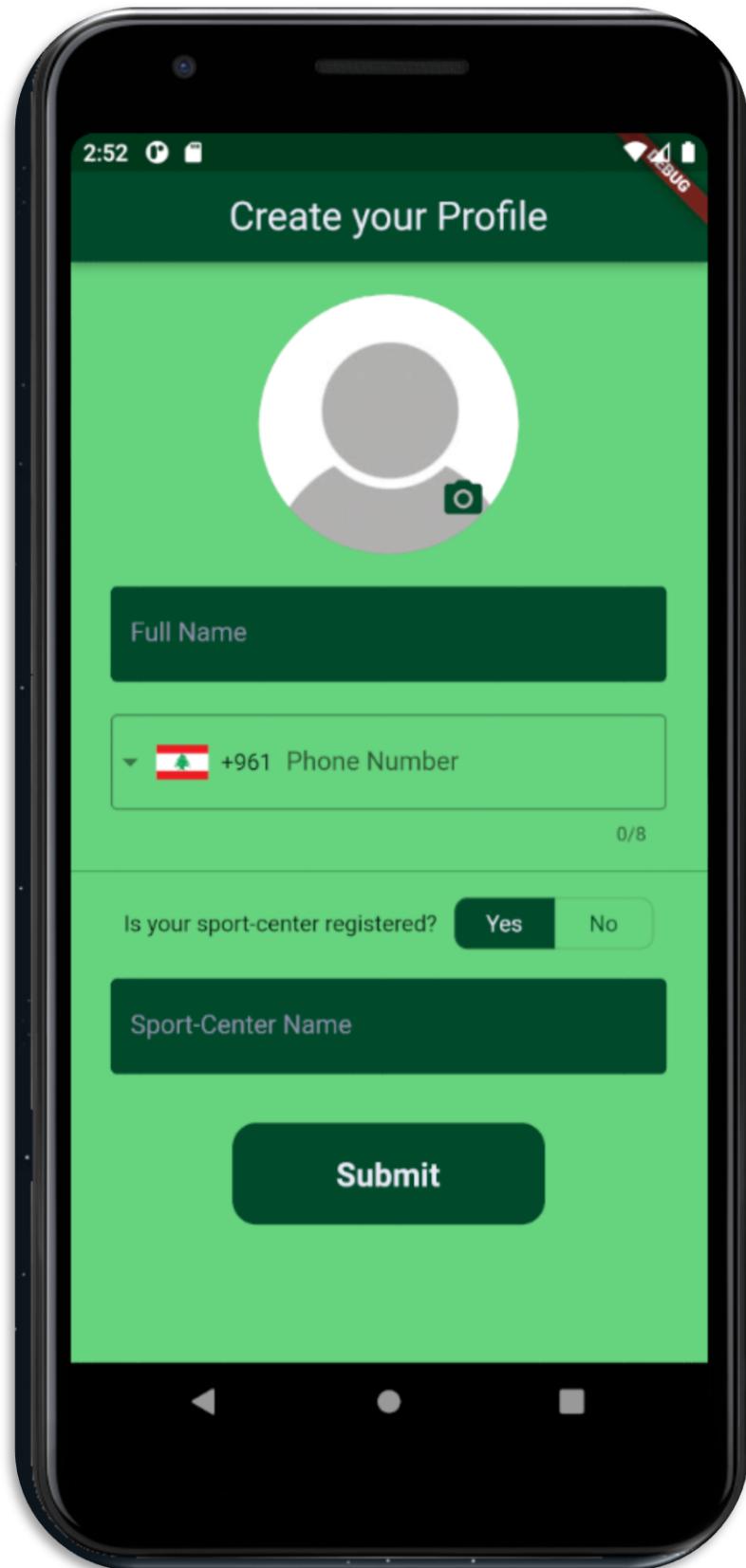
Continue

## Description- Manager Profile

For manager users signing up and logging into PitchPal, they will also be directed to a dedicated page where they can provide essential information about themselves and their managed sports center. This page aims to ensure that the manager's profile is complete and accurate for effective coordination and scheduling within the system. Like player users, mandatory information for managers includes their name, email, and phone number. However, an additional mandatory field is introduced, requiring managers to specify the name of the sports center they oversee. If the sports center has not been registered in the system before, PitchPal prompts the manager to complete the registration process for the sports center first. This ensures that all sports centers within the platform are registered and verified, maintaining data integrity, and providing reliable experience for players. Once the sports center is successfully registered, the manager can proceed with filling out their personal information and connecting it to their respective sports center. By enforcing this requirement, PitchPal ensures that each manager is associated with a legitimate and recognized sports center, streamlining the process of scheduling and reservations.

## Screenshots

### Mobile



*Web*



Name: \*

Email: \*

Phone Number: \*

Sport Center Name: \*

If the sport center is not registered before in the system. Please Register it [Here](#) and then create your profile

# Edit/ Delete Profile

## Description

Both users- players and field managers- can edit and delete their accounts Information. The edit basically redirects the users to the create profile page but with current information filled. The users can change whatever attributes they want except the email and the id of the player because they identify the users in the system.

## Screenshots

### Web

USER INFORMATION

Profile Picture



Remove Profile Picture

Name \*

Email address \*

Date Of Birth



Sex \*

---

### CONTACT INFORMATION

Address \*

Mazraa, Beirut, Lebanon

Phone Number \*

---

### ABOUT ME

About Me

|

Update

# Sports Center Registration

## Description

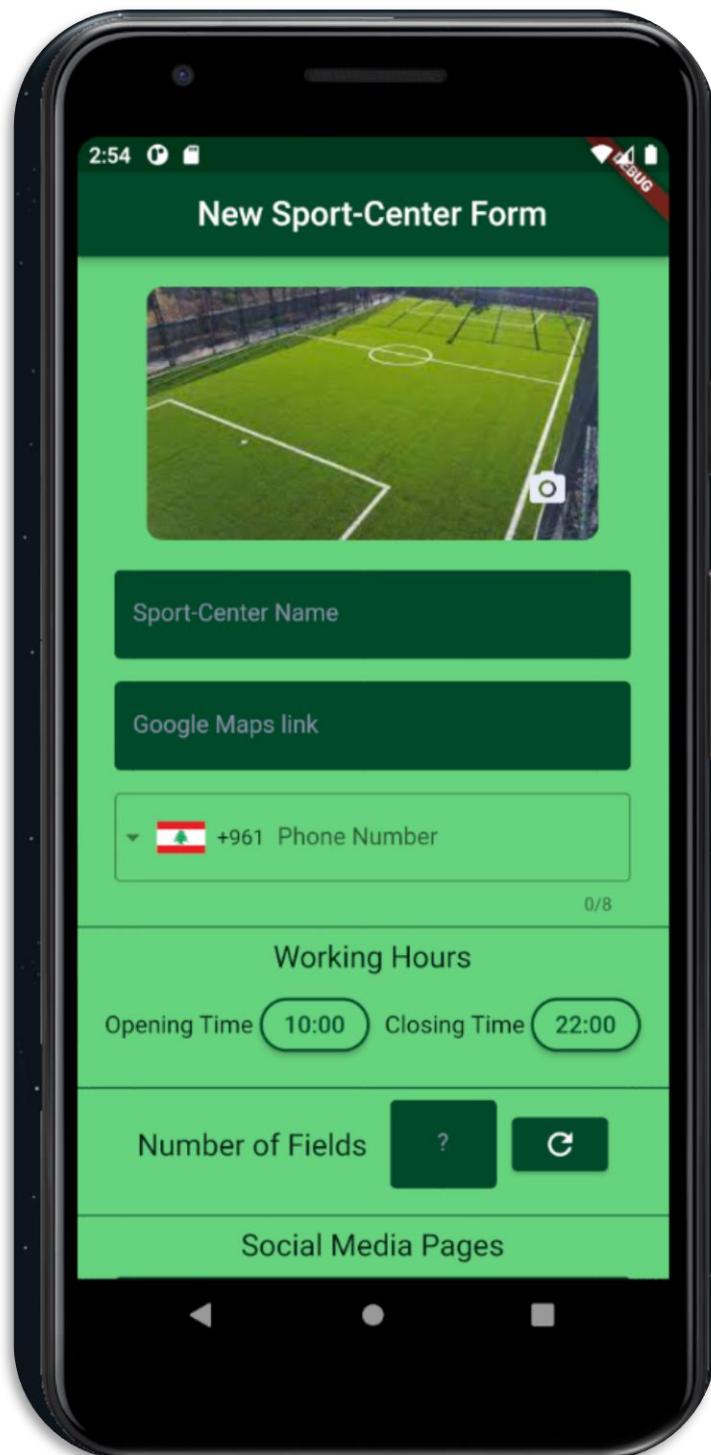
When registering a sports center in PitchPal, managers are required to fill in mandatory information to ensure comprehensive and accurate details about the facility. The registration process prompts the manager to provide essential information such as the name of the sports center and details about its facilities and fields. Managers have the flexibility to add multiple facilities, each with its own name and description, allowing them to showcase the diverse amenities available at the sports center. Additionally, managers can add as many fields as they want, providing specific details for each field, including height, width, grass type, and recommended team size. This level of granularity enables players to make informed decisions when reserving fields that best suit their needs.

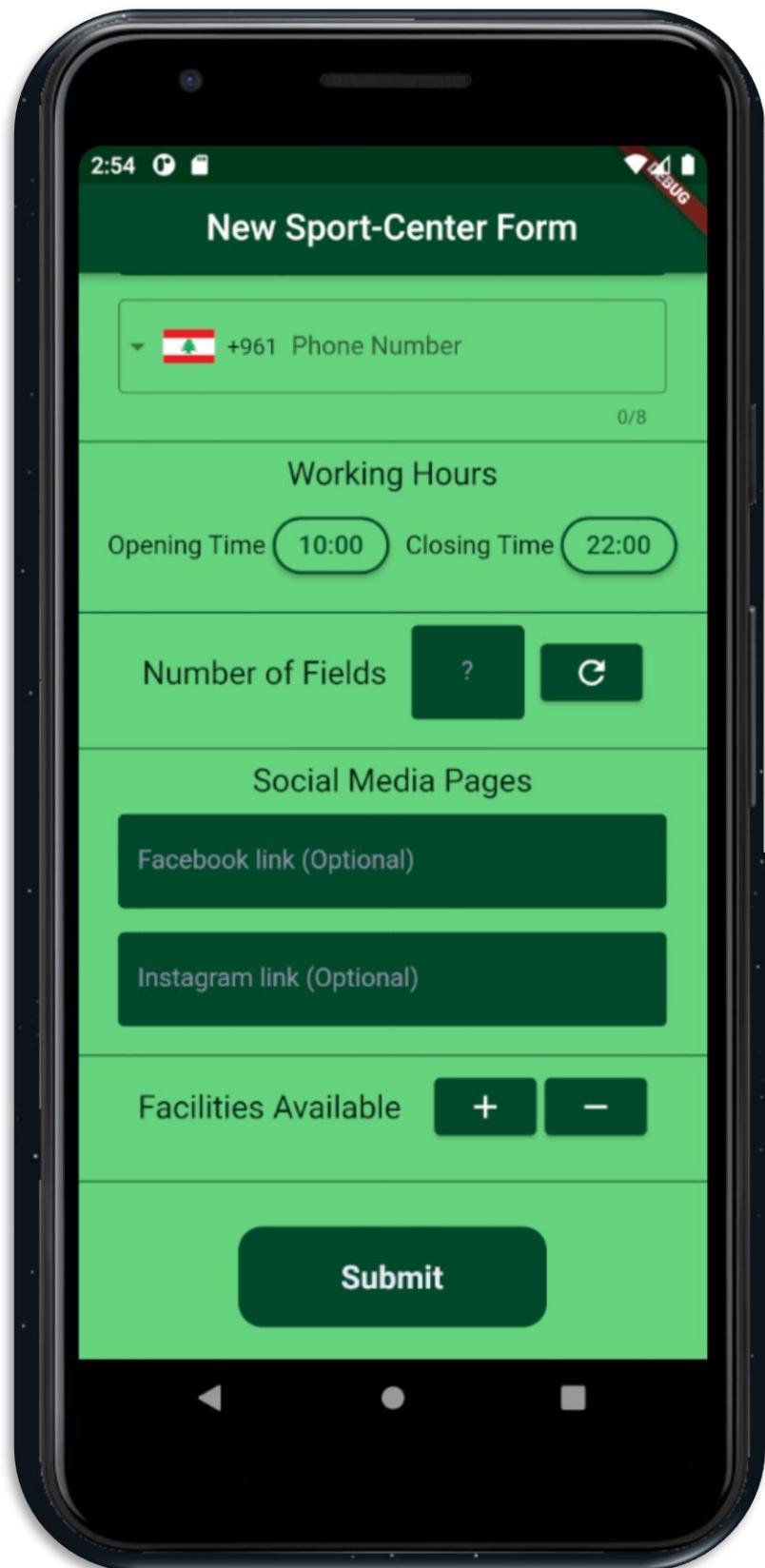
In terms of visual representation, the sports center registration process allows managers to upload a profile picture for their facility. While this step is optional, if no picture is provided, a default image will be assigned by the system. Alongside the visual aspects, managers are also required to provide a Google Maps link to the sports center's location. The provided link undergoes validation to ensure its authenticity and accuracy. This link is crucial as it enables the PitchPal system to retrieve the latitude and longitude coordinates of the sports center. This geographical information is utilized later for distance calculations, allowing players to find sports centers conveniently based on their location.

