

## Activity 2: Need-finding

### 2.1 Requirements-Gathering Methods

In order to understand the challenges, needs, and behaviors of people who play in 5-aside football matches, we used two need-finding methods:

1. Survey Questionnaire
2. Direct Observation

These methods allowed us to gather both self-reported data, through the survey, and real-world behavioral insights, through the direct observation, providing us with a greater understanding of the user needs.

#### 2.1.1 Method 1: Survey Questionnaire

The questions asked in the questionnaire are as follows:

1. Age
2. How often do you play football?
3. How many of your friends play football?
4. How often do you struggle finding enough players for a game?
5. What do you do when missing players for the game?
6. How satisfied are you with your current method?
7. Would you join matches organized by people you don't know?
8. What factors matter most when joining a match?
9. Would you use an app to find extra players or join public matches?
10. What concerns or risks would stop you from using such an app?
11. What features would be most valuable to you in said app?
12. How interested are you in an app like this?

### 2.1.2 Method 2: Direct Observation

We visited several football fields in our area (indoor 5 aside centre and public outdoor courts) to observe how players organise games when playing in a real situation. We looked in both the afternoons and late evenings, when a majority of people play.

During these visits, we observed a number of consistent behaviors:

- Small groups would often congregate around waiting for enough players to join in. Which made these groups often wait a longer time than expected because they had no quick way of finding replacement or last-minute players.
- Some players walked around asking other people around them if they wanted to join in, especially if they were short by one or two players.
- We did not perceive any organized system of matching people to games; most of the coordination occurred through private WhatsApp groups.
- Some teams began their games with fewer than the planned number of players, which made the game unbalanced and not as good.

Overall, our observations gave us confirmation of what the survey responses suggested: players have difficulty consistently arranging matches; when someone cancels at the last minute. Without a centralised platform, people waste time, games begin late or matches don't occur at all.

### 2.1.3 Requirement Gathering Process

Our process included four major steps:

1. Identify the research goals  
Understand how people are currently finding matches to each other, what problems they face and whether an app could solve these problems.
2. Select methods  
We decided that we would conduct a survey (to gain preferences and perceptions) and direct observation (to observe real behaviour at football fields).
3. Collect data

A Google Form was distributed and two different field visits to different football courts were made.

4. Analyse results

Survey responses and observation insights were combined to draw out functional, non-functional and experience requirements.

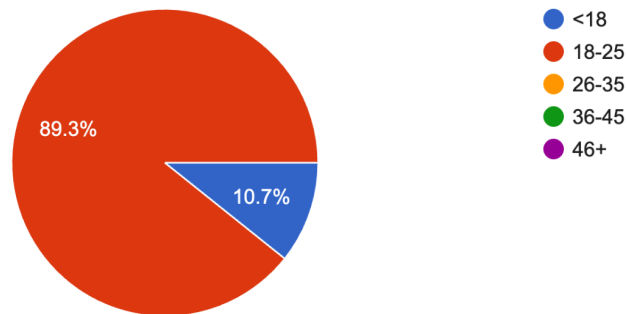
## 2.2 Collected Data & Findings

### 2.2.1 Survey Findings

- After concluding the survey, we learned that a majority of the interviewees/respondents were between the age of 18-25 and most probably international students who are very familiar with football.

Age

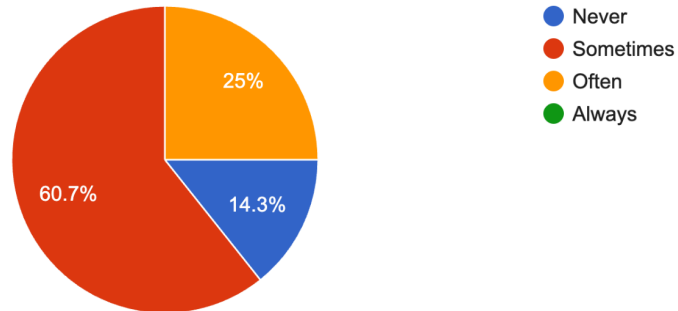
28 responses



- This shows that more than 85 percent of the respondents struggle finding enough players to be able to play a game which proves the problem.

