Tournament Organizer:
“Brining Your Tournaments to Life – Effortlessly.”

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SESSION 2020-2024

TOURNAMENT ORGANIZER

“Bringing your Tournaments to life – Effortlessly.”

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SESSION 2020-20224

UNDERTAKEN

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FINAL APPROVAL

Certified that we have read this project report submitted by Mr. (Muhammad Sohaib Sana, Osama) and it is, in our judgment, of sufficient standard to warrant its acceptance by Department of Computer Science, COMSATS University Islamabad, Attock Campus, for the BSSE degree.

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DEDICATION

This project is dedicated to our parents who have never failed to give us financial and moral support, for giving all our needs during the time we developed our system and for teaching us that even the largest task can be accomplished if it is done one step as a time. We dedicate this Project to our teachers especially Dr. QASIM JAN who have helped us in this project.

ACKNOWLEDGEMENT

I am grateful to Almighty God for giving me the strength, knowledge and understanding to complete this project. His love has been more than sufficient to keep and sustain me.

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I also extend gratitude and appreciation to my lecturers in Computer Science department who have taught me at one point or the other. May God continue to bless, protect and guide you all.

I also wish to acknowledge the great support of my parents, siblings who have been a source of inspiration towards my academic pursuit. God bless you all.

PROJECT BRIEF

PROJECT NAME	TOURNAMENT ORGANIZER ORGANIZE EFFORTLESSLY.
ORGANIZATION NAME	COMSATS UNIVERSITY ISLAMABAD, ATTOCK CAMPUS
OBJECTIVE	TO PROVIDE EASY WAYS FOR TOURNAMENTS ORGANIZING
UNDERTAKEN BY	MUHAMMAD SOHAIB SANA/OSAMA
SUPERVISED BY	DR. QASIM JAN LECTURER COMPUTER SCIENCE CUI ATTOCK
STARTED ON	03 MARCH 2023
COMPUTER USED	DELL VOSTRO 3550 CORE i7
SOURCE LANGUAGE	DART and PYTHON 3.0
OPERATING SYSTEM	WINDOWS 10 PRO
TOOLS USED	JUPITER, ANDROID STUDIO

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CHAPTER 1:
INTRODUCTION

1 Introduction

Tournaments are an essential part of many sports and games, providing a platform for players and teams to compete and showcase their skills. However, organizing and managing tournaments can be a challenging and time-consuming task, particularly when dealing with large numbers of participants, complex schedules, and match results. In recent years, tournament management systems have emerged as a promising solution to simplify the process of organizing and managing tournaments.

For this FYP, we propose the development of a mobile application called the "Tournament Organizer" that aims to streamline the management and organization of tournaments. This app will provide a comprehensive set of features and tools that enable organizers to manage tournaments more efficiently, including the ability to create and manage tournaments, schedule matches, track scores and standings, and communicate with participants and stakeholders.

1.1 Vision Statement

For tournament organizers and participants Who need a more efficient and user-friendly way to manage and organize tournaments. The Tournament Organizer App is a mobile application for tournament management of games like Table tennis and Badminton that is played in teams of two players. This app leverages advance machine learning algorithms to predict winners. Unlike traditional tournament management systems and manual processes Our product simplifies the tournament management process, saves time and resources, and provides a better experience for organizers and participants alike. By automating key tasks and providing an intuitive interface, the Tournament Organizer App enables organizers to focus on delivering a successful and enjoyable tournament experience.

1.2 Related System Analysis/Literature Review

1.2.1 Introduction:

Tournaments are a common form of competition in various sports and games. The management of tournaments requires significant planning, coordination, and communication among organizers, participants, and stakeholders. The emergence of technology has enabled the development of various tournament management systems to facilitate the management process. This literature review aims to evaluate the existing research and literature related to tournament

management systems and their features. In particular, it focuses on the Tournament Organizer App, which is proposed as a comprehensive solution for managing tournaments.

1.2.2 Key Findings:

Several tournament management systems are available in the market, including **Challonge**, **Tournament**, and **Smash.gg**. These systems offer basic features for managing tournaments, such as creating brackets and scheduling matches. However, they often lack advanced capabilities for managing complex tournaments with multiple rounds and game types. The proposed Tournament Organizer App aims to overcome these weaknesses by offering a comprehensive set of features and tools for managing tournaments. These include advanced scheduling options, automated score tracking, and real-time communication between organizers, participants, and stakeholders.

1.2.3 Critical Analysis:

The existing literature on tournament management systems has shown that these systems can improve the efficiency and accuracy of tournament management. However, the literature also highlights the limitations of existing systems, such as their inability to manage complex tournaments with multiple rounds and game types. The proposed Tournament Organizer App aims to address these limitations by offering a comprehensive set of features and tools. However, the literature does not provide a detailed evaluation of the proposed app. Future research should focus on evaluating the effectiveness of the Tournament Organizer App and comparing it with existing tournament management systems.

1.3 Project Deliverables

- A fully functional mobile application for Android platform that provides a comprehensive set of features for managing tournaments.
- User manuals and documentation for the Tournament Organizer App, including installation instructions, user guides, and technical specifications.
- A database for storing and retrieving tournament data, including participant information, match schedules, and results.

- User testing and evaluation reports to ensure the usability, functionality, and effectiveness of the Tournament Organizer App.
- A final report that documents the development process, design decisions, and project outcomes of the Tournament Organizer App.
- May in future, we include a web-based dashboard for tournament organizers to manage and monitor tournaments, which can be accessed through a web browser.

1.4 System Limitations/Constraints

- Limited platform support: The app may be limited to certain mobile platforms, which could limit its accessibility for some users..
- Network connectivity: The app requires a stable network connection to function properly, which could limit its usage in areas with poor or no connectivity.
- Data privacy and security: The app requires sensitive information such as participant data and schedules, which raises concerns about data privacy and security.
- User adoption: The success of the app depends on user adoption and willingness to use the app for tournament management, which could be influenced by factors such as user interface design and ease of use.

1.5 Tools and Technologies

Table 1: Tools and Technologies

Tools And Technologies	**Tools**	**Version**	**Rationale**
	Android Studio	2021	IDE
	Firebase	2022	DBMS
	Adobe XD	2018	Design Work
	Technology	**Version**	**Rationale**
	Flutter	3.0.5	Front-end Development
	Firebase	9	Back-end Development
	Dart	2.17.6	Back-end Development
	Libraries	**Version**	**Rationale**
	Firebase core	1.0.5	Firebase Functionalities
	Dart convert	2.0.1	Many conversion methods
	RxDart	3.1.4	Asynchronous programming
	Path provider	10.1.1	Locations for filesystem

1.6 Relevance to Course Modules

The Tournament Organizer App is related to several courses studied during a BCS program, including **Software Engineering, Object Oriented Programming, Software Project Management, Machine learning/ Deep learning Human-Computer Interaction, Database Systems and Mobile Application Development.**

- **In Software Engineering,** the app involves the design, development, testing, and deployment of a software product. The app's codebase follows the software engineering principles to ensure a robust and maintainable product.
- **In Human-Computer Interaction,** the app's user interface is designed with usability and user experience in mind. The app's design follows the principles of effective communication, user-centered design, and accessibility to make it easy to use for all users.

