SW Engineering CSC648-848-05 Spring2024

application title & name : Teamup

Team : 5

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Milestone 1

02/20/2024

Version #	Date Submitted
2	03/21/2024
1	03/01/2024

Executive Summary

In a world driven by connectivity, our web application, TeamUp, emerges as the ultimate platform for sports enthusiasts at our University. Motivated by the mission of creating a dynamic community of sports lovers, TeamUp is the bridge that connects players, facilitates game exploration, and empowers universities to organize vibrant sports tournaments. This application provides a seamless experience for users to explore, join, and create games effortlessly. With TeamUp's user-friendly interface, individuals can navigate through game schedules, join or form teams, and participate in university-hosted tournaments. For universities, TeamUp streamlines the tournament management process, from creation to participant registration and real-time standings display. This project's value lies in its ability to cultivate a thriving sports community, providing a centralized hub for sports enthusiasts and universities to connect, play, and celebrate the spirit of sportsmanship. It ensures the creation of an innovative, inclusive, and unparalleled sports ecosystem that caters to both the individual player and the university.

Main Use Cases

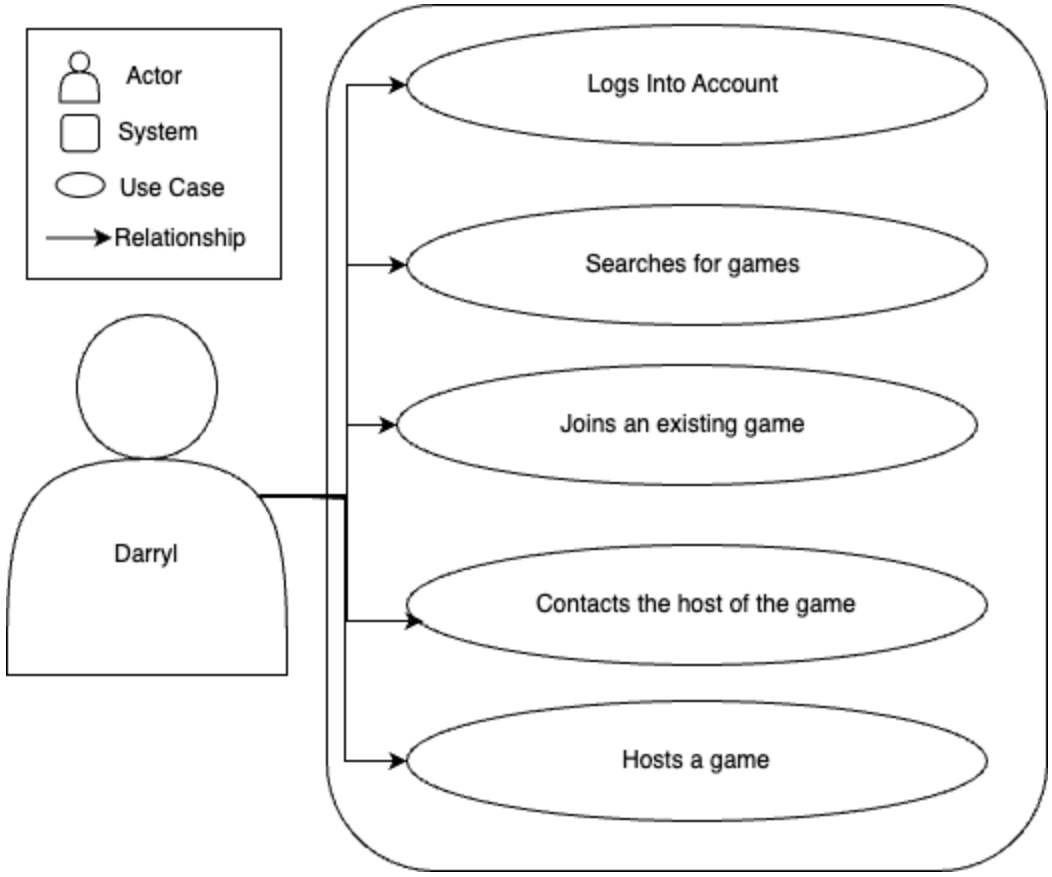
Use Case 1

- **Actors:** Darryl (1st Year Student), TeamUp (web application)
- **Assumptions:**
    - Darryl is a first year student at SFSU
    - Darryl is interested in sports
- **Use Case:**

Darryl has graduated high school and is heading into his first year of college at SFSU. He's moved here from far away and has not met any people yet, or joined any clubs. He wants to find a way to meet some friends with similar interests as him. While doing some research on SFSU's resources in making connections, he comes across TeamUp. From the convenience of home, he is able to find a group of three people that are hosting a game of soccer to play casually. He decides to attend the game by joining one of the teams on the app. They meet and have a blast playing a small game of soccer. They exchange contacts and keep in touch. Darryl is glad that he was able to easily make some friends using TeamUp.

Benefits for Darryl:

- Expands his social circle. His positive experience encourages him to become an active participant on the platform.
- Allows for Darryl to take advantage of being able to initiate contact with potential friends in a low-pressure environment.



