

# POLO: The Player's Hub -An Innovative App based platform for improving collaboration among Sports Players

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**Abstract-** Lifestyle has been the subject of growing scientific attention worldwide in recent decades as it has come to be recognized as a key factor in determining health status. According to the WHO, a person's manner of life accounts for 60% of their healthy quality of life. Our goal is to develop an app-based platform that will enable you to quickly locate neighbors that share your skill level. Along with the benefits of exercise, playing with or against a partner or participating in team sports provides social contact that lengthens your life more than exercising alone.

## *b. For Professional Sports Players*

Professional players or youths who are professionally engaged in a sport and wish to play at certain level, only get the chance to practice solely with their known players (preferably playing among players of their own academy itself) and they do not get opportunity to explore and practice with the outside competitors of their own age group and level. It gives them lack of exposure and their performance might degrade while playing for national or higher level tournaments.

## *c. For Senior Citizens*

A WHO survey estimates that 38 million Indians have anxiety and close to 57 million Indians experience depression. This number has risen as a result of the extraordinary pandemic that is impacting individuals of all ages, particularly the elderly, whose mental health has gotten much worse recently.

Keeping the Emotional Well-being of Seniors in Mind is a platform where people over 55 can meet and connect with like-minded people in the same place and with the same interests. They can take classes like gardening, or yoga, dance therapy, art, and more. by connecting with them in real time

**Keywords-** Health, Sports, Players, Location

## I. INTRODUCTION

Playing and staying active are essential, but they might be difficult to sustain if you go to the gym alone every day or if you don't have a companion to play with. Sports participation is essential for everyone's physical and mental health. In every phase of life, it is crucial. It also enhances a person's personality. Daily exercise keeps our organs healthy and helps to strengthen our hearts. Sports have always been at the forefront, and they are even more thrilling now than they were then. Exercise maintains good blood pressure and clean blood vessels. Regular exercise decreases blood sugar and cholesterol.

Problem can be classified for three kinds of people:

### *a. For kids and common people who want to play*

Play is as important to young kids as money to adults. So when kids say "no one will play with me," it probably feels like a really big deal to them. People get easily demotivated to stay physically active and play the sports they love because it's hard to find a suitable sport partner. We know how frustrating it is to play with people way below or way above your level. Social interaction among sports players can increase their activity through friend ranking, sports competition, and help them find like-minded friends of their of skill level.

## II. TECHNOLOGY USED

The main technology used is Android, firebase

The Android operating system is the most connected of the many mobile platforms in the world. Hundreds of thousands and thousands of mobile devices are powered by Android in one hundred and ninety international locations of the industry. It is expected to hold approximately 71% of the global market share by the end of 2021, and this tendency is getting stronger every day. The Open Handset Alliance, a business, began creating Android. The process of developing software apps for the Android operating system is known as Android development. One of the most widely used mobile operating systems in the world, Android gives developers a platform to make a variety of apps, from straightforward utility programmes to intricate games and multimedia programmes.

It offers more customising options, and several manufacturers produce Android-compatible smartphones. As a result, there is a significant increase in the demand for Android mobile applications, and businesses need competent developers with the necessary skills. Android was first intended to be an operating system for mobile devices. Android is now available in capsules, wearables, boxes, smart TVs, notebooks, etc., but with the development of code libraries and recognition among developers of various domains, it will be the only software for all such devices.

#### Features of Android:-

- Android is a mobile operating system developed by Google. It is widely used in smartphones, tablets, and other mobile devices. Some of the key features of Android include:
- Open-source platform: Because Android is an open-source platform, programmers can view its source code, alter it, and produce original versions.
- Multitasking: Android supports multitasking, allowing users to run multiple apps at the same time.
- Customizable user interface: Android has a customizable user interface, which means that users can change the look and feel of their device by downloading different themes and customizing their home screen.
- Google services: Android integrates with many of Google's services, including Google Maps, Google Assistant, Gmail, and Google Drive.
- Google Play Store: The Google Play Store is available for Android users to download and enjoy a variety of apps, games, movies, music, and books.
- Notification system: Android has a powerful notification system that allows users to receive and manage notifications from various apps on their device.
- Security: Android provides various security features, including Google Play Protect, which scans for potentially harmful apps, and Android's permission system, which allows users to control what data and resources apps have access to.
- Accessibility features: Android includes a number of accessibility features, such as Voice Access, which allows users to control their device using voice commands, and TalkBack, which provides spoken feedback to help visually impaired users interact with their device.