By providing a comprehensive registration process for sports centers, PitchPal ensures that managers can present accurate and detailed information about their facilities. This level of granularity and validation contributes to a robust and reliable platform where players can confidently make reservations and find suitable sports centers for their activities.

## Screenshots

### Mobile





# Web

## Facilities Available

### Facility 1

Facility Name \*

Facility Description \*

[Remove Facility](#)

[Add Facility](#)

Name: \*

Location Link (open google maps from your laptop, mark your court, copy the link and paste it here) \*

Phone Number: \*

Link To Facebook

Link To Instagram

Start Time \*

 :  :  

End Time \*

 :  :  

## Fields

### Field 1

Field Number: \*

0

Field Length (in km): \*

0

Field Width (in km): \*

0

Reservation Price (in \$): \*

0

Grass Type: (turf or grass ) \*

Recommended Team Size: \*

0

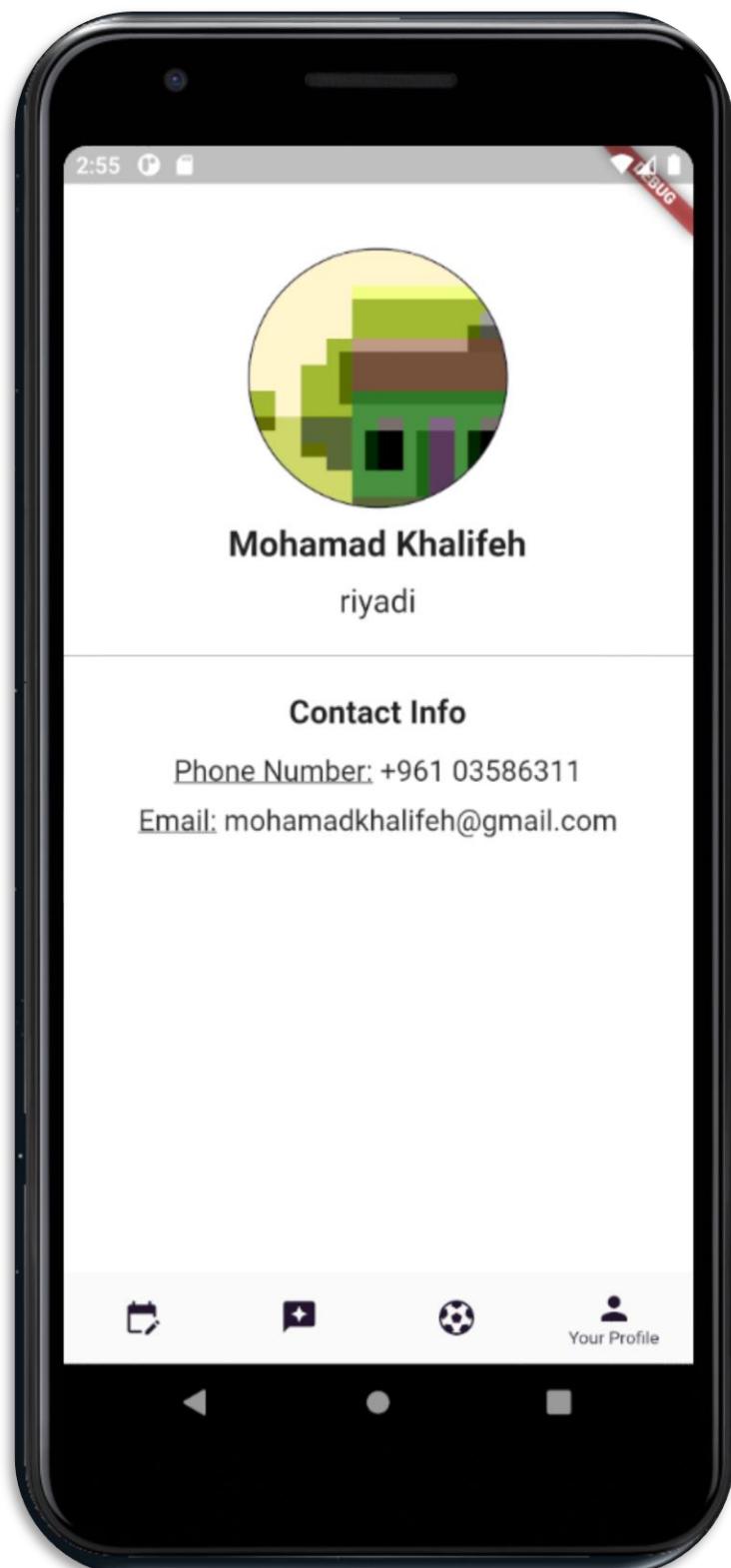
## View User Profile

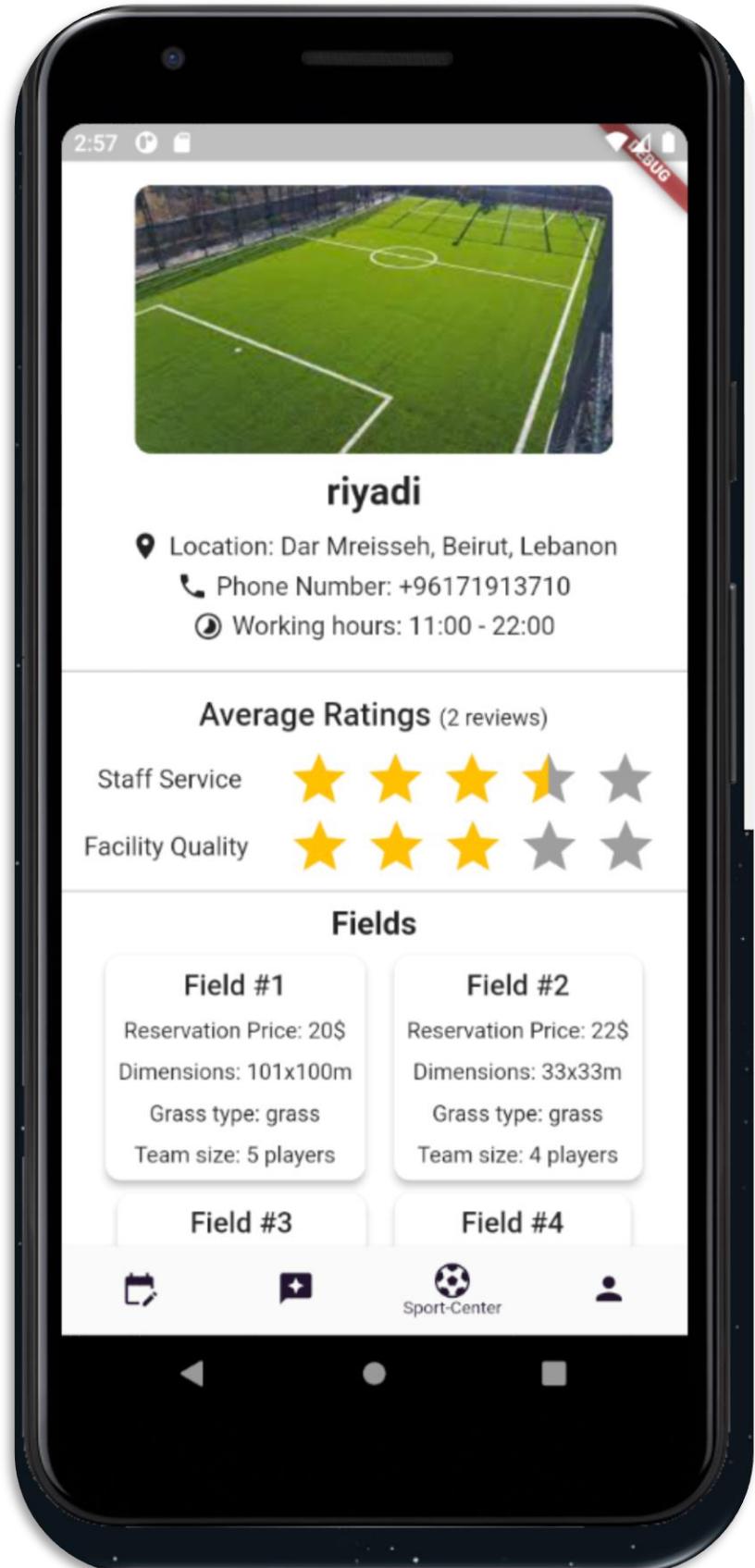
### Description

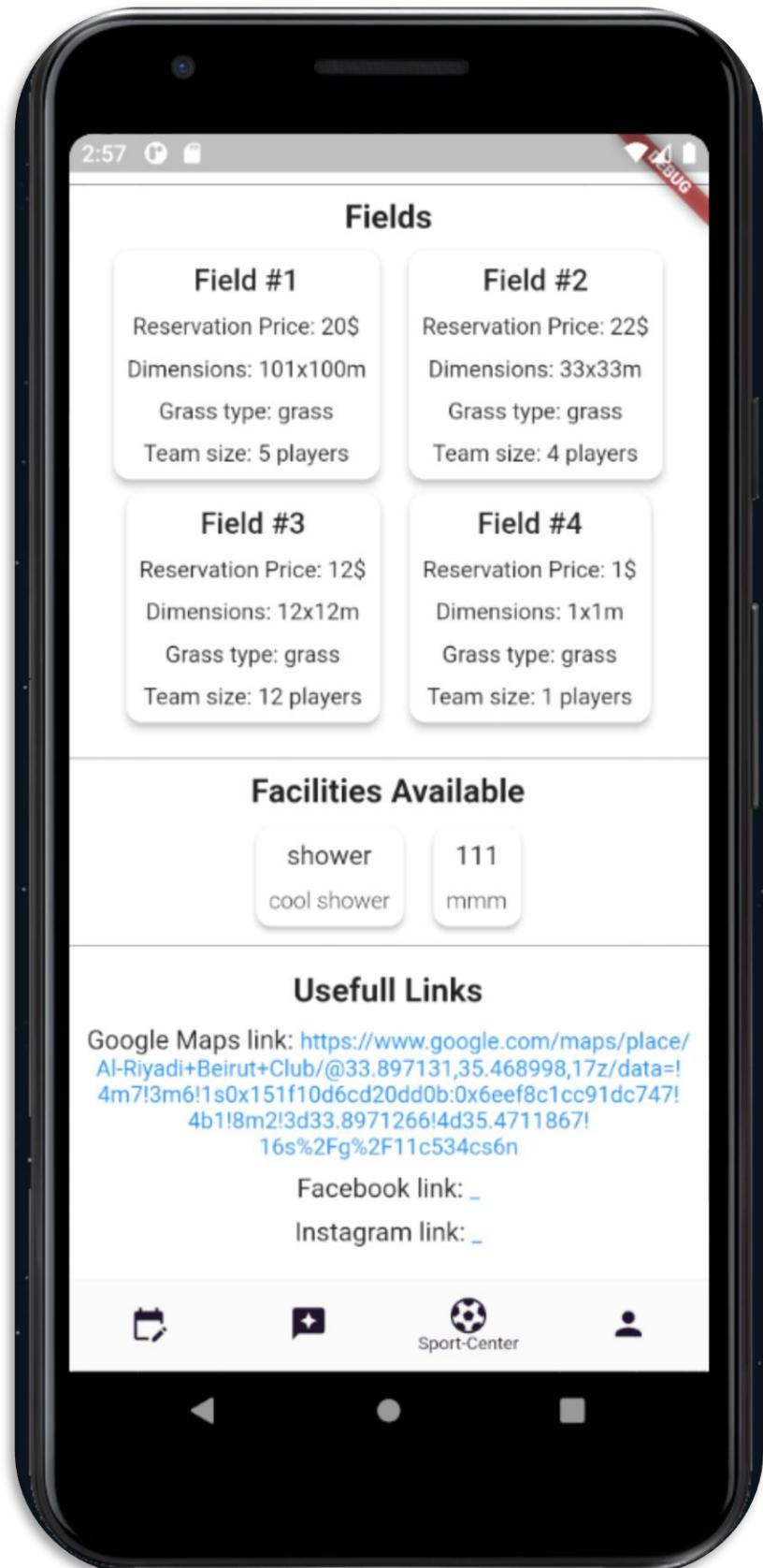
All the entities in the system (players, field managers, sport centers and teams) will be able to see their profiles. The profiles are simply displaying all information about the entities in addition to the ability to delete or edit the profiles. The team and player can see their moral and skill rating. In addition, the sport center profile shows the reviews of the center in addition to facility average rating and staff quality rating. When other than the owner visits the profile he can rate the entity (as we will see later). Note that the average rating is over 5.