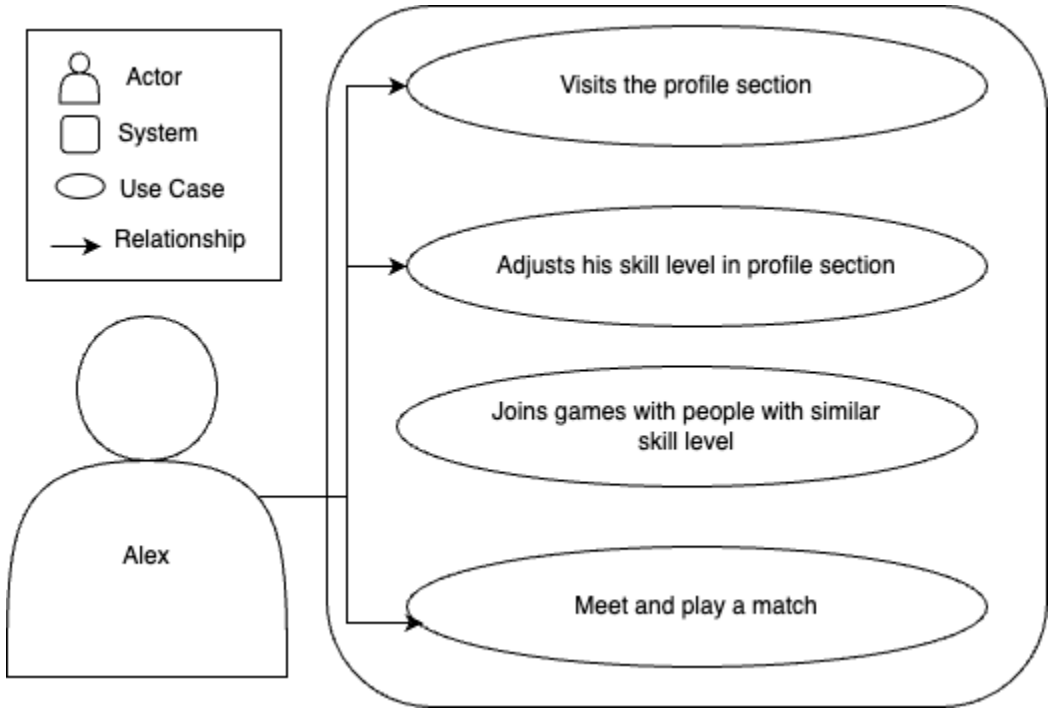
Use Case 2

- **Actors:** Alex (College Student at SFSU), TeamUp (web application)
- **Assumptions:**
  - Alex is a member already on the app
  - Alex had not selected a skill level when originally creating an account
- **Use Case:**

Alex has played a couple of soccer games at SFSU with some students through TeamUp, but unfortunately he has not found those experiences enjoyable. He finds the gap in the skill levels between him and the people he plays with too big. He believes he is not as skilled as the players that he is playing with, and comes to the conclusion that he needs to find people that are closer to his level. He quickly realizes that TeamUp offers an easy and seamless method of adjusting his skill level. After adjusting his skill level, he finds matches with people of similar skill levels and begins playing games with them. He finds these matches much more enjoyable and competitive, and is thankful for TeamUp's awesome way of showcasing skill levels of players.

Benefits for Alex:

- Alex can seamlessly explore and engage in a variety of sports activities, from competitive leagues to casual games, ensuring he finds the perfect fit for his interests and skill level.



Use Case 3

- **Actors:** John (Gym Supervisor), Mitchell (3rd Year Student), TeamUp (web application)
- **Assumptions:**
  - John and Mitchell are friends.
  - John works at the gym located on campus.
  - John and Mitchell are interested in basketball.
  - John and Micthell attend SFSU.
- **Use Case:**

