# TeamMate
# Personnel Management
# Team 05 - Concat

## Team Members

| Name | E-Mail | Role |
|------|--------|------|
| Krishna |  | Team Lead |
|  |  | Frontend Lead |
|  |  | Database Admin |
|  |  | Docs-Editor |
|  |  | Github Master |
|  |  | Backend Lead |

## Milestone 1
## July 09 2024

## Version History

| Revision | Date Submitted |
|----------|----------------|
| Initial Draft | 13 June 2024 |
| Revision 1 | 20 June 2024 |
| Revision 2 | 09 July 2024 |

# Table of Contents

# Executive Summary

TeamMate is a comprehensive personnel management solution specifically tailored for small to mid-sized groups. Recognizing that smaller non-profit organizations and community groups often lack the resources or need for full-scale professional HR services, TeamMate fills this gap by providing an accessible and user-friendly platform. Designed for less formal environments, TeamMate offers a range of customizable features that also make it adaptable for professional settings. Instead of juggling multiple services to handle various aspects of personnel management, TeamMate consolidates these functions into a single, streamlined platform.

TeamMate is designed to provide leadership with a comprehensive overview of their organization's members, enabling them to quickly assess activities and track progress throughout each member's tenure. The platform showcases individual accolades and accomplishments, making them visible to other users within the organization, while allowing administrators to issue said accolades. TeamMate includes robust event management capabilities, allowing administrators to easily set up and manage various events such as meetings, training sessions, workshops, and other organizational activities. The system tracks attendance, ensuring that all participation is documented and easily accessible for future reference. Additionally, TeamMate provides tools for monitoring and managing qualifications and certifications. Administrators can keep track of who holds specific certifications and when they were obtained.

TeamMate empowers a diverse range of smaller communities. Whether it's tracking a student's progress, a gamer's achievements, a volunteer's service hours, or a non-profit member's contributions. TeamMate not only simplifies management but also enhances transparency and accountability within the group. The system fosters a culture of recognition and appreciation by highlighting individual achievements and contributions. This recognition encourages members to take pride in their efforts and motivates them to strive for excellence. By using TeamMate, organizations can create a motivating environment that drives continuous improvement and engagement.

# Main Use Cases

**Actors:** Dave (Customer), Chris (Dave's Friend), Scouts (Users), TeamMate (Company)

**Assumptions:**

 Dave has information about his scouts in separate offline platforms.

 Dave, Chris, and Scouts all have reliable internet access.

**Use Case #1**

 Dave is part of the leadership for Boy Scouts of America in the silicon valley. During COVID, the Boy Scout troops were hardly able to go outside and do their activities, Dave is worried that such events will negatively affect troop motivation and participation. A platform to display scout progress and achievements online appeals to him, as it would still allow the scouts to take pride in their achievements and showcase them without needing in-person meetings. Dave creates an account and an organization on TeamMate for all troops in the Silicon Valley. He uses the groups category to ensure each Troop has their own section, and imports all awards. As the scouts create their own account and join the organization one by one, Dave starts assigning them their awards and groups, but realizes that this is tedious work for one person. Dave gets his friend Chris to also create and account and join the organization, where he gives Chris administrator permissions. Now, Dave and Chris both assign groups and awards to the incoming scouts, and Dave is relieved that the workload is much more manageable. On the dashboard screen, Dave can see all the scouts in his organization, separated by Troops; he can click on a scout to open a page that displays information about them and their awards.
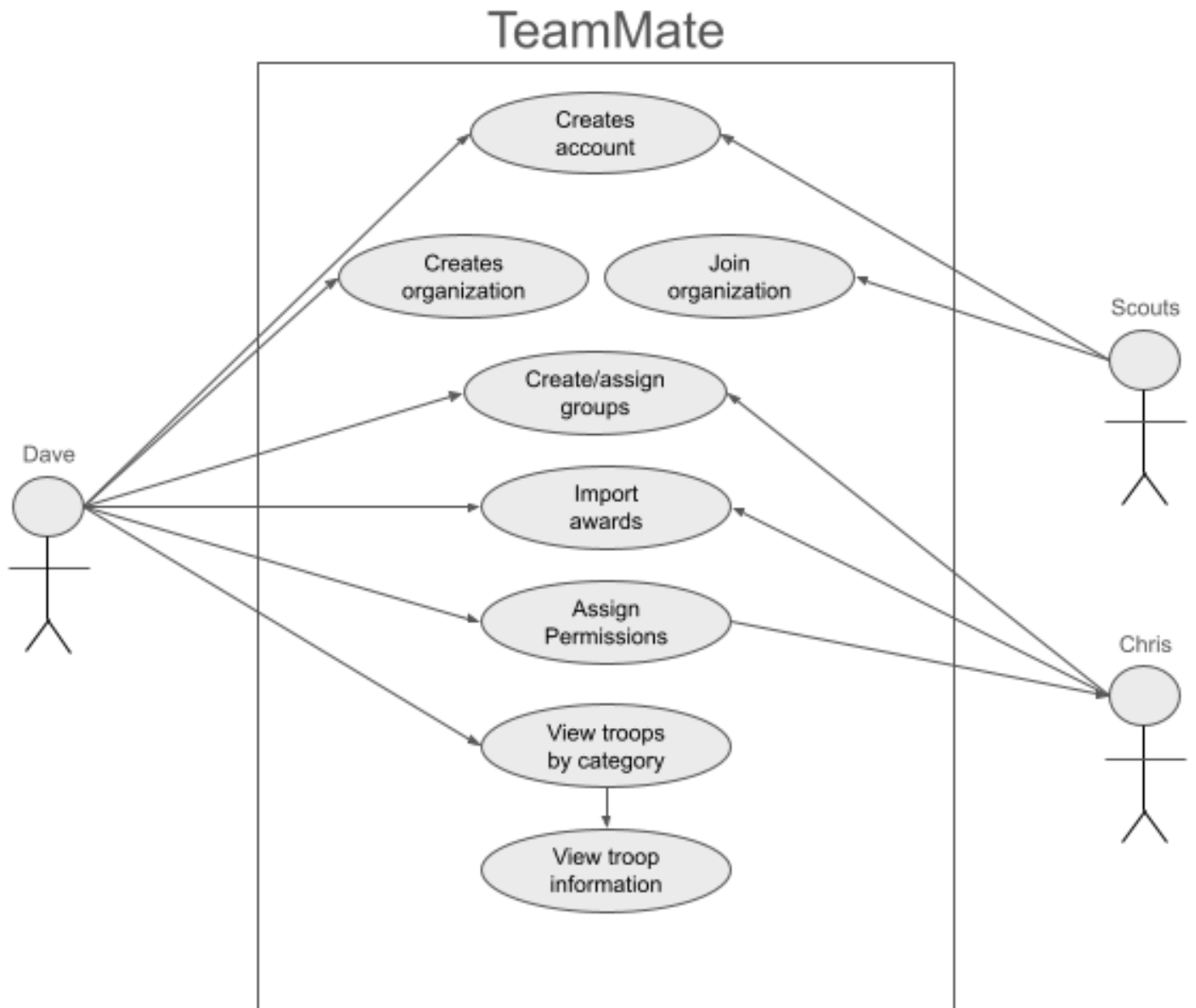
**Benefits:**