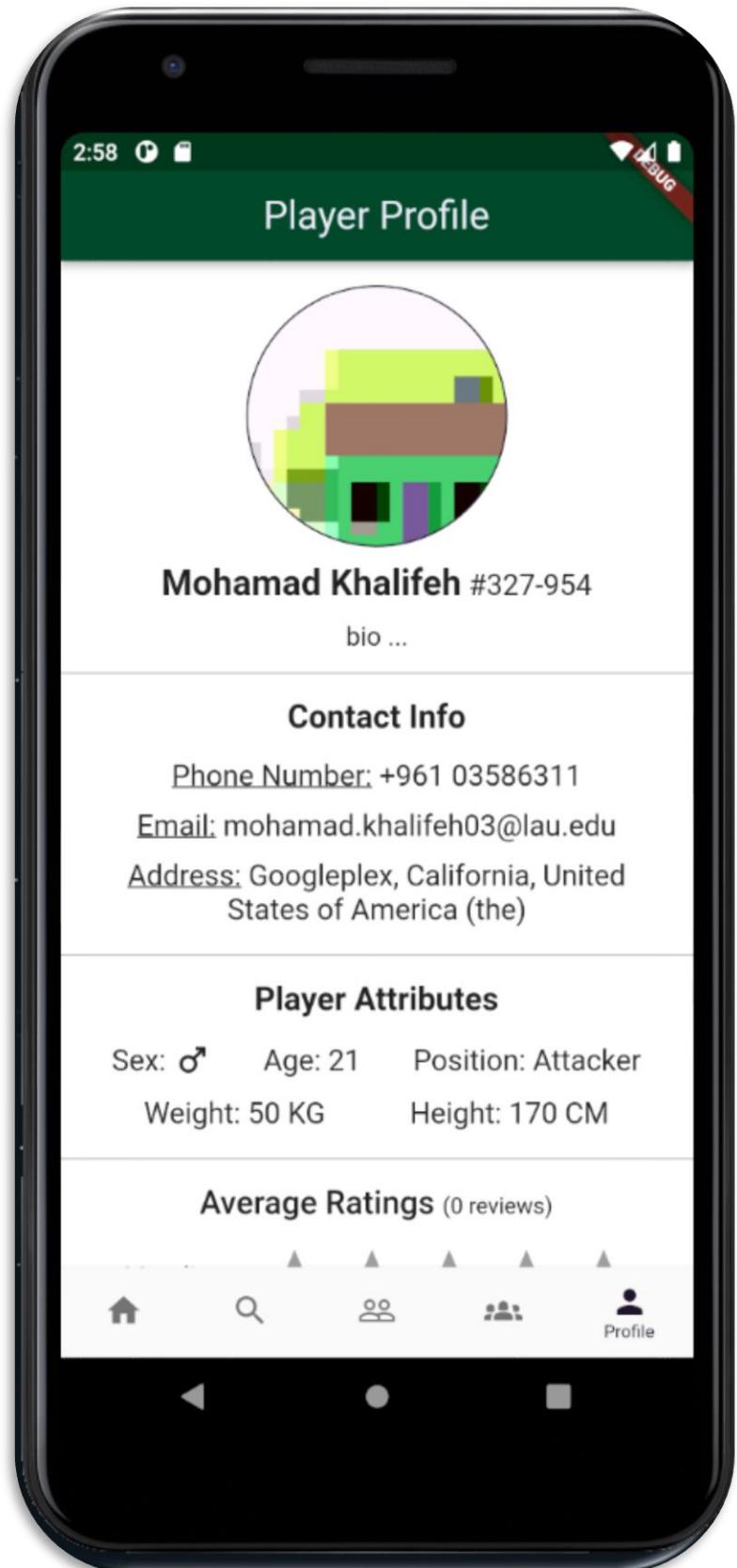
## Screenshots

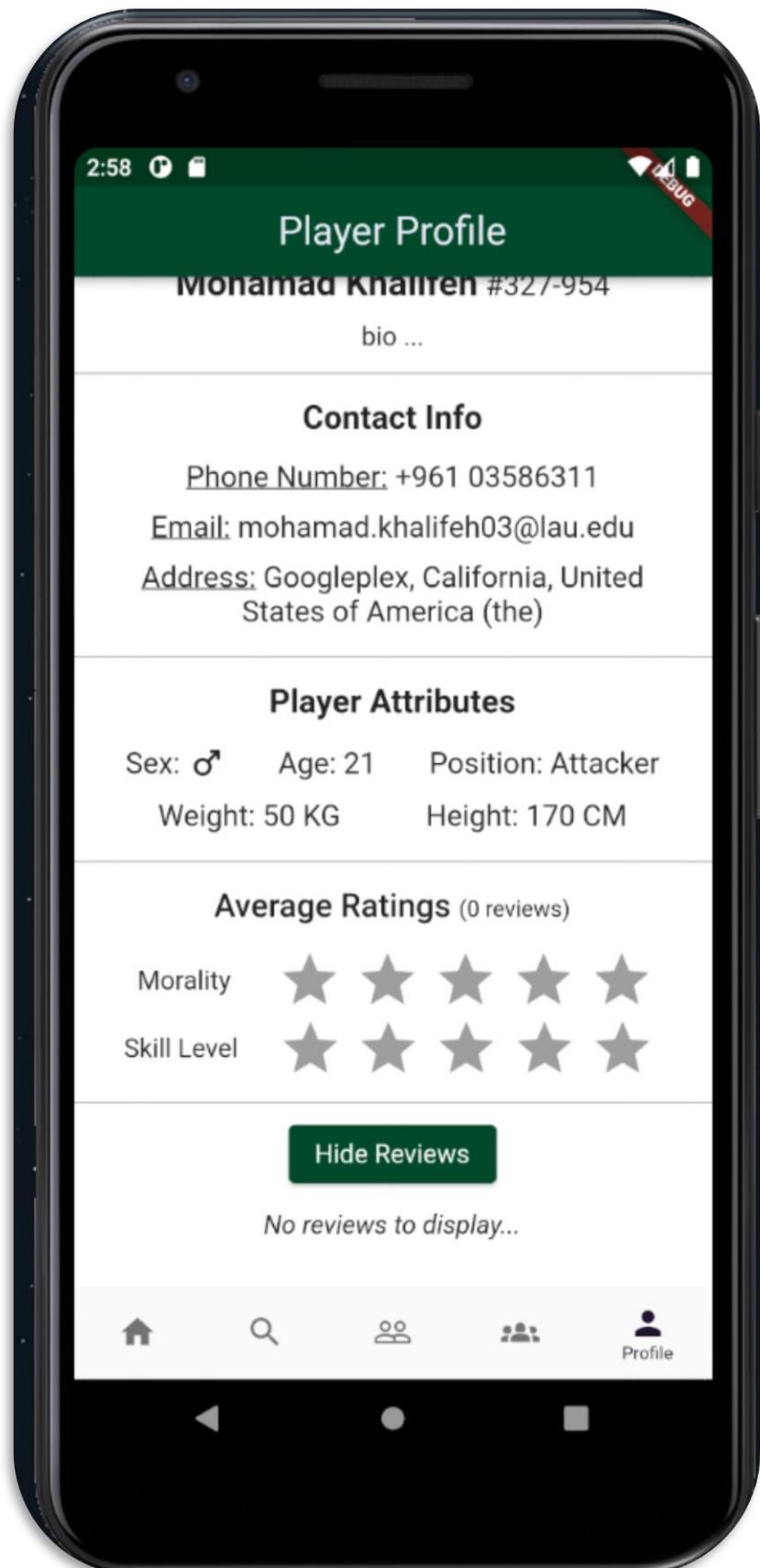
### Mobile











## Web

**My Account**

Your ID: 262-887

USER INFORMATION

Name	Age
Majd Mando soih	9
Sex	Position
M	attacker
weight	Height
45	1.2

CONTACT INFORMATION

---

**3 Friends**    **0 Morality Rating**    **0 Skill Rating**

**Majd Mando soih, 9**  
Mazraa, Beirut, Lebanon  
attacker

ane batal 2awe b7ot bel 90////

[Edit Your Profile](#)    [Deactivate Your Account](#)

**My Account**

USER INFORMATION

Name	
Manager ali for riyadi	

CONTACT INFORMATION

PhoneNumber	Email address
71913710	managerRiyadi@gmail.com

  
riyadi

[Edit Your Profile](#)    [Deactivate Your Account](#)

## Sport Center Information

### GENERAL INFORMATION

#### Name

riyadi

#### Working Hours

11:00 (From 11:00 to 22:00)

### CONTACT INFORMATION

#### CONTACT INFORMATION

#### Address

Dar Mreisseh, Beirut, Lebanon

#### Location Link

#### PhoneNumber

+96171913710

### FACILITIES AVAILABLE

#### Facility 1

#### Facility Name

shower



3.5

Staff Rating

3

Facilities Rating

riyadi

Dar Mreisseh, Beirut, Lebanon

[Edit Sport Center](#)

[Remove Sport Center](#)

### Sport Center Reviews

**2023-05-13**

good court n

**2023-05-14**

good

FIELDS AVAILABLE

**Field 1**

Field Number:

1

Field Length (in km):

101

Field Width (in km):

100

Reservation Price (in \$):

20

Grass Type

grass

Recommended Team Size:

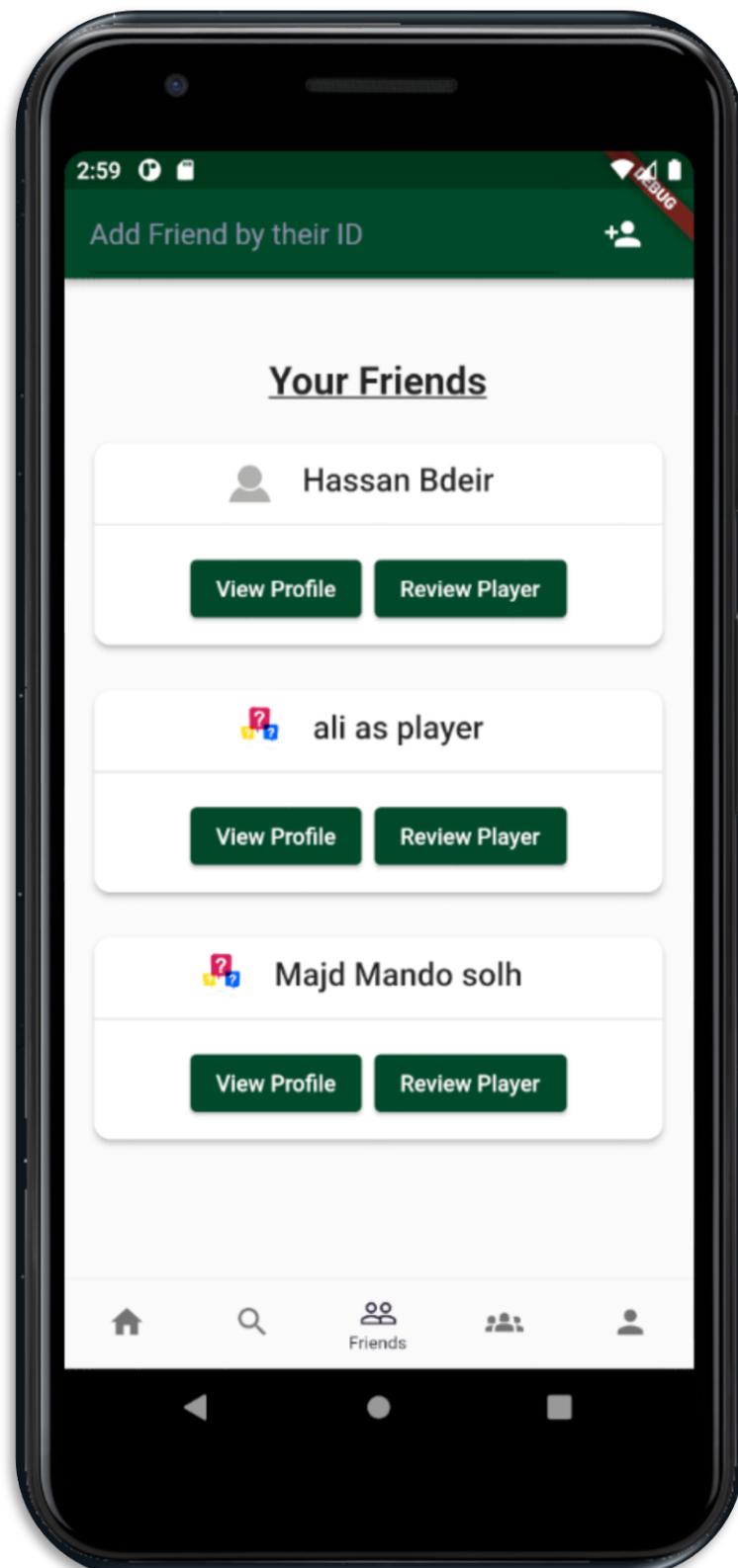
## Add Friends

### Description

The friend feature in PitchPal fosters a sense of community and connection among players. Within the platform, players can connect and establish friendships with other players. By utilizing the friend feature, players can expand their social network and enhance their overall experience within the sports community. This feature enables players to send friend requests to one another, initiating the process of connecting and forming bonds. Once a friend request is accepted, players become friends, unlocking various benefits and opportunities. Friends can easily communicate, share updates about their sports activities, coordinate game schedules, and even invite each other to join teams or participate in events. The friend feature in PitchPal serves as a catalyst for building relationships, promoting teamwork, and creating a supportive environment where players can connect and engage in their shared passion for sports.