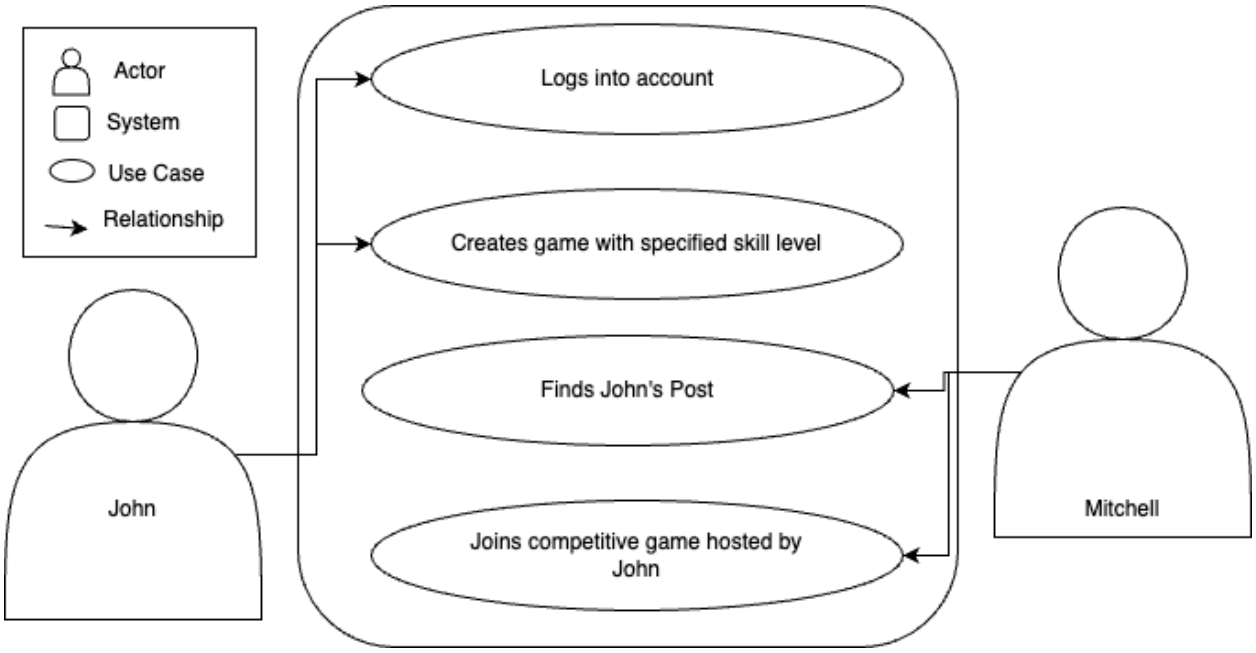
John works at the campus gym at SFSU. Since working there, John has been looking for ways to play basketball with others at a higher skill level. As John is working, he encounters Mitchell as he walks into the gym. John mentions the idea of arranging games at a specific skill level at the gym, but explains the frustrations and difficulties of organizing such events. Mitchell mentions TeamUp as he uses it to find basketball games and explains the features involving hosting games at a specified skill level. After this conversation, John visits TeamUp and is amazed by its ease of use and immediately sets up a basketball game with a skill level of intermediate and higher. Mitchell sees the posting of the game and joins it shortly after. John and Mitchell are glad that they are able to play basketball in a more competitive setting.

Benefits for John:

- John can easily coordinate games with specified ~~rules and limits~~ skill levels.

Benefits for Mitchell:

- Mitchell can now play basketball more competitively, incentivising him to play at best and become a better player.



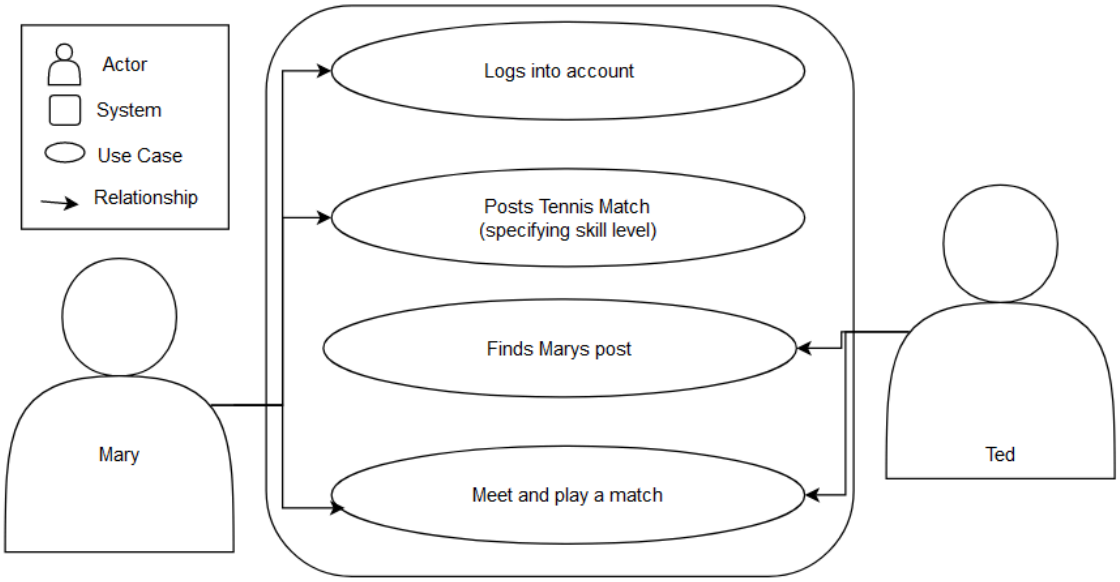
Use Case 4

- **Actors:** Mary (3rd Year Student), Ted(TeamUp User), TeamUp (Web Application)
- **Assumptions:**
  - Mary is a 3rd year college student
  - Mary is already in the school tennis club
- **Use Case:**

Mary is a 3rd year college student who currently already plays for the school's tennis club. This club is very competitive and attends many tournaments every year. However, Mary would like to have extra practice before her next tournament so she can be as prepared as possible. Because the school tournaments she already attends use an app called TeamUp, she tries to use the other feature on the app. Mary posts on the app that she is looking for tennis opponents who are a certain skill level. Another user of the app, Ted, finds her post and they both meet to play tennis against each other. After the practice session, Mary feels satisfied and has found weaknesses in her game that she can work on.

