

# Screen Sketches

Group 215

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Sports Sphere

# Actors

## 1. Users

Most people using this app will have the permission level of a regular user. This includes viewing and changing your account information, such as name, email, or password. They can also create and join game posts and view their calendar, which tells them all the games occurring based on a specified filter.

## 2. Game Post Creator

The game post creator is a user with all of the normal user's abilities and can modify the game posts they create. This allows them to edit post fields like location, sport, and date. They can also delete the post, removing all users who had previously signed up for it.

## 3. Admins

Admins have the same permissions as the game post creator, except that the admins can change any game post, not just the ones they create. They also can modify the account information of any user in the database. This type of user is meant to simulate a person who works for SportSphere and needs to be able to perform troubleshooting/fix bad data or delete comments with inappropriate language.

# Non-functional Requirements

## Usability

The application shall be useable to the average user with an android device. Initial releases shall not be required to support accessibility features, however, it must be easy and intuitive to use in general. This is to be accomplished by providing the user with a clear and simple yet powerful UI that will allow them to accomplish the activities within the app.

The API provided by the server shall be clean and clear for the developers to use effectively. This will ensure that the data can be consumed easily by the application making it fully usable by the end user.

## Performance

The entire system including the server and the android app must be performant in a way that the end user is able to constantly and quickly accomplish each task. This means that the android app will appear both responsive and fast to the end user. The backend will ensure that data is saved and served in a reasonable timeframe so that there are no legs in the way the system responds to user input.

The performance of both the frontend and backend must be such that it is able to handle up to 100 simultaneous users at any given time. During max usage the system must ensure that no data is lost and that the end user does not experience any delays because of the system load.

The android application must be able to operate without excessive battery consumption. When not in use the application must go to sleep or put processes into the background to conserve system resources as much as possible and practical.

API requests shall be limited to a max of 10 calls per device per second and reduced wherever possible. This will ensure the server resources are not unnecessarily wasted by repeated and needless API requests.

The server shall have a maximum response time of 100ms for lightweight API calls and 1s for processor intensive data requests. It is desirable to keep the response time to a minimum as much as possible.

Because mobile networks are not consistent it is impractical to specify network speeds and upload/download requirements. However, the system shall function in such a manner that facilitates the most efficient use of the network available to provide optimal performance. Where the network is excessively slow or unavailable the application shall notify the user of the performance degradation.

## Compatibility

The client side shall be an android app running on modern android hardware. Other hardware shall not be supported at this time. End users must be able to easily install the client application on their devices without extensive configuration or the installation of other software.

Minimum requirements are expected to be followed to allow the application to run on android version 12 and newer. Older versions of android shall not be supported now or in the future. The hardware must provide a minimum of 1gb of memory and 512mb of storage. The screen resolution must not be less than 720x1280 and shall support the full color scale. Additionally the device must have a working touch screen that supports multi-touch. The application shall not be required to support other forms of input at this time.

## Scalability

Following the performance requirements the system must be able to scale as the user load increases. This is mainly a backend server requirement that will ensure the system is able to provide the services needed to each client in a timely manner. The system shall be able to handle up to 100 simultaneous users without slowing down or causing delays in the processing and delivery of data.

The system shall also have the elasticity to quickly adjust to sudden changes in user load while providing data with minimal latency.

## Resiliency

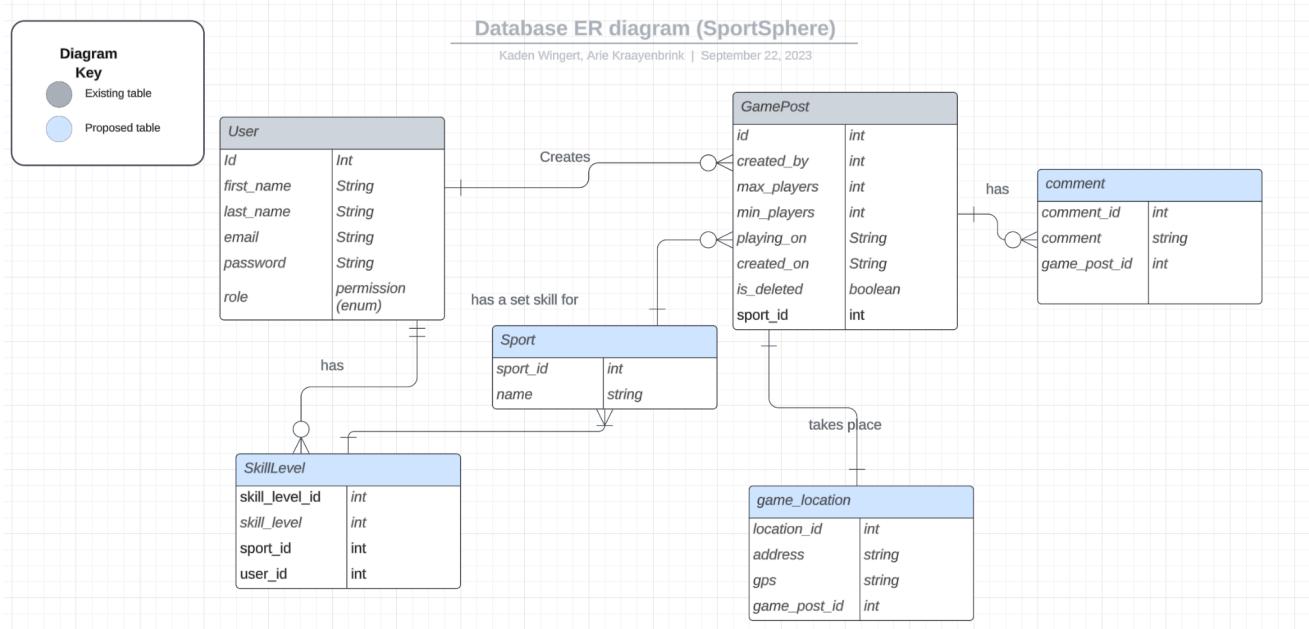
The application shall be able to recover in the event of any type of interruption. This includes restoring the user input should the user switch apps on their device before data is submitted to the server, as well as ensuring that user data is permanently saved within a database even if the server crashes.