### 3. How often do you struggle finding enough players for a game?

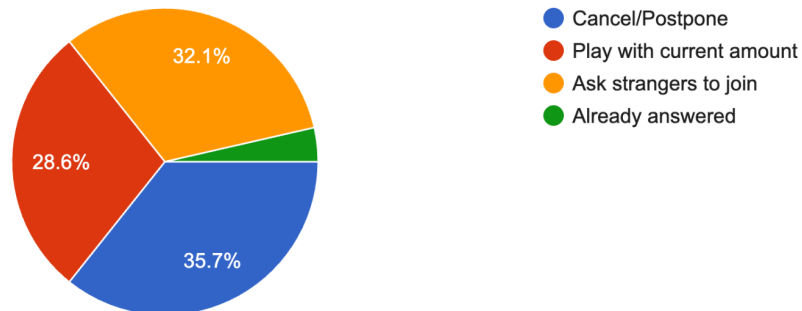
28 responses



- When in need for players, the respondents either would need to cancel the game, ask strangers to join in person, or play with a small amount of people which are all essentially inconveniences.

### 4. What do you do when missing players for the game?

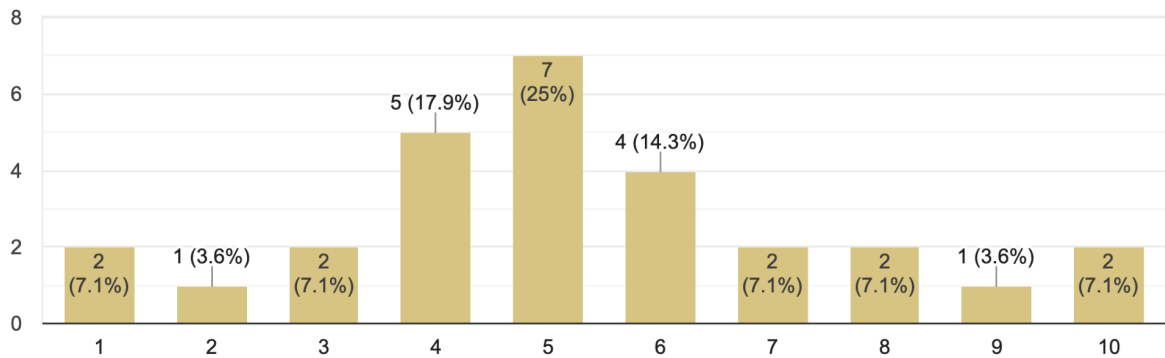
28 responses



- The majority of the respondents were not very satisfied with their current solution to the problem which allows for an implementation of a new and improved solution.

#### 5. How satisfied are you with your current method?

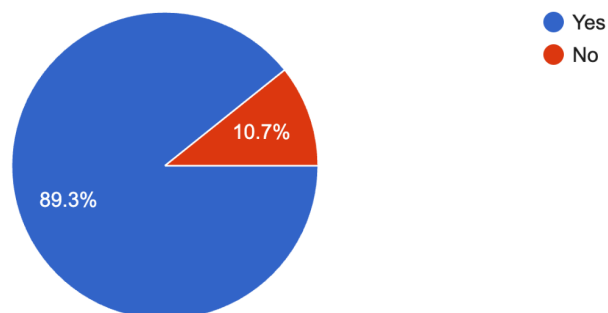
28 responses



- Almost 90 percent of the people would not mind joining a game organized by a stranger which shows flexibility and open-mindedness which is especially important when introducing a new solution.

#### 6. Would you join matches organized by people you don't know?

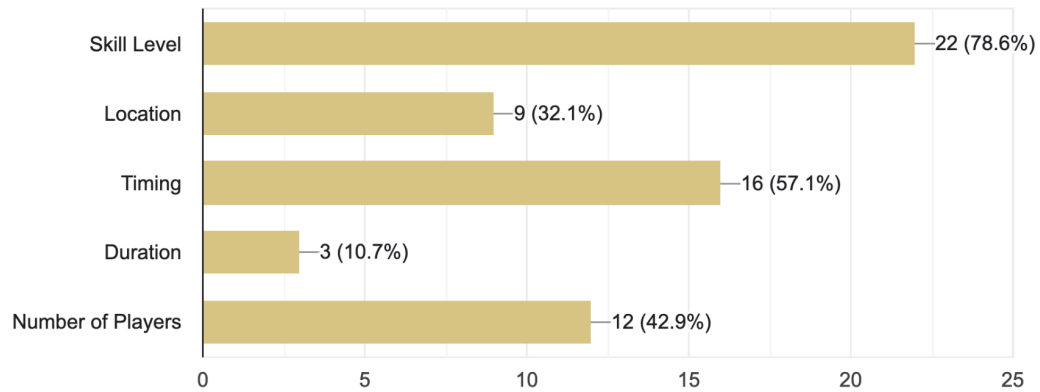
28 responses



- The majority of the responses show that the players skill level is the number one priority when deciding to join a public match.

