# TURF FLASH: ONLINE FOOTBALL CLUBS MATCHMAKING AND TURF BOOKING APPLICATION

**A PROJECT REPORT**

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# BONAFIDE CERTIFICATE

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# ABSTRACT

In today's world every process and action can be done through the internet. Internet plays a major role in making our daily activities to be completed in a quick, easy and efficient way. Internet must be used to ease our life activities. One such life activity is playing physical games/sports. Playing a sport for two or three times a week can be very effective for a human body as it greatly increases our metabolic activities. But finding players to play in a new environment is difficult because we do not know the surroundings and the people in the place. Booking sport facilities is difficult nowadays because people are quite busy and do not have enough time to go to sport Centre just for making a reservation. To overcome this project will helps their residents to organize the data and the information into better style and format and also to their customers so they can make a reservation easily through internet connection. Nowadays, besides concentrating in providing the best services to the customers, quieter a numbers of business organizations had move a step ahead by equipping the new technology in their business such as an online sport booking system. Many companies already use online system in order to give better services to their customers. Moreover, They can save their time from going to any particular place in order to do a reservation. Even though there is a playground or turf to players are unable to do a reservation. Also if there are in an unknown place they do not know the local players around them which acts as another difficulty for them. The system overcomes these issues by collecting the data's of the players from each location and displaying it to the users based on their location. Users can login and check the players and clubs around them for their respective sports and book matched with in a mutually preferred place. The level of the players and clubs can be understood by the ratings they have. The level will be good resource for the people who look for place to join with other players to play with them. This app can also be used for match making between two clubs or sports center.

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# LIST OF SYMBOLS, ABBREVIATIONS

| | |
|---|---|
| **WAN** | Wide Area Network |
| **WBS** | Work Break Structure |
| **HTML** | Hypertext Markup Language |
| **NFC** | Near Field Communication |
| **OS** | Operating System |
| **UML** | Unified Modeling Language |
| **CASE** | Computer-Aided Software Engineering |
| **UI** | User Interface |
| **SDLC** | System Development Life Cycle |
| **UML** | Unified Modeling Language |
| **ICT** | Information and Communication Technology |

# CHAPTER 1
# INTRODUCTION

# 1. INTRODUCTION

## 1.1 OVERVIEW

Before starting the development of the project, there are few things that need to be considered first. This is to ensure that the project is feasible to be continued and also at the same time to provide a guideline or standard on how shall the project works. For that purpose, this section will be giving brief explanation about the project, the identification of problem statement, objectives that need to be achieved and scope of study that need to be follow. Nowadays, besides concentrating in providing the best services to the customers, quite a numbers of business organizations had move a step ahead by equipping the new technology in their businesses such as an online sport booking systems. A few of companies already used an online system in order to give better services to their customers. However, it is hard to enhance the peoples to learn and used this kind of technology because it is still new. Online system provides service where users/peoples can access the network from anywhere and anytime to do it where the system more than adequate information. Moreover, they can save their time from going to any particular place in order to do the specific task. By doing an improvement the finished system will allow all sports centres or clubs, to book sessions, view their current booked sessions, and cancel them, if necessary. It can be inconvenient having physically go to the Sports Centre to book sessions. By making this system user friendly, it can attract many users to use this system regularly. Besides that, this system can help administrator to keep track the booking records, locate in the database and can manage the booking also the schedules from redundancy. After getting and gathering all sorts of data, it can minimize the problem, which exist before, and the development in online system or system that is being using now can be improved

## 1.2 PROBLEM DEFINITION

Users need to analyse and know about the other clubs by going personally and speaking with them. Even though they do not get the information they wished for the clubs or sports centre. They need get the contact numbers of the club manager or captain which is difficult and arrange players for that game. There will be more tasks like the team captain may not be present at the club or players for the game may not sufficient.

## 1.3 SIGNIFICANT OF THE PROJECT

1. These problems can be overcome by using the online system. From this, we can have advantages to use this Online System anywhere.
2. Allow authorize user to access the system:
3. The system will only allow the authorized user to access to the system. All the users can have their own account and they can use the system on their specified interest.
4. Easy access to the Internet:
5. The system is run in a wide area network (WAN). So that users can easily access to the system everywhere through internet connection using broadband.
6. Easily to host and manageable:
7. User can host game and manage their data with a easily user interface

## 1.4 OBJECTIVES

1. The development of this system is based on the following objectives:
2. To develop and design an online system that can help users book the match with other users(club) in this system. For example the users can make a reservation for the match and also several facilities. The online service allows users to achieve the same thing at their own time and convenience.
3. To enable wide access and provide users with the ability to change the schedules, cancel the reservation and so on. During time reservation, the users can check the availability before making a reservation or change the date, venue, day and etc… before submitted the application.
4. Easy and efficient solution so this system can decrease time of old method done during make a match .
5. To help administrator keep track records from the traditional systems. This system can help administrator to keep track the booking records, locate in the database and can manage the booking also the schedules from redundancy.

## 1.5 FEASIBILITY OF THE PROJECT WITHIN THE SCOPE AND TIME FRAME

In the project, Work Break Structure (WBS) is developed in providing the basis for deciding how to do work as well as creating the project schedule. There are several phases that can be implemented to the Work Break Structure (WBS) process such as planning, executing, analysis and design, implementation and presentation phases. For the planning phase, the project activity is to prepare project timeline which is consists of three parts of planning such as identify tasks, determine the tasks dependencies and finalize timeline. For analysis and design part, the activities are such as prepare conceptual data modelling and database design. Next, for executing phase part, the projects activities involve are such as information gathering and facts finding, search for relevant journal and article and search for suitable tools and development method. Other than that, it also involve about preparation of preliminary report which is consists of background of study, identify problem, significant of the project, objective and scope of study, methodology/project work, conclusion, prepare abstract, finalize preliminary report and submit preliminary report. Besides the other one is implementation part which is involve about installation of development tools and develop prototype. Finally, the last phase is presentation phase. In this phase, the project's activities are such as prepare presentation material, revise and practice for presentation and submission interim report.

# CHAPTER 2
# LITERATURE SURVEY

# 2. LITERATURE SURVEY

### 2.1 Web-Based Medical Appointment Systems

**Author Name** **:** Gunther Eysenbach

**Year of Publish** **:** 2017

Health care is changing with a new emphasis on patient-centeredness. Fundamental to this transformation is the increasing recognition of patients' role in health care delivery and design. Medical appointment scheduling, as the starting point of most non-urgent health care services, is undergoing major developments to support active involvement of patients. By using the Internet as a medium, patients are given more freedom in decision making about their preferences for the appointments and have improved access. The purpose of this study was to identify the benefits and barriers to implement Web-based medical scheduling discussed in the literature as well as the unmet needs under the current health care environment.

### 2.2 Application of Intelligent Agents in Hospital Appointment Scheduling System

**Author Name** **:** Arthur Hylton III and Suresh Sankaranarayanan

**Year of Publish** **:** 2012

Normally when we want to make an appointment with the hospital staff, it becomes really tedious and time consuming. Over the past considerable amount of work have been done by using software Agents in areas like m-commerce, e-commerce, telemedicine etc. Agent based systems have also been developed for the hospital service, for searching and fixing appointment over mobile phones which gives a direct reply when the appointment is made or the next available date(s) or cancelled. However, no facility like priority appointment of patients has been developed. Also the appointment does not take into consideration emergency situations like Accidents and so on and the scheduling reported is only for general patient appointment only. Taking these important aspects into consideration, we here have developed an intelligent agent based system towards negotiating and collaborating with the agents of doctors and the hospital for the appropriate appointment time for the patient which would take the above factors into consideration. In addition the meetings of the junior staff like the duty doctor and nurse with the chief doctor regarding patients would also carried out again while taking into consideration the medical condition of the patient admitted and so on.

These agents developed would function based on fuzzy preference rules, to make a proper decision regarding making an appointment for patient and other hospital staff , which is very unique and first of its kind. The system validated uses ANDROID 2.2 and JADE-LEAP, for providing a robust, user friendly solution for the patient and doctor

### 2.3 Enhanced Security of User Authentication on Doctor E-Appointment System

**Author Name** **:** Shelar Pooja, Hande Nilima, Dhamak Prajakta, Hingane Nisha

**Year of Publish** **:** 2018

Introducing e-services have shown that e-commerce site is able to advertise an impactful method for individuals to do booking/reservation. As far as the topic is, concerned, internet-booking methods could be created for bus stations, airfields, hotels, cinemas along with other clinics, which take part in reservation. However, in this particular paper, we proposed an online appointment process for a healthcare environment. An internet scheduling process enables people to securely and conveniently book their booking online. When compared to traditional queuing, the web-based appointment system has the potential to significantly improve patient satisfaction with registration while also reducing total waiting time. The existing research is based on a single layer authentication system that posed certain drawbacks, which also include poorly executed and inadequate time schedules with patient staff. This proposed technique solved existing methods and improved user authentication within a healthcare system. Our proposed method provides an effective and secure outpatient appointment queuing model for appropriate appointment scheduling, reducing patient wait times, doctors' idle time, and overtime, while also increasing outpatient satisfaction.