The server shall employ a mechanism to detect crashes and restart the application if such an event occurs. Data must not be lost during this time meaning that the system shall retain all possible data not on the server at the time of the crash until the server is back in operation.

Other unexpected events shall be handled with error handlers to ensure that the system is able to deal with and recover from any bugs or errors that may arise.

Network related issues shall be handled in such a way that user data is not lost in the event of a network failure.

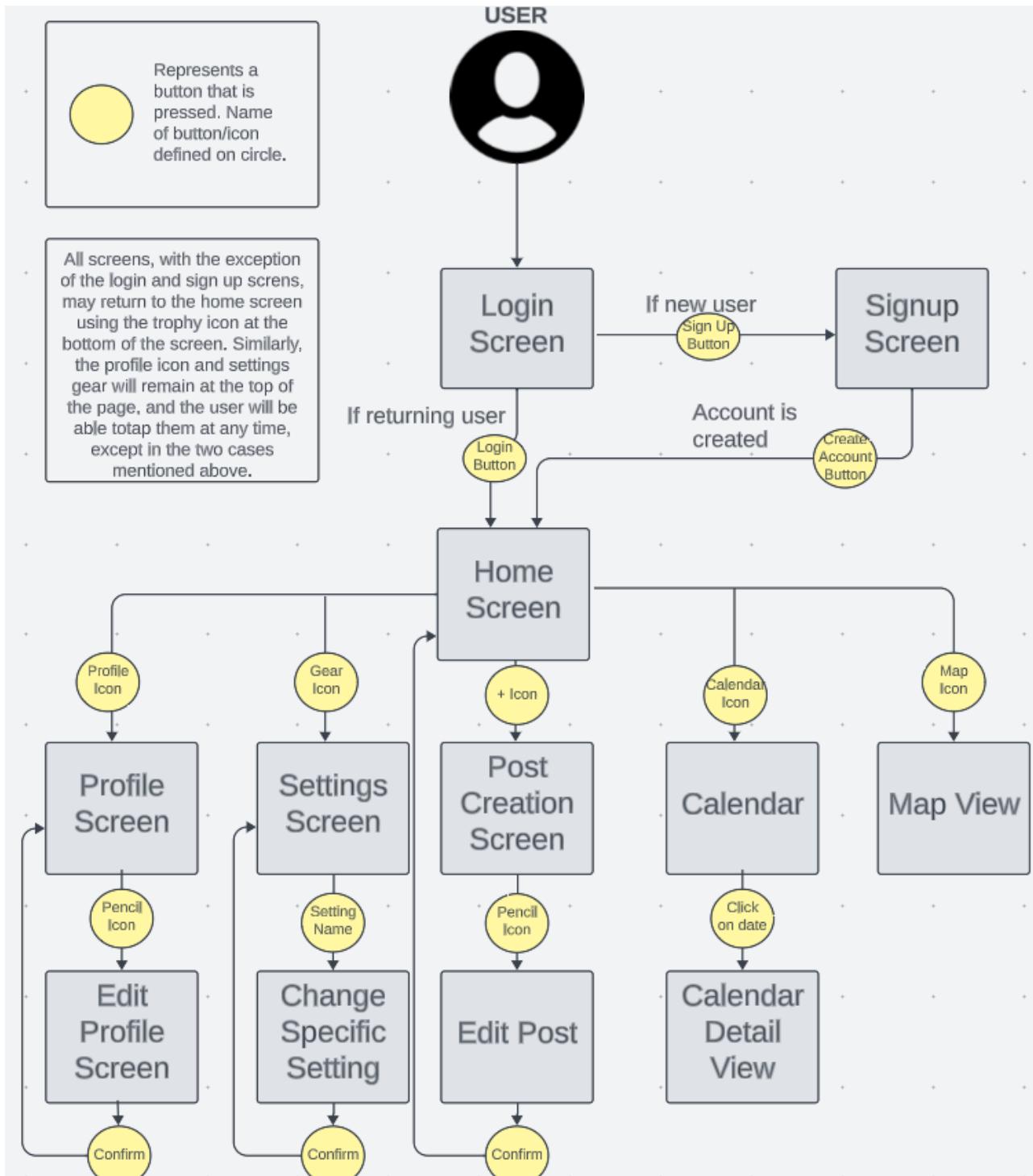
# ER Diagram of Tables and Fields



ER diagram can also be found at this link in lucid charts:

[https://lucid.app/lucidchart/ba242780-b4c5-49e6-8585-49e7b4abd70a/edit?viewport\\_loc=-13%2C-28%2C1910%2C1070%2C0\\_0&invitationId=inv\\_55829f62-2828-4479-aab9-e37e7d178abd](https://lucid.app/lucidchart/ba242780-b4c5-49e6-8585-49e7b4abd70a/edit?viewport_loc=-13%2C-28%2C1910%2C1070%2C0_0&invitationId=inv_55829f62-2828-4479-aab9-e37e7d178abd)

# Screen Flow



Link to LucidChart (Login Required): [Screen Flow](#)