Benefits for Mary:

- Can find opponents to practice against who are a high enough skill level that she desires to practice against.
- She becomes as prepared as she can be before a big tournament.



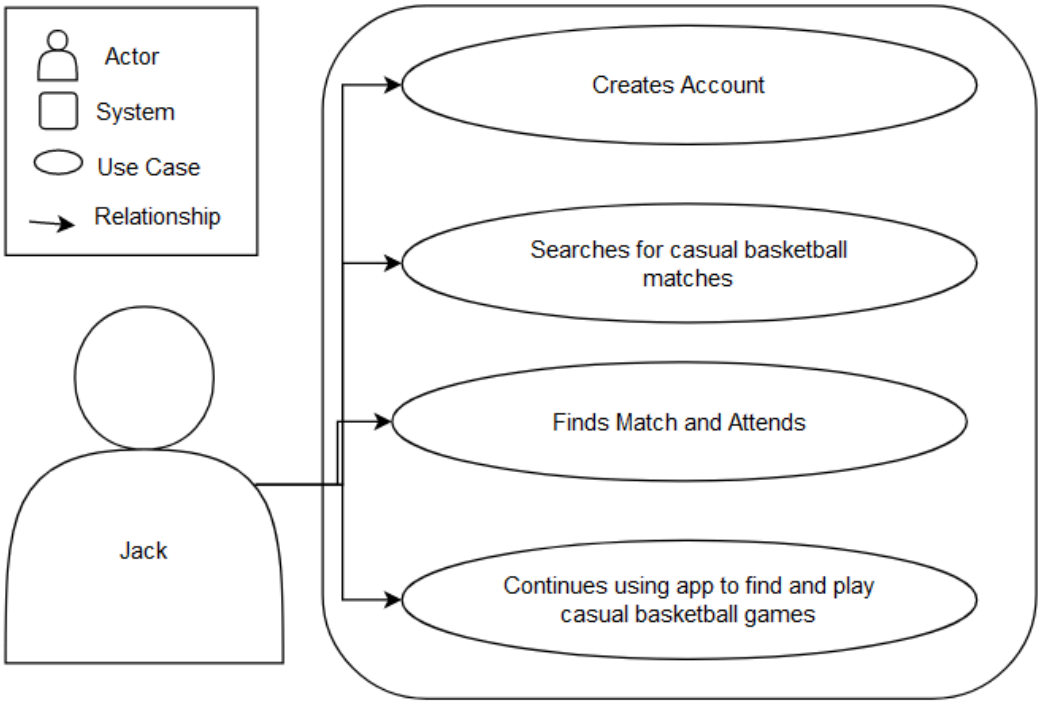
Use Case 5

- **Actors:** Jack (3rd Year Student), TeamUp (Web Application)
- **Assumptions:**
    - Jack is a 3rd year college student
    - Jack likes to play basketball with his friends sometimes on the weekends
- **Use Case:**

Jack used to play basketball with his friends occasionally on the weekends. However, Jack moved to another state for college, and now does not have friends to play basketball with anymore. Although he likes and plays basketball often, he is not interested in trying out for his new school's basketball team, he wants a more casual experience. Luckily for him, he finds an app called TeamUp. With the app, he finds there are other students who have signed up and have scheduled a casual game in the school's gym. He signs himself up for the game, and now he has found a new group of people to play basketball with whenever he wishes.

Benefits for Jack:

- Found a new group of friends that Jack can now play basketball with regularly.



Use Case 6

- **Actors:** Chris(3rd Year Student), Tyler(2nd Year Student), TeamUp (Web Application)
- **Assumptions:**
    - Chris and Tyler are college roommates.
    - Chris really likes basketball and plays often.
    - Tyler has never played basketball but wants to play.
- **Use Case:**