### 2.4 Smart Appointment Reservation System

**Author Name** **:** S. Sri Gowthem, K.P. Kaliyamurthie

**Year of Publish** **:** 2015

The smart appointment reservation system is an electronic paper less application designed with high flexibility and ease of usage for patients to book their appointment within the scheduled appointment slots according to their preference. This system serves in managing appointments and provides patient to cancel or reschedule appointment by integrating distributed clinical systems into a set of consistent and convenient services accessible via a web browser. The administrator checks the patient’s requests, manages the

appointment schedule, and maintains the patient's information. The patients will receive the scheduled updates regarding confirmation of appointments, delay in appointment schedules and unavailability of doctor .This smart appointment reservation system gives patient a chance to provide feedback about the system to enhance the services. The design of the proposed system provides easy way for the patient to reserve their appointment with their preferences.

### 2.5 Student-Teacher Online Booking Appointment System in Academic Institutions

**Author Name** **:** Bashir Omolaran Bello

**Year of Publish** **:** 2016

Web-based booking appointment systems are prevalent currently either online or using traditional queuing systems. Several businesses like hospitals use different Web-based appointment systems for their patients who make appointments process more efficient, thereby minimizing patient's waiting time and maximizing the total number of patients served. This study presents a web based appointment booking system through web or mobile devices that assists both students and lecturers to be acquainted with the time of appointment wherever they are. The system allows students and lecturers to simply gain access to the system by connecting to the Internet. It also enables students to drop any message which consists of the purpose and time of the appointment. The system was developed using Hypertext Markup Language (HTML5), Hypertext Pre-processor (PHP) as scripting language, Bootstrap framework and My Structured Query Language (MySQL) as database. This will enable the web application to be robust, cheap and capable of operating on various platforms. The system does not only fully automated, and perform excellently well, but also user-friendly, time effective and efficient.

### 2.6 Digital Table Booking and Food Ordering System Using Android Application

**Author Name** **:** Dhore B.,Surabhi Thakar1, Prajakta Kulkarni

**Year of Publish** **:** 2014

With rapid increase in the use of mobile phones, the desire for people to access mobile internet to get information and services from anywhere and everywhere has increased. There is an increase in number of restaurants and restaurant-goers which necessitates

enhancement of the hospitality industry. This research work aims to design and implement a remote food ordering system, through which one can order food before visiting a restaurant, book table, and also make payment. Moreover, two or more customers can place orders for the same table from remote locations. This application consists of three applications within itself. First is for the customer who can book tables and place orders. Second is for the kitchen unit in a restaurant, which enables the staff to view current orders. Third is for the manager of that restaurant in order to keep track of all the transactions. We have made use of a recommendation engine that suggests menu to a customer while placing order. We have also made use of a compression algorithm that compresses the size of images used throughout the application at various stages. This system increases quality and speed of service. It also increases the popularity of restaurants among potential customers. Implementing this system gives a cost-efficient opportunity to give customers a personalized service experience where they are in control of choosing what they want, when they want it – from dining to ordering to payment. We have chosen Android platform because it is most widely used today and is very economical.

### 2.7 Dynamic Scheduling of Outpatient Appointments Under Patient No-Shows and Cancellation

**Author Name** : Nan Liu, Serhan Ziya, Vidyadhar G. Kulkarni

**Year of Publish** : 2010

This paper develops a framework and proposes heuristic dynamic policies for scheduling patient appointments, taking into account the fact that patients may cancel or not show up for their appointments. In a simulation study that considers a model clinic, which is created using data obtained from an actual clinic, we find that the heuristics proposed outperform all the other benchmark policies, particularly when the patient load is high compared with the regular capacity. Supporting earlier findings in the literature, we find that the open access policy, a recently proposed popular scheduling paradigm that calls for "meeting today's demand today," can be a reasonable choice when the patient load is relatively low.

### 2.8 Mr. Doc: A Doctor Appointment Application System

**Author Name** : Shafaq Malik, Nargis Bibi, Sehrish Khan, Razia Sultana

**Year of Publish** : 2017

Life is becoming too busy to get medical appointments in person and to maintain a proper health care. The main idea of this work is to provide ease and comfort to patients while taking appointment from doctors and it also resolves the problems that the patients has to face while making an appointment. The android application Mr.Doc acts as a client whereas the database containing the doctor's details, patient's details and appointment details is maintained by a website that acts as a server. Keywords: App.

### 2.9 NFC Enabled Intelligent Hospital Appointment and Medication Scheduling

**Author Name** **:** Suresh Sankarananrayanan ; Swabik Musa Abdallah Wani

**Year of Publish** **:** 2014

Patient Appointment and medication Scheduling is necessary to manage and keep efficient tracking of day to day functionalities in health sector. It may be mentioned that a well-designed appointment Scheduling System can help to deliver timely and convenient access to medical services and enhance patient satisfaction and physician efficiency. Normally, we see patients coming to the hospitals and health centers and filling out registration forms and wait for the response for an agreed date. Some research has been done in the past towards developing online and mobile enabled appointment system. Some of these include prioritization also towards scheduling appointment. But still there exists the area of waiting time and also delay in patient being served to be explored. So with that as basis a Near Field Communication (NFC) based appointment system was developed which allows patient towards tapping NFC appointment card at appointment kiosk in hospital/clinic for making appointment. The system does possess prioritized scheduling for appointments and the medicine collection made by NFC card which was purely dependent on nurse rather being automated by software. The NFC based system puts a lot burden towards scheduling of patients based on priority by the nurse who obviously put lot of room for the waiting time and the consequent delay for patient as in the previous system. To obviate these problems we now have developed an intelligent NFC based appointment system towards prioritized appointment scheduling based on age and profile of the patient. In addition the system also enables automatic calling of patient based on priority for being served by the concerned nurse. Lastly system possesses timing constraints towards making/canceling appointments. The implementation has been carried out using Php and Mysql.

**2.10 The Dentist Online Reservation System Design and Implementation Web Based Application and Database Management System Project**

**Author Name** **:** Chutisant Kerdvibulvech , Nwe ni win

**Year of Publish** **:** 2012

Most of business sectors today are using network services and offering Online web services in order to create more benefits for both their stakeholders and themselves, including the way of how people make booking. This project is about to implement a database system which the transactions can be done in web base application. The system helps to save the time and effort of the users in safe and convenient ways. It enables patients to book and check their appointment schedule. The system also helps the administrator to maintain the database online easily. It enables the administrator to check the patient's requests, manage the appointment schedule, and manage the patient's information. It offers an opportunity for patients to submit their personal comments to the dental clinic to give better services. The design for the proposed system can be obtained easy way to access the enquire information about the dentist appointment.

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# CHAPTER 3
# SYSTEM ANALYSIS

# 3. SYSTEM ANALYSIS

## 3.1 EXISTING SYSTEM

Currently, the process of managing the sports club is file based and manual. These obsolete management system slows down functionality of the club. For example, a new user wants to enrol in a training batch he/she has to visit the club and fill up the registration form. The form then passes through a hierarchy of club members before approval. It takes time as well as effort form a user's perspective. This is just a single case. Same problem persists in all the major operation of the club.

This application can be used by the players to book the available clubs according to their need. This application not only helps the players but also the club owners who want to expand their field vision through online medium. This project provides a simple and beautiful interface for the admin as well as to the Players, or users. Just admin needs to add their clubs and can view the booking History. All the information will be stored in the database and that will help to maintain all the information of Players or users.

## 3.2 DISADVANTAGES OF EXISTING SYSTEM

- Users are unable to find the nearby players to connect with.
- Unable to find sports clubs or teams around them.

## 3.3 PROPOSED SYSTEM

The proposed Sports club management system is fully automated and requires just one person from the club to maintain the functionalities of the club. The user can register for new membership, book ground for specific days and register for training batches. The admin has to approve every membership and ground booking request as well as request to join a training batch. No need of clumsy paper-work. No need to be physically present to book the ground. No manual processing of requests.

## 3.4 ADVANTAGES OF PROPOSED SYSTEM

- Users can find other players of their desired sports choice.
- They can also host games or events of their interest.
- Users can find the sports clubs or teams around them.

## 3.5 FEASIBILITY STUDY

User or players find difficulties in connecting with other players in a new environment Today's young children average seven hours daily in front of electronics, such as television, tablets, laptops and phones - and kids are swapping active, outdoor play for a more sedentary lifestyle, causing severe consequences for their health and overall well-being. One of the reasons for this is lack of friends to play with. There are apps only which includes video games and there are no apps which has the technology that unifies people for outdoor through smart phones. Thereby, we are introducing a new technology through this application. This app will allow users to easily find partners to play various outdoor games like football, cricket, tennis etc.