- **In Database Systems**, the app stores and manages data about the tournament, including the participants, schedules, and match results. The app uses a database to store, retrieve, and update data in a structured way.
- **In Mobile Application Development,** the app is built as a mobile application for Android or iOS devices. The app leverages the mobile device's features such as GPS, camera, and touch screen to provide an intuitive and interactive experience to users.

Overall, the Tournament Organizer App brings together the knowledge and skills gained from multiple courses to develop a comprehensive and functional software product.

Problem Definition

CHAPTER 2:

PROBLEM DEFINATION

2 Problem Definition

2.1 Problem Statement

Organizing and managing tournaments can be a challenging and time-consuming task, particularly when dealing with large numbers of participants, complex schedules, and match results. Traditional tournament management systems and manual processes have several limitations, including difficulty in keeping track of player and team information, scheduling matches, managing scores and standings and communicating with participants and stakeholders. These limitations can lead to inefficiencies, errors, and frustration for both organizers and participants.

To address these challenges, the proposed Tournament Organizer App aims to streamline the tournament management process by providing a comprehensive set of features and tools to enable organizers to manage tournaments more efficiently. The app will leverage advanced machine learning algorithms, to automate key tasks and provide an intuitive interface for users. The app will allow organizers to create and manage tournaments, schedule matches, track scores and standings and communicate with participants and stakeholders.

The Tournament Organizer App will solve the problem of inefficient and error-prone tournament management by providing a user-friendly and efficient way to manage and organize tournaments. With this app, tournament organizers can focus on delivering a successful and enjoyable tournament experience while participants can enjoy a seamless and well-organized tournament experience.

2.2 Problem Solution

The objective of the Tournament Organizer App is to simplify the process of organizing and managing tournaments for tournament organizers and participants. The app aims to provide an efficient and user-friendly platform for organizing and managing tournaments, saving time and resources for organizers and providing a better experience for participants.

The primary goal of the Tournament Organizer App is to automate key tasks related to tournament management, such as creating and managing tournaments, scheduling matches, tracking scores and standings, and communicating with participants and stakeholders. By leveraging advanced with machine learning algorithms, the app will provide a cutting-edge solution for tournament management.

Another important objective of the Tournament Organizer App is to provide a comprehensive set of features and tools for tournament organizers, including the ability to create custom tournament formats, manage teams and participants, generate schedules and brackets and track real-time scores and standings. The app will also provide communication tools for organizers to send updates, notifications, and announcements to participants and stakeholders.

The Tournament Organizer App also aims to provide a better experience for participants with features such as online registration and payment processing, real-time match updates and results and the ability to view and share tournament information and schedules. The app will also provide a social platform for participants to connect with other players of the tournament.

Overall, the Tournament Organizer App aims to revolutionize the way tournaments are organized and managed, providing an innovative and efficient solution for tournament organizers and participants alike.

2.3 Objectives of the Proposed System

TO-1: Develop a mobile application for tournament management that simplifies the process of organizing and managing tournaments.

TO-2: Provide an intuitive and user-friendly interface for organizers and participants to manage tournament details and communicate with each other.

TO-3: Automate key tasks such as scheduling matches, tracking scores and standings, and generating reports to save time and resources.

TO-4: Improve tournament transparency and fairness by providing real-time updates and ensuring accurate record-keeping.

TO-5: Enable tournament organizers to customize the app according to their specific needs and preferences.

TO-6: Ensure data security and privacy for all tournament-related information.

TO-7: Provide a cost-effective solution for tournament management that can be easily accessible to a wide range of users.

2.4 Scope

The scope of the Tournament Organizer App is to provide a comprehensive solution for tournament management and organization. The app will be designed to streamline the entire tournament management process, from creating and scheduling tournaments to tracking scores and communicating with participants. The main functionalities of the app will include the ability to create and manage tournaments, add and manage participants, schedule matches, track scores and standings, generate reports and communicate with participants and stakeholders.

The app will be developed as a mobile application for Android platform with a user-friendly interface that allows tournament organizers to easily access and manage all tournament-related tasks on-the-go. The app will leverage advanced machine learning algorithms to provide a more intuitive and efficient user experience. It will also feature real-time updates, so organizers and participants can stay informed about match schedules, scores and standings.

The scope of the project includes developing a robust and scalable back-end infrastructure, which will handle all data processing and storage. The app will be developed using modern software development technologies, including APIs, SDKs, programming languages such as Flutter, Dart and Python, and frameworks such as Flutter and Firebase. The app will be designed to support international language and currencies, making it accessible to a global audience.

The scope of the project also includes testing the app thoroughly to ensure it meets all functional and non-functional requirements and providing documentation. Overall, the scope of the Tournament Organizer App is to provide a comprehensive and efficient solution for tournament management, saving time and resources for tournament organizers and providing a better experience for participants.

2.5 Modules

2.5.1 Module 1: User Management

FE-1: User registration and login

FE-2: User profile management

FE-3: User access control

2.5.2 Module 2: Tournament Management

FE-1: Create and manage tournaments

FE-2: Define tournament format, rules, and schedule

FE-3: Create and manage teams

FE-4: Assign players to teams

FE-5: Manage tournament brackets and rounds

FE-6: Record match results and update standings

2.5.3 Module 3: Match Management

FE-1: Create and manage matches

FE-2: Schedule matches with teams

FE-3: Assign referees to matches

FE-4: Record match results and update standings

2.5.4 Module 4: Communication

FE-1: Send messages and notifications to participants

FE-2: Share tournament information and updates

FE-3: Allow participants to communicate with each other

2.5.5 Module 5: Reporting and Analytics

FE-1: Generate reports on tournament progress, results, and performance

FE-2: Analyze tournament data to identify trends and insights

FE-3: Provide visualizations to facilitate data analysis and decision making

2.5.6 Module 6: Integration and Customization

FE-1: Integrate with external APIs and services

FE-2: Customize tournament rules, formats, and settings

CHAPTER 3:
REQUIREMENT ANALYSIS

3 Requirement Analysis

This chapter will provide a detailed overview of the different user classes that are expected to use the application and their pertinent characteristics. This analysis is important in identifying the key requirements of the application and ensuring that they align with the needs of the intended user classes.