#### 7. What factors matter most when joining a match?

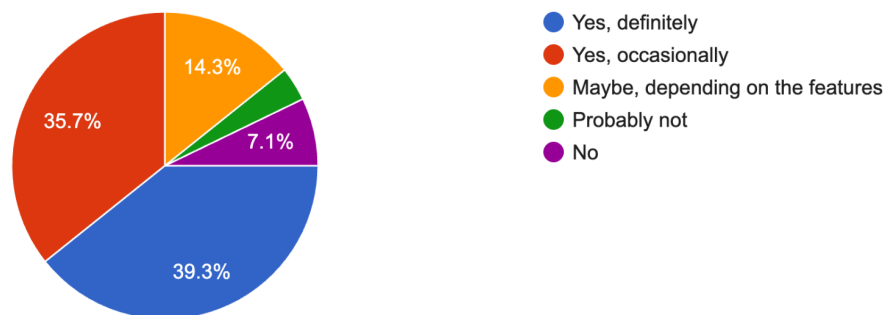
28 responses



- When proposing the idea of using the 11th Man application to be able to find a match or players when in need, about 90 percent of the respondents showed interest in using this application.

#### 8. Would you use an app to find extra players or join public matches?

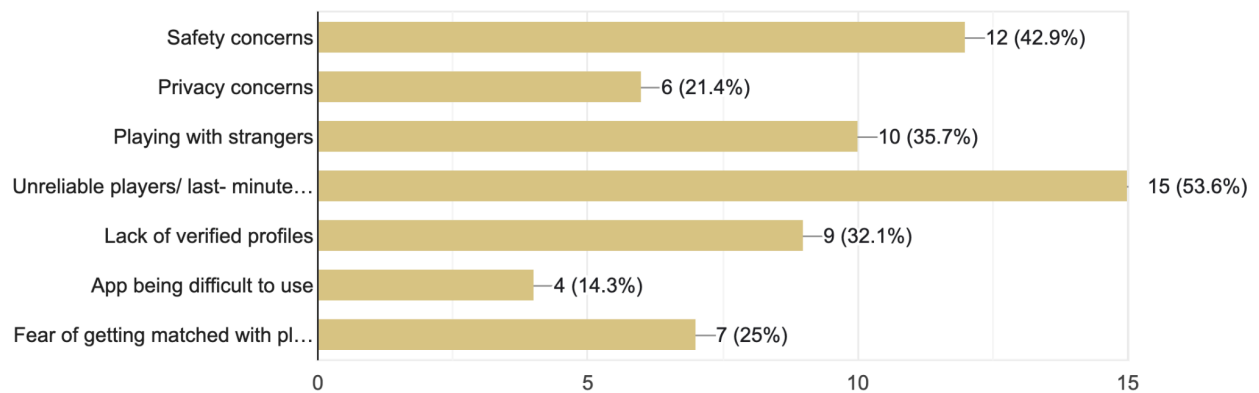
28 responses



- The major concerns that the respondents feared in relation to the app was general safety (lack of trust between strangers) and also the unreliability and last minute cancellation of some players.