## Screen Sketches #1 - Login (Bonus)

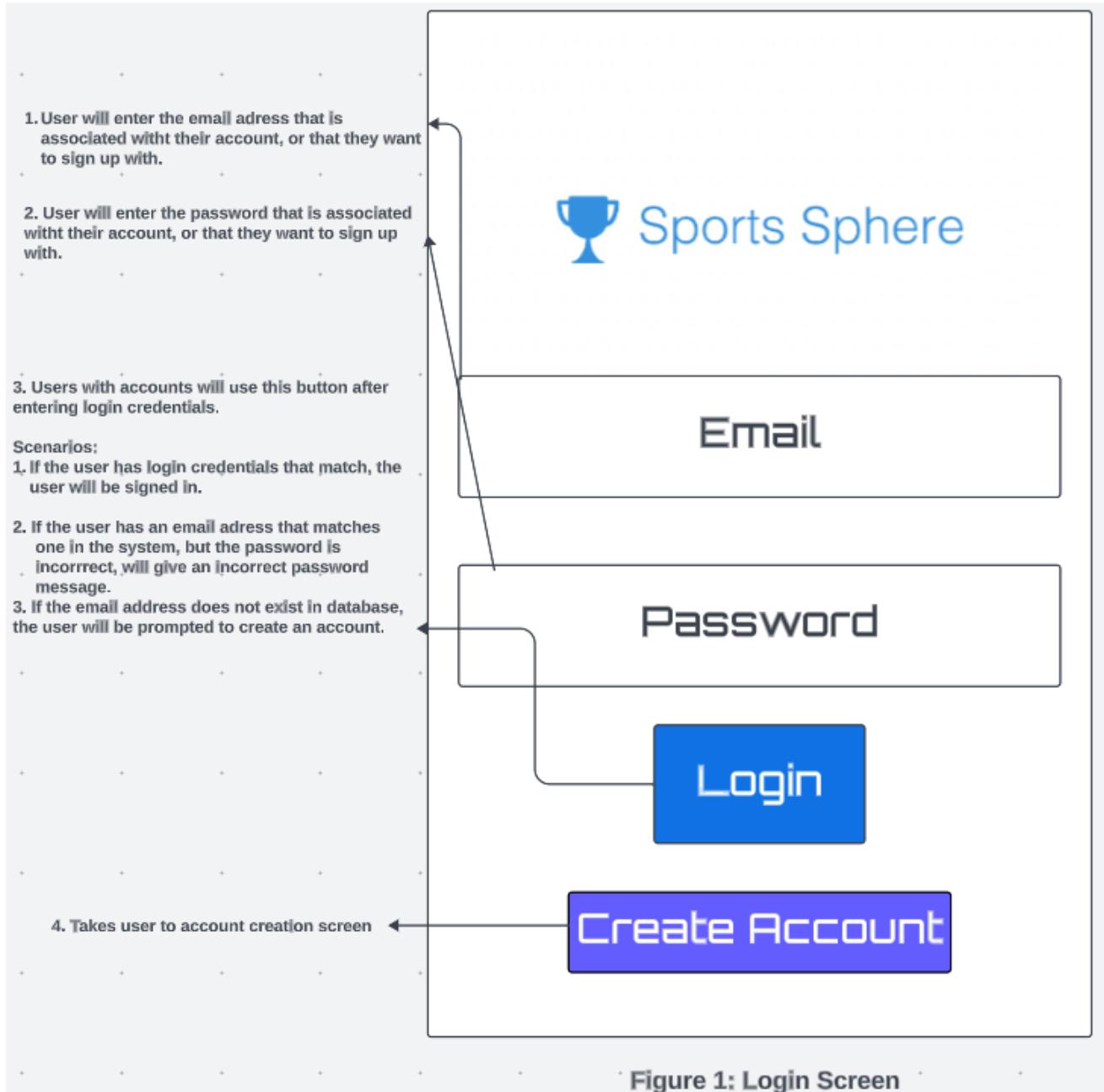
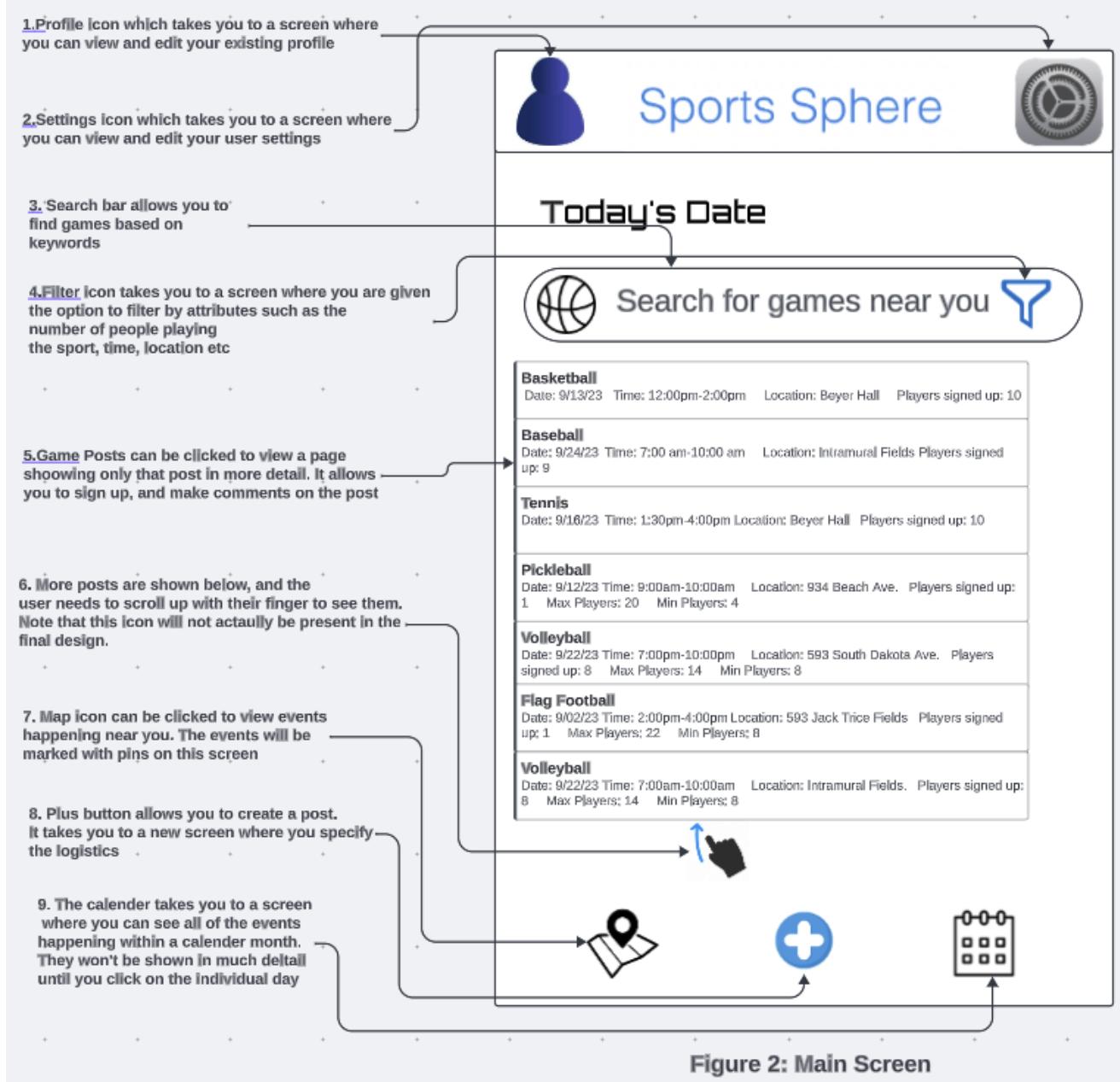