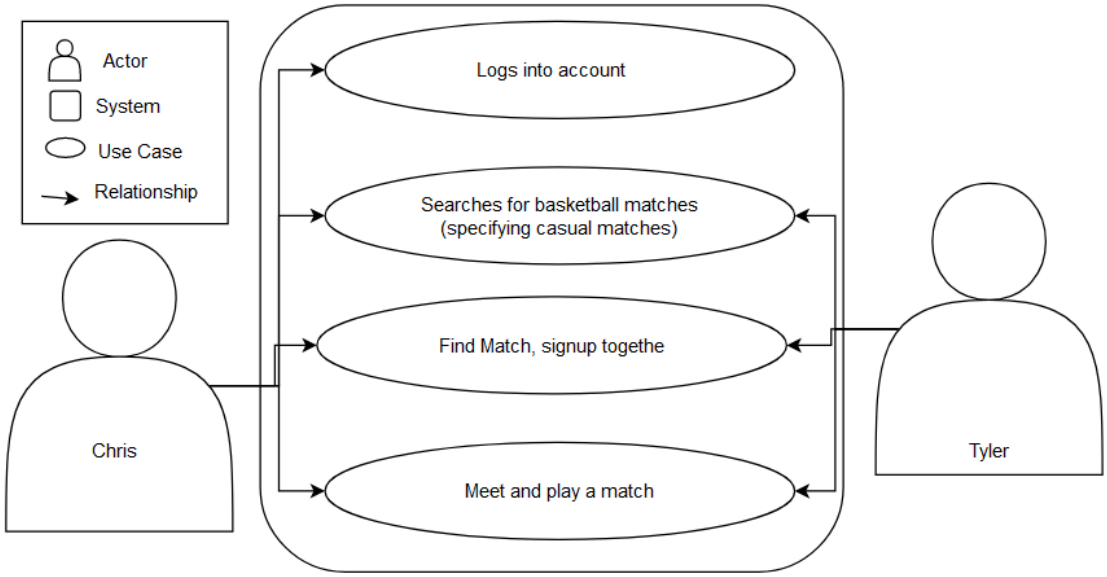
Chris (a 3rd year student) and Tyler (a 2nd year student) are roommates on their college campus. Chris plays basketball nearly every day in the school's gym. Tyler wants to also join, but he has never played and doesn't even know where to start. Chris tells him that he has been using an app called TeamUp to find basketball games to play. Tyler downloads the app, but he is still nervous about playing with strangers. So, Chris offers to join a game with him. On the TeamUp app, they find a casual game being hosted at their school's basketball court. They sign up together and attend the game.

Benefits for Chris:

- Chris and Tyler now have a new activity to deepen their friendship.

Benefits for Tyler:

- Tyler is more comfortable looking for and playing basketball games on the app.



Use Case 7

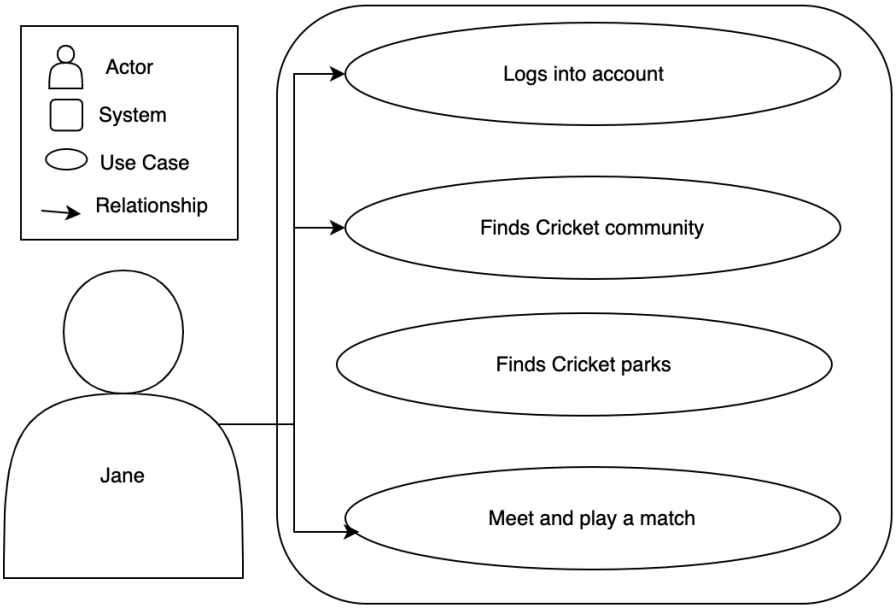
- **Actors:** Jane (San Francisco Resident), TeamUp (Web Application)
- **Assumptions:**
    - Jane has recently moved to San Francisco
    - Jane plays cricket.
- **Use Case:**

In Jane's free time, she likes to play cricket. In the previous city she was living in, there was a large cricket community and games would not be hard to find locally. However, since moving to San Francisco, Jane has not been able to find anywhere to play cricket or any other residents that play the sport as well. After conducting some research online, she stumbles upon a web application called TeamUp. She sees that there is an established cricket community in San Francisco on the app and creates an account. Shortly after creating her account, Jane is able to find facilities and parks where they play her beloved sport. Jane is now immersed in the cricket community in her city and exclusively uses TeamUp to arrange and find games.

Benefits for Jane:

- Jane now has a platform that serves her needs of wanting to play local cricket matches.

- Jane can find matches that coincide with her schedule and preferences.



Use Case 8

- **Actors:** Trevor (San Francisco Resident), Noah (San Francisco Resident), Jimmy (Public Transportation Rider), TeamUp (Web Application)
- **Assumptions:**
  - Trevor and Noah are friends.
  - Trevor, Noah, and Jimmy play badminton.
  - Jimmy is also a San Francisco resident.
- **Use Case:**