 Dave and Chris can track all their scouts on one central platform.

 Scouts, and their friends and family, can quickly check their progress.

 Scouts feel recognized and motivated to participate more in their community.

**Diagram**

# TeamMate

**Actors:** Jake (Customer), Specialists (Users), TeamMate (Company)

**Assumptions:**

      Jake is keeping track of his specialists certifications separately.

      Jake and his Specialists have access to the internet.

## Use Case #2

      Jake is the leader of a professional group in a field with many qualifications. His specialists need these qualifications to be considered for work by potential customers. However, each of these certifications use their own system and platform. Jake finds it tedious and time consuming to track all of his subordinates' qualifications through the various platforms they acquired them from. In order to improve productivity and keep everything centralized, Jake creates a TeamMate account and organization. Jake's Specialists also create TeamMate accounts and join his organization. Jake then imports his Specialists' qualifications, certifications, and training into the system in order to see all of them at a glance. Jake can also schedule training for certifications, see who attends them, and update their qualifications accordingly. This centralized dashboard relieves Jake, since he no longer has to track many different systems and applications, but can instead have all required information on just TeamMate.
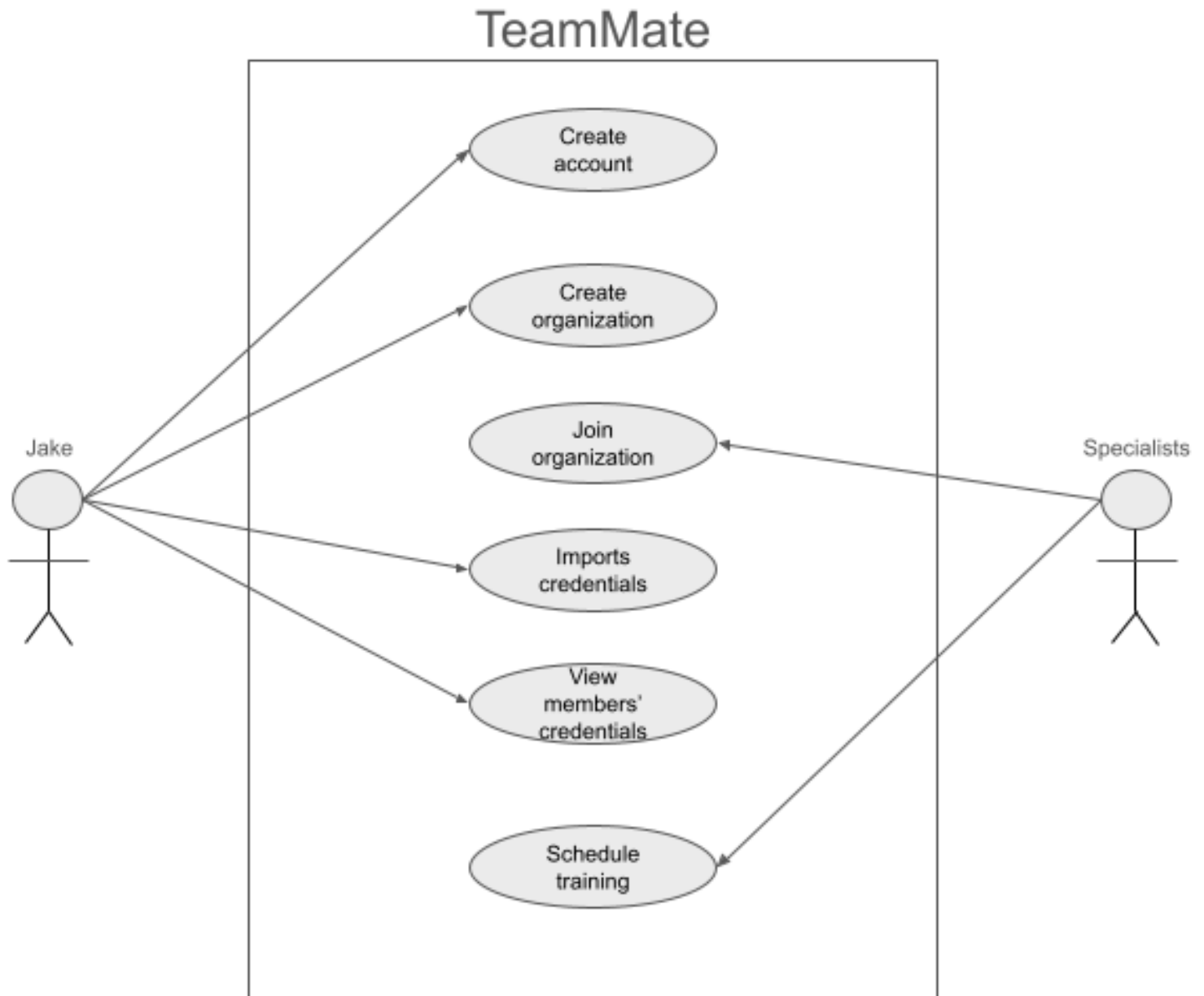
**Benefits:**