Figure 1: Login Screen

## Screen Sketches #2- Main (Kaden Wingert)



## Screen Sketches #2- Main

This is the main screen where users are taken after login. The center and majority of the screen are taken up by the various game posts and some details about them (5). Not all posts will fit on one screen, so users can scroll up to view more (6). The user can search for games through a search bar (3) and filter their search after clicking on the filter button (4). The top left of the screen shows a user profile, which takes you to a screen where you can view and edit account information(1). The top right button takes you to a settings screen where you can modify device settings (2). The bottom of the screen consists of 3 buttons. First, the map on the left takes you to a different view where you can see game posts happening around your location (7). Next, the plus button in the middle allows you to create a post and specify its details. Finally, the calendar on the right takes you to a screen to see all the events happening within a calendar month. The purpose of this screen is to provide the user with a variety of options while not overwhelming them with excessive buttons or information. We wanted the layout to be easy to follow, so we opted for a traditional social media user interface style.

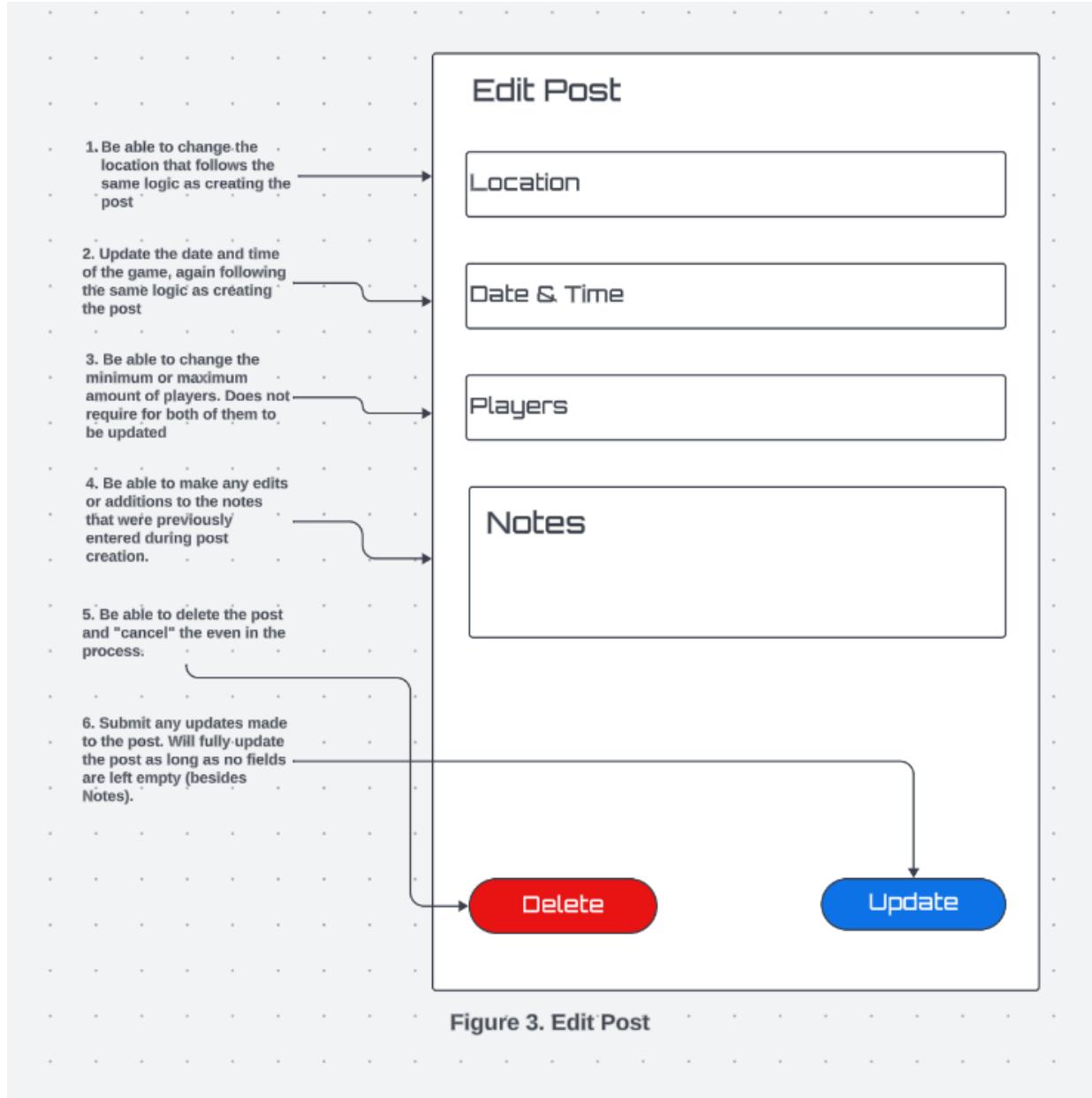
## Screen Sketches #3 - Create Post (Kerwn Shaw)