## 3.6 HARDWARE ENVIRONMENT

- Android OS : 7.0 and Above
- RAM : 3GB and Above
- Internet Speed : 2Mbps and Above

## 3.7 SOFTWARE ENVIRONMENT

- Operating System : Windows 10 (64 bit)
- Software : Flutter
- Database : Firebase

## 3.8 TECHNOLOGIES USED

- Flutter
- Firebase

### 3.8.1 Flutter

Flutter is a mobile application development framework created by Google, which has been gaining popularity among developers and companies worldwide in recent years. It offers a wide range of features and benefits that make it an excellent choice for building high-quality, visually appealing, and fast mobile applications for both Android and iOS platforms. One of the key benefits of Flutter is its single codebase, which can be used to build apps for both platforms. This means that developers do not have to create two separate codes for Android and iOS, reducing the development time and cost significantly. Furthermore, Flutter provides a rich set of customizable widgets and tools, which can be used to create stunning and responsive user interfaces, making it an ideal choice for building visually appealing applications. Another significant advantage of Flutter is its fast development cycle. Flutter's hot reload feature allows developers to make changes to the code and see the results immediately, without having to restart the application. This makes the development process faster, more efficient, and less time-consuming, allowing developers to focus on building high-quality applications. Flutter also provides excellent performance and stability, thanks to its use of a high-performance rendering engine, making it an ideal choice for building high-performance applications. Additionally, it has a large and active community, providing developers with access to a wealth of resources, tools, and support. In conclusion, Flutter is an excellent mobile application development framework that offers a wide range of features and benefits, making it an ideal choice for building high-quality, visually appealing, and fast mobile applications for both Android and iOS platforms. Its single codebase, customizable widgets, and tools, fast development cycle, and excellent performance and stability make it a popular choice among developers and companies worldwide. With the continued growth of the mobile app industry, Flutter is likely to become even more popular in the coming years.

### 3.8.2 Firebase

Firebase is a mobile and web application development platform created by Google. It provides a suite of tools and services that help developers build high-quality, scalable, and secure applications quickly and efficiently. Firebase offers a wide range of features that make it an ideal choice for developers and companies of all sizes. One of the key benefits of Firebase is its real-time database, which allows developers to store and synchronize data in real-time across multiple clients. This makes it easy to build applications that require real-time updates, such as messaging apps, social media platforms, and online collaboration tools. Firebase also offers a wide range of authentication and security features, making it easy for developers to implement secure authentication and authorization processes for their applications. This includes support for various authentication providers, such as Google, Facebook, and Twitter, as well as custom authentication methods. Another significant advantage of Firebase is its hosting and storage services. With Firebase, developers can easily host their applications and files in the cloud, reducing the cost and complexity of managing their own servers. Firebase also provides a range of tools and features to optimize application performance, such as caching and content delivery networks (CDNs). Firebase also offers a range of other features, such as analytics, remote configuration, and push notifications, making it an all-in-one platform for building high-quality mobile and web applications. Moreover, Firebase integrates seamlessly with other Google services, such as Google Cloud Platform, making it easy to build applications that leverage the power of Google's ecosystem. In conclusion, Firebase is an excellent application development platform that offers a wide range of features and benefits, making it an ideal choice for developers and companies of all sizes. Its real-time database, authentication and security features, hosting and storage services, and other tools and features make it easy to build high-quality, scalable, and secure mobile and web applications. With its seamless integration with other Google services, Firebase is likely to become even more popular in the coming years as the demand for high-quality, scalable applications continues to grow.

# CHAPTER 4
# SYSTEM DESIGN

# 4. SYSTEM DESIGN

## 4.1 UML DIAGRAMS

UML is a standard language for specifying, visualizing, constructing, and documenting the artifacts of software systems. UML was created by the Object Management Group (OMG) and UML 1.0 specification draft was proposed to the OMG in January 1997.OMG is continuously making efforts to create a truly industry standard.UML stands for Unified Modeling Language.UML is different from the other common programming languages such as C++, Java, COBOL, etc. UML is a pictorial language used to make software blueprints.UML can be described as a general purpose visual modeling language to visualize, specify, construct, and document software system.Although UML is generally used to model software systems, it is not limited within this boundary. It is also used to model non-software systems as well. For example, the process flow in a manufacturing unit, etc.UML is not a programming language but tools can be used to generate code in various languages using UML diagrams. UML has a direct relation with object oriented analysis and design. After some standardization, UML has become an OMG standard.

### 4.1.1 Use Case Diagrams

A use case diagram is a type of Unified Modeling Language (UML) diagram that represents the interactions between a system and its actors, and the various use cases that the system supports. It is a visual representation of the functional requirements of the system and the actors that interact with it. Use case diagrams typically include the following elements:

- Actors: Actors are external entities that interact with the system. They can be human users, other systems, or devices.
- Use Cases: Use cases are the specific functions or tasks that the system can perform. Each use case represents a specific interaction between an actor and the system.
- Relationships: Relationships are used to indicate how the actors and use cases are related to each other. The two main relationships in a use case diagram are "uses" and "extends". "Uses" relationship indicates that an actor uses a specific use case, while "extends" relationship indicates that a use case extends or adds functionality to another use case.

- System Boundary: The system boundary is a box that contains all the actors and use cases in the system. It represents the physical or logical boundary of the system being modeled.
- Use case diagrams are useful for identifying the functional requirements of a system, and for communicating these requirements to stakeholders. They can be used in the requirements gathering phase of software development, as well as in the design and testing phases.

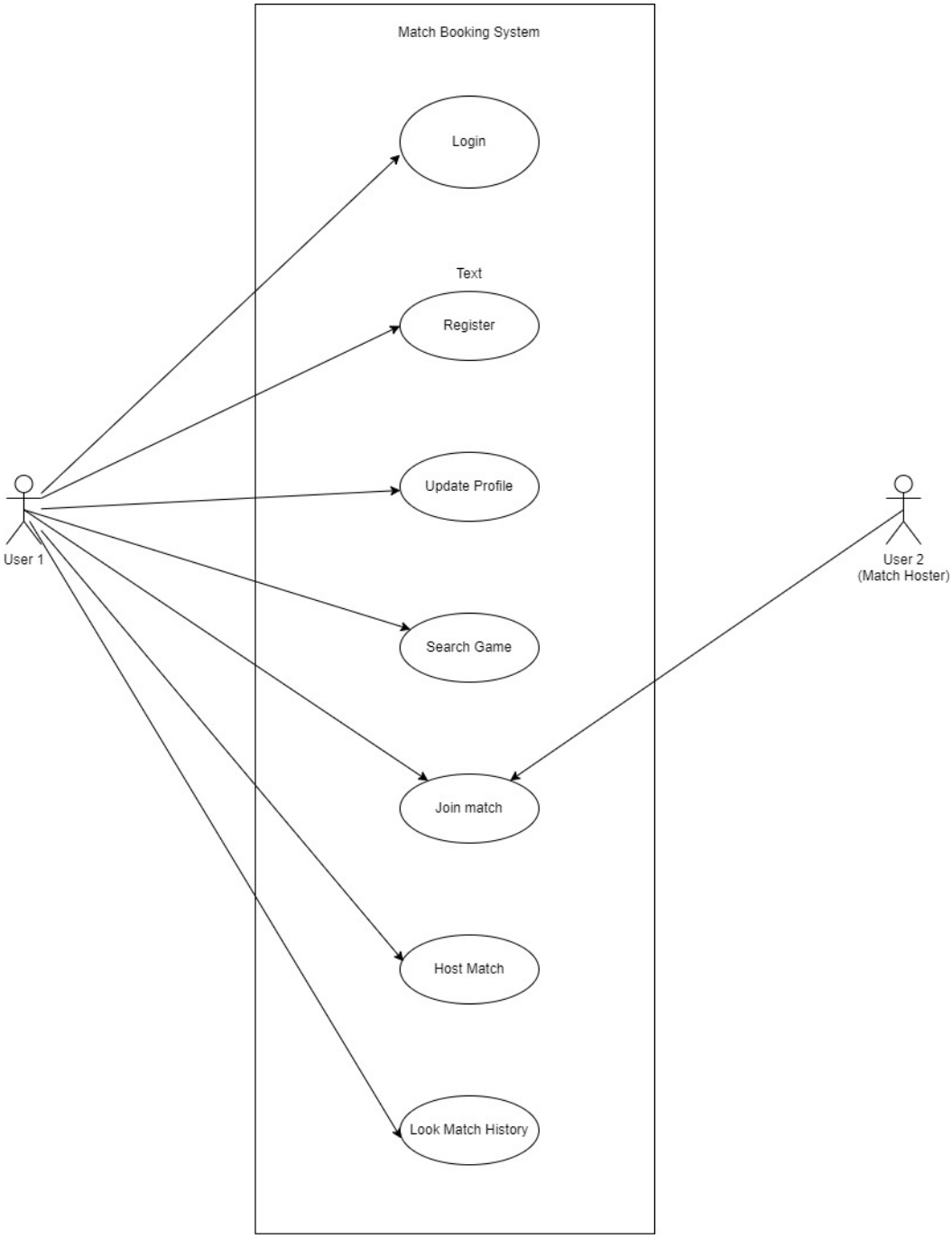



Fig 4.1.1 Use Case Diagram

### 4.1.2 Class Diagram

The class diagram depicts a static view of an application. It represents the types of objects residing in the system and the relationships between them. A class consists of its objects, and also it may inherit from other classes. A class diagram is used to visualize, describe, document various different aspects of the system, and also construct executable software code.It shows the attributes, classes, functions, and relationships to give an overview of the software system. It constitutes class names, attributes, and functions in a separate compartment that helps in software development. Since it is a collection of classes, interfaces, associations, collaborations, and constraints, it is termed as a structural diagram.The main purpose of class diagrams is to build a static view of an application. It is the only diagram that is widely used for construction, and it can be mapped with object-oriented languages.