      Jake can quickly check if his team has the qualification a customer asks for.

      Jake can check which of his team members are attending the training events.

# Diagram

## TeamMate

Jake

Specialists

Create account

Create organization

Join organization

Imports credentials

View members' credentials

Schedule training

**Actors:** Dr. Sarah (Supervisor), Researchers (Alice, Bob), Lab Assistants (Eve, Frank), Graduate Students (Heidi, Jose)

**Assumptions:**

Dr. Sarah has access to the TeamMate platform

Researchers, Lab assistants, and graduate students have created their accounts on TeamMate and joined the lab organization.

**Use Case #3**

Dr. Sarah logs into the TeamMate platform and navigates to the custom "Project Management" section. She inputs the details of the new project, including objectives, timelines, and assigned researchers. Researchers log their progress and update project milestones regularly. Lab assistants support researchers by updating their progress on the tasks. Graduate students input their progress and updates on their specific research tasks. Dr. Sarah reviews the progress updates and provides feedback or adjusts timelines as needed. The system generates a progress report summarizing the status of all ongoing research projects and confirms the progress updates are saved and the report is generated successfully.
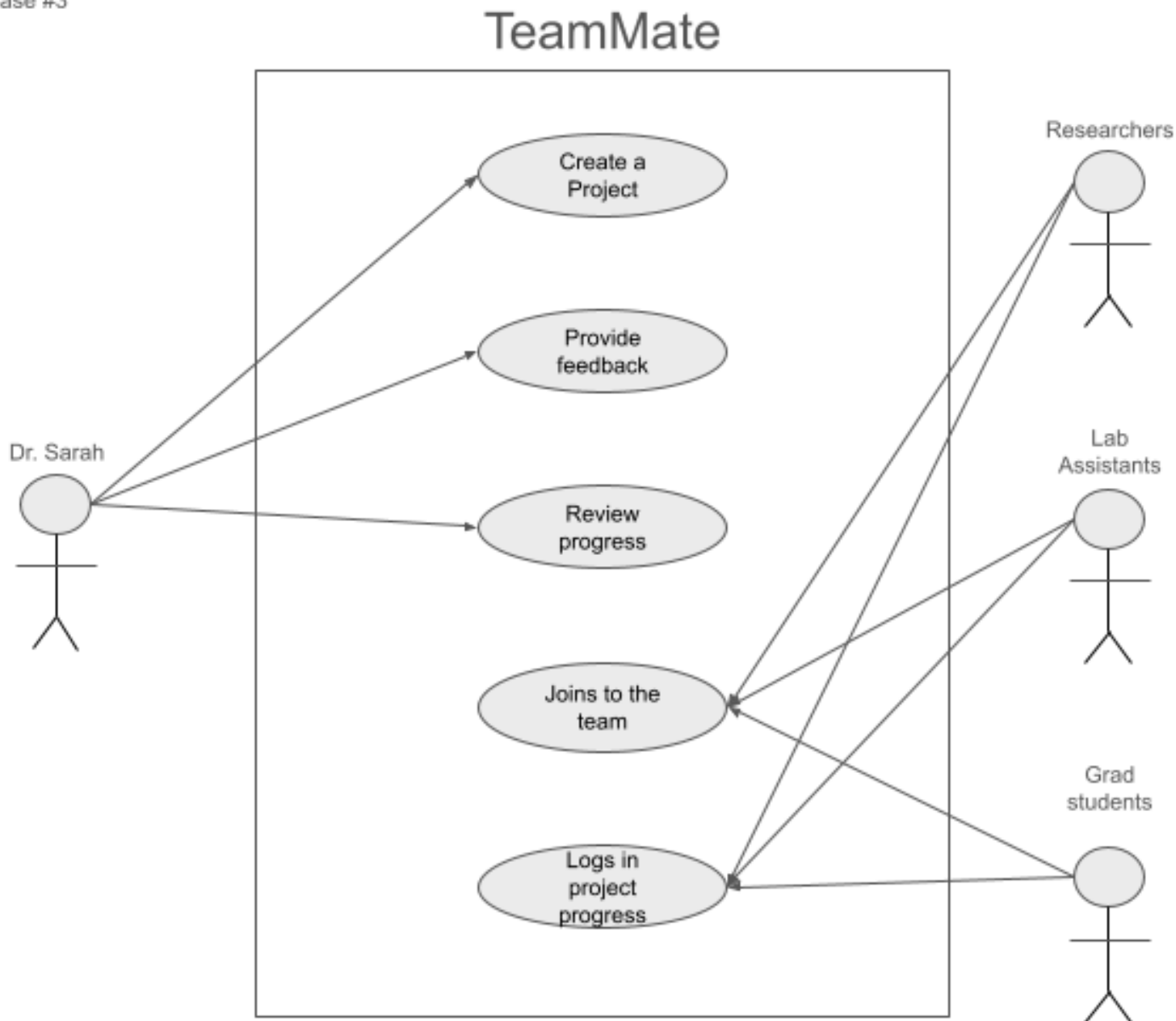
**Benefits:**