Figure 2. Create Post

This will be the screen that a user will be met with when trying to create a post. All required fields will be 1) selecting a sport that associates with the game they are interested in playing, 2) a location (building or sports complex), 3) the date (MM/DD/YYYY) and time (12-hour clock format), 4) and the minimum and maximum amount of players. It is optional for the user to 5) invite their team associated with the sport and 6) enter any notes pertaining to the game. The user then has the option to either cancel the post creation or post making it public for any user to join the game.

## Screen Sketches #4 - Edit Post (Kerwn Shaw)



This screen closely resembles the post creation, only with fewer options that can be changed. It will automatically pull all the original information from the post and give the options to update the same pertaining information. The only field that can be left empty before updating the post is the “Notes” field as it is optional for the post in general. The user also has the option to delete the post, which in turn will “cancel” the event and remove it from the feed and calendar views.

## Screen Sketches #5 - View Profile (Sam Frost)

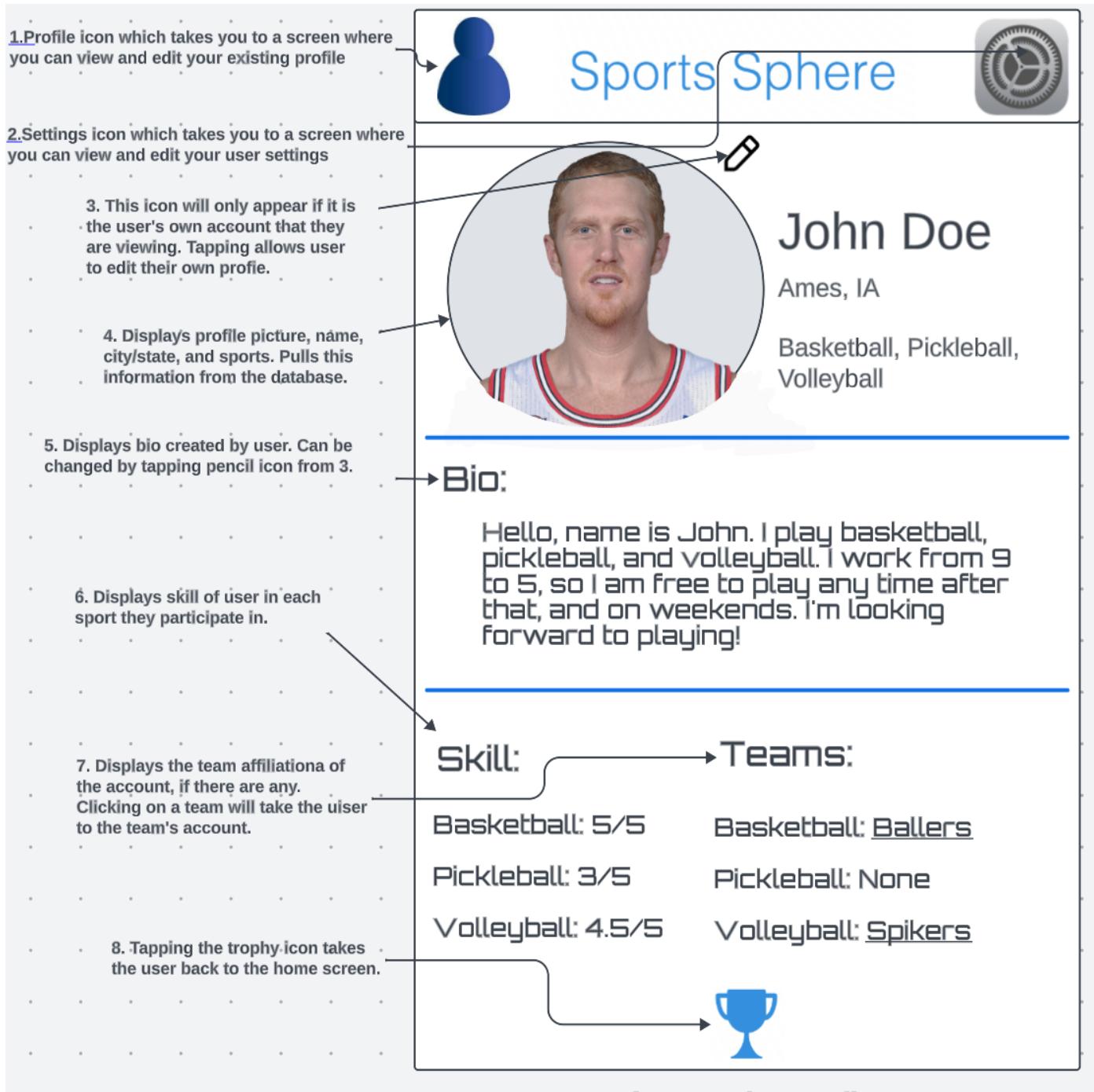


Figure 5: View Profile

## Screen Sketches #5 - View Profile

This screen will display the information of a user's profile. Users will have a large amount of control of the information their profile displays. This is for both aesthetic choices, as well as privacy. At the top of the screen, arrows 1 and 2 point to the profile and settings screen, respectively. Though the profile page is already shown, the profile icon is kept to keep consistency. Arrow 3 points to the pencil icon, which allows the user to alter their profile settings. The pencil icon only appears when the user is viewing their own profile. Arrow 4 points to the profile's information, including the profile picture, name, city/state, and sports that they play. Arrow 5 points to the profile's bio, which the user can edit. 6 points to the skill the user has in the sports that they play. 7 points to the teams in which they are members of. The names of teams are links, and clicking them will take them to the page of the team. 8 points to the trophy icon, which will take the user to the home screen.

## Screen Sketches #6 - Settings (Sam Frost)



Figure 6: Settings

## Screen Sketches #6 - Settings

This screen will display the user's settings. We want to give our users a large degree of customizability with their experience of our app. At the top of the screen, arrows 1 and 2 point to the profile and settings screen, respectively. Though the settings page is already shown, the profile icon is kept to keep consistency. The remainder of the arrows, with the exception of arrow 12, pointing to the button that will return the user to the home screen, point to settings the user can change. Below is the list of settings, along with a brief description.

3	Sports - Edit what sports you are involved in.
4	Teams - Edit what teams you are affiliated with.
5	Profile - Edit your profile
6	Availability - Edit your availability.
7	Range - Set how far you are willing to travel for events. Only events within a defined radius will appear on your recommended.
8	Theme - Toggle between light mode, dark mode, and the system default
9	Privacy - Edit your privacy settings.
10	Account details - Edit name, email address, and password.
11	Delete Account - Delete your account.