#### 9. What concerns or risks would stop you from using such an app?

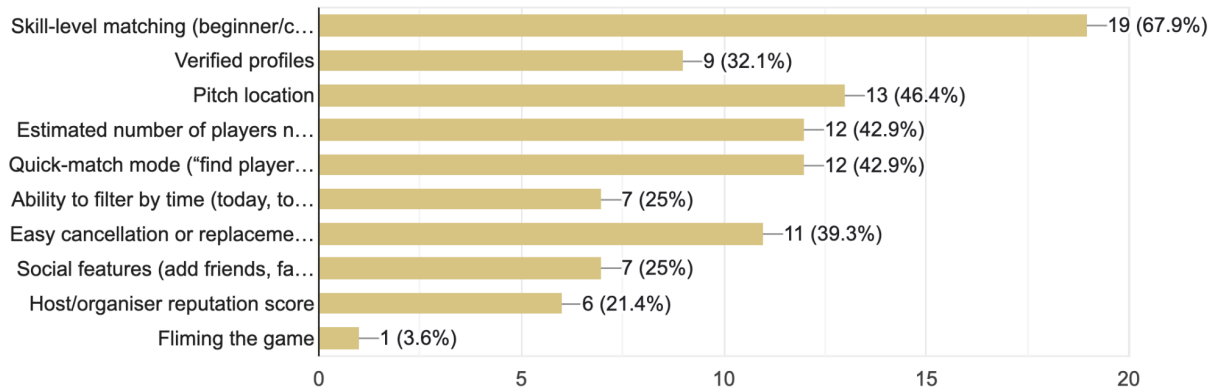
28 responses



- The respondents were mostly interested in the skill level features, as this would allow them to play with people matching their skill and allow for a more enjoyable game.

## 10. What features would be most valuable to you in said app?

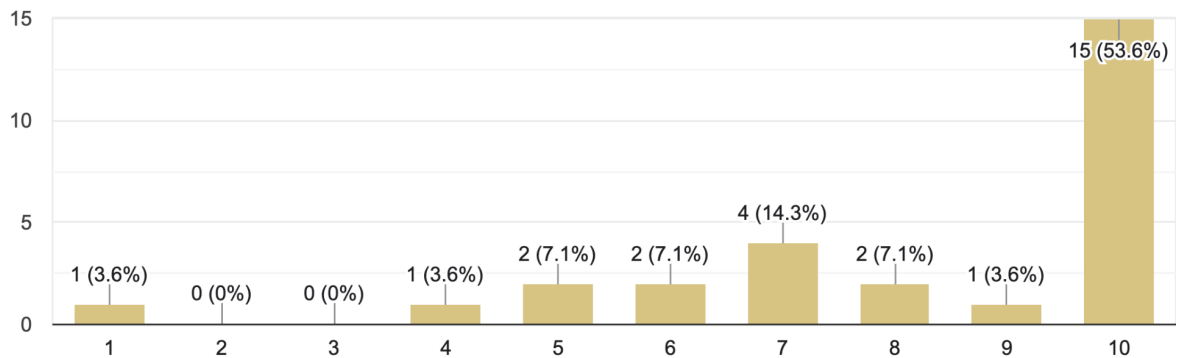
28 responses



- A large majority of the respondents are very interested in the 11th Man application, and believe in the solution presented.

## 11. How interested are you in an app like this?

28 responses



## 2.2.2 Observation Findings

During our visits we discovered a number of consistent behaviors that matched with our survey results:

1. Postponements or cancellations due to missing players: Most groups waited from 10-30 minutes for more people to get there, and in a few cases the games were cancelled completely. This illustrated how tenuous match organisation is.
2. Informal player recruitment: At the fields visited, some players would approach random individuals walking by and ask them if they would like to join. This revealed that there is no sound backup system when teams are short.
3. Games starting incomplete: Some matches were started by less than the intended amount of players (i.e. 4v4 vs 5v5 etc) which lowers the quality and intensity of the games overall.
4. No centralised information: In the locations visited players used WhatsApp groups or word-of-mouth. We saw no system connecting teams in need of players to teams looking for games.

### Overall Analysis:

These behaviours make the point that match organisation is haphazard, wasteful of time, and reliant on chance. The absence of a central platform leads to frustration and some informal games not taking place - proving there is a real need for an app that helps players find or make games quickly.

## 2.3 Requirements

### 2.3.1 Functional Requirements

1. Match Creation: Allow users to create public or private matches of football games with information about time, location, and number of players required.
2. Join Match Feature: Users are able to join matches instantly with a single tap
3. Player Count: Users are able to see live information regarding the amount of players that are in a match and the amount that is required.
4. Player Profiles: Basic player information such as availability, skill level, and rating are accessible by users.
5. Notifications: Notification when new matches are around or when a match is almost full.

6. Match History: Store past matches, attendance, and fields visited.
7. Match Requests & Host Approval: In order for players to join a match they are required to send a request to the hoist. The host can either accept or reject the request.

### 2.3.2 Non-Functional Requirements

1. Performance: The system should be capable of an effortless loading of match lists, updates and notifications without any noticeable delay.
2. Scalability: Support a large number of users who are searching and playing games simultaneously.
3. Availability: Make sure that the app is working and accessible with as little downtime as possible.
4. Security: To secure the user data, location and profiles using encryption.
5. Usability: The interface should be intuitive enough for the new users to navigate through it easily.
6. Reliability: Make certain data on matches (time, location, number of players) are accurate and always current.
7. Error Handling: When something goes wrong a message pops up to assist the user (e.g. failed to join a match).