Dr. Sarah can efficiently monitor the progress of multiple research projects.

Researchers, Lab assistants, and graduate students receive timely feedback and support from the lab supervisor.

Diagram

# TeamMate

Create a Project

Provide feedback

Review progress

Joins to the team

Logs in project progress

Dr. Sarah

Researchers

Lab Assistants

Grad students

**Actors:** Dr. Susie (Supervisor/Lab Manager), Technicians(Ingrid, Jack), Maintenance Staff (Nancy, Billie)

**Assumptions:**

Dr. Susie has access to the TeamMate platform

The team members have created their accounts individually on TeamMate and joined the lab organization.

**Use Case #4**

Dr. Susie logs into the TeamMate platform and navigates to the custom "Equipment and Supplies Management" section. She inputs the details of the lab equipment and supplies, including quantities of them, locations, and maintenance schedules. Lab technicians log equipment usage and report any issues or maintenance needs. Maintenance staff schedules and performs maintenance based on the logs and reports from the lab technicians. Dr. Susie reviews the equipment usage logs and schedules maintenance as needed. The system tracks inventory levels and alerts Dr. Susie when supplies are low. Dr. Susie places orders for new supplies and updates the inventory accordingly. The system confirms the equipment and supplies logs are updated and inventory levels are tracked regularly.

**Benefits:**

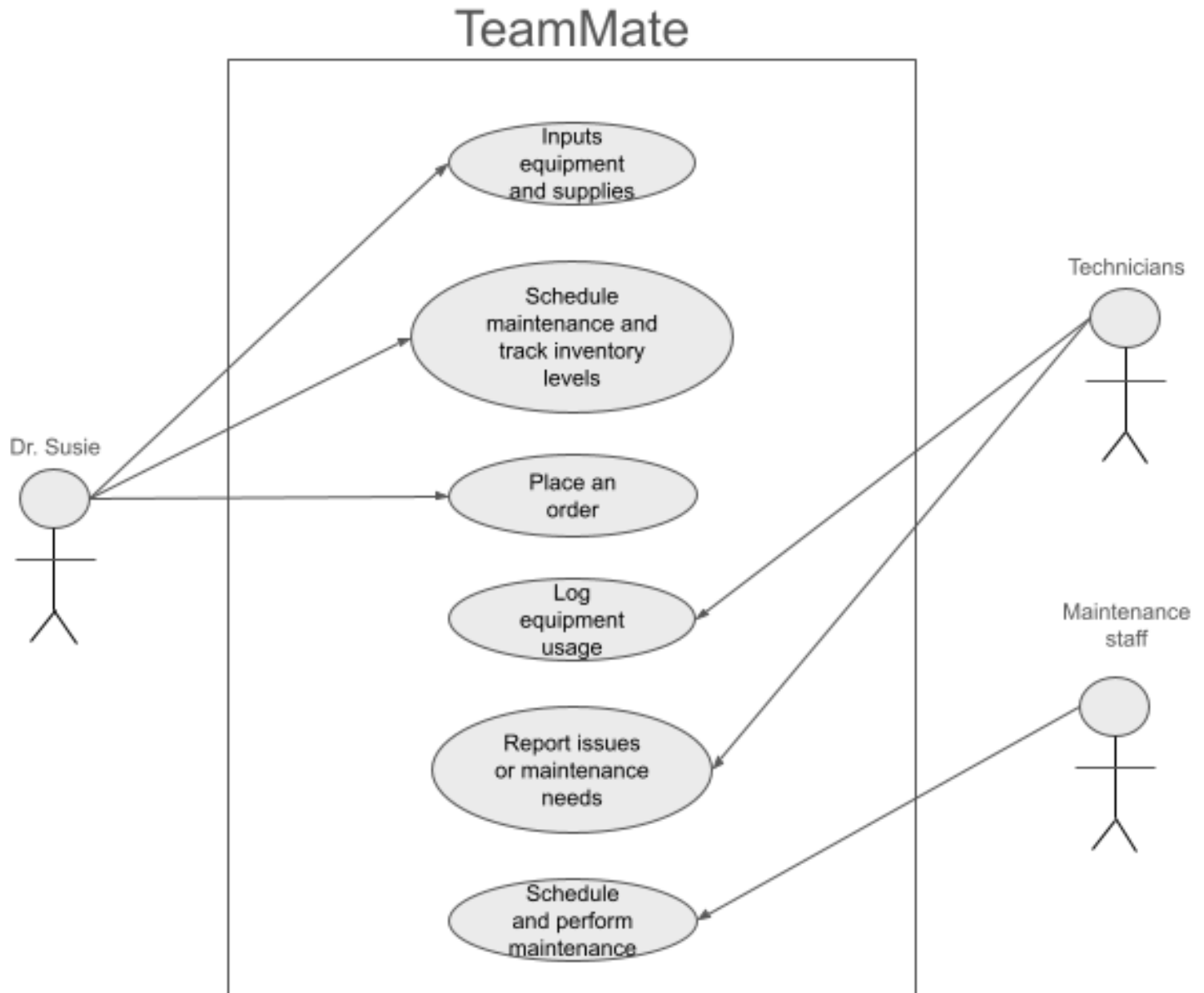Dr. Susie can efficiently manage lab equipment and supplies in one centralized platform.