## Screen Sketches #7 - Calendar (Arie Kraayenbrink)

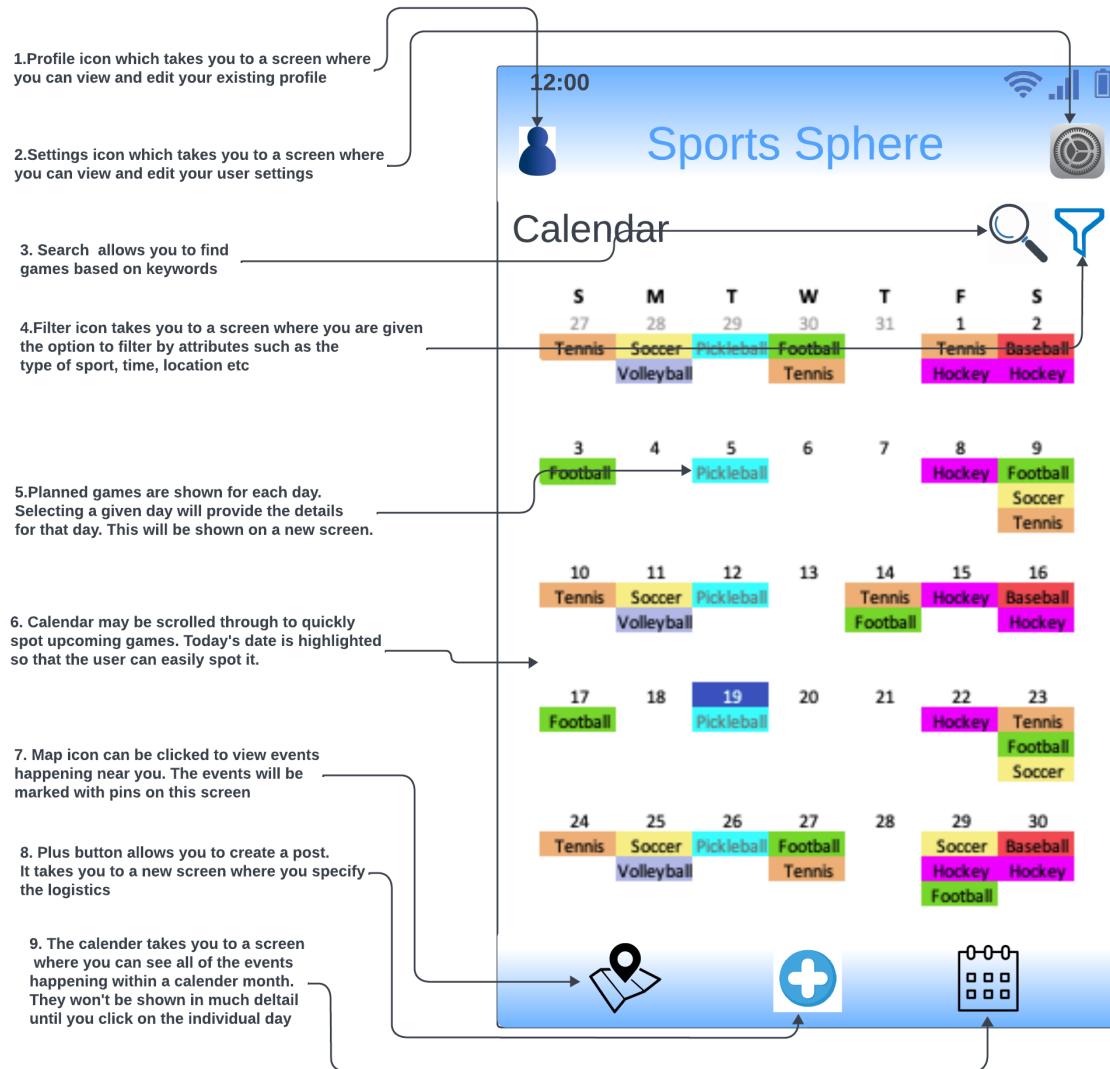


Figure 7: Calendar Screen

The calendar screen presents the user with a month by month view of upcoming sports events. This calendar may be scrolled vertically as desired so that the user can see any given date. The individual days are populated with a color coded list of sports that are scheduled for that day. Selecting a day from this calendar view will bring the user to a detailed view that will show all events for the day as well as the complete details about the games available.

The calendar may also be searched for specific keywords (item 3). This feature will allow the user to quickly find a particular set of games that match the given keyword. Additionally there is a filter button (item 4) that will allow the user to filter the view to show only a subset of games.

The filter will apply to type of sport, location, or time of day. This will make it easier for the user to select the games they are interested in.

At the top of the screen the user may select their profile or go to settings if they wish. These functions are not related to the calendar, but are there for quick reference for the user. Also, at any time the user is able to return to the full calendar, create a new post or go to the map view by selecting the corresponding buttons at the bottom of the screen.

## Screen Sketches #8 - Calendar Detail View (Arie Kraayenbrink)

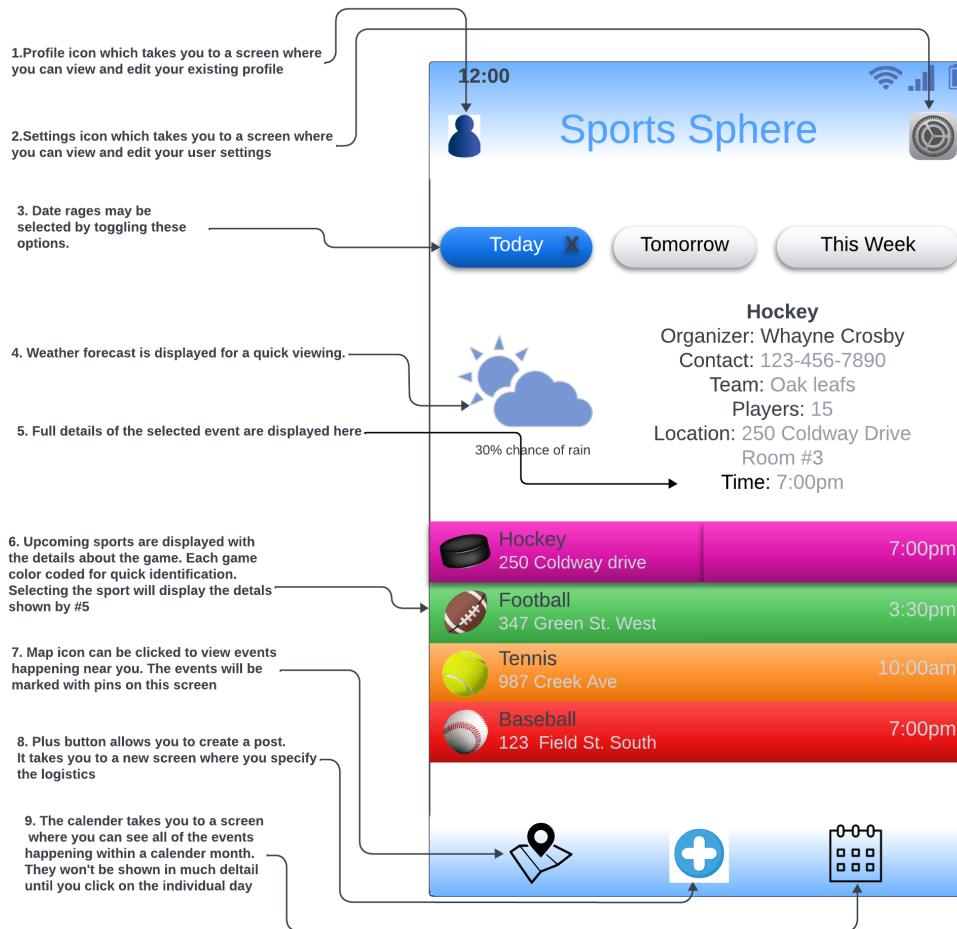


Figure 8: Calendar Detail Screen

This is the detailed view of the sports for a selected day. The screen will present the user with a scrollable list of games for the selected day. Each item in the list will be color coded and give the user quick info such as the sport type, the location and time. This will allow the user to easily sort through what games they want to play.

From this list, the user is able to select a particular sport to see its details. Once selected, the details will include the Sport type, the organizer and contact info, the team name if applicable, the number of current players, the location and time of the game.

There are also quick filter options at the top that allow the user to include a wider date range if desired. By default the list will be filtered to only the day selected in the previous screen. However, the user may choose to view additional days without going back to the previous screen. This is accomplished by toggling one of the other two options at the top of the view.

If the number of games exceeds the screen real estate, the user will be able to scroll through the list of games for the selected date range.

Current weather is conveniently displayed for the user to see what to expect around the time of the upcoming game. This will be helpful for fans and players alike by aiding them in planning what to expect from the weather during the game time. Current weather alerts will also be presented here should they be issued for the time of the game.