#### Advantages of Android Development

- Broad audience: As the most popular mobile operating system in the world, Android gives developers a platform to connect with a sizable and varied user base.
- Open-source platform: Android is a freely available platform, which allows for the modification of its source code to suit the needs of developers. As a result, there is a sizable and active developer community that can contribute to the platform and produce original solutions.
- Large app market: The Google Play Store, the primary app store for Android devices, has a large and growing market for apps, providing a platform for developers to reach millions of users and monetize their apps.
- Easy integration with Google services: Android integrates with many of Google's services, including Google Maps, Google Assistant, Gmail, and Google Drive. This allows developers to add powerful and user-friendly features to their apps.

#### Disadvantages of Android Development

- Fragmenting offers a user-friendly way of interacting with the app but has a few downsides. Android's requirement that the development team adapt to the varied sizes of mobile phones available on the market and give rise to specific features in the software is one such drawback.
- As Android gadgets can vary quite a bit, it becomes more challenging to test the app. This can lead to larger amounts of time and money being used for development and testing, depending on how complex and specific the application is.
- The lack of consistency in Android devices can cause further complications for developers, as it is necessary for them to be aware of all the different types of phones on the market and their capabilities. This increases the difficulty of creating a unified user experience across all types of devices.
- Furthermore, any changes or updates made to an Android app must be tested separately on each device, which can be both time consuming and may lead to additional costs in order to ensure compatibility.

**Java:** The ability to utilise managed code that can be executed on mobile devices is one of the reasons we decided to design the app using Java. Java ME refers to Java's mobile edition. The majority of smartphones and tablets support Java ME, which is built on Java SE. A versatile, secure environment for creating and executing programmes for embedded and mobile devices is offered by Java Platform Micro Edition (Java ME). This programme was created using Java ME. It can make use of the capabilities of nearby hardware and is both portable and secure. Address limitations on installing Java programmes designed for ME on mobile devices. In actuality, Java ME offers a solution for executing programmes on gadgets with limited memory, screens, and power.

**JSON:** JSON has become the modern standard for data exchange and is a much more efficient than XML. It is easy to structure data and supports a variety of data structures like arrays, objects and documents. Additionally, it is language-independent, meaning it can be used across multiple languages, such as JavaScript, PHP, Java and Python. JSON is frequently used for communication between the server and client applications, where it enables fast processing of data. As a result, JSON has become an invaluable tool for web applications and developers alike.

**Android Studio:** Android Studio is the official integrated development environment (IDE) for Android app development. It is developed by Google and is designed to provide a powerful and easy-to-use environment for building, testing, and deploying Android apps. Some of the key features of Android Studio include:

- Intuitive UI: Android Studio has a modern and user-friendly interface that makes it easy for developers to navigate and use.
- Code editor: Android Studio includes a code editor that provides features like code highlighting, auto completion, and error checking to make it easier for developers to write and manage code.
- Layout Editor: Android Studio includes a visual layout editor that allows developers to create and preview their user interface designs, including support for a wide range of devices and screen resolutions.

**Firestore Database:** A database housed in the cloud, Firestore Database stores data as JSON. Each linked buyer receives real-time synchronised facts. Although we develop cross-platform apps using our iOS and JavaScript SDKs, all of our clients share a single real-time database instance and instantly get updates with the most recent information.

No software server is needed to gain access to Firestore database in real time. we can access it immediately from a mobile device or web browser. data validation and security through security guidelines for the Firestore database at the current time, policies based primarily on the term achieved while the statistic is study or written.