Equipment maintenance is timely and well documented.

# Diagram

## TeamMate

- Inputs equipment and supplies
- Schedule maintenance and track inventory levels
- Place an order
- Log equipment usage
- Report issues or maintenance needs
- Schedule and perform maintenance

Dr. Susie

Technicians

Maintenance staff

**Actors:** Steve (Manager), XYZ staff (User), TeamMate(Company)

**Assumptions:**

Steve is knowledgeable in the usage of applications on websites and smartphones.

Steve and his staff have access to the internet

## Use Case #5

Steve is a manager at a non-government organization, XYZ, and he's enthusiastic about recognizing activities and workflow in the organization because mostly, the body of the workforce is volunteers. At the same time, he is concerned that everyone in the company is at the same pace. In reality, it was difficult to monitor, encourage, and recognize everyone at the same time.

Meanwhile, he found out that an online platform TeamMate can track and provide a comprehensive overview of all the members, making sure no one is left behind by recognizing their activities. He can issue digital accolades to the XYZ staff to recognize their contributions, which are visible on their profiles. The TeamMate would suggest Steve or HR manager to issue digital badges when volunteers complete a certain amount of tasks or projects they were assigned. He can also share the recognition to the public via social media.

## Benefits for Steve

The app saves Steve time and energy by tracking workflow and issuing digital accolades to recognize volunteers' contributions.
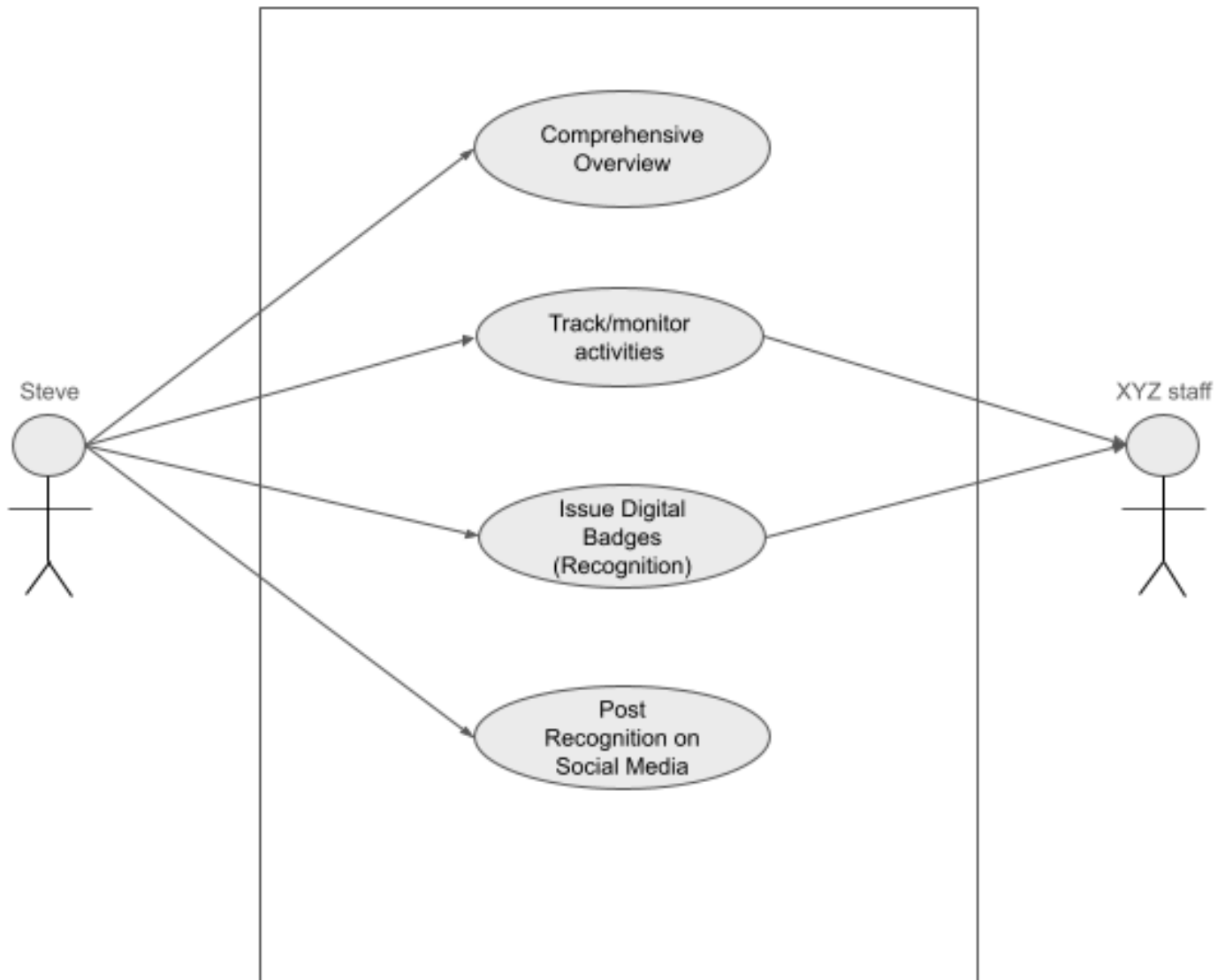
The volunteers get motivated by the culture of public recognition to continue their efforts.