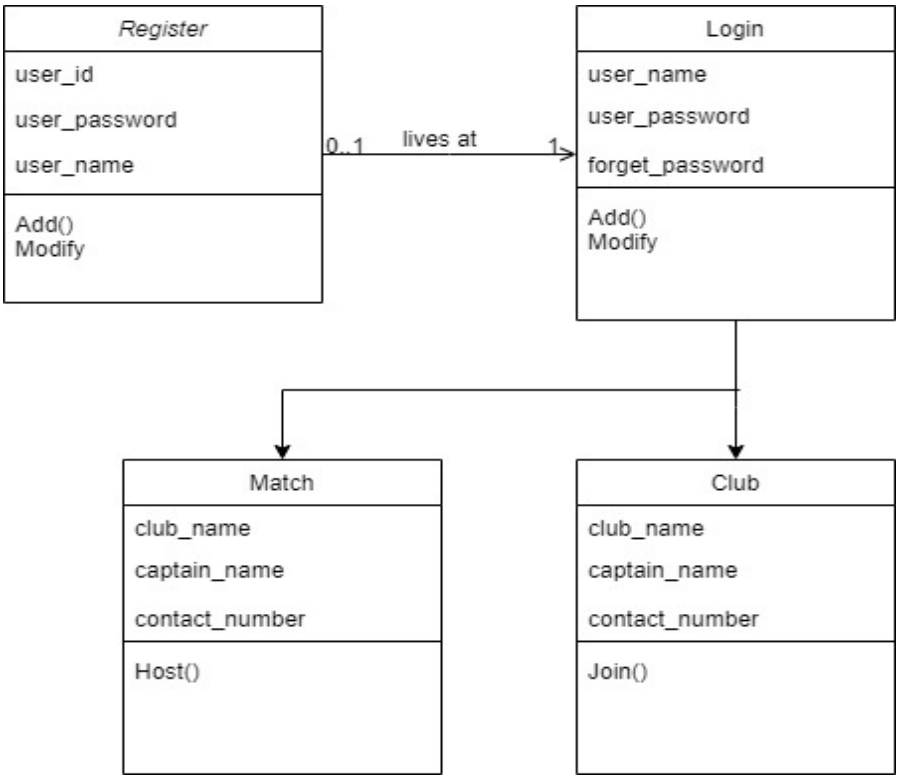



Fig 4.1.2 Class Diagram

### 4.1.3 Activity Diagram

Activity diagram is a graphical representation of workflows of stepwise activities and actions with support for choice, iteration and concurrency. An activity diagram shows the overall flow of control. We use Activity Diagrams to illustrate the flow of control in a system and refer to the steps involved in the execution of a use case. We model sequential and concurrent activities using activity diagrams. So, we basically depict workflows visually using an activity diagram. An activity diagram focuses on condition of flow and the sequence in which it happens. We describe or depict what causes a particular event using an activity diagram.

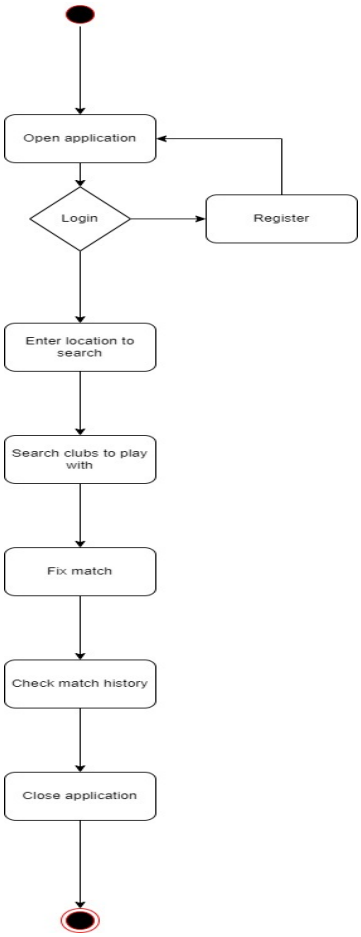



Fig 4.1.3 Activity Diagram

## 4.2 DATA DICTIONARY DIAGRAM

A data dictionary provides terminology for all relevant data to be used by the developers in a project. It helps in performing analysis based on the impact of some data on the processing activities. It also helps the developers to determine the definition of different data structures in terms of their basic elements while designing activities. In the case of large systems, data dictionaries may become extremely voluminous and difficult to handle. In such case, CASE (Computer-Aided Software Engineering) tools are used, that capture all the data items appearing in the DFD and automatically generate the data dictionary.

| Entity: User | | |
|---|---|---|
| Attribute Name | Data Type | Description |
| user_id | String | Unique user identifier |
| About me | String | User's detail |
| Case Search | array of stings | |
| Nickname | String | User's nickname |
| Photo url | array of string | |
| Recent chat | array of string | Recent chat of user |

Table 4.4.1 User Entity Table

| Entity: Turf | | |
|---|---|---|
| Attribute Name | Data Type | Description |
| Id | String | Unique turf identifier |
| Name | String | Turf name |
| Location | String | Turf location |
| Price | Number | Price of using turf |
| Distance | Number | Distance from user |
| Rating | Number | Rating of the turf |
| Date | time stamp | Date of booking the turf |

Table 4.4.2 Turf Entity Table

| Doc type: Booking | | |
|---|---|---|
| Attribute Name | Data Type | Description |
| Slots | Array | Number of slots available |
| Total price | Number | Total price of turf |
| Turf id | Number | Unique turf identification |

Table 4.4.3 Booking Document table

## 4.3 WIRE FRAME DIAGRAM

A mobile app wireframe is a two-dimensional sketch that serves as a visual guide and illustrates how an application will work. A wireframe doesn't represent the full design of the app, but only the key screens and interface elements. The app owner and development team can use a wireframe to agree and clarify the entire project's direction and scope.

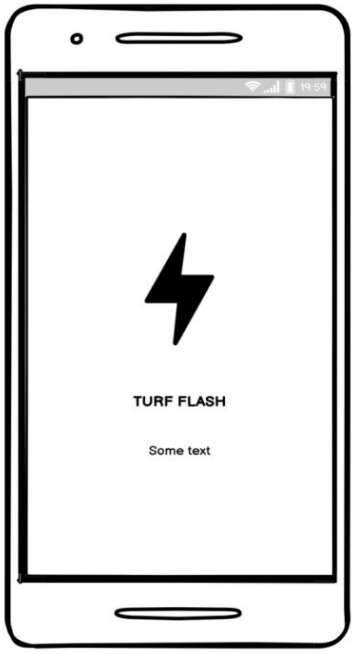



Fig 4.3.1 Loading Screen


Fig-4.3.2 Overlay Screen


Fig-4.3.3 Overlay Screen 2

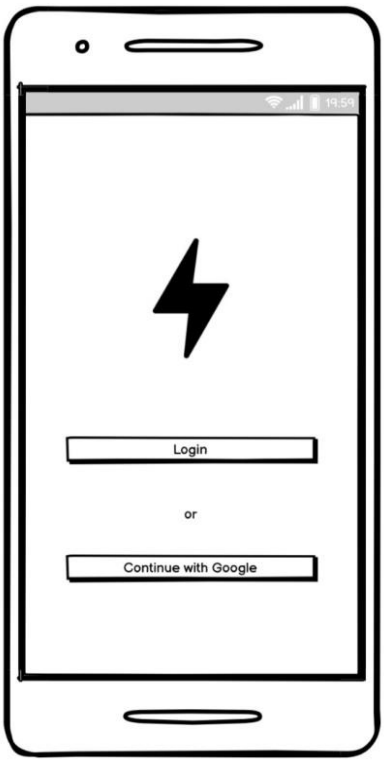



Fig-4.3.4 Welcome Screen


Fig-4.3.5 Login Screen

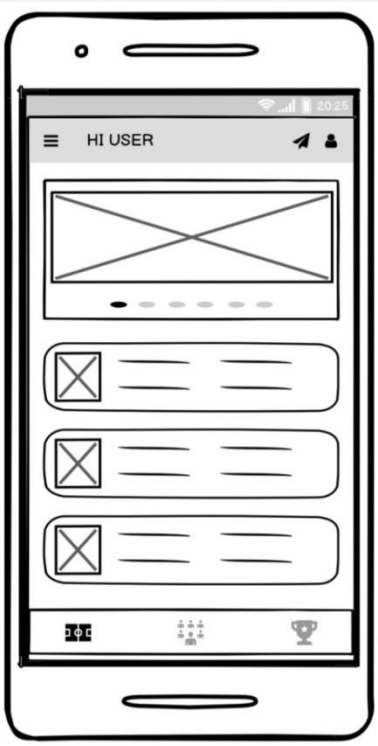



Fig-4.3.6 Home Page

## 4.4 UI DESIGN

User Interface (UI) design is the process of creating visual interfaces through which users interact with digital products or services. UI design plays a crucial role in determining how easily and efficiently users can use a digital product or service, and how satisfied they are with their experience. In this essay, we will discuss the key elements of UI design and their importance in creating effective user interfaces. One of the most important elements of UI design is usability. A UI should be easy to use, intuitive, and efficient. A good UI design should take into account the user's cognitive abilities, such as memory, attention, and perception. This means that the design should be simple, with clear navigation, and intuitive interactions. A user should be able to understand what the product is all about and how to use it without any difficulty. Another important element of UI design is aesthetics. Aesthetic design is the way a UI looks and feels. Aesthetic design should be pleasing to the eye, with colors and typography that are easy on the eyes. A good UI design should use contrasting colors to guide the user's attention to important information. The overall design should also be consistent throughout the product or service. UI design also includes responsiveness. The

UI should be designed in such a way that it responds quickly to user input. It should be able to load quickly and display information in real-time. It is important to note that responsiveness is not just about speed, but also about providing feedback to the user in a timely manner. This can be in the form of animations or status indicators that show the user what is happening in the background. The design of a UI should also take into account the context in which it will be used. For example, a UI designed for mobile devices should be optimized for touch input and smaller screens. It should also take into account the fact that users may be using the product or service on-the-go, which means that the design should be simple and easy to use. Similarly, a UI designed for a desktop environment should be optimized for keyboard and mouse input, and take advantage of the larger screen real estate. In addition to these elements, a good UI design should also be accessible. This means that the design should be usable by people with disabilities such as visual or hearing impairments. The design should be compatible with assistive technologies such as screen readers, and should use text alternatives for non-text elements such as images and videos.