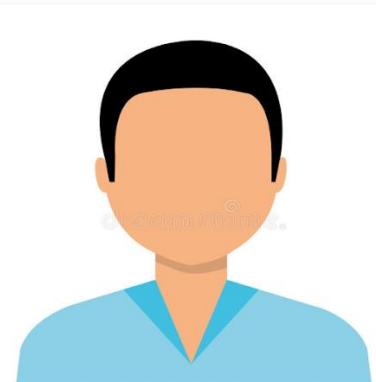
## Screenshots

### Mobile



## Web

Players  Search By Name  Display: Friends

 <b>Hassan Bdeir</b> goal keeper testing@gmail.com <a href="#">View Profile</a>	 <b>Mohamad Khalifeh</b> attacker mohamad.khalifeh03@lau.edu <a href="#">View Profile</a>	 <b>alloush</b> attacker alloush@gmail.com <a href="#">View Profile</a>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------

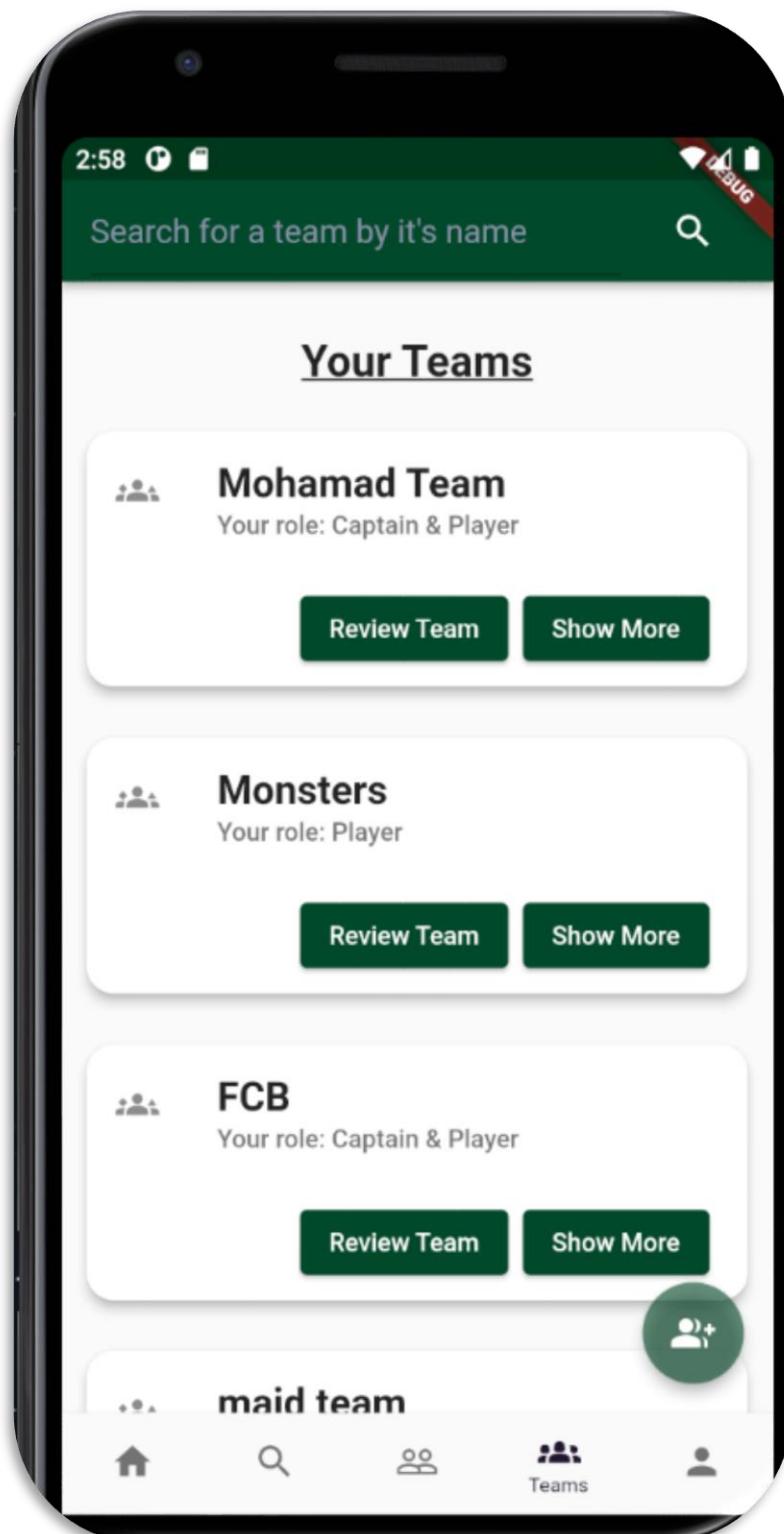
## Form Team

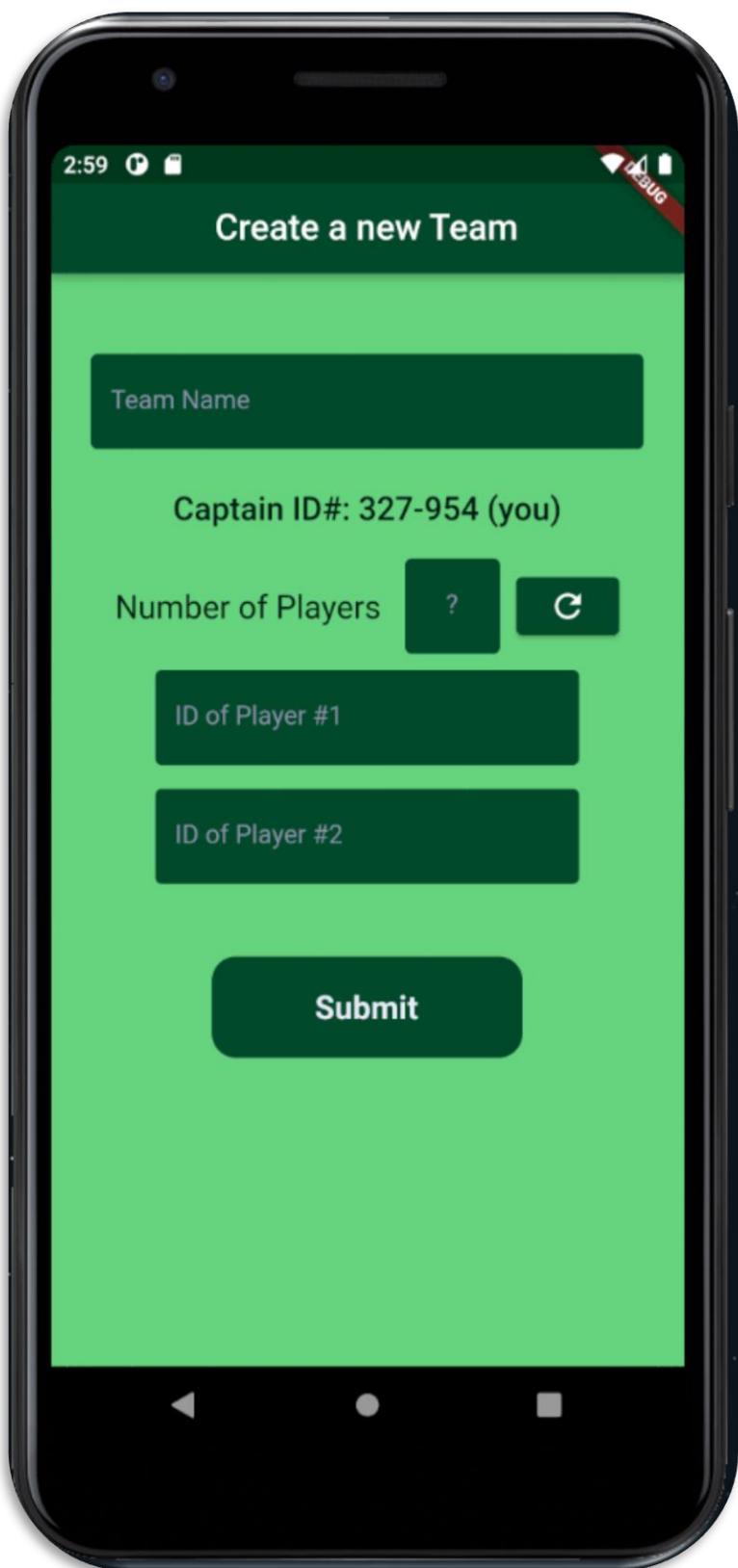
### Description

In PitchPal, players have the exciting capability to form their own teams, bringing together players of their choice to participate in sports activities. This feature empowers players to create cohesive and competitive teams, enhancing their performance and fostering camaraderie. To establish a team, players can input the unique six-digit player ID of the individuals they wish to invite. The system then performs a search based on the ID and retrieves the corresponding player, simplifying the process of adding desired teammates. Along with selecting teammates, players are also required to provide a team name, which serves as an identity and representation of their collective spirit. Once the team is formed, players can utilize the team functionality within PitchPal, including team-specific chat, shared schedules, and coordinated participation in tournaments or matches. The ability to form teams in PitchPal empowers players to create strong bonds, strategize together, and compete effectively in the sports community.