3.1 User classes and characteristics

The Tournament Organizer App is designed to cater to the needs of various user classes, including tournament organizers, players, and spectators. Each user class has unique characteristics that influence their usage patterns and requirements from the application.

3.1.1 Tournament Organizers

The tournament organizers are the primary users of the app. They are responsible for creating and managing tournaments, registering players and scheduling matches. The pertinent characteristics of tournament organizers include:

- They are knowledgeable about the game and its rules
- They have experience in organizing tournaments
- They are detail-oriented and meticulous in managing tournament logistics
- They require a user-friendly and efficient interface to manage the tournament

3.1.2 Players

Players are the secondary users of the app, and they use it to register for tournaments, view schedules, and keep track of their scores. The pertinent characteristics of players include:

- They are passionate about the game and want to participate in tournaments
- They are competitive and want to perform well in the tournament
- They require an easy-to-use interface to register and view tournament information
- They may require push notifications or reminders about their upcoming matches

3.1.3 Spectators

Spectators use the app to view the tournament schedule, track scores and stay updated on the tournament's progress. The pertinent characteristics of spectators include:

- They may have limited knowledge about the game and its rules
- They may not have any prior experience in organizing tournaments
- They are interested in watching the matches and tracking the tournament's progress
- They require a simple and intuitive interface to view the tournament information.

Understanding the characteristics of each user class is crucial in designing an application that meets their needs and provides a seamless experience

3.2 Requirement Identifying Technique

For identifying the requirements of the Tournament Organizer App, the following techniques can be used:

1. **Interviews:** This technique involves conducting interviews with potential users, stakeholders and experts to gather their opinions and feedback on what features and functionalities the app should have.
2. **Surveys:** Conducting surveys among the target audience of the app can also help in identifying their requirements, preferences and pain points.
3. **Use case diagrams:** Use case diagrams can be used to identify the different actors and their interactions with the app. This can help in identifying the functional requirements of the app.
4. **Prototyping:** Prototyping involves creating a working model of the app with limited features and functionalities. This can help in identifying the requirements of the app by testing it with potential users and stakeholders.
5. **Brainstorming sessions:** Brainstorming sessions with the development team and stakeholders can help in identifying the requirements and potential features of the app. This technique can be particularly effective in identifying non-functional requirements such as performance, security, and usability.

The selection of these techniques will depend on the specific requirements and nature of the Tournament Organizer App. A combination of multiple techniques can also be used for a more comprehensive understanding of the requirements.

3.3 Functional Requirements

Table 2: Functional Requirement 1

Identifier	FR-1
Title	User Registration
Requirement	The user shall be able to create a new account by providing a unique username, valid email address and password. The password must be at least 8 characters long, contain at least one uppercase letter, one lowercase letter and one digit. Upon successful registration, the user shall receive a confirmation email.
Source	User Requirement
Rationale	To allow users to create an account and access the app's functionalities.
Business Rule	NONE
Dependencies	NONE
Priority	High

Table 2: Description of FR-2 (Functional Requirement X)

Table 3: Functional Requirement 2

Identifier	FR-2
Title	User Login
Requirement	The user shall be able to log in to their account using their registered username and password. Upon successful login, the app shall redirect the user to their dashboard.
Source	User Requirement
Rationale	To allow users to access their account and use the app's features.
Business Rule	NONE
Dependencies	FR-1
Priority	High

Table 3: Description of FR-3 (Functional Requirement X)

Table 4: Functional Requirement 3

Identifier	FR-3
Title	User Dashboard
Requirement	.The app shall provide a dashboard for each user after they log in. The dashboard shall display the user's ongoing and upcoming tournaments, as well as any messages or notifications from the app.
Source	User Requirement
Rationale	To provide users with an overview of their tournament schedule and any important information related to their account.
Business Rule	NONE
Dependencies	FR-2
Priority	Medium

Table 4: Description of FR-4 (Functional Requirement X)

Table 5: Functional Requirement 4

Identifier	FR-4
Title	Create Tournament
Requirement	The user shall be able to create a new tournament by providing a tournament name, date, time, location, game type and description. The user shall also be able to set the tournament format, rules and prizes. Upon creation, the tournament shall be visible to all users on the app.
Source	User Requirement
Rationale	To allow users to create an organize their own tounaments.
Business Rule	NONE
Dependencies	FR-2
Priority	High

Table 5: Description of FR-5(Functional Requirement X)

Table 6: Functional Requirement 5

Identifier	FR-5
Title	Join Tournament
Requirement	The user shall be able to search for tournaments on the app and request to join them. The tournament organizer shall be notified of the user's request and have the option to accept or reject it. If accepted, the user shall be added to the tournaments participants list.
Source	User Requirement
Rationale	To allow users to participate in tournaments and for tournament organizers to manage tournament participants.
Business Rule	NONE
Dependencies	FR-2
Priority	Medium

3.4 Non-Functional Requirements

3.4.1 Reliability:

- REL-1: The Tournament Organizer App shall have a MTBF(mean time between failures) of at least 100 hours of continuous usage.
- REL-2: In case of a software failure, the system shall be able to recover all data from the last successful backup within 30 minutes.
- REL-3: The system shall have an error detection and correction mechanism that can automatically detect and resolve errors without the need for user intervention.

3.4.2 Usability:

- USA-1: The Tournament Organizer App shall have a user interface that is intuitive and easy to use, such that a new user can learn how to use the app in less than 10 minutes.
- USA-2: All user interactions within the app shall be completed in no more than 3 clicks or taps.
- USA-3: The app shall have a clear and concise user manual or help section that is easily accessible from within the app.

3.4.3 Performance:

- PER-1: The Tournament Organizer App shall be able to handle at least 100 concurrent users without any noticeable decrease in system performance.
- PER-2: The app shall respond to user actions within 1 second or less, even under heavy load.
- PER-3: The app shall be able to handle large data sets and complex queries without any significant delay or performance issues.

3.4.4 Security:

- SEC-1: The Tournament Organizer App shall encrypt all sensitive user data, such as passwords and payment information, using industry-standard encryption algorithms.
- SEC-2: The app shall have a secure login system that requires a strong password and two-factor authentication.
- SEC-3: The app shall have a mechanism in place to detect and prevent unauthorized access attempts, such as IP blocking and rate limiting.

3.5 External Interface Requirements

3.5.1 User Interfaces Requirements

The Tournament Organizer App should have a user-friendly interface that allows users to easily navigate the app and perform the necessary actions. The following requirements should be met:

• The app should have a consistent layout and color scheme.