Fig-4.4.1 Screen 1


Fig-4.4.2 Screen 2


Fig-4.4.3 Screen 3


Fig-4.4.4 Screen 4


Fig-4.4.5 Screen 5


Fig-4.4.6 Screen 6

# CHAPTER 5
# SYSTEM ARCHITECTURE

# 5. SYSTEM ARCHITECTURE

## 5.1 ARCHITECTURE DIAGRAM

An architecture diagram is a graphical representation of a set of concepts that are part of an architecture, including their principles, elements and components. It is also defined as a visual representation that maps out the physical implementation for components of a software system. It shows the general structure of the software system and the associations, limitations, and boundaries between each element.

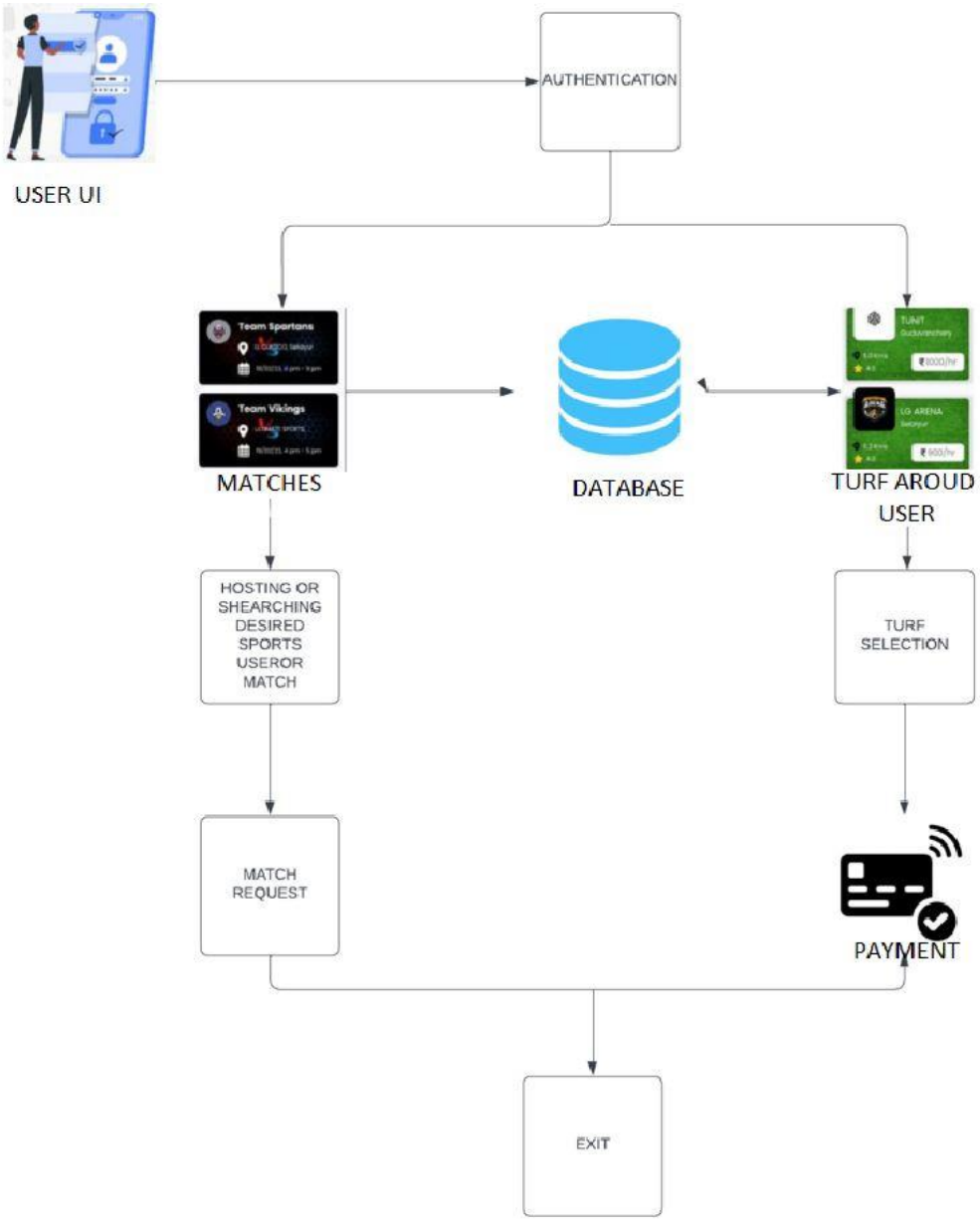



Fig 5.1.1 Architecture Diagram

The components in system architecture of the fig 5.1 are:

- User Interface (UI): This is the front-end component of the application that allows users to interact with the application through various screens and forms.
- User Authentication and Authorization: This component is responsible for managing user registration, login, and access control to the application's features and data.
- Turf Booking: This component is responsible for managing the availability of turfs and their reservations. It also tracks the bookings made by users and sends notifications to users and admins regarding upcoming reservations.
- Match Selection: This is used for selecting matches or players of choice
- Payment Gateway: This component facilitates the payment process for users. It should integrate with popular payment gateways and provide a secure way to handle transactions.

# CHAPTER 6

# SYSTEM IMPLEMENTATION

# 6. SYSTEM IMPLEMENTATION

## 6.1 MODULE DESIGN SPECIFICATION

This system is made up of five main parts:

- **Login**
- **Profile**
- **Register**
- **Book**
- **Host**

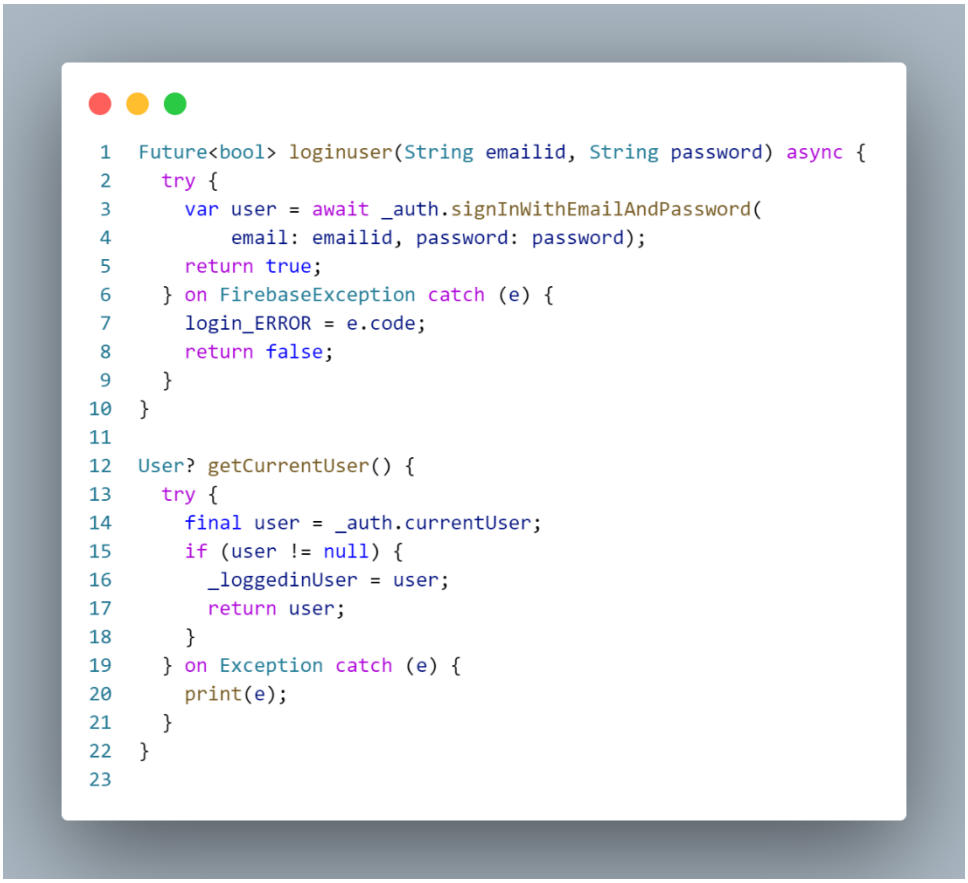
### 6.1.1 Login

An app login module typically consists of various components to facilitate secure and convenient user access. These elements include:

- Username/Email Address: A text field where users can enter their username or email address linked to their account.
- Password: A password field for users to enter their password. The password field should be masked with asterisks or dots to ensure data privacy.
- Remember Me: A checkbox option that users can choose if they want the app to remember their login details for future sessions.
- Login Button: A clickable button that users can press to submit their login credentials and gain entry to the app.
- Forgot Password: A link or button that users can click to reset their password in case they forget it.
- Social Media Login Options: Extra options that enable users to sign in using their social media credentials such as Facebook, Google, or Twitter.
- Signup: A button or link that new users can click to create a new account on the app.
- Error Messages: Clear and concise messages that appear when users enter incorrect login credentials or experience issues during the login process.
- Two-Factor Authentication: An optional security measure that requires users to enter a verification code in addition to their username and password.