With the Firestore actual-time Database on Blaze Pricing Plan, we can support the information needs of our app by splitting our information throughout a couple of database times in a single Firestore task. Streamline authentication with Firestore authentication on our venture and authenticate customers in our database instances. Controls get admission to records in every database with custom Firestore actual-time database regulations to be had for every database instance.

Cloud Firestore is a scalable and bendy database used for server improvement, mobile, and web from Firestore and Google Cloud Platform.

It shops developer certain key-value pairs to trade the conduct and look of our app without requiring users to download an update. it is used to hosts the HTML, CSS, and JavaScript of our website as well as other developer-supplied assets like graphing, fonts, and icons.

A Firestore mission is a pool of resources which could include a database as well as objects which include user debts, analytics, and something that can be shared between some of patron applications.

Firestore is a powerful, cloud-based platform that enables developers to create and manage applications, without having to set up any servers or infrastructure. It provides two cloud-based solutions for real-time data synchronization: the Firestore Realtime Database and Cloud Firestore. The Firestore Realtime Database is a native Firestore solution that ensures real-time synchronization between clients with low latency. Cloud Firestore is the latest offering from Firestore and offers enhanced scalability and faster access than the Realtime Database. For example, with Cloud Firestore, developers can scale their data up to 500,000 concurrent connections on a single database instance. This makes it an ideal solution for applications with large user bases that require real-time data synchronization and fast access to data.

### III. LITERATURE REVIEW

#### [1] Investigating Digital Apps: Gaming Elements and Learning Context

Investigating digital apps with a focus on gaming elements and learning context can provide valuable insights into how technology can be used to enhance the learning experience. Gaming elements, such as points, leaderboards, and badges, can motivate users and increase their engagement with the app. These elements can also provide feedback and allow users to track their progress, which can be especially useful in a learning context.

In a learning context, digital apps can provide a more

interactive and engaging way to learn compared to traditional methods, such as textbooks and lectures. For example, digital apps can use gamification to make learning fun and engaging, and they can also provide immediate feedback to users, allowing them to track their progress and see how they are doing.

Moreover, digital apps can also offer personalized learning experiences, adapting to the user's needs and abilities. For example, apps can use algorithms to adjust the difficulty level of content based on the user's performance, and they can also provide tailored recommendations for additional resources and learning materials.

#### [2] Development of Android Based Real Location Tracking App

With the exchange in human living requirements, a human desires to travel alone at new locations. He isn't always aware about numerous locations at new vicinity. His own family members might be involved about his properly- being. we have evolved an Android primarily based real region monitoring App which is able to music present day region of a person. it will inform someone about his cutting- edge area at ordinary c program language period of time. It also has advanced database in which a user can save facts about his name and address and its statistics may be hand over to someone who is interested by traveling at same region. This App is capable of register new human beings and it is able to provide Login facility at any instance of time. This software uses actual time Firestore database.

#### [3] Application of Firestore in Android App Development-A Study

Pure software is on the rise some databases are disorganized data such as video, photo, audio, text, file and other unfounded forms. Difficult for relationships Database Management Tool (RDBMS) unstructured records. Firestore is fairly new technology for unstructured bulk management records. It is very fast compared to RDBMS. This is it paper creates useful features with Firestore. Aim to familiarize yourself with Android and its standards related terms, benefits and obstacles. Paper It tries to demonstrate some of the functionality of Firestore by creating an Android application.

#### [4] Developing of Android Mobile Application Using Java and Eclipse: An Application

Overall, developing an Android mobile application using Java and Eclipse is a straightforward process that involves setting up the development environment, creating a new project, designing the user interface, writing code, testing the app, and deploying the app. By using Eclipse as the development environment, developers can take advantage of its powerful tools and features to build high-quality, scalable, and user-friendly Android apps.

#### [5] Development of Native Mobile Application Using Android Studio for Cabs and Some Glimpse of Cross Platform Apps

This paper discusses the Taxi software, which was created

with the most recent version of Android Studio. Also, it includes roughly the same structures used for the creation of Android and iOS.