• The app should follow standard mobile app design guidelines.

• The app should be able to adapt to different screen sizes and resolutions.

• The app should have a help section accessible from every screen.

• The app should have a search function to help users find specific tournaments.

3.5.2 Software Interfaces

The Tournament Organizer App should integrate with the following software components:

• **Calendar:** The app should be able to integrate with the user's calendar to schedule tournaments.

• **Notification service:** The app should be able to send notifications to users about upcoming tournaments..

SI-1: Calendar

The Tournament Organizer App shall integrate with Google Calendar to allow users to schedule tournaments.

SI-2: Notification Service

The Tournament Organizer App shall use Firebase Cloud Messaging to send push notifications to users about upcoming tournaments.

3.5.3 Communications Interfaces

The Tournament Organizer App requires communication functions to enable users to receive notifications, access social media, and share tournament information. Specific requirements include:

• The app should be able to send push notifications to users' devices.

• The app should be able to access social media APIs to allow users to share tournament information.

• The app should support email notifications to inform users of upcoming tournaments, results, and other information.
• The app should support SMS messaging to send reminders and other important information to users.

CHAPTER 4:
DESIGN MODEL

4 Design and Architecture

4.1 Architectural Design

The Tournament Organizer App can be designed using the Model-View-Controller (MVC) architecture pattern.

The major subsystems in the Tournament Organizer App are:

Model: This subsystem is responsible for managing the data of the application, such as tournament information, player information, and game results. It stores and retrieves data from the database and communicates with the controller to update the view.

View: This subsystem is responsible for presenting the data to the user in a graphical user interface. It receives input from the user and communicates with the controller to update the model.

Controller: This subsystem is responsible for controlling the flow of the application. It receives input from the view and updates the model accordingly. It also communicates with the view to update the user interface.

Here is a diagram showing the subsystems and their connections in the Tournament Organizer App:

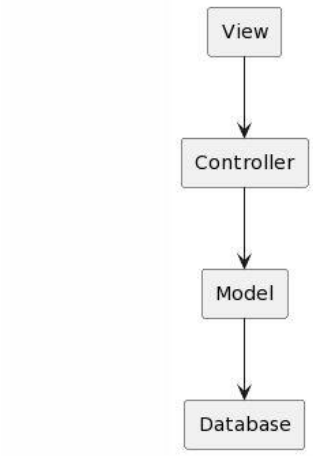


Figure 1: Architecture

In this architecture, the view interacts directly with the user and displays the data from the model. The controller acts as an intermediary between the view and the model and updates the view based on changes in the model.

The model communicates with the database to store and retrieve data, and the controller communicates with both the view and the model to ensure that the data is updated and displayed correctly.

This modular structure allows for easy maintenance and modification of the application. For example, if the database schema needs to be changed, only the model needs to be updated. If the user interface needs to be redesigned, only the view needs to be modified. The controller acts as a bridge between the two subsystems and can be updated as necessary to ensure proper communication between the view and the model.