- Captcha: An image or question that users must answer correctly to prove that they are not a robot. This is another optional security feature that can help prevent unauthorized access.
- Privacy Policy: A link to the app's privacy policy, which explains how the app collects, stores, and uses user data.
- Terms of Service: A link to the app's terms of service, which outlines the rules and guidelines that users must follow when using the app.
- Login History: A feature that allows users to view their login history, including the date, time, and device used to access the app. This can help users identify any suspicious activity on their account.

Overall, it is crucial to design the login module to provide users with a secure, easy-to-use, and seamless login experience.



```dart
Future<bool> loginuser(String emailid, String password) async {
  try {
    var user = await _auth.signInWithEmailAndPassword(
        email: emailid, password: password);
    return true;
  } on FirebaseException catch (e) {
    login_ERROR = e.code;
    return false;
  }
}

User? getCurrentUser() {
  try {
    final user = _auth.currentUser;
    if (user != null) {
      _loggedinUser = user;
      return user;
    }
  } on Exception catch (e) {
    print(e);
  }
}
```

Fig 6.1.1 Login User Function

The Fig 6.1.1 contains the code snippet for sample code of Login using Email and Password using FireBase Authentication.

In our application we use Google's FireBase Authentication service for Login and Sign up and Authentication purposes.

### 6.1.2 Register

A register or signup page is where users can create a new account to access the app. The following are common components of a register or signup page:

- Full Name: A text field where users can enter their first and last name.
- Email Address: A text field where users can enter their email address. This will be used as their username for logging in.
- Password: A password field where users can create a password for their account. The password field should be masked with asterisks or dots for security purposes.
- Confirm Password: A password field where users need to re-enter their password to ensure they have entered it correctly.
- Gender: A dropdown or radio button where users can select their gender.
- Date of Birth: A date picker where users can enter their date of birth.
- Phone Number: A text field where users can enter their phone number.
- Country/Region: A dropdown where users can select their country or region.
- Postal Code: A text field where users can enter their postal code or zip code.
- Captcha: An image or question that users must answer correctly to prove that they are not a robot. This is a security feature that can help prevent unauthorized access.
- Terms of Service: A checkbox or link that users need to agree to before they can create an account. The terms of service outline the rules and guidelines that users must follow when using the app.
- Privacy Policy: A checkbox or link where users can read and agree to the app's privacy policy, which explains how the app collects, stores, and uses user data.
- Register Button: A button that users can click to submit their registration details and create their account.
- Two-Factor Authentication: An optional security measure that requires users to enter a verification code in addition to their username and password.
- Captcha: An image or question that users must answer correctly to prove that they are not a robot. This is another optional security feature that can help prevent unauthorized access.

- Privacy Policy: A link to the app's privacy policy, which explains how the app collects, stores, and uses user data.
- Terms of Service: A link to the app's terms of service, which outlines the rules and guidelines that users must follow when using the app.
- Login History: A feature that allows users to view their login history, including the date, time, and device used to access the app. This can help users identify any suspicious activity on their account.

Overall, the register or signup page should be designed to be user-friendly, secure, and straightforward. The page should also provide users with clear instructions and feedback during the registration process to ensure a seamless and successful registration experience.

```
Future<bool> signup(String displayname, String emailid, String password) async {
  try {
    print(displayname);
    print(emailid);
    print(password);
    var newuser = await _auth.createUserWithEmailAndPassword(
        email: emailid, password: password);
    print(newuser);
    User? current_user = getCurrentUser();
    current_user!.updateDisplayName(displayname);
    current_user.updatePhotoURL('images/logo.png');
    return true;
  } on FirebaseException catch (e) {
    print(e.code);
    register_ERROR = e.code;
    return false;
  }
}
```

Fig 6.1.2 Register User Function

The Fig 6.1.2 contains the code snippet for sample code of Sign up using Email and Password credentials using FireBase Authentication. In our application we use Google’s FireBase Authentication service for Login and Sign up and Authentication purposes.

### 6.1.3 Profile

A user profile module is a key component of an application that allows users to view and manage their personal information, preferences, and settings. The following is an overview of what a user profile module might include:

- User Information: This section includes basic user information such as the user's name, email address, phone number, and profile picture. It may also include additional information such as the user's date of birth, gender, and location.
- Preferences: This section allows users to specify their preferences for the application such as their preferred language, time zone, theme, or notification settings. This section may also include options for customizing the user interface, font size, or display settings.
- Security: This section includes security-related options such as changing the user's password, enabling two-factor authentication, or setting up a security question and answer. It may also include options for managing third-party application access, such as revoking access for apps that the user no longer uses.
- Privacy: This section includes options for managing the user's privacy settings such as controlling what information is visible to other users, managing data sharing preferences, or opting out of targeted advertising.
- History: This section may include a log of the user's activity within the application, such as past transactions, searches, or interactions with other users.
- Feedback: This section allows users to provide feedback on the application, report issues or bugs, or suggest improvements. It may also include options for contacting customer support or accessing help resources.

Overall, a user profile module should provide a comprehensive overview of the module's features and functions, highlighting its ability to enhance the user experience and improve user engagement. It should also provide insights into user behavior and preferences, which can be valuable in guiding future development and updates to the application.

In our application we collect various customer details along with profile details including

- NAME
- PHONE NUMBER

- EMAIL ID
- PASSWORD
- ABOUT ME
- PROFILE PICTURE

### 6.1.4 Host

This module is one of major component of this project and this is module is where we implement functionalities of the app which is responsible for Hosting or Posting a match request on our app.

One must register in our application before using this module to prevent any irregularities. An user can click on HOST BUTTON to open HOST FORM where he/she can fill the respective details like date/time , location and etc.We user FireBase FireStore to store the details of each match request as it is cloud based it can be accessed from every where in the world. On successful match host the details customer entered regarding the match will be saved an document with respective fields and with unique id in the FireStore within the Matches Collection of database.

The various fields of the Host Documents are:

- CUSTOMER ID
- CUSTOMER NAME
- TEAM NAME
- LOCATION
- DATE
- TIME
- POSTED TIME

### 6.1.5 Book

This is module also one of the main functionality of this project. This module is where we implemented all the necessary steps to deploy the turf booking .Currently we have included only the turfs which are located in our neighbourhood but soon we will be able to expand to major places.

It is must for an customer to register himself in the application first before he/she can proceed to book his slots. We use FireStore to store the Data of local Turfs which can be fetched directly to the application through firestore default provided Apis. The Data of the Turfs are stored as separate document for each turf within the turfs collection.

The various fields of the Turfs Documents are:

- TURF NAME
- TURF ID
- LOCATION
- LOGO URL
- IMAGES URLS
- PRICE
- RATING

The various fields of the Bookings Documents are:

- TURF NAME
- TURF ID
- SLOTS
- DATE
- TOTAL PRICE
- BOOKING ID

# CHAPTER 7

# SYSTEM TESTING

# 7. SYSTEM TESTING

## 7.1 BLACK BOX TESTING

Black box testing is a software testing technique that focuses on testing the functionality of a software system without knowing the internal workings of the system. In this type of testing, the tester is not concerned with the code, architecture, or design of the system but instead focuses on the inputs and outputs of the system. The goal of black box testing is to determine whether the software system behaves correctly based on its specifications, requirements, and business logic. The tester typically creates test cases that simulate different scenarios and inputs to verify the expected results. Black box testing can be performed at different levels of software testing, including unit testing, integration testing, system testing, and acceptance testing. It can be automated or performed manually. The advantages of black box testing include the ability to test the software system from the end user's perspective, the ability to detect defects that may be missed in other types of testing, and the fact that it does not require knowledge of the internal workings of the system. The disadvantages of black box testing include the possibility of incomplete testing due to the limited knowledge of the system, and the fact that it may be difficult to determine the root cause of defects.

## 7.2 WHITE BOX TESTING

White box testing is a software testing technique that focuses on testing the internal workings of a software system. In this type of testing, the tester has access to the source code, architecture, and design of the system and uses this knowledge to create test cases that verify the correctness and quality of the system's implementation. The goal of white box testing is to ensure that the code is written correctly, follows best practices and coding standards, and meets the design specifications. The tester typically creates test cases that target specific areas of the code, such as loops, conditionals, and error handling, to ensure that all possible scenarios have been tested. White box testing can be performed at different levels of software testing, including unit testing, integration testing, and system testing. It can be automated or performed manually.

The advantages of white box testing include the ability to test the system thoroughly and ensure that all code paths have been exercised, the ability to detect defects that may be

missed in other types of testing, and the ability to optimize the code for performance and efficiency.