Steve is happy because the way the platform transforms the volunteers more organized, motivated, and dedicated to their tasks, missions.

# Diagram

## TeamMate

Steve

Comprehensive Overview

Track/monitor activities

Issue Digital Badges (Recognition)

Post Recognition on Social Media

XYZ staff

**Actors:** Bob (Founder of Inferno), TeamMate (Company), Teams/ players (Inferno community)

**Assumptions:**

Bob is willing to try the platform(TeamMate).

All the teams create accounts on TeamMate, and reliable internet is accessible.

**Use Case #6**

Bob is a CS graduate from SFSU and he founded a gaming community called Inferno. After one year, the community can host gaming events across the Bay Areas with active 100 members. As members grow, it is challenging to host events, organize teams, track individual achievements, and post announcements. He could have hired more people, but he doesn't want to raise membership fees. He is worried that he could not manage teams and events perfectly.

One of the members introduces him to an online team/event/organization management platform (TeamMate) that can set up events, organize teams, check qualifications, track streamlined activities, recognize achievements, and a few to name. Now the gaming community creates events and tournaments with features of signing up more teams without schedule conflicts. The platform records attendance, ensuring not just teams, but individuals have detailed profiles that include biography, participating history, level, rewards, and achievements. The administrators can also make announcements on the platform.
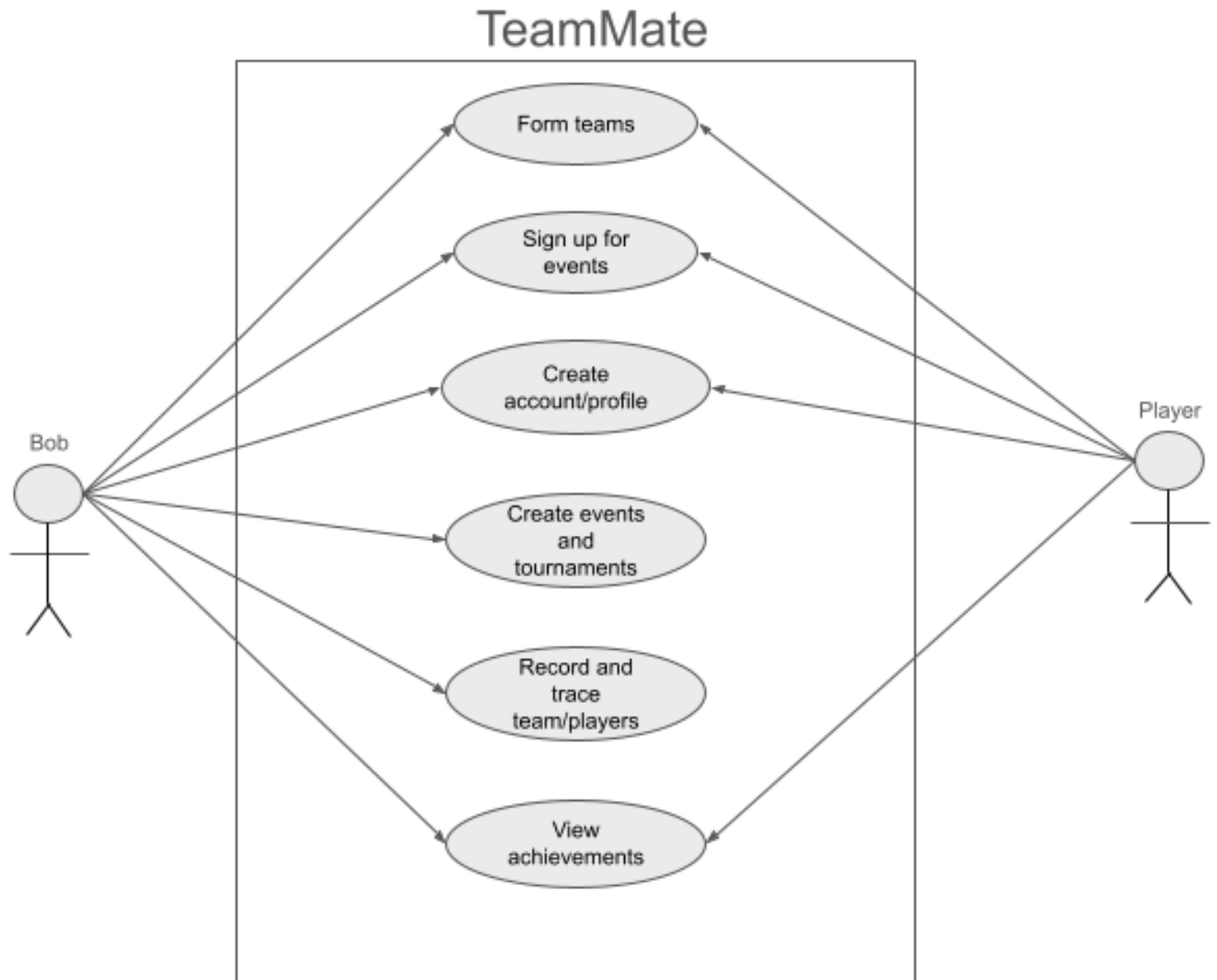
**Benefits for Bob:**

The online platform saves Bob resources and energy to handle teams, events and organization effectively.