4.2 Design Models

4.2.1 Activity Diagram

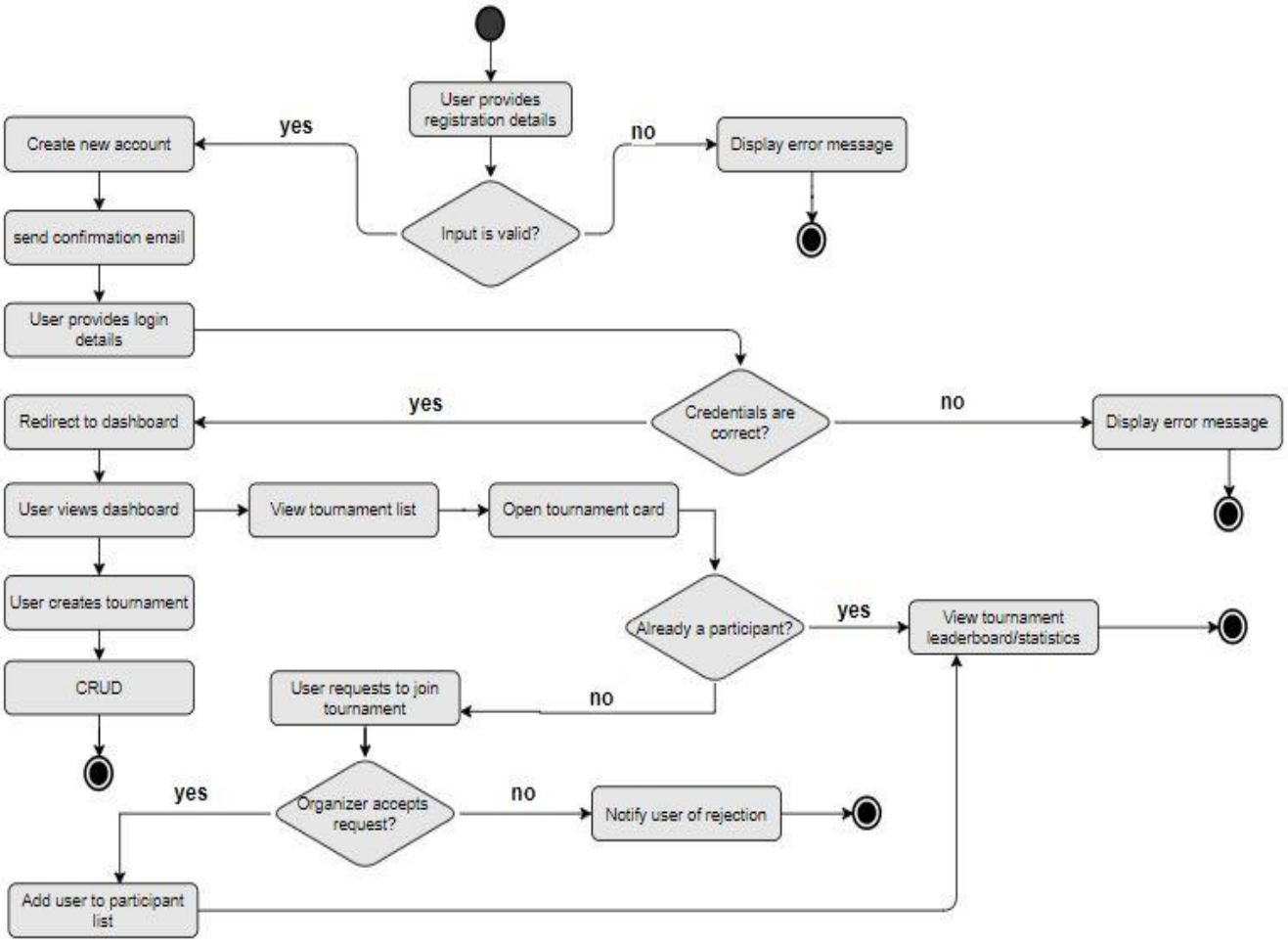


Figure 2: Activity Diagram

4.2.2 Sequence Diagram

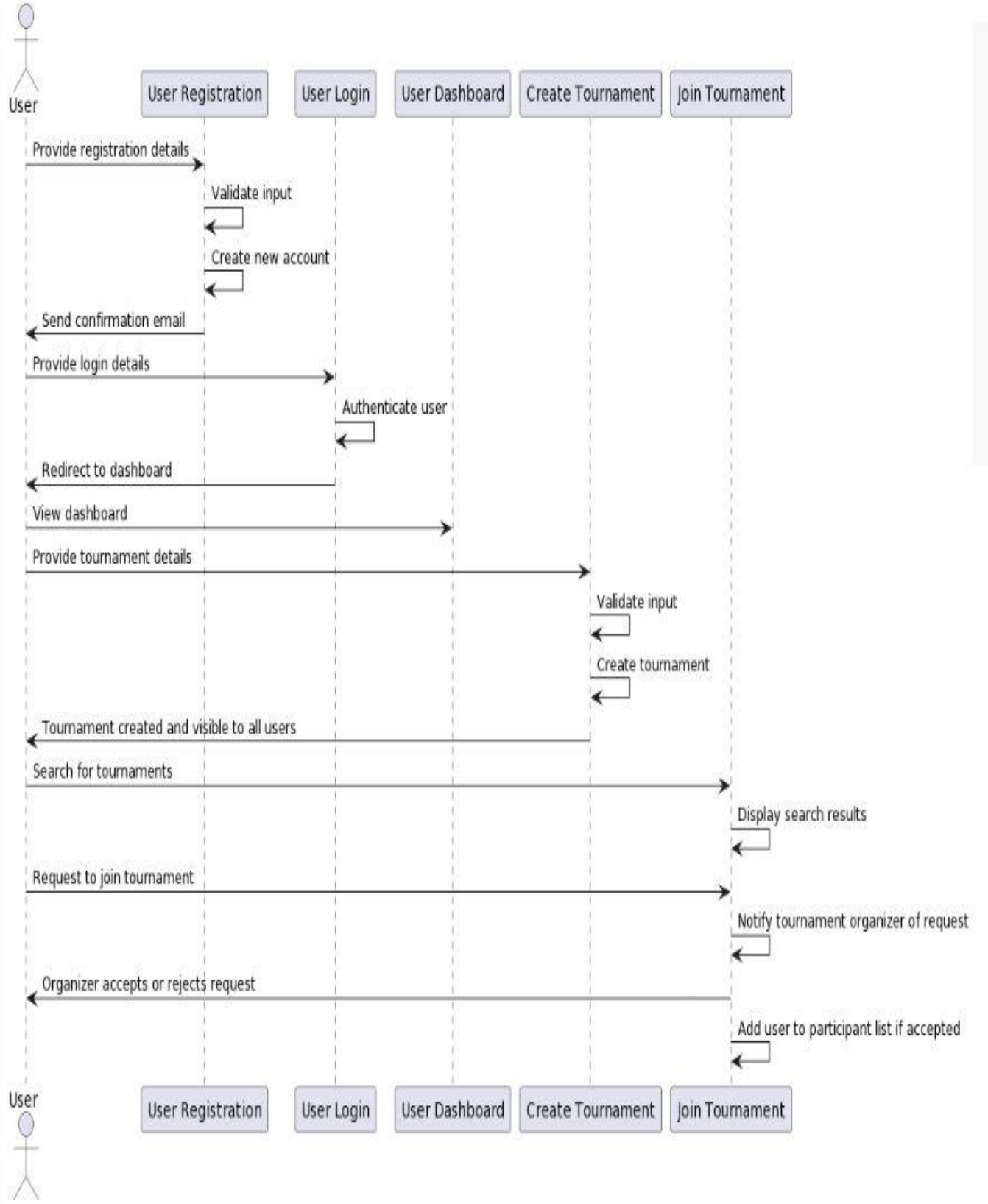


Figure 3: Sequence Diagram

Class Diagram

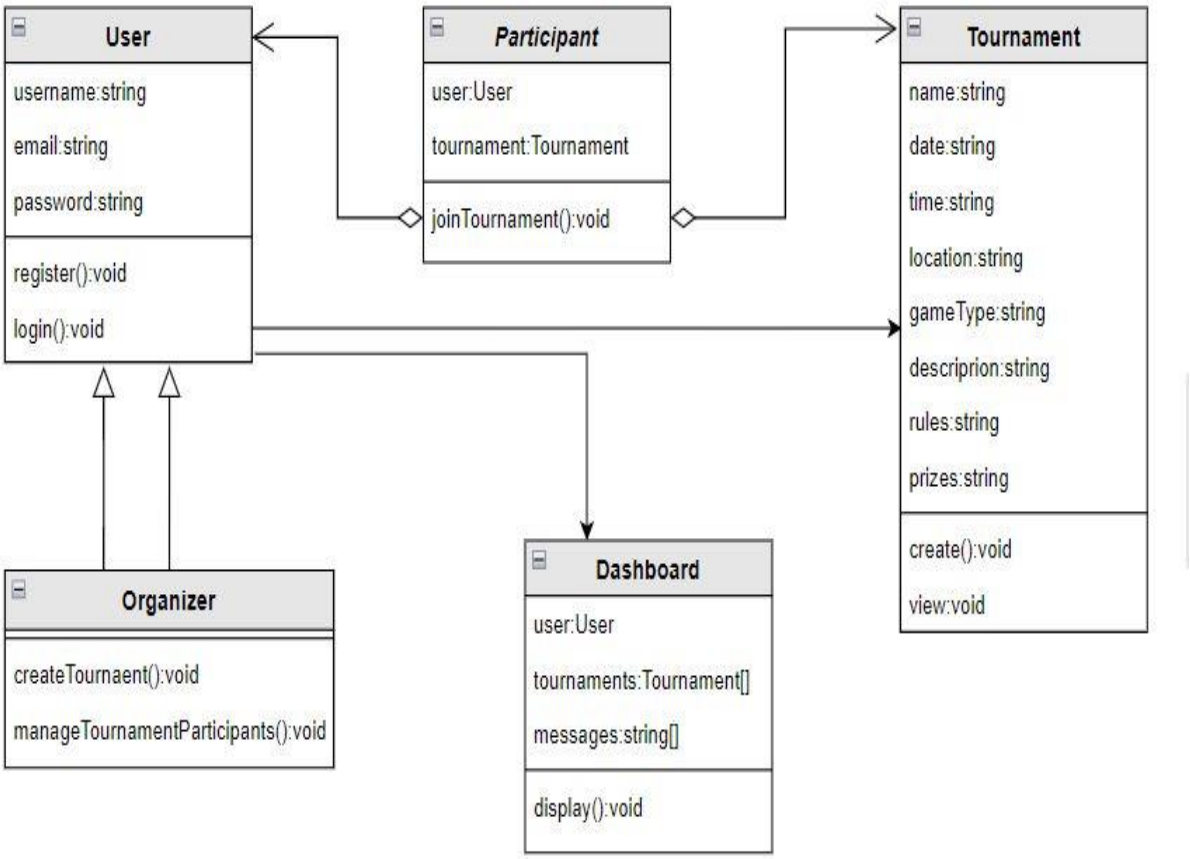


Figure 4: Class Diagram

4.3 Data Design

The Tournament Organizer App will require a database to store various types of data related to the tournaments and their participants. The following entities will **be stored** in the database:

1. ***Tournament:*** This entity will contain information about each tournament, including the name, location, start and end date, type of game, and the number of players.
2. ***Participants:*** This entity will contain information about the players participating in each tournament, including their name, age, gender, and contact information.
3. ***Matches:*** This entity will contain information about each match played during the tournament, including the players involved, the score, and the time and date of the match.
4. ***Results:*** This entity will store the results of each match, including the winner and loser.

The data will be **organized** using a relational database management system (RDBMS) such as Firebase or PostgreSQL. The database schema will be designed to ensure data integrity and consistency.

The data will be **accessed** and manipulated by the application through SQL queries. The application will use an object-relational mapping (ORM) tool such as Flutter to interact with the database.

Overall, the data design of the Tournament Organizer App will ensure that all necessary data is stored in a structured and organized manner, enabling efficient data retrieval and manipulation.

4.3.1 Data Dictionary

1. **Tournament**
    - Name: string, the name of the tournament
    - Location: string, the location of the tournament
    - Start Date: date, the start date of the tournament