### 7.3 TEST CASES

**TEST REPORT:** 01

| TEST CASE ID | TEST CASE/ACTION TO BE PERFORMED | EXPECTED RESULT | ACTUAL RESULT | PASS/ FAIL |
|---|---|---|---|---|
| 1 | Open app | Display splash screen | Display splash screen | PASS |
| 2 | Signup using google | Successful user creation | Successful user creation | PASS |
| 3 | Signup manual | Successful user creation | Successful user creation | PASS |
| 4 | Signin using credentials | Open home page after signing | Open home page after signing | PASS |
| 5 | Book a turf | Successfully generate booking id | Successfully generate booking id | PASS |
| 6 | Host match | Display hosted match to other users | Display hosted match to other users | PASS |
| 7 | Chat with other users | Display the message sent and received | Display the message sent and received | PASS |
| 8 | Send image to others | Display the image in chat | Display the image in chat | PASS |
| 9 | Edit the user profile | Updates the changes made by user | Updates the changes made by user | PASS |

Table 7.3.1 Test Cases and Their Results

# CHAPTER 8
# CONCLUSION

# 8. CONCLUSION & FUTURE ENHANCEMENT

## 8.1 CONCLUSION

Online Sports Match Booking System this project Sends message reminders to managers and users whenever matches are booked, cancelled or rescheduled. And users can easily and securely authenticate themselves by linking their existing service by using a password. Nowadays many companies in Malaysia have start providing Information and Communication Technology (ICT) in their company. These technologies provide a new system in order to get services or products just by online system This system will be designed in such a way that users can access it only from their computer with an internet connection According to System Development Life Cycle (SDLC), each of the works can be separated into four fundamental phases: planning, analysis, design and implementation. In developing this system, the author need to know what the functions are is useful to parties, users and management. Testing stage is very important in doing a new system because to figure out the errors that was not noticed by the developer. For example, after completing the system, it should be tested on the real network server. The Sports club management system categorizes its visitors into different categories and presents them with the respective functionality as per their level of access. As a conclusion, the reliability, authentication and authorization and security are very important issues even if this system was fully implemented. Here users can see number one games and select which is preferred for them. The whole purpose of this project is to explicitly show how the internet and software applications can be utilized to improve the work activities today.

## 8.2 FUTURE ENCHANCEMENT

In future hopefully this system can be implemented via phone and SMS reservation. By having this system, it can reduce time constraint of browsing on the internet. The undertaking worked here is simply to guarantee that this item could be substantial in today genuine testing world. Here all the capacity are made and tried. Presently a-days the framework works for limited number of figure out how to function. In not so distant future it will be extend for various sorts of confirmation strategies with the goal that proficiency can be Prosperous.

Some of the additions that we feel are needed for it to happen are:

- Advancing the system to maintain other club activities.
- Making User Interface more User Friendly.

I also want to temper my application for the Future Work .I hope this work will help me in my future work. The aim of this project is to conduct each and every items. Such as every Members tidings, User & every event data . It will show every updated notice given by the Office & Club Influence.

# APPENDICES

# APPENDICES

## A.1 CODING

```
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';
import 'package:modal_progress_hud_nsn/modal_progress_hud_nsn.dart';
import 'package:turf_flash/constants.dart';
import 'package:turf_flash/screens/welcome.dart';
import 'package:turf_flash/widgets/roundedbutton.dart';
import 'package:turf_flash/services/authenticate.dart';
import 'home.dart';

class login extends StatefulWidget {
  static String id = "login";

  @override
  State<login> createState() => _loginState();
}

class _loginState extends State<login> {
  String? Email;
  String? pass;
  bool showSpinner = false;
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: ModalProgressHUD(
        inAsyncCall: showSpinner,
        child: SafeArea(
            child: SingleChildScrollView(
          reverse: true,
          child: Column(
```

```
mainAxisAlignment: MainAxisAlignment.center,
children: [
 Hero(
  tag: 'logo',
  child: Container(height: 200, child: Image.asset('images/logo.png')),
 ),
 SizedBox(
  height: 20,
 ),
 Text(
  "Email Address",
  style: Klogo.copyWith(fontSize: 30),
 ),
 Padding(
  padding: const EdgeInsets.all(10.0),
  child: TextFormField(
   onChanged: (value) {
    Email = value;
   },
   keyboardType: TextInputType.emailAddress,
   textAlign: TextAlign.center,
   decoration: kTextFieldDecoration.copyWith(
    hintText: "sample@gmail.com",
   ),
  ),
 ),
 SizedBox(
  height: 20,
 ),
 Text(
  "Password",
  style: Klogo.copyWith(fontSize: 30),
```

```
),
Padding(
  padding: const EdgeInsets.all(10.0),
  child: TextFormField(
    onChanged: (value) {
      pass = value;
    },
    obscureText: true,
    textAlign: TextAlign.center,
    decoration: kTextFieldDecoration.copyWith(
      hintText: "Password",
    ),
  ),
),
RoundedButton(
    title: 'Login',
    colour: Colors.blue,
    onPressed: () async {
      setState(() {
        showSpinner = true;
      });
      if (Email != null && pass != null) {
        bool t = await loginuser(Email!, pass!);
        setState(() {
          showSpinner = false;
        });
        if (t == true) {
          Navigator.pushReplacementNamed(context, home.id);
        } else {
          Email = pass = null;
          showCupertinoModalPopup<void>(
            context: context,
```

```
                builder: (BuildContext context) =>
                  CupertinoAlertDialog(
                 title: const Text('Alert'),
                 content: Text(login_ERROR!),
                 actions: <CupertinoDialogAction>[
                  CupertinoDialogAction(
                   isDestructiveAction: true,
                   onPressed: () {
                    Navigator.pop(context);
                   },
        child: const Text('Okay'),
)
}
```

## A.2 SAMPLE SCREENS

Below we have attached the screenshots from our application TURF FLASH.The Fig A.2.1 is the loading screen or called an Splash screen.The Fig A.2.2 is the screen where an user need to select option.


Fig A.2.1 Loading Page


Fig A.2.2 Registration Page

The Fig A.2.3 is the Login page of our application where user needs to enter his credentials to login into if he is an new user he can click on sign up or use sign in using google option. The Fig A.2.4 The above screenshots shows the screen from the application where list of all available matches is shown.

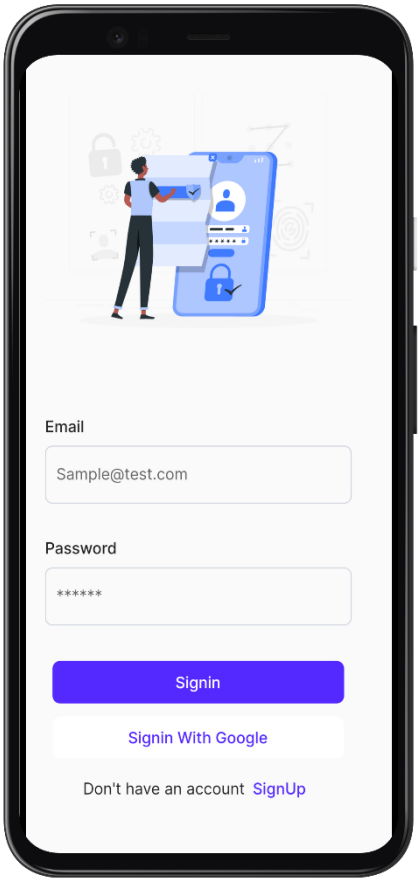



Fig A.2.3 Login Page

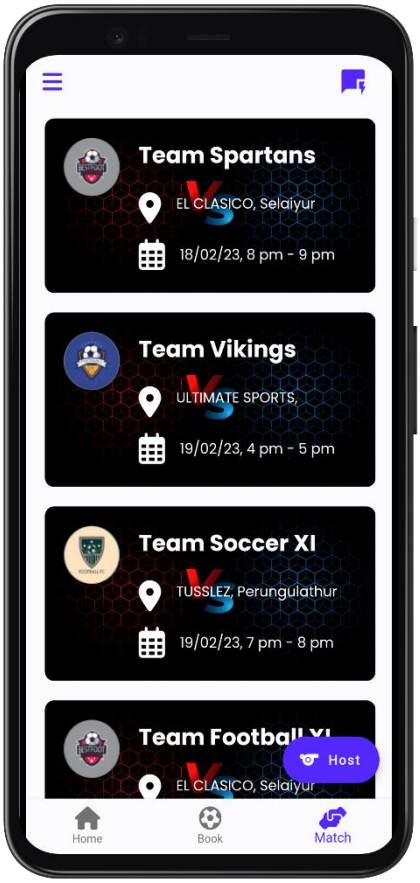



Fig A.2.4 Match Page

The Fig A.2.5 is the Home page of our application where we can display paid ads and tournaments advertisement here. The Fig A.2.6 The above screenshots shows the screen from the application where list of all available nearby turfs are shown.