Bob can access the platform anywhere and anytime.

# Diagram

## TeamMate



Bob

Player

Form teams

Sign up for events

Create account/profile

Create events and tournaments

Record and trace team/players

View achievements

**Actors:** Dan (Construction Company manager)  Luigi, Angel, Joshi (Construction workers, users) Danliland (Construction Company), and TeamMate (App Company)

**Assumptions:**

Dan is currently having a difficult time interviewing new prospects for his construction company and knowing why other are failing to do the requested work

Dan is aware of the TeamMate App knows to use it and has introduced it to his workers

**Use Case #7**

Dan serves as a construction company manager at the Danliland construction company. As manager he employs at least 20 workers in his company. Some of his workers are Luigi, Angel and Joshi, as construction workers Dan asks them to complete a training survey in order to track what the employers need to learn about construction, what they already know, but also emphasize what they have learned in the past about construction working with other companies. Dan uses the TeamMate App to create an account for each worker so they can login and complete the survey within it. Having the name of each worker, the email, and experience in construction  keep track of who has completed the survey and who has not, also track what needs to be learned while the workers work. With the app the construction manager is also able to manage when the survey was opened or completed. Depending on survey results some workers will have to meet with Dan

**Benefits:**

The TeamMate App is going to help Dan have a more organized life when he asks new and current employers to complete the work survey because he will keep track of what each worker needs to learn about construction, what they already know about construction, and what knowledge they plan to take out while working in a construction company

The TeamMate App can help Dan learn more about each of his workers (background wise) in relation to the experience they currently have in construction

# Diagram
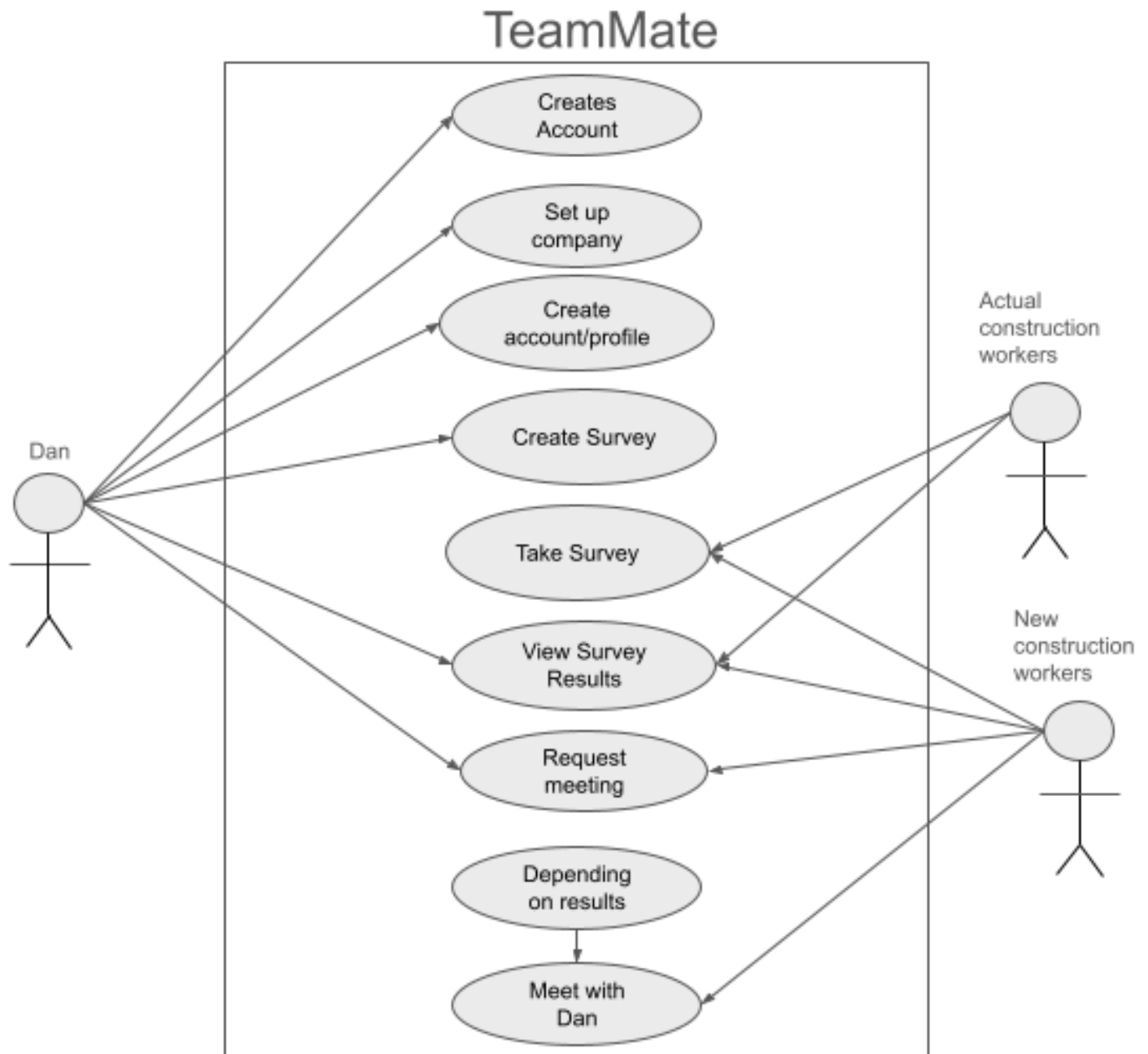
**Actors:** Mary (Customer), Volunteers (Users), TeamMate (Company)

**Assumptions:**

Mary is currently tracking her volunteer activities and hours manually or using multiple tools