## Screenshots

### Mobile





*Web*

## Your Teams

**Monsters**  
CAPTAIN ID: 180-329

**FCB**  
CAPTAIN ID: 327-954

**LAU sailors**  
CAPTAIN ID: 180-329

**majd team**  
CAPTAIN ID: 262-887

Team Name  
Monsters

averageMoralRating  
0

Average Skill rating  
0

Team Reviews

**No Reviews Exist**

Rate



## Create Your Team

Team Name

Add Player

Add



Majd Mando solh  
ID: 262-887

Create

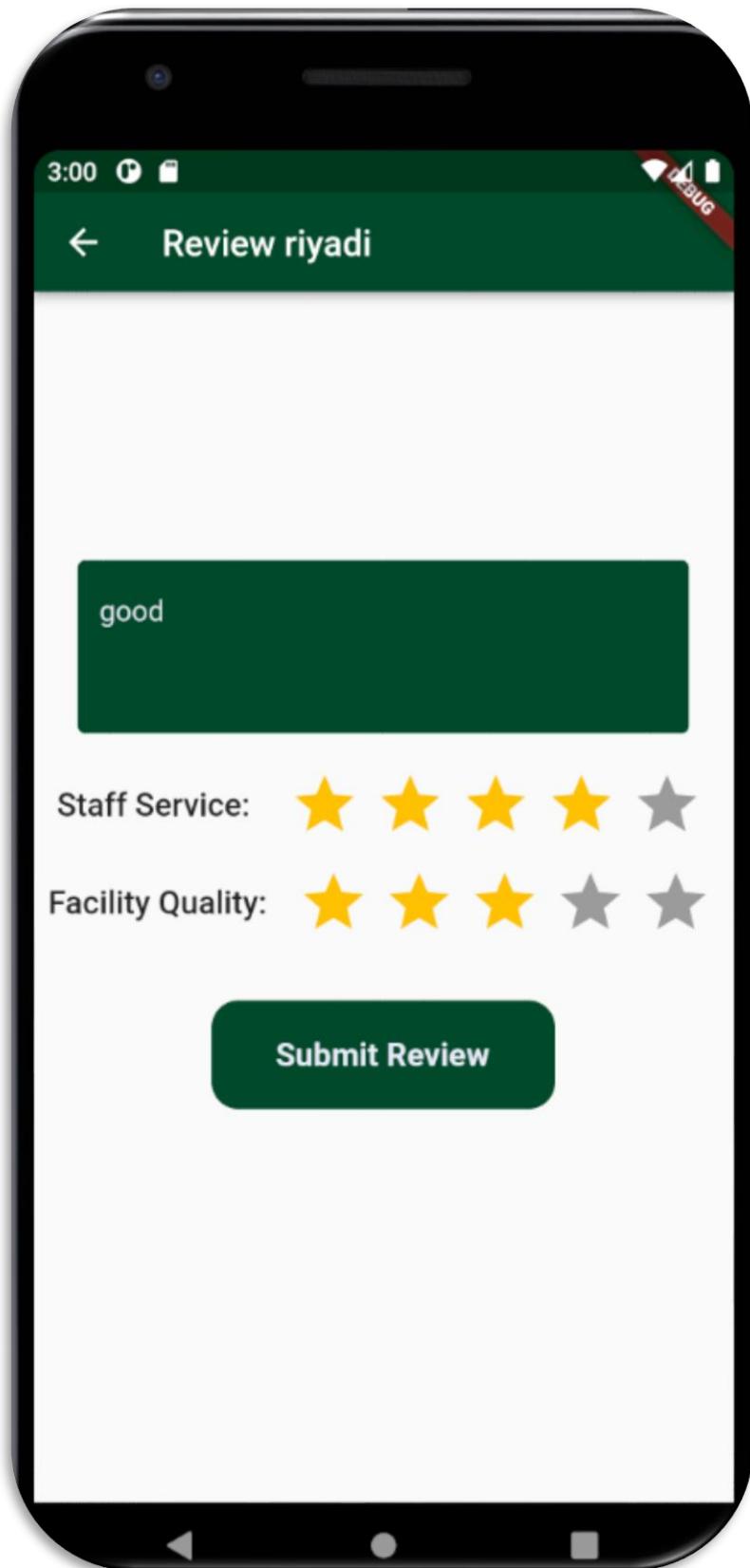
## Reviews System

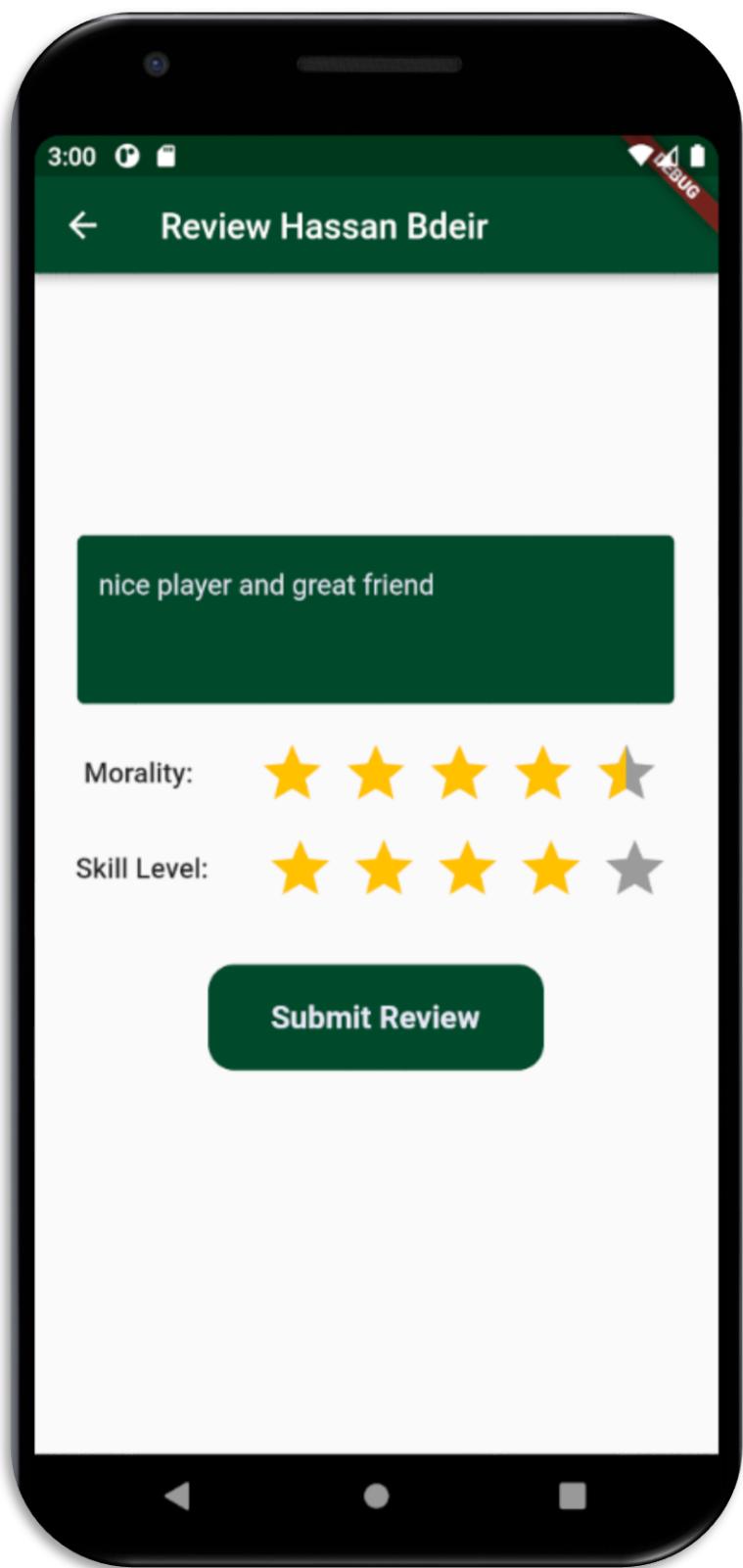
### Description

The reviews feature in PitchPal provides a platform for players to express their opinions and provide feedback on the skill level, morality level, facility quality, and staff quality within the sports community. Any player can rate and review other players, teams, and sports centers based on their personal experiences. When rating other players, players can assign skill and morality ratings, capturing both the technical abilities and ethical conduct displayed during gameplay. Furthermore, players can edit their reviews and add comments to provide more context or further elaborate on their ratings. Each time a new review is added for the same player, team, or sports center, the system recalculates the average skill rating, average morality rating, facility quality rating, or staff quality rating accordingly. This dynamic approach ensures that the ratings reflect the most recent feedback and provide accurate representations of player skills, moral conduct, and the quality of sports facilities and staff. The reviews feature in PitchPal promotes transparency, encourages constructive feedback, and assists players in making informed decisions when engaging with other players, teams, and sports centers.

## Screenshots

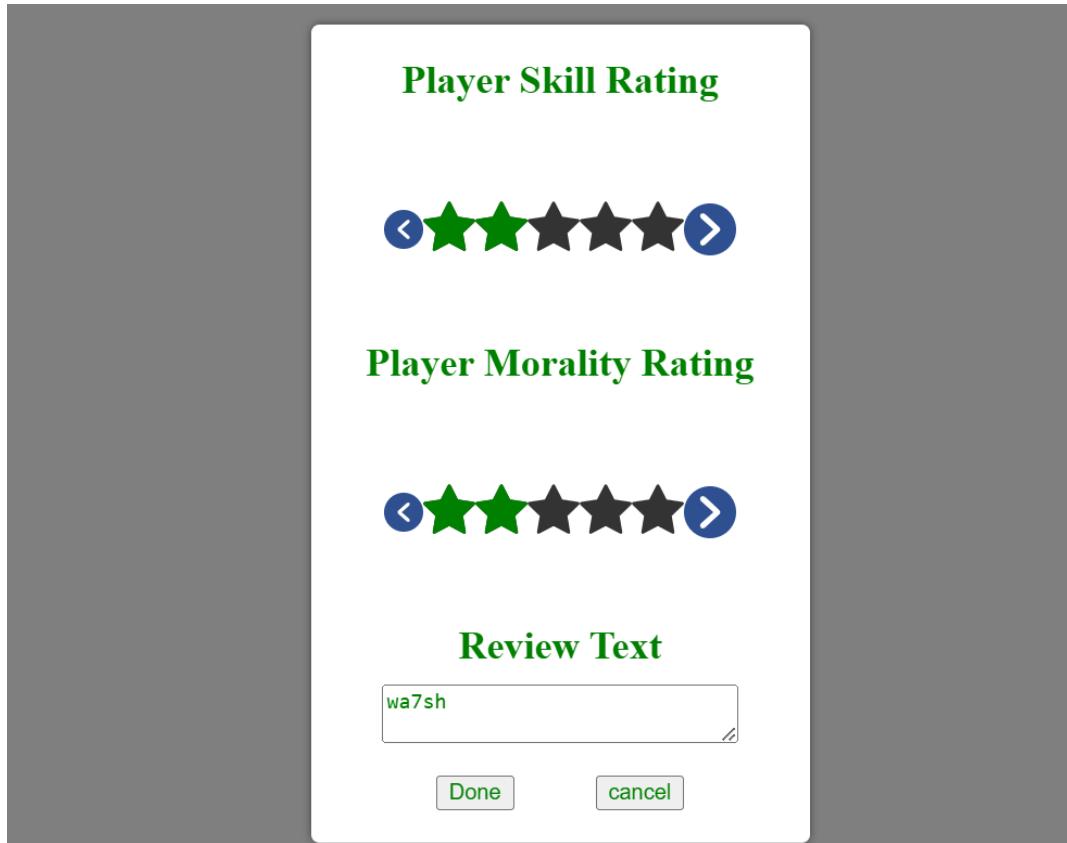
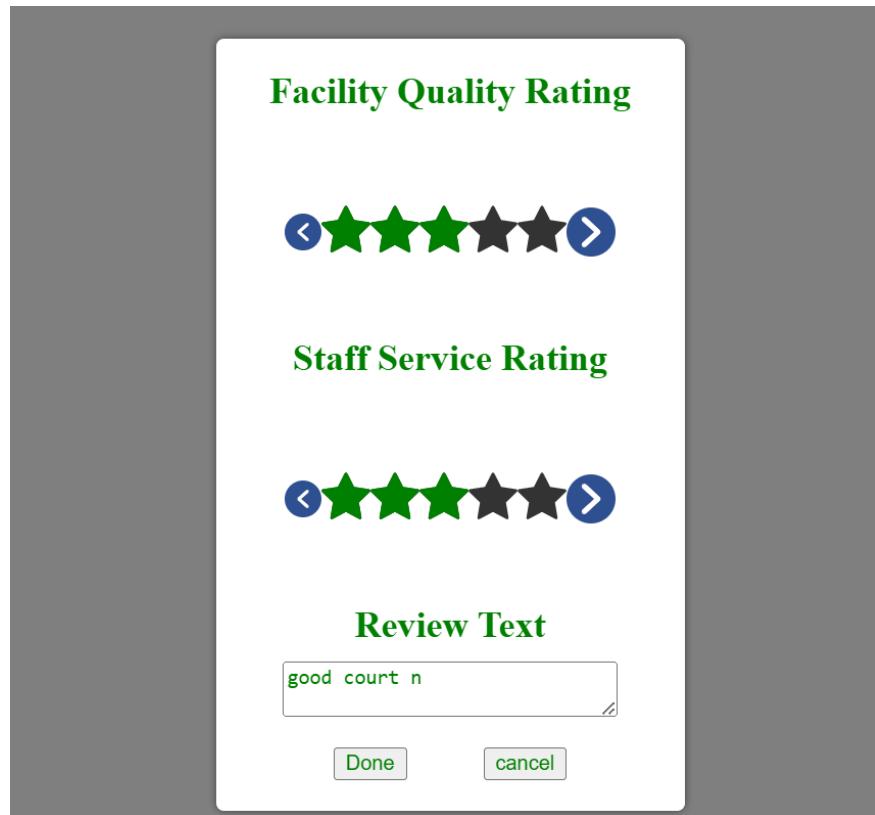
### Mobile