Any structure's application is possible. It also contains a demonstration of the Cab programme, showing how it functions and what it may be used for. Taxi software's dual goals are to create jobs and improve the quality of life for customers, owners, and drivers. In essence, we want to work together so that everyone—clients, drivers, and taxi owners—can gain from it.

#### IV. FEATURES OF APP

i. *User profile*

Creating a user profile is essential for making the most of a sports app. With a signup process that's fast and easy, you can create an account in no time. Once logged in, your user profile will let you access all of the app's features, so it's important to make sure that your details are up to date. Creating a user profile is a great way to get started and start enjoying the full benefits of a sports app.

ii. *Chat with your buddies and share your location*

This app provides the ultimate solution to stay connected with your sports buddies. It allows you to chat and share your location with just a few taps! This helps you stay informed about any new development, plan activities together and track each other's whereabouts. The intuitive design makes it easy for anyone to use and the secure connection guarantees that all your data is safe and secure. With this app, you can now chat with your sports buddies and share your location with ease.

iii. *Use GPS to show nearby available sports academies /Grounds within specified radius.*

This app can help users find nearby available sports academies/grounds within a specified radius with the help of GPS. This app has made it easier for people to find the best sports academies in their area quickly and conveniently. Moreover, it can be used for both recreational and competitive purposes. The intuitive interface ensures that everyone can easily use this app without any difficulty.

iv. *Play with buddies near you having same skill set as you*

Our app allows you to easily filter players based on their level and location, providing a suitable match within the radius you specify. This way, you only need to play with opponents who have the same skill set as you. That way, you can be sure that you will always be playing against same level players who can challenge and push you to be better.

v. *Organize and join matches*

If you are looking for an exciting way to keep yourself active and entertained, why not organize your own sports match or yoga session? Invite people to the location and join matches with fellow players. Organizing a sports match or yoga session can be a fun and rewarding experience for everyone involved!

- vi. *Friendly app for physical and mental well being*  
 Our app is designed to help combat loneliness and improve overall wellness. Through the app, users can connect with sports buddies in their area, creating a sense of community. This helps promote active lifestyles, encourages healthy habits, and provides support during times of stress



Fig. 1

V. METHODS

➤ Figure 2 shows the general process system design of the app.

As shown, the system design of the sports app outlines a comprehensive approach for login register and connecting with nearby sports players. The design includes a variety of features that make communication, coordination, and collaboration between players easier. It also helps to improve the overall user experience. As a result, this sports app offers a great platform for players to interact and connect with each other while engaging in their favorite activities.

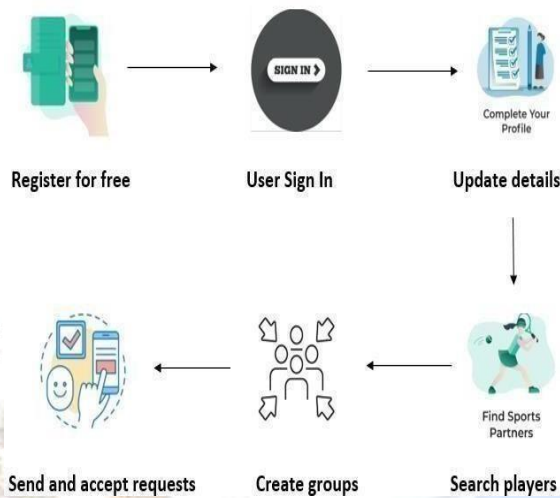


Fig. 2

➤ Figure 3 depicts the use case diagram for the suggested system in the meanwhile.