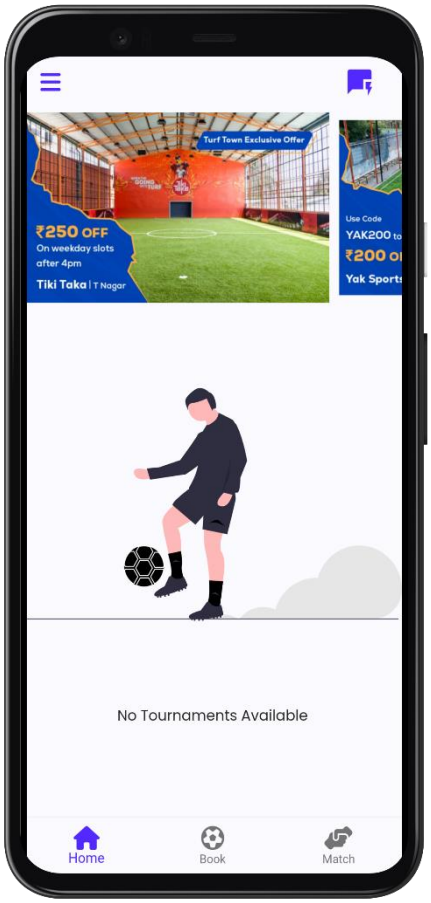



Fig A.2.5 Home Page

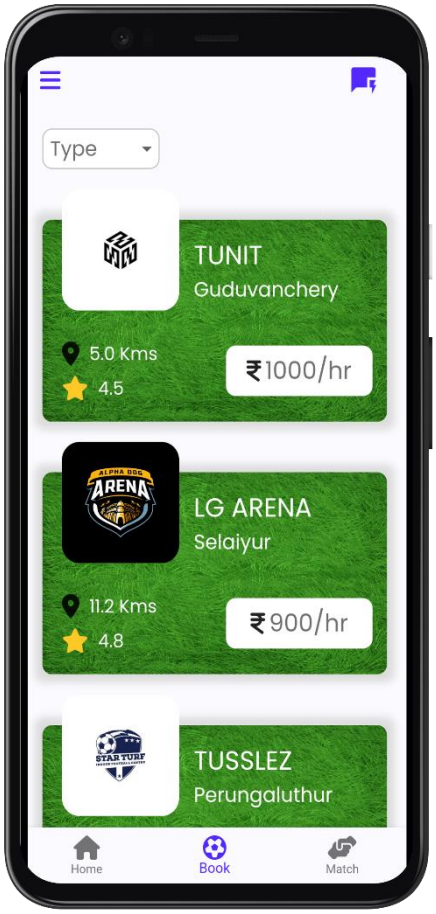



Fig A.2.6 Turf Page

The Fig A.2.7 and Fig. A.2.8 are screen which shows up when a user clicks on the turf and where he can check the facilities or turf and book an application.

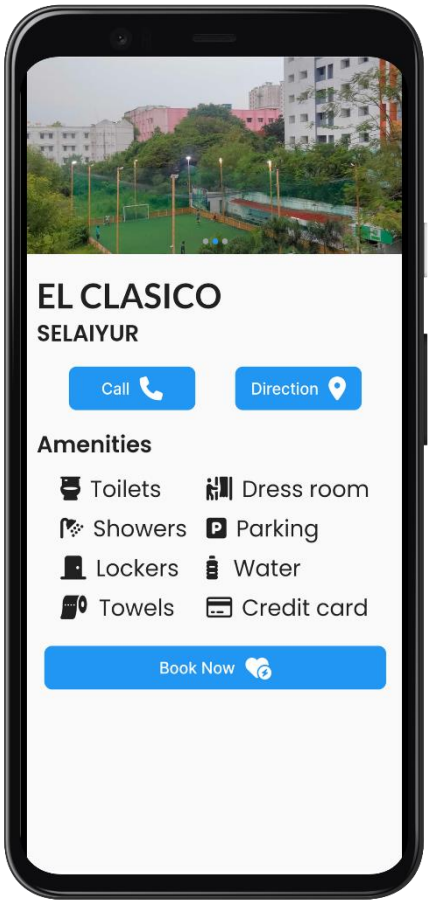



Fig A.2.7 Turf Detail Page

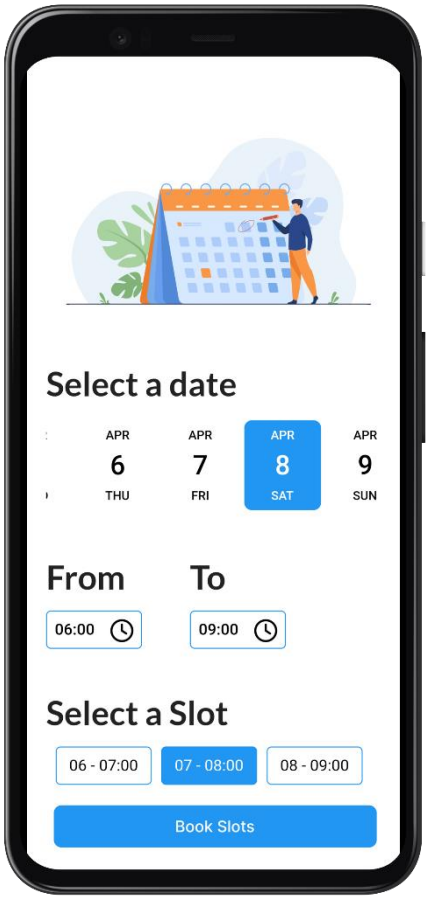



Fig A.2.8 Book Page

The Fig A.2.9 and Fig. A.2.10 are screen which shows up when a user finishes booking process and this screen is showed to ensure that the details are ryt and the last success page comes when payment are successful.

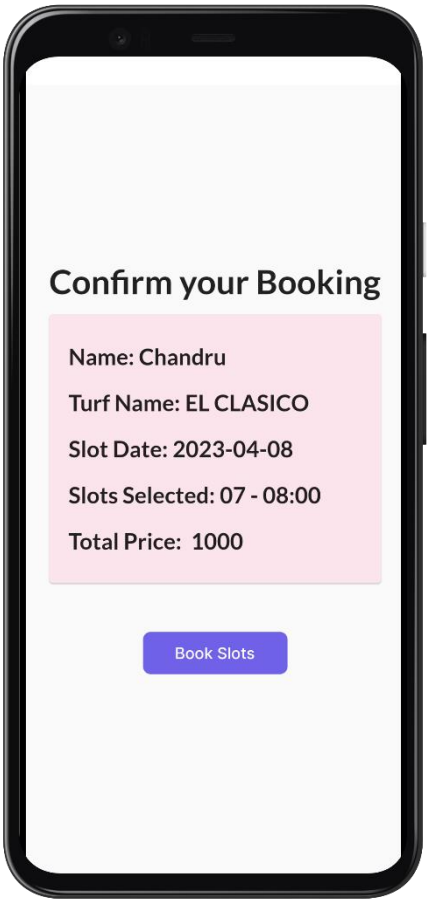



Fig A.2.9 Confirm Booking Page

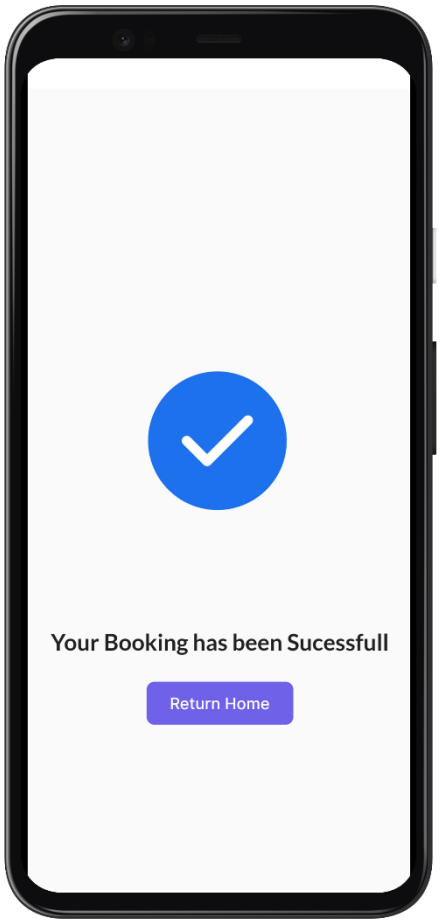



Fig A.2.10 Successful Book Page

The Fig A.2.11 This the chat home screen of our application where an user can chat with fellow user.

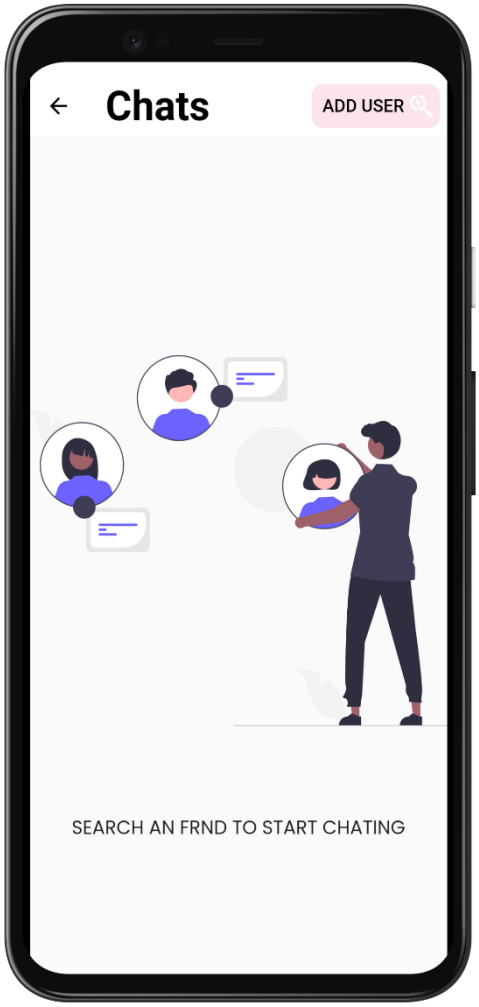



Fig A.2.11 Chats Page

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