### 2.3.3 User Experience Requirements

1. Simple Match Flow: Routing should be designed to allow the user to either make or find a match within 3 steps max.
2. Clear Visuals: Display fields, number of players, match information clearly and easily comprehensible
3. Smooth Navigation: Easy access to the homes, matches, and profile with least number of taps.

4. Personalization: Allow users to personalize preferred locations, user's skill level and notifications.
5. Accessible Language: Use easy to understand and know in the sport of football.
6. Consistency: Colors, icons, and the navigation throughout the app is to be consistent.

## 2.4 Analysis Using Personas, Scenarios, Task Analysis, and Use Case Diagrams


Persona 1:



# Jack


University Student

Age: 20 years	Country: Leipzig
Sex: Male	Education: Computer Science Student
Marital status: Single	Occupation: Student




### BIO

Jack is a big lover of football and plays whenever he has free time after university. However, he often has difficulty getting people to play with. On several occasions, he waited for more than 20 minutes and then went away without playing. These repeated experiences made him realize that he must have an application that will help him find matches instantly that are close and join a team that needs players.



### GOALS

- Join football games within seconds instead of having to organise a group.
- Improve his skills through more frequent play.



### CHALLENGES

- Arriving at Field and no matches found.
- Feeling awkward approaching strangers and asking them if they need players.
- Wasting time waiting for ambiguous match availability.

### PERSONALITY

Active

Passive

Confident

Reserved


Social

Independent


Spontaneous

Organized


### TASTES AND HOBBIES




FOOTBALL



CODING



GAMING



FITNESS

## Task Analysis (Jack joining a match):

1. Open the app
2. Select an available match
3. Send a join request
4. Wait for host approval
5. Receive acceptance in app
6. Check match location
7. Arrive and play

## Use Case Diagram:

### Use Case 1: Find Nearby Match

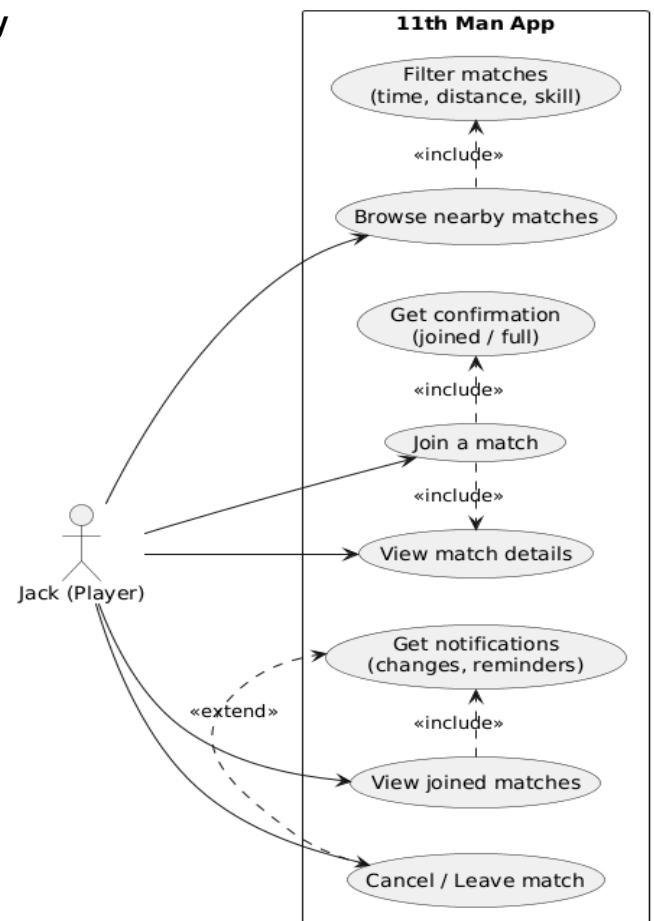
**Primary actor:** Jack

**Goal:** Quickly find football matches that need players nearby.


**Description:** Jack opens the app and views available football matches near his location. The app shows matches with open slots so he does not waste time going to a field without a game.