*Web*





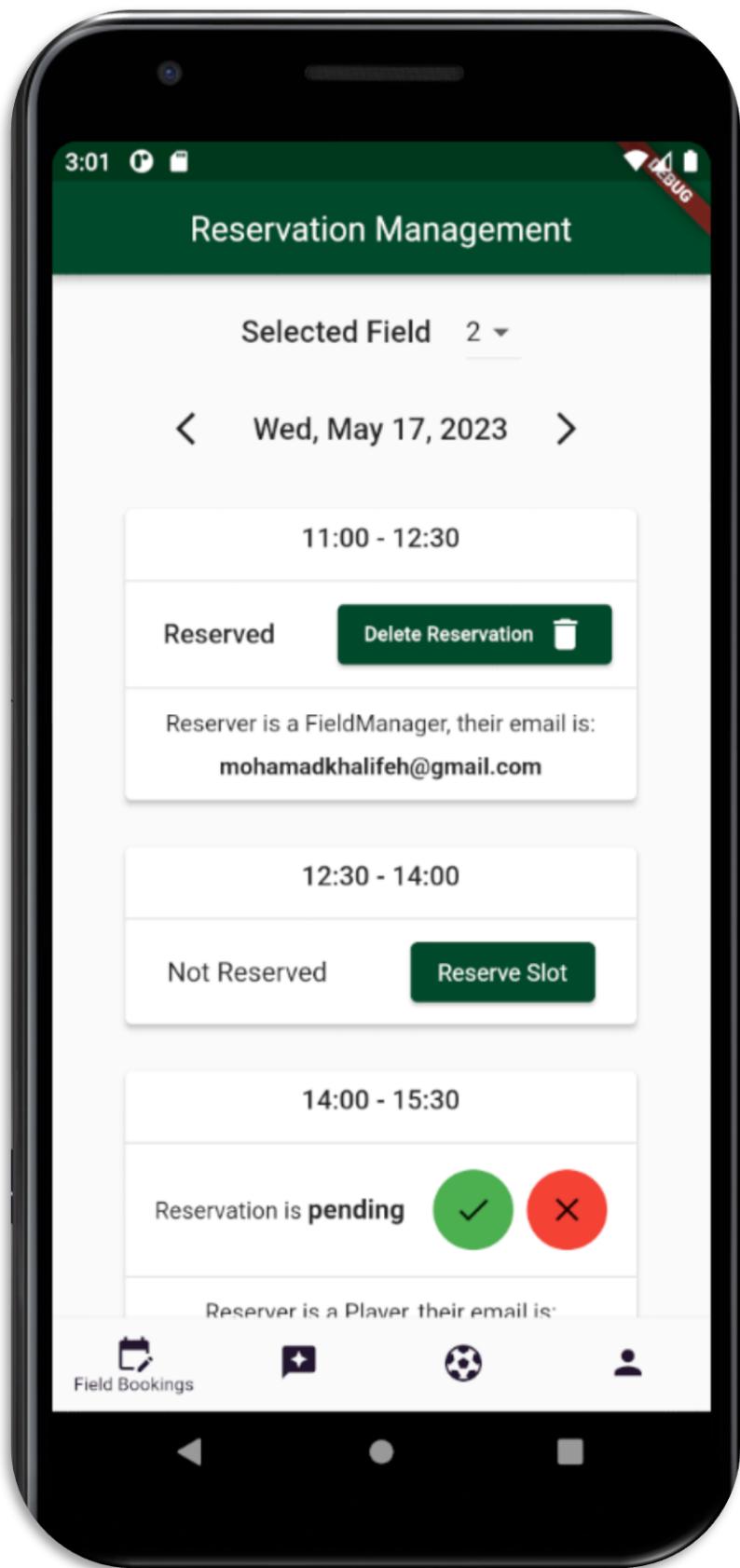
# Reservation System

## Description

The reservation management system integrated within the Pitch-Pal application provides field owners and managers with robust tools to efficiently manage their football field schedules. Managers have the capability to add and delete reservations directly through the system, allowing them to easily update and modify the availability of their fields. Additionally, they can review pending reservation requests from players and either decide to accept or reject them based on factors such as field availability or the reviews that the player has received. The system presents reservations in a convenient schedule-like format, providing managers with a comprehensive view of all upcoming bookings.

## Screenshots

### Mobile



## Web

Welcome Manager ali for riyadi      [Your Profile](#)      [Make Reservation](#)      [Pending Reservations](#)      [riyadi](#)      [Log Out](#)

Select Field Number:

Select Date:

### Sport Center Schedule (black for reserved , green for free and yellow for pending)



### Pending Requests

riyadi, field: 3, time 12:30-14:00  
status: pending

**Sport Center:** riyadi  
**Reserver Email:** mohamad.khalifeh03@lau.edu  
**Field Number:** 3  
**Time** 12:30-14:00  
**Reservation Date:** 2023-05-18  
**Reservation Type:** Player  
**Comments:** No comments

Team 1

Team 2

### Play in riyadi

Select Field Number:

Visibility of Reservation:

Select Date:

### Available Slots



### Team One Players

Enter player Id or Team Name

Add



Majd Mando solh  
ID: 262-887

Delete

### Team Two Players

Enter player Id or Team Name

Add

### Additional Comments

Any Additional Comments

Confirm Reservation

## Browse Sports Center

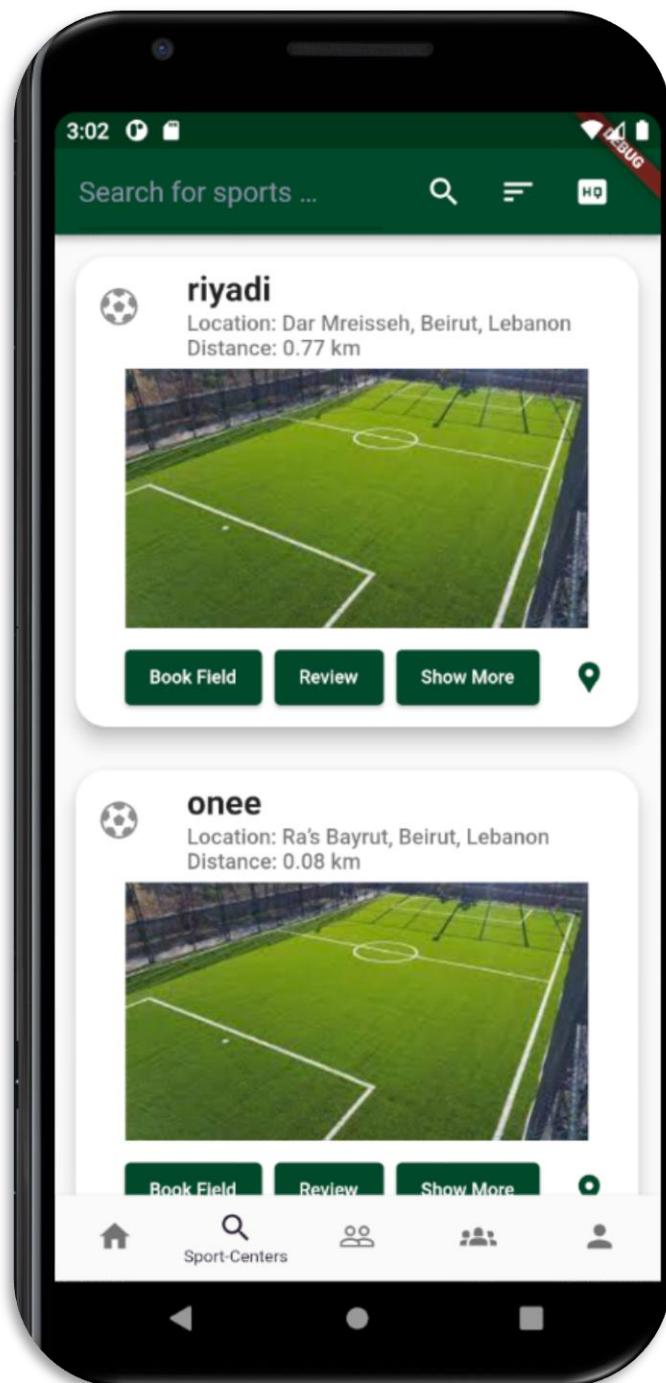
### Description

The searching feature for sports centers allows users to find fields with ease. Users can search for fields by name. The search results can be sorted based on proximity using geolocation services. Additionally, users can sort the results by the highest rating, leveraging the review system. This comprehensive searching functionality ensures that users can quickly locate desired fields, whether it's by name, proximity, or reputation.

Once a player selects a sports center from the search engine within Pitch-Pal, they gain access to a comprehensive profile that provides valuable information. Users can explore details such as the sports center's profile, including facilities, and operating hours. The location feature allows users to view the sports center's exact address and get directions for seamless navigation. Moreover, users can also find links to the sports center's social media accounts, enabling them to explore further updates and engage with the community. To make informed decisions, users can read reviews and ratings from other players, ensuring they have a comprehensive understanding of the sports center's quality and reputation.

## Screenshots

### Mobile



## Web

**Best Pitches To Play Football**

Search By Name  Sort by:  Select an option

**riyadi**  
Dar Mreisseh, Beirut, Lebanon  
+96171913710

**Sport Ville**  
Ra's Bayrut, Beyrouth, Lebanon  
+961 71588733

**onee**  
Ra's Bayrut, Beirut, Lebanon  
71913710

  
**Play** **Rate**

**0** **0**  
Staff Rating Facilities Rating

**Sport Ville**  
Ra's Bayrut, Beyrouth, Lebanon

---

**Sport Center Reviews**

**No Reviews Exist**

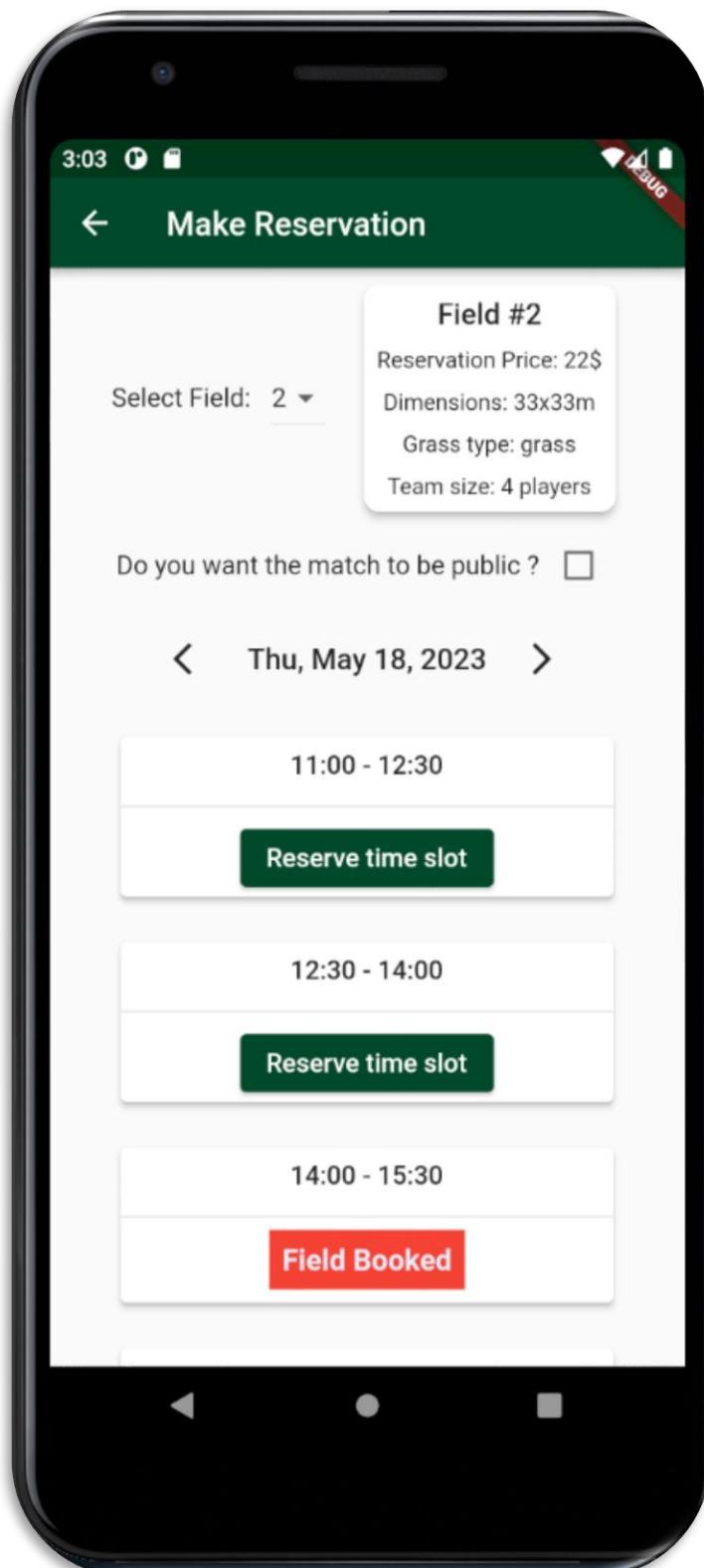
## Reserve A Field

### Description

Upon selecting a sports center from the search engine in Pitch-Pal, players can delve deeper into the facility's offerings. They can explore each individual field within the sports center by accessing their respective schedules. By examining the schedule, players can conveniently check the available time slots for reservations, enabling them to plan their matches and events effectively. However, it is important to note that reservations made through the app are subject to the field manager's approval. This ensures that the reservation process remains streamlined, allowing managers to review and confirm the bookings based on field availability and other considerations. This feature guarantees a seamless experience, where players can reserve their desired time slots without going through the hassle of making calls and contacting field managers privately.