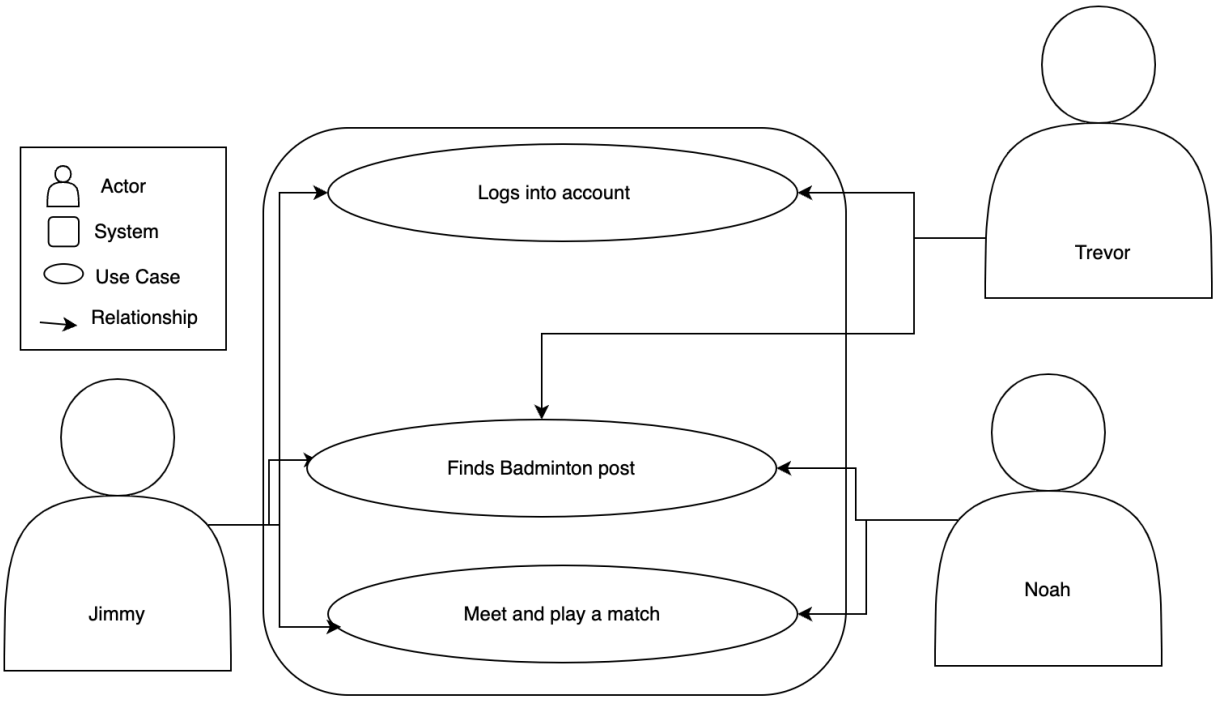
Trevor and Noah are avid badminton players. At times, they want to play doubles but due to the lack of a badminton population in their area, it can be very difficult to find other players that want to play doubles. This problem forces Trevor and Noah to travel across the city to have a chance of finding matches to play against others. Sometimes they commute and face the same issue at their local badminton court, wasting their time. One day when Trevor and Noah are traveling using public transportation, hoping to find a match in another area, they come across another badminton player, Jimmy. After further conversation, Noah expresses their difficulty of finding doubles matches around their local area and having to travel to other courts for a chance of finding other players that want to play. Jimmy introduces Trevor and Noah to TeamUp, which he has been using himself to find games around the city. He explains that TeamUp allows users to find and also set up casual matches for their preferred time and place. Trevor and Noah immediately create accounts and are amazed at the amount of available badminton matches posted spanning the entire city.

Benefits for Trevor and Noah:

- Trevor and Noah now can save time and arrange plans to play doubles against other players as opposed to waiting for players to show up to a location or travel to not have a guaranteed chance of playing doubles.

Benefits for Jimmy:

- Benefited the badminton community in San Francisco by increasing the population of players on TeamUp.



Main Data Items and Entities

1. User

- Definition: Represents anyone who interacts with the app, including players and school administrators.

2. Game

- Definition: A scheduled sports activity that users can join or create.

3. Team

- Definition: A group of users who join together to play a sport, either for casual games or within a tournament.

4. Tournament

- Definition: A competitive event organized by schools or universities, involving multiple games and teams.

5. Match

- Definition: A specific instance of a game within a tournament, between two teams or individuals.

6. Location

- Definition: Physical place where games and tournaments are held.

7. Profile

- Definition: Detailed information about a user, including their sports preferences and skill levels.

User Types and Privileges

- Player: Regular users who can browse and join games, create games, and register for tournaments. They can also be part of or form teams.
- School Administrator: Users with the authority to create and manage tournaments on behalf of their institution. They have additional access to tournament management tools.

Usage in Documentation and Development

- These terms and their definitions will be used consistently across all project documentation, user interfaces, software components, and database designs.
- The division of user types into Players and School Administrators informs the app's functionality and access control mechanisms.
- The attributes listed for each entity provide a high-level overview of the data model and serve as a guide for database design and API development.