    - End Date: date, the end date of the tournament
    - Game Type: string, the type of game being played in the tournament
    - Number of Players: integer, the number of players participating in the tournament
2. **Participants**
    - Name: string, the name of the participant
    - Age: integer, the age of the participant
    - Gender: string, the gender of the participant
    - Contact Information: string, the contact information of the participant (e.g. email or phone number)
3. **Matches**
    - Player 1: string, the name of the first player participating in the match
    - Player 2: string, the name of the second player participating in the match
    - Score: integer, the score of the match
    - Time and Date: datetime, the date and time the match was played
4. **Results**
    - Winner: string, the name of the winner of the match
    - Loser: string, the name of the loser of the match

Note that this data dictionary only includes the major entities and their attributes, and does not include any functions or methods.

4.4 Human Interface Design

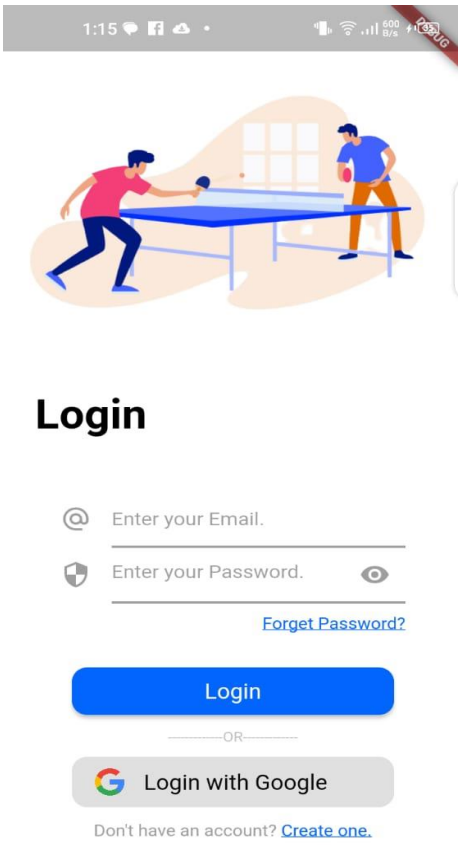
From the **user's perspective**, the Tournament Organizer App will provide a user-friendly interface that allows them to manage and organize tournaments. The system will have various features that will enable users to perform tasks such as creating tournaments, managing player registrations, scheduling matches, and updating scores.

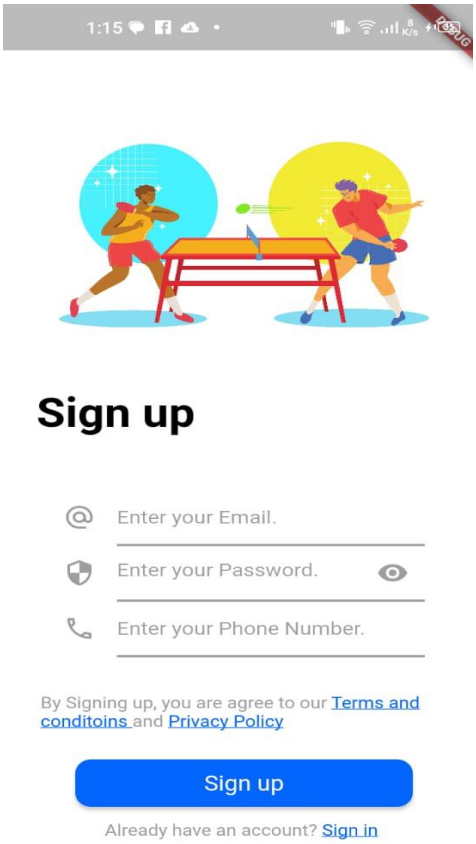
To create a tournament, the user will be able to provide details such as the name, type, and location of the tournament. They will also be able to set the rules and regulations of the tournament, including the number of players allowed, match format, and other relevant information. Once the tournament has been created, the user can add players to the tournament by sending out invitations or allowing players to register online.