**Success outcome:**

Jack sees a list of nearby matches with **clear availability**



## Persona 2:



# Adam

University Student

Age: 21 years	Country: Leipzig
Sex: Male	Education: Business Administration Student
Marital status: Single	Occupation: Student

### BIO

Adam plays 5-aside football every weekend with his friends, and is often in charge of organising matches. While he likes to plan games, it is often that players will cancel games at the last minute. Finding replacements (he normally messages a variety of different WhatsApp groups, but responses are too late). On more than one occasion he had to cancel a booked match or had to play with fewer players, which resulted in a decreased game quality and a time/money waste. These frustrations made him realise the need for an app which would help him to quickly find available players and manage the matches in a much more efficient manner.

### PERSONALITY

Organized	Spontaneous
Extrovert	Introvert
Assertive	Easy-going
Team-oriented	Independent





### GOALS

- Easy to create and organise matches.
- Substitute the players who did not show up to avoid cancellations.
- Make all of the games balanced and competitive.

### CHALLENGES

- Last-minute cancellations which ruin games.
- Struggle in order to find good players on short notice.
- Organizing multiple communication channels for organizing matches.

### TASTES AND HOBBIES

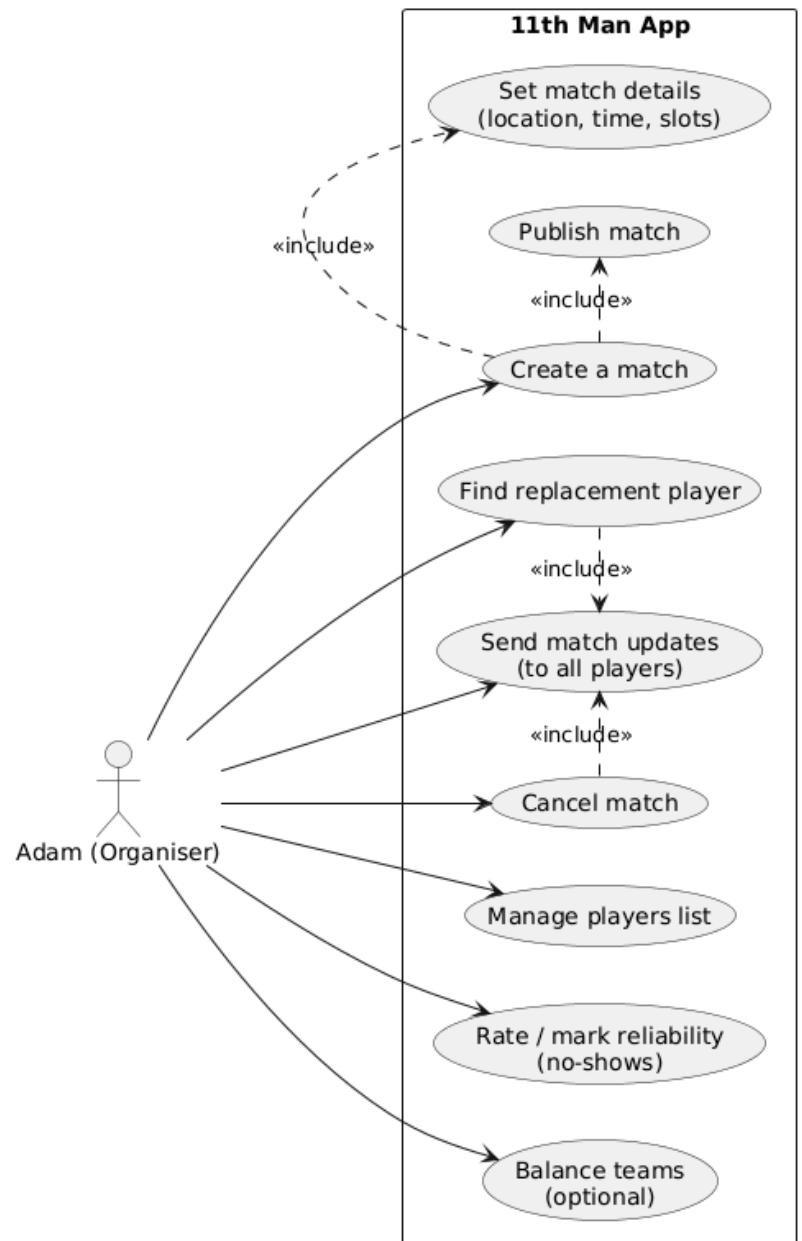
 FOOTBALL	 SOCIALIZING
 BUSINESS	 FITNESS

## Task Analysis (Omar Making a match)

1. Open the app
2. Tap "Create Match"
3. Enter match details
4. Publish match
5. Receive join requests
6. Approves or rejects each request
7. Monitor player count

8. Start match once full

**Use Case Diagram:**



## 2.5 Justification of Requirements

### Functional Requirements:

**Match Creation:** Most survey respondents said they often struggle to find enough players, and during observation many groups were stuck waiting around with no easy way to organize a proper match. Creating matches inside the app gives players a simple, central place to coordinate instead of relying on slow group chats or asking people in person.