## Screenshots

### Mobile



## Web

**Sport Center:** [riyadi](#)  
**Reserver Email:** mohamad.khalifeh03@lau.edu  
**Field Number:** 1  
**Time** 17:00-18:30  
**Reservation Date:** 2023-05-18  
**Reservation Type:** Player  
**Comments:** No comments

### Team 1

	<b>Mohamad Khalifeh</b> ID: 327-954
	<b>Majd Mando solh</b> ID: 262-887
	<b>rabi yara</b> ID: 107-645

### Team 2

	<b>alloush</b> ID: 971-754
	<b>Hassan Bdeir</b> ID: 180-329

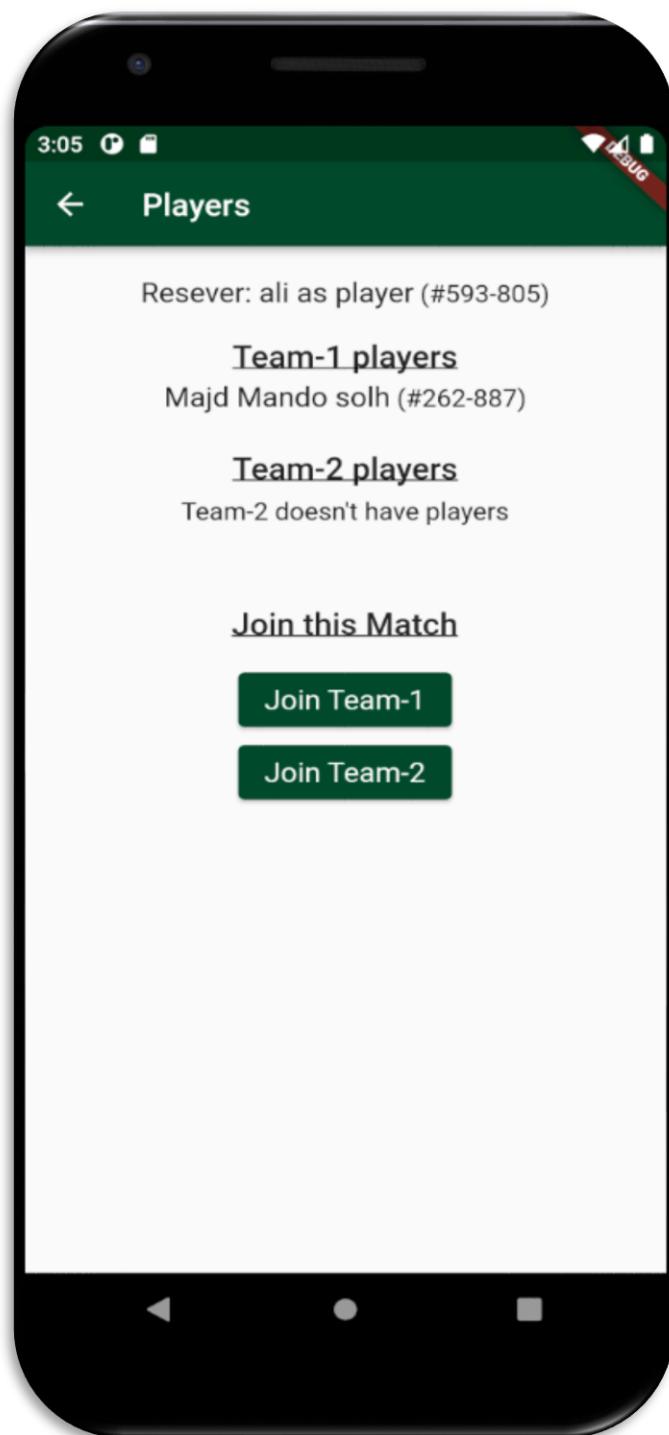
## Create A Public Match

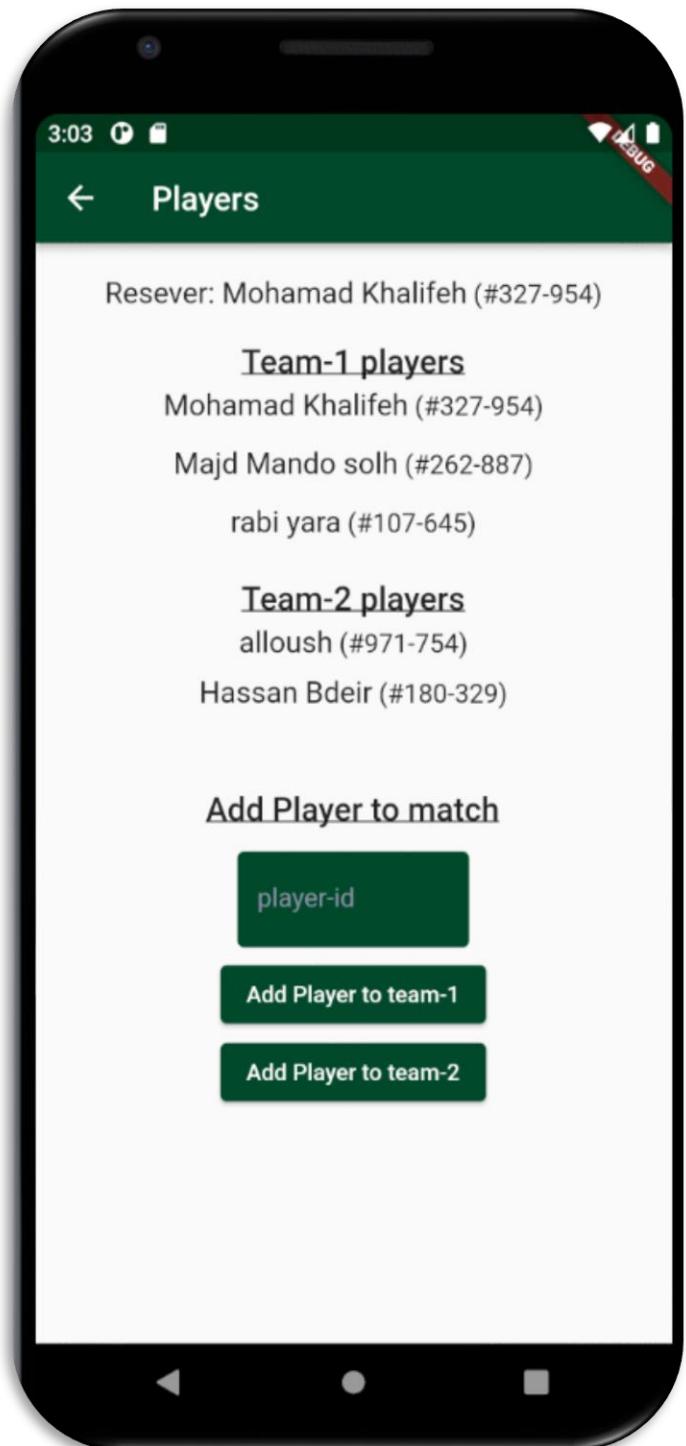
### Description

The application enables the players to create public matches that are open for others to join. Players have the option to make their matches public, allowing them to attract interested participants and expand their network of fellow football enthusiasts. Other players using the app can search for public matches and explore the details, such as date, time, and location. If interested, they can request to join one of the teams participating in the match. However, it is important to note that the final approval to join the match rests with the captain of each team. This ensures that team composition and balance are maintained while giving captains the authority to manage their team's participation.

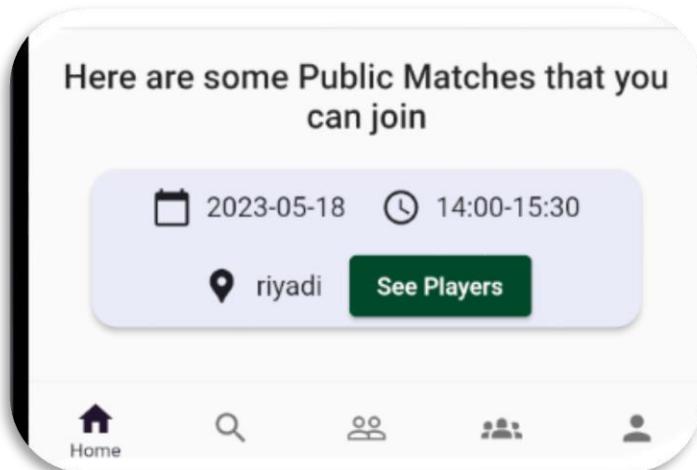
## Screenshots

### Mobile





View of Captain Managing Participating Players



Web

**Today Public Matches**

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riyadi, field: 1, time 11:00-12:30  
status: accepted

---

riyadi, field: 2, time 14:00-15:30  
status: accepted

---

Sport Center:	riyadi
Reserver Email:	mohamadkhalef@gmail.com
Field Number:	1
Time	11:00-12:30
Reservation Date:	2023-05-18
Reservation Type:	FieldManager
Comments:	u16 practice

**Team 1**

**Team 2**

**View of Captain Managing Participating Players**

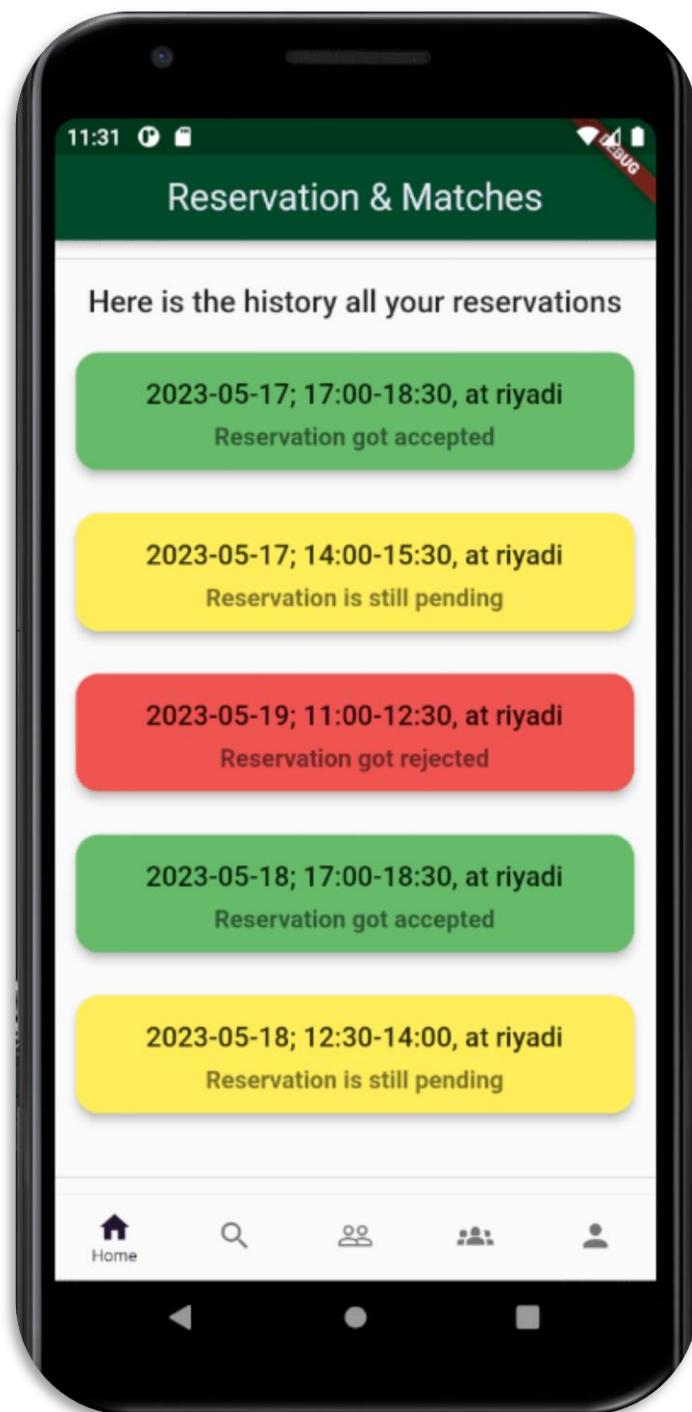
## View Reservation Status

### Description

On the player's home page, the application displays a comprehensive overview of a player's upcoming matches and reservation statuses. Users can easily view a dashboard that displays their scheduled matches, ensuring they stay organized and prepared for their upcoming games. Additionally, players can conveniently track the status of their reservations on this page. They can check whether their reservation requests have been accepted or rejected by the field managers, allowing them to stay updated on the availability of their preferred fields. For reservations that are still pending, users can monitor the progress and receive notifications once the field managers decide. This feature keeps players informed about the status of their reservations, enabling them to plan accordingly and make any necessary adjustments to their sports activities.