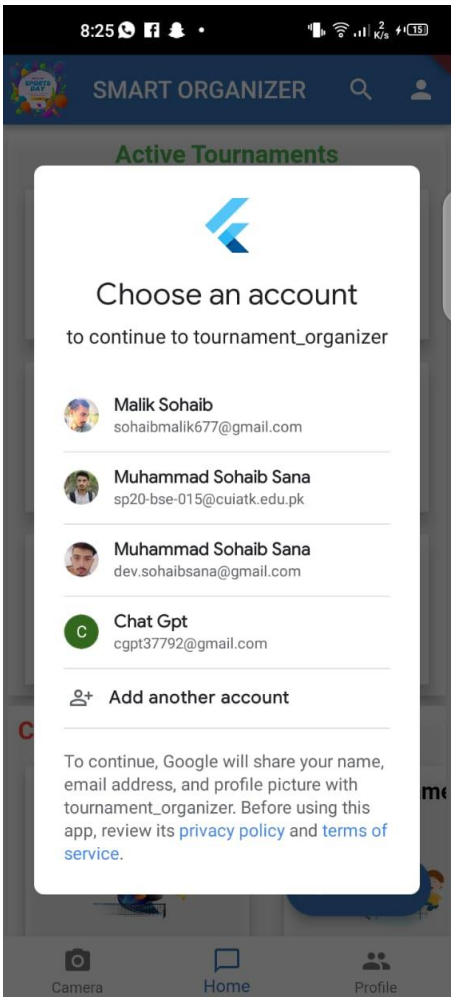
The system will allow the user to schedule matches by selecting the players who will be competing and assigning them a time and location for their match. Users will also be able to view the match schedule and receive notifications of any changes made to it. During a match, the user will be able to update the score in real-time using the app, which will allow spectators to view the score live.

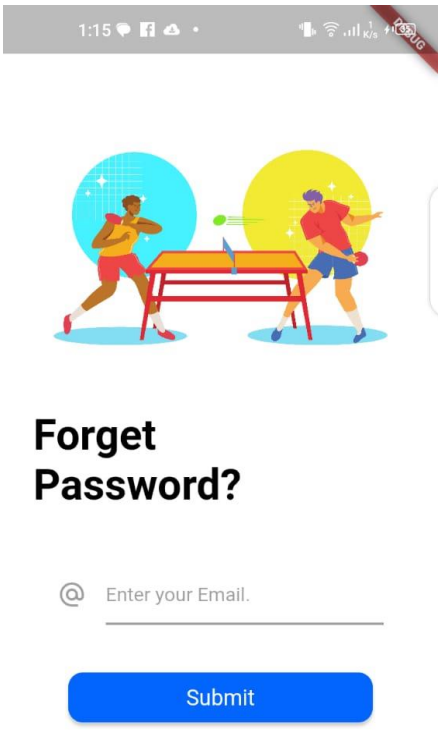
The **feedback information** provided to the user will include notifications of new messages, changes to the match schedule, and updates to the tournament standings. The app will also provide statistical information, such as the number of matches played, the number of players registered, and the number of spectators attending the tournament. Overall, the user interface will be designed to be intuitive and user-friendly, making it easy for users to navigate and use the system.