Functional Requirements

User:

1. Users shall be able to search for games based on sport type. 1
2. Users shall be able to search for games based on location. 1
3. Users shall be able to search for games based on time.1
4. Users shall be able to search for games based on player skill level. 1
5. User shall join existing games. 1
6. Users shall create new games. 1
7. Users shall specify sport, location, time, and number of players needed for a game. 1
8. Users shall invite friends to join created games. 3
9. Users shall be able to join a game as a team 2
10. Users shall be able to join existing teams. 2
11. Users shall be able to join registered tournaments 2

Game:

1. Game listing shall provide facility location. 1
2. Game listing shall provide player profiles. 1
3. Game listing shall provide facility game rules. 1

Tournament:

1. Users shall receive confirmation emails containing tournament details.
2. Users shall receive notifications containing tournament participation instructions.
3. Users shall receive reminders to registered participants before the tournament start date.
4. Team members shall be able to communicate to coordinate logistical issues related to games.
5. Admins shall have the ability to update or change the tournament schedules.
6. Tournaments shall generate games schedules based on the number of teams, available time slots, and tournament format.
7. Participants shall receive notifications of their match schedules, including date, time, opponent, and location.
8. The tournament shall enforce a code of conduct policy for game participants.
9. Tournament violations of the code of conduct shall be reported.
10. The game results including scores and winners, shall be updated within the app.
11. The app shall recognize the outstanding performances of top participants.
12. Users shall have the opportunity to provide feedback and evaluations on the game.

User Authentication and Authorization:

1. The system shall enforce password strength requirements.
2. Passwords shall be securely hashed and stored in the database.
3. The system shall support optional two-factor authentication (2FA).
4. Users shall have the ability to recover forgotten passwords.
5. The system shall allow users to update their account information.
6. Users shall have the option to manually log out from their accounts.

Non-Functional Requirements

Reliability:

- The system shall be available 99.9% of the time during peak usage hours.
- The application shall be resilient to server failures and able to recover gracefully without data loss.

Response Time:

- The system shall respond to user interactions within 2 seconds for browsing games and tournaments.
- User actions such as joining a game or registering for a tournament shall complete within 5 seconds.

Hardware and Networking Requirements:

- The application shall be hosted on servers with sufficient processing power and memory to handle concurrent user requests.
- Network bandwidth shall be adequate to support simultaneous interactions from multiple users.

Usability Requirements:

- The user interface shall be intuitive and easy to navigate for users with basic computer literacy.
- User interactions and workflows shall be consistent across different sections of the application.

Privacy:

- User data collected shall include name, email address, and sports preferences.
- Data collected shall only be used for facilitating game and tournament management and shall not be shared with third parties without user consent.

Compatibility:

- The application shall be compatible with major web browsers such as Chrome, Firefox, Safari, and Edge.
- Responsive design principles shall be implemented to ensure optimal viewing and usability across desktop and mobile devices.

Media Content:

- Images and media files uploaded by users shall adhere to specified formats and size limits to ensure efficient storage and retrieval.
- Accepted file formats and size limits shall be communicated to users during the upload process.

Performance:

- The application shall be capable of handling concurrent user interactions without significant degradation in performance.
- Database queries and server-side operations shall be optimized to minimize latency and ensure smooth user experience.

Licensing and Legal:

- The application shall comply with relevant laws and regulations governing data privacy, user consent, and intellectual property rights.
- Proper licensing for third-party libraries and software components used in the development shall be obtained and documented.

Training and Support:

- Users with a high-school diploma, after 1 hour of training, shall be able to navigate and use core features of the application.
- Support documentation and resources shall be provided to assist users in troubleshooting common issues and accessing help when needed.

Tools and Requirement Management:

- Requirements management shall be handled using tools from XYZ, ensuring traceability and accountability throughout the development lifecycle.
- Each requirement shall be associated with identifiable portions of code referenced by module name and code line number for ease of maintenance and debugging.

Competitive analysis

1. SportsEngine Tourney
    - SportsEngine Tourney is a website/application for easily managing sports tournaments, competitions, and leagues. It has about 380,000 reviews on the app store. More than one million games are played annually.

2. Piel | Pick Up Soccer
    - Plie | Pick Up Soccer is an application for people who want to get together and play soccer casually.Users can find games that are held nearby. There are 5300 ratings on the app store.

3. Meetup
    - Meetup is an online platform where people can join communities with common interests and hobbies. It's the most famous and has the most users among these five competitors. Meetup has more than 60 million registered users and there are 330,000 groups in 193 countries and 10,000 cities.

4. MaxPreps
    - MaxPreps is an online sports media focused on high school sports. They provide game results, game schedules, and statistics for high school sports. It covers a wide range of sports such as baseball, basketball, golf, and soccer, etc.

5. ZogSports
    - ZogSports is a website/application that offers leagues in various sports for adults, mainly in major cities. There are leagues for major sports such as basketball and soccer as well as minor sports such as pickleball and kickball.

6. Reclub
    - You can participate in sports communities and competitions on Reclub. You can also find coaches as well as sports matching. It's used in many English speaking countries and has over 10k downloads on Google Play.