## Screenshots

### Mobile





Web

## Your Plays

riyadi, field: 2, time 14:00-15:30  
status: accepted

riyadi, field: 1, time 17:00-18:30  
status: accepted

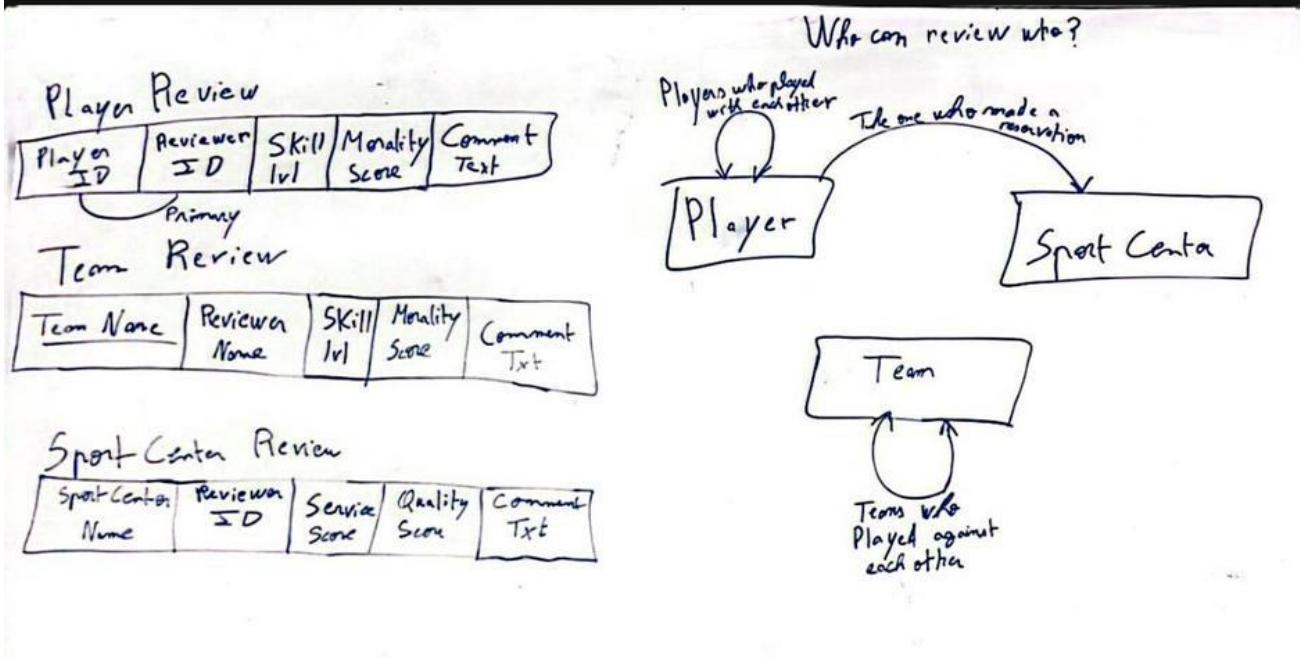
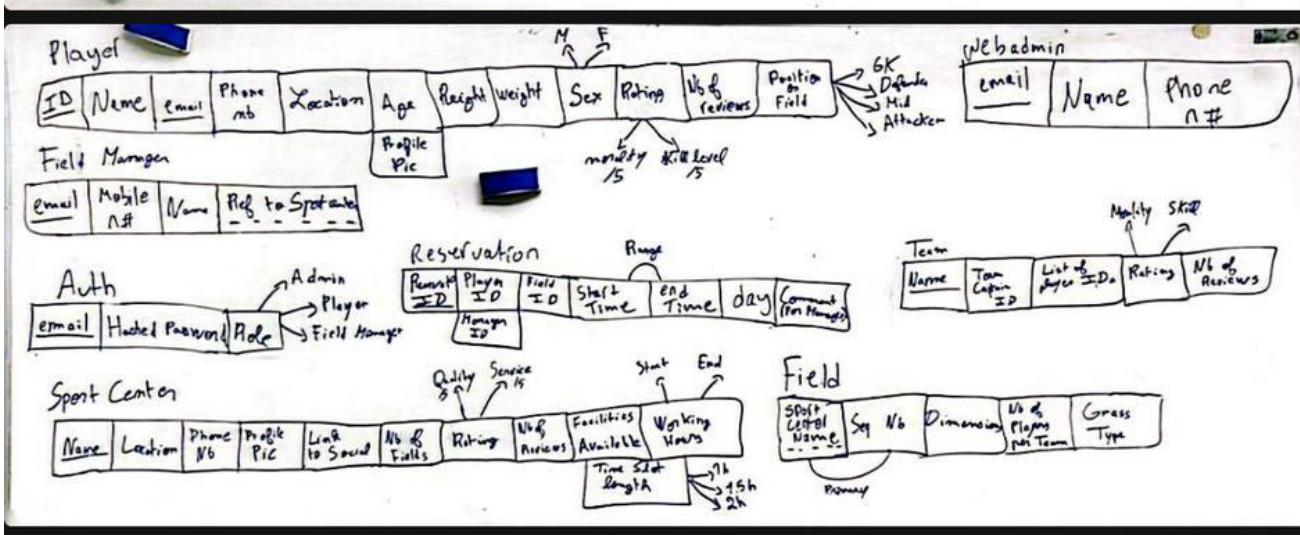
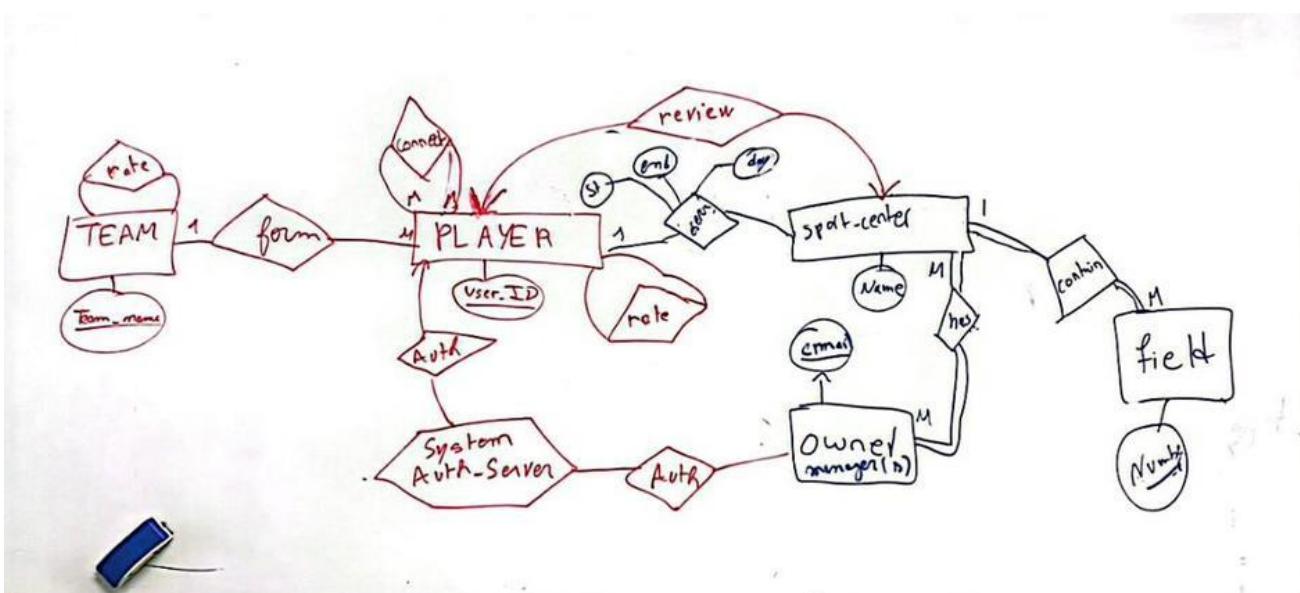
# Implementation

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The development of the Pitch-Pal application utilized a range of cutting-edge technologies to create a seamless user experience. For the backend, we leveraged Node.js, specifically utilizing the Express framework, which provided a robust and scalable foundation for building REST APIs. This allowed for efficient communication between the client and server, facilitating smooth data exchange and seamless functionality.

To ensure reliable and scalable data storage, we employed MongoDB as our database solution. MongoDB's flexible document model and powerful querying capabilities offered an ideal fit for managing and storing complex data structures associated with sports centers, reservations, user profiles, and reviews.

For the front end, we adopted a multi-platform approach. We developed a mobile application using Flutter, a versatile and cross-platform framework known for its high performance, fast development cycles, and native-like user interfaces. This allowed us to deliver a consistent experience across both iOS and Android devices. In addition to the mobile app, we created a dynamic and responsive website using the Vue.js framework. Vue.js provided us with a flexible and intuitive framework for building interactive user interfaces. With Vue.js, we achieved a seamless user experience on the web, ensuring optimal performance and responsiveness across various devices and screen sizes.



ER Diagram- Database Tables- Review System Tables

## Future Work

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In terms of future work for PitchPal, several exciting enhancements and expansions can be considered to further improve the system's functionality and user experience:

- Enhancing Design and UI: Continuously improving the design and user interface of PitchPal will contribute to a visually appealing and intuitive platform. This could involve refining color schemes, layout structures, and incorporating modern design principles to create a visually engaging experience for users.
- Multi-Sport Capability: Expanding the system beyond football and incorporating support for multiple sports will broaden the platform's appeal and cater to a wider range of athletes. Enabling players to connect and reserve sport centers for various sports such as basketball, tennis, or cricket will enhance the platform's versatility and attract a diverse user base.
- Chat System between Friends: Implementing a chat system specifically designed for friends within PitchPal will facilitate seamless communication and coordination. Friends can exchange messages, discuss game strategies, and coordinate their sports activities efficiently, fostering a stronger sense of community and teamwork.
- Enhanced Features for Public Matches: Improving features related to public matches will make it easier for players to find and participate in games with others in the community. This could include features such as advanced search filters, skill-based match recommendations, or automated scheduling options to streamline the process of joining public matches.
- Implementing Neo4j for Friend Connections: Integrating a graph database like Neo4j for managing friend connections can bring several advantages. Neo4j's graph-based structure can efficiently handle complex relationships between users, making it easier to navigate and analyze connections between friends. The use of graph databases allows for faster queries and scalability, enhancing the performance and flexibility of the friend feature within PitchPal.

These future developments will contribute to an enhanced user experience, increased platform versatility, improved communication, and streamlined features, further solidifying PitchPal as a comprehensive and user-friendly sports management system.

# Conclusion

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In conclusion, this report has presented the development and implementation of PitchPal, an innovative mobile and web application designed to revolutionize the way football players in Lebanon reserve fields, socialize, and organize matches. Throughout the report, we have highlighted the key features and functionalities of PitchPal, emphasizing its ability to address the challenges faced by football enthusiasts and sports center owners.

PitchPal offers a user-friendly platform that streamlines the field reservation process, saving time and effort for players. By providing comprehensive information about nearby fields and their amenities, users can easily discover suitable options and secure bookings with just a few taps. This seamless reservation experience eliminates the traditional complexities associated with finding and booking football fields.

Moreover, PitchPal fosters a vibrant football community by facilitating social connections and friendships among players. Through the app, users can create teams, engage in friendly competition, and foster a sense of belonging within the community. The platform encourages socialization and enriches the overall football experience for its users.

Furthermore, PitchPal provides field owners with a robust reservation management system, empowering them to effectively manage their schedules, avoid conflicts, and optimize field utilization. This enhances the service they provide to their customers and contributes to the overall efficiency of sports center operations.

Additionally, PitchPal leverages location services to enhance user experiences by providing personalized recommendations for nearby fields, public matches, and events. This feature encourages users to explore football opportunities beyond their immediate vicinity, broadening their horizons and expanding their football network.

The comprehensive review system incorporated in PitchPal further promotes trust, fair play, and accountability within the football community. Users can share their experiences and provide ratings for both football fields and fellow players, enabling informed decision-making and fostering a positive environment for all participants.

In summary, PitchPal emerges as a powerful solution that addresses the complexities associated with reserving football fields, promotes socialization, and enhances the overall football experience in Lebanon. Its specific focus on the local football community, availability as both a mobile and web application, streamlined reservation process, emphasis on social connections, and comprehensive review system set it apart from existing platforms.

By offering a user-friendly communication and coordination platform for both football players and sports center owners, Pitch-Pal contributes to the development and growth of the Lebanese

football community. It saves time and transportation expenses, promotes socialization, and encourages sports to combat depression and promote a productive and active lifestyle.

With its unique features and contributions, PitchPal is poised to make a significant impact on the football landscape in Lebanon. As the app continues to evolve and gain traction, we anticipate its positive influence in connecting football players, facilitating field reservations, and fostering a thriving and interconnected football community.

# Appendices

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Please find the link to our [Github Repository](#)

## References

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1. <https://www.freecodecamp.org/news/build-a-restful-api-using-node-express-and-mongodb/amp/>
2. <https://flutter.dev/>
3. <https://vuejs.org/>
4. <https://pitchbooking.com/>
5. <https://sportcietyapp.com/>