**Join Match Feature:** Almost 90% of people said they would join games organized by strangers, and we observed players trying to quickly recruit others at the field. A one-tap join feature makes this process fast and convenient, replacing and avoiding the last-minute scrambling and awkward conversations we saw in real life.

**Player Count:** Both the survey and the field observations showed the same problem, games often started with fewer players than planned or people ended up cancelling. Showing live player counts helps everyone know exactly where things stand and reduces wasted time.

**Player Profiles:** Skill level was the top factor people cared about when joining a match, and many respondents were worried about unreliable or unsafe players. Simple profiles help users feel more confident about who they are playing with and allow games to feel fair and balanced. Being able to see the person's skill and other attributes not only gives comfort but also allows for faster decision making when in need for a player.

**Notifications:** Players usually miss out on games because they don't hear about them in time, and groups at the field are stuck waiting for others to show up. Notifications make it easier for players to join quickly and help matches fill up faster.

**Match History:** Unreliable players and last-minute cancellations were major concerns in the survey. Match history allows for a simple record that helps players trust each other and gives hosts a sense of who usually shows up.

**Match Requests & Host Approval:** Although players are open to joining strangers, safety and trust were still big concerns. Giving hosts the ability to approve requests adds a layer of control and helps ensure the match feels safe and comfortable for everyone involved.

## Non-Functional Requirements

**Performance:** Players struggle to find last-minute players, and they usually rely on fast communication. During the observations, delays directly caused games to start late. Smooth, fast performance ensures users can join or create matches immediately when needed.

**Scalability:** Most of the survey respondents were 18–25 and very active football players, meaning spikes in app traffic are likely at similar times (evenings, weekends). To avoid crashes or bugs during busy hours, the app must scale as the community grows.

**Availability:** Most of the time players organize the matches spontaneously, sometimes just minutes before playing. If the app is unavailable when users need it, it defeats the main purpose of solving last-minute coordination issues that were seen both in surveys and in the field.

**Security:** Safety and privacy concerns were major worries in the survey. Players want to feel comfortable joining matches with new people, and strong security helps address concerns about data misuse or unsafe interactions.

**Usability:** In the survey, many current methods (WhatsApp groups, asking strangers in person) were described as inconvenient or inefficient. Since this app

replaces those informal tools, it must be simple enough that even new users can use it instantly without confusion.

**Reliability:** A major issue identified was unreliability or last-minute cancellations. If the app shows outdated or wrong match data, it repeats the same problems users already face and basically doubles down on the user. Reliable information builds trust and prevents wasted trips or unbalanced matches and simply a better experience.

**Error Handling:** Good error messages prevent confusion and help maintain smooth coordination.

## User Experience Requirements

**Simple Match Flow:** Players often need to organize matches quickly, especially when someone cancels at the last minute. During observations, people wasted time waiting or asking around. A short, simple flow helps users act fast without frustration.

**Clear Visuals:** Survey responses showed that skill level, timing, and number of players are key factors when deciding to join a match. Clear visuals make it easy for users to quickly understand whether a match fits their needs without digging through information.

**Smooth Navigation:** Many current methods of organizing games are inefficient and scattered across different platforms. Smooth navigation reduces friction and helps users move quickly between key sections, which is important when time-sensitive decisions are involved.

**Personalization:** Skill level was the most important factor for users when joining matches, and location and timing were also highly valued. Personalization ensures users see relevant matches first and reduces the effort needed to find suitable games.

**Accessible Language:** Most respondents are familiar with football and already use informal language when organizing games in person or through messages. Using familiar terms makes the app feel natural and reduces confusion for new users.

**Consistency:** Consistency helps users learn the app quickly and trust it. Since many users want a faster and more reliable alternative to current tools, a consistent interface reduces mistakes and makes the experience feel smooth and professional.