Company	Reclub	Meetup	Plei	SE tourney	MaxPreps	ZogSports

Strength	Many active users and groups Users can find coaches Many sports are available Great UI	Many users/communities Great Interface, good UI It is easy to use the website/application	Focusing on soccer. Many followers on social media such as Instagram and FaceBook Easy to create an account Users can invite friends by using your phone number It automatically creates a team for you	easy to manage competitions, tournament, and leagues	Focusing on high school athletes. users can view news, rankings and statistics. Users can use the services without creating an account	Many users and many active groups
Weakness	The sports are defined by the developers There is not many casual games Games that are full show up in search The app displays clubs and meets that have not been active for a certain period of time	Not focused solely on sports, there is no tournament feature	Focusing only on soccer. The UI is not the best, the green background is hard to see. You need a picture to create an account Users have to purchase game credits instead of paying Directly There are	Only focused on tournaments and leagues, not many uses of social media	Sports matching is not available. Too many ads. Focusing on high school athletes limits the number of users.	The main target is adults. Only focusing on leagues. Only available in big cities such as NY, SF, etc.

			not many users.			
Pricing	Free, but it costs money to participate in games.	Depends on the size of the groups. As the size of groups gets bigger, the price increases	Free, but it costs a few dollars to participate in games	Pricing was unavailable . You have to contact the company	Free	Free, but it costs a few dollars to participate in games.
Social media	Instagram, X, FaceBook	FaceBook, X, Instagram	Newsletter, blog, Instagram, FaceBook	Blog	Tiktok, YouTube, Instagram, FaceBook, X	Blog, Instagram
Onboarding experience	Smooth instructions	Smooth instructions	Not much support after first step	Not much support from the beginning	Smooth instructions	Smooth instructions

Features	Reclub	Meetup	Plei	SE tourney	MaxPreps	ZogSports	Our product
Text Search	+	++	+	-	+	+	+

Boolean Search	++	++	-	+	+	++	+
Leagues/Tournament	+	-	-	++	-	++	++
Availability in School/College	-	-	-	-	+	+	++
Browse	+	++	+	+	-	+	+

Summary:

What we found in our research of the five competitors is that there are not many matching services that allow people to play sports casually. For example, SportsEngine Tourney and ZogSports focus only on leagues and tournaments. There are services for those people, such as Plei and Meetup, but since Plei is only for soccer and Meetup is not only for sports, each has its own disadvantages. Therefore, our product allows users to find people who want to play sports casually, which differentiates us from other similar services. We also found that there are not many school-specific services. Our product allows schools and universities to hold tournaments, which is a unique feature of our product not found in other services. The benefits to schools of using this service are many. For example, it doesn't only help students make friends but also promotes health and helps students release stress. We are looking to raise money by marketing our product to schools. A sports and health version of Canvas is our goal. When we looked at the market, we noticed that there are not many services that utilize social media. Since most students use social media, we are considering marketing through the active use of TikTok and Instagram. People who want to enjoy sports casually and students are our main target audiences.

Checklist

• Team found a time slot to meet outside of the class. DONE
• Github master chosen. DONE.
• The team decided and agreed together on using the listed SW tools and

deployment server. DONE.
• Team ready and able to use the chosen back and front-end frameworks and those who need to learn are working on learning and practicing. ON TRACK
• The Team lead ensured that all team members read the final M1 and agree/understood it before submission.DONE
• Github organized as discussed in class (e.g. master branch, development branch, a folder for milestone documents etc.)DONE;

Contributions

Juan Estrada	9	Submit Milestone One & create the workflow for Milestone 2 List of non-functional requirements List of functional requirements
Kotaro Iwanaga	9	Version 2 of Competitive analysis implementing teammate's opinion
Cole Chiodo	8	Format the milestone 1 pdf document and make sure we don't miss any sub-checkpoint Main Use Cases
Martin Pham	8	Merge the "about" branch to main and watch Executive Summary Main Use Cases
Jaycee Lorenzo	9	Main Use Cases Home page with team members page /template for individual team member single page
Areeb abbasi	8	Deploy app and share : Website URL Main Data Items and Entities

High-level system architecture and technologies used

Frontend Components:

- JavaScript ECMAScript 2023 (ES14)
- React 18.2.0

Backend Components:

- JavaScript ECMAScript 2023 (ES14)
- Node.js v21.0.0 with Express.js 4
- MySQL 8.0.36

Testing Tools:

- Jest 29.7.0

SSL:

- Cloudflare offers free SSL certificates for websites using their content delivery network (CDN) services.

Deployment and Hosting Platform:

- Amazon Web Services (AWS)
- Ubuntu Server 23.10

	React.js(JS)	Node/Express(JS)	AWS	MySQL	Jest
Juan Estrada	3	3	3	4	3
Cole Chiodo	2	3	2	4	2
Kotaro Iwanaga	3	3	3	4	2
Martin Pham	4	3	2	4	2
Jaycee Lorenzo	4	3	2	4	2
Areeb Abbasi	3	5	5	5	3

Item	Credentials
Website URL	http://54.163.16.75/
SSH URL	ec2-54-163-16-75.compute-1.amazonaws.com
SSH Username	ubuntu
SSH Password	I uploaded the .pem file in the credentials folder
Key	I uploaded the .pem file in the credentials folder
Database URL	database-648.czcm6osyi4ii.us-east-1.rds.amazonaws.com
Database Username	admin
Database Password	Jose648#