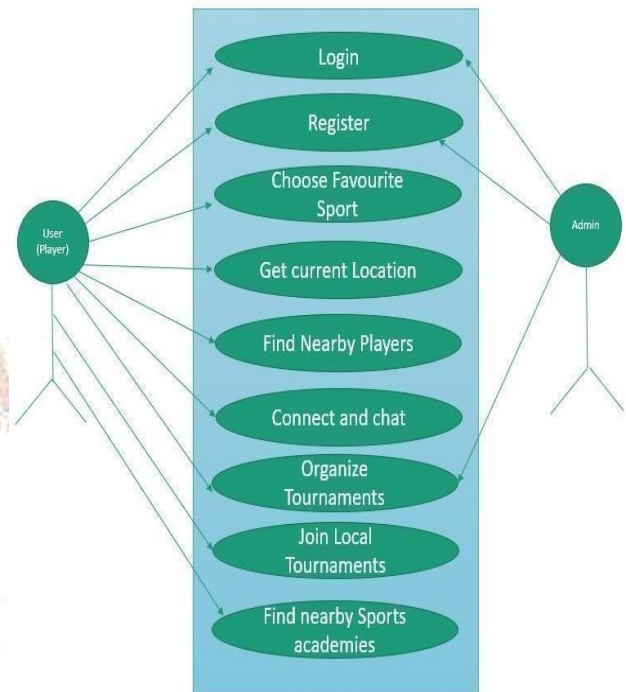


Fig. 3

➤ Figure 4 shows the database design of the app.

As shown in Figure 4, the database design of the sports app is designed to enable users to easily login and register to connect with nearby sports players. It also stores user data so that users can get notifications about upcoming events and activities in their area. The database design has been made with scalability in mind, so as the app grows, it can accommodate more and more users. Overall, the database design provides a strong foundation for the app to efficiently provide its services to its users.

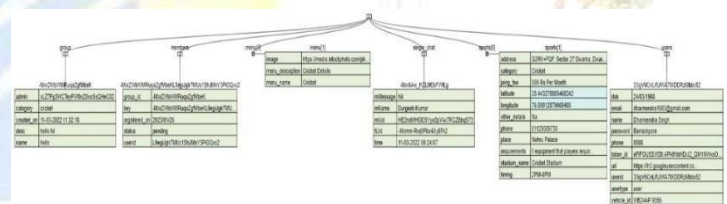


Fig. 4

The Use Case Diagram of the proposed system, as seen in Figure 3, shows how the sports app will work. The diagram comprises of four modules – login/register, connect with nearby players, create a match and search for an existing match. Through the login/register module, users must first sign into the app before they can access other modules. Through the connect with nearby players module, users can locate and interact with local players. The create a match module allows users to set up a match and invite other sports players to join them. Lastly, the search for an existing match module helps users find matches that are already created and join them. All these modules together make this sports app a convenient and efficient platform that can be used by anyone looking to play sports.

VI. RESULTS

Welcome to the home page of our sports app! We have designed this app with the result of connecting nearby sports players in mind. With an easy login or registration process, you can join the community and find other sports players nearby to play with. We hope that this app will be able to bring together

sports players near you so that everyone can connect with each other and enjoy their favourite sports.

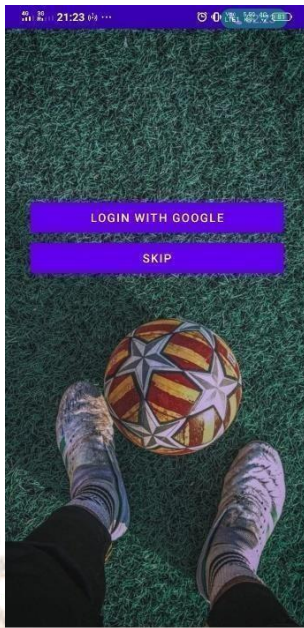


Fig. 5

## VII. CONCLUSION

With the help of this app we are trying to provide a 360° experience to our users so they stay on the app and find everything they need, from coaches to local clubs and courts, partners, leagues etc.

This platform would offer a personalized search experience to aid in finding local sports partners, booking coaches, finding nearby sports clubs, playing matches, and improving skill level, enabling players to spend quality time on the court and less time missing out on their favourite sport.

This innovative idea will definitely stand out in the market and it will not only be useful for players but also to the senior citizens by supporting their emotional well-being.

It will help senior citizens combat loneliness and regain a sense of belonging through interactive entertainment and connection sessions. From a business perspective, money would be expensive for the program.

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