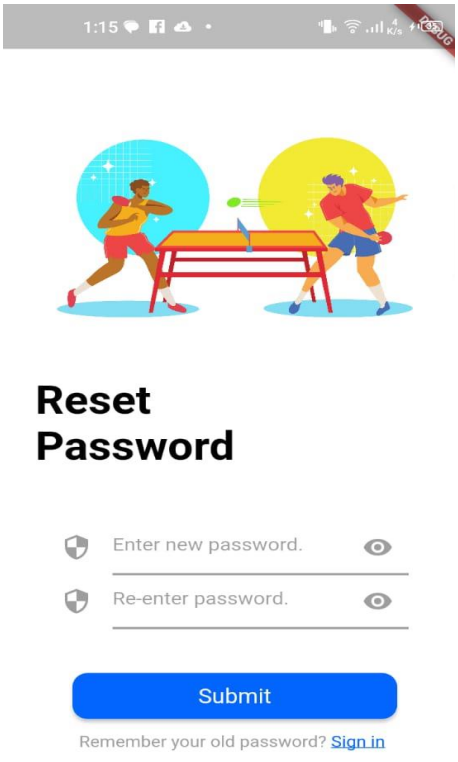
4.4.1 Screen Images

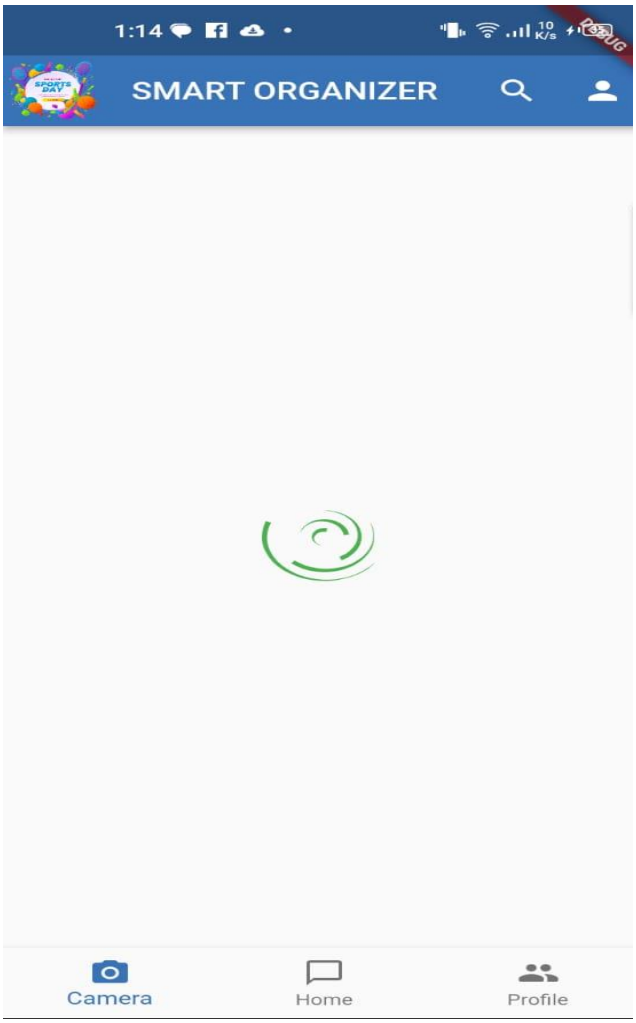




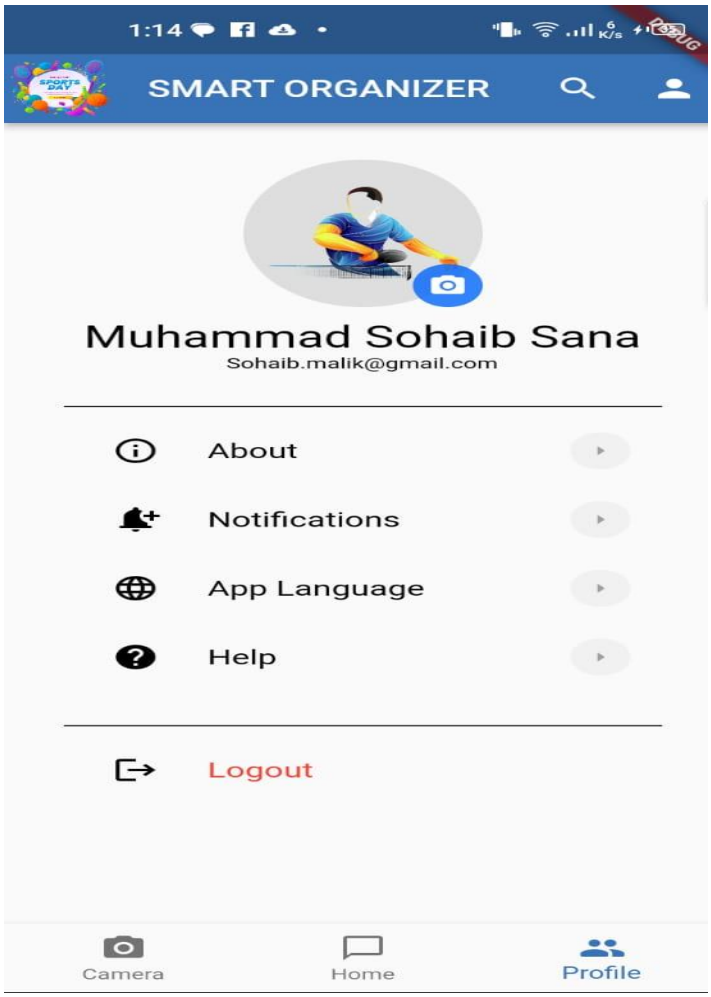


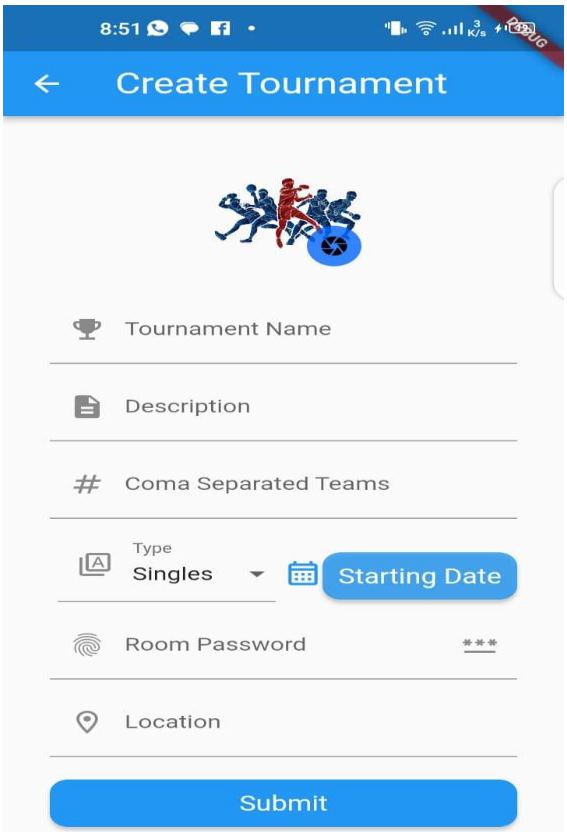





SMART ORGANIZER
Camera
Home
Profile

SMART ORGANIZER
Active Tournaments
Inter Departmental
Inter Departmental Tournament in COMSATS University Islamabad, Attock Campus
CS Tournament
Random Participants from whole University in COMSATS University Islamabad, Attock Campus
Annual Trophy
Annual Trophy Tournament inter departmental in COMSATS University Islamabad, Attock Campus
Completed Tournaments
Inter Departmental
CS Tourname
Create
Camera
Home
Profile


SMART ORGANIZER
Muhammad Sohaib Sana
Sohaib.malik@gmail.com
About
Notifications
App Language
Help
Logout
Camera
Home
Profile



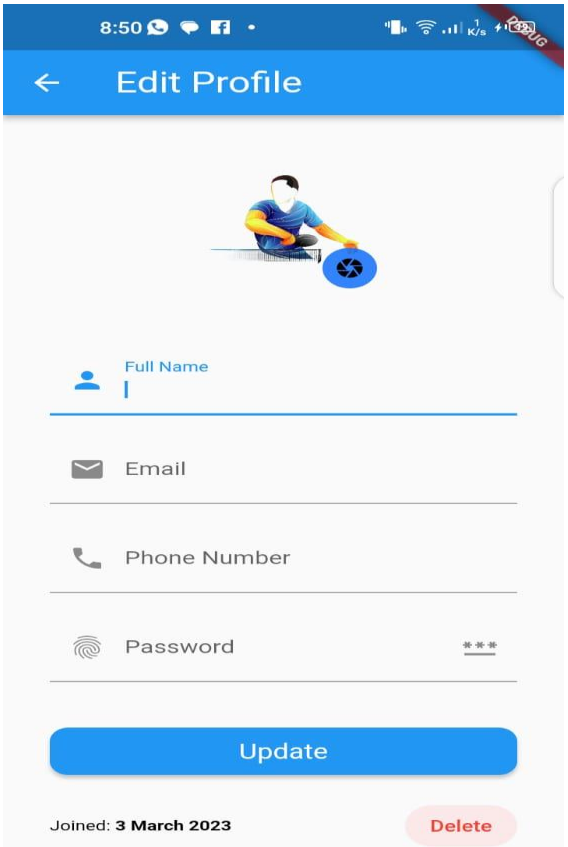


Figure 5: Screen Images

4.4.2 Screen Objects and Actions

In the Tournament Organizer App, the following screen objects and actions are associated with them:

1. **Dashboard screen:**
    - Screen objects: tournament cards, add tournament button
    - Actions: click on a tournament card to view tournament details, click on add tournament button to create a new tournament
2. **Tournament details screen:**
    - Screen objects: tournament details section, edit tournament button, delete tournament button, add participant button, participant list
    - Actions: edit tournament details by clicking on edit tournament button, delete tournament by clicking on delete tournament button, add participant by clicking on add participant button, view participant details by clicking on a participant in the participant list
3. **Participant details screen:**
    - Screen objects: participant details section, edit participant button, delete participant button
    - Actions: edit participant details by clicking on edit participant button, delete participant by clicking on delete participant button
4. **Settings screen:**
    - Screen objects: change password section, delete account button
    - Actions: change password by entering a new password and clicking on save changes button, delete account by clicking on delete account button and confirming the action

These screen objects and actions are designed to provide a user-friendly and intuitive interface for the Tournament Organizer App.