Just like the above screen, the user is able to return to the full calendar, create a new post or go to the map view by selecting the corresponding buttons at the bottom of the screen.

## Screen Sketches #9 - Map view (Kaden Wingert)

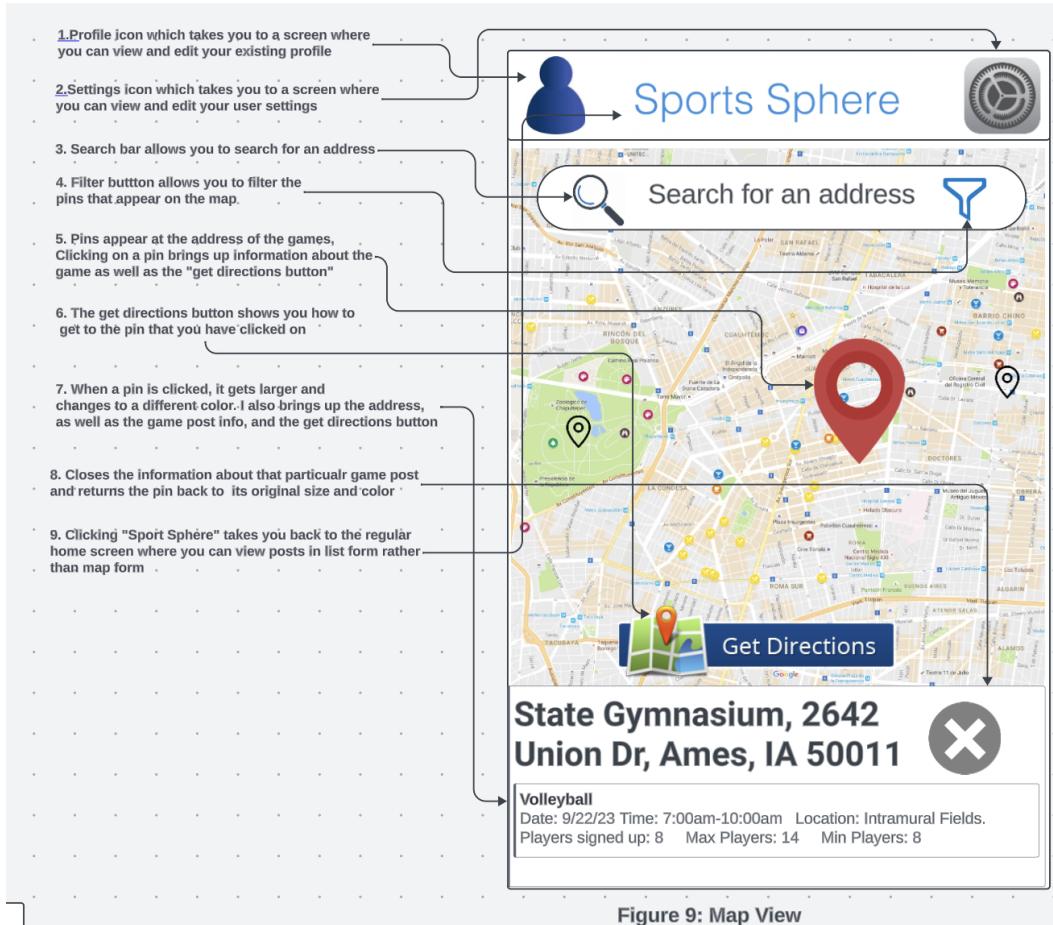


Figure 9: Map View

Set how far you are willing to travel for events. Only events within a defined radius will appear on your recommended.

This screen is meant to help the user see all of the games occurring at a location near them. It still has the profile icon (1), which takes you to the profile screen, the settings icon (2), which takes you to the settings screen, and a search bar (3) with a filter (4) where you can narrow down results. This screen shows the games as pins (5), and clicking on them brings up the card at the bottom of the screen and enlarges the pin(6). The information about the game post is displayed for the user (7), and the x button (8) allows the user to close the pop-up and change the pin back to normal size and color as the rest. Finally, there is a get directions button, which comes up when a pin is selected. It allows you to receive directions to the selected game post.

## Screen Sketches #10 - Create Account Screen (Kerwn Shaw)

The image shows a wireframe of a 'Create Account' screen. At the top left is a trophy icon. Below it are five input fields: 'Email', 'Password', 'First Name', 'Last Name', and 'Location'. To the left of the screen, six numbered steps are listed with arrows pointing to specific fields or sections:

- User will need to enter their desired email address. Will check for a valid email.
- User will enter a password, will check for password requirements.
- User will need to enter their preferred first and last name to be displayed on their user profile.
- User will enter location in either city, state format (i.e. Ames, IA) or by zip code.
- User will rate themselves on 6 sports included in the app on a scale of 0 - 5 (accepts decimal point values). These ratings can then be improved through community votes.
- Once all required fields are filled out and met to specifications, the user will click on submit to finish profile creation.

Below the input fields, there is a section titled 'Please rate yourself on the sports below' with rating scales for Basketball, Pickleball, Volleyball, Tennis, Soccer, and Baseball. A large blue 'Submit' button is at the bottom.

**Figure 10 Create an account**

This screen will allow for the user to create their own account for the app. It will ask the user to 1) enter their desired email address, 2) create a password that meets requirements, 3) enter their preferred first and last name that will then later be displayed, 4) their location to be entered in either city, state format (i.e. Ames, IA) or by zip code, 5) and finally the user will need to rate themselves on the 6 sports that will be included in the app, these ratings will later be “upgraded” through community votes. Once all information is complete, the user will click on the 6) “Submit” button which will complete account creation and move them onto the main app screen (see screen 2).