Mary and her volunteers have reliable internet access

**Use Case #8**

Mary works as a coordinator at a local non-profit organization that relies on volunteers to carry out and support its mission. She finds it overwhelming and challenging to keep track of the volunteers' hours, activities, and accomplishments using tools such as spreadsheets and manually keep track of these processes. In desperate need for a solution that can help streamline this process and provide a clear overview of each volunteer's contribution, her search begins, and she comes across the website, TeamMate. Mary creates an account on TeamMate and sets up her organization. Mary then is able to import historical volunteer data which includes their hours worked, tasks completed, and any awards they achieved. TeamMate allows her to easily assign new tasks to volunteers, track their hours in real time, and manage schedules for upcoming events. Volunteers can create an account, log their hours directly into the system, review their progress, and receive recognition for their contributions. Mary can also generate reports to showcase or highlight the volunteers' efforts which help recognize their hard work and secure future funding for the organization.
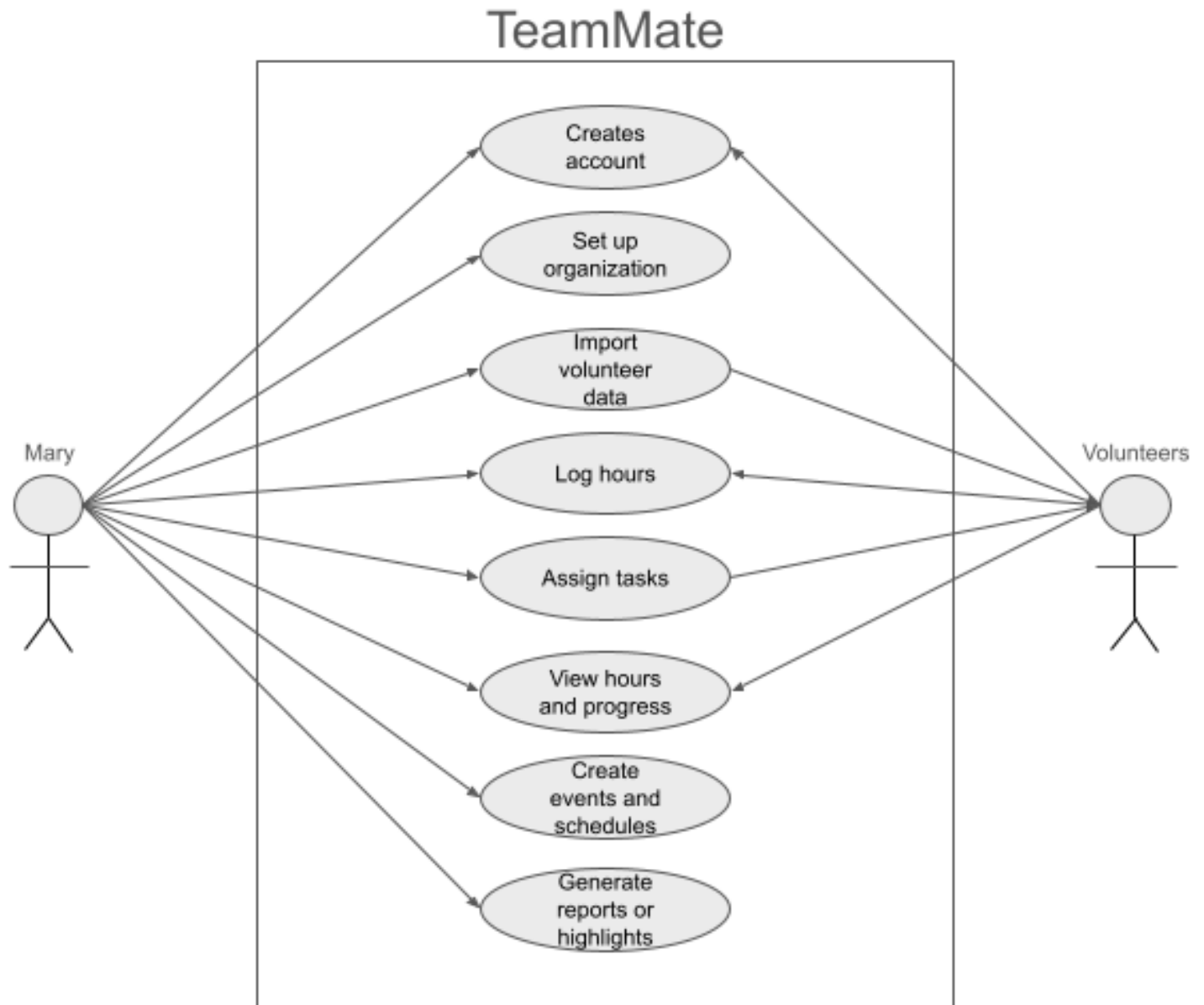
**Benefits:**

Mary is able to efficiently manage all volunteer activities and hours in one centralized platform.

Volunteers can easily log their own hours and view their contributions which can promote transparency and recognition.

The organization within TeamMate can provide detailed reports or highlights on volunteer activities that can further aid funding or grand opportunities.

# Diagram

## TeamMate

Mary

Volunteers

- Creates account
- Set up organization
- Import volunteer data
- Log hours
- Assign tasks
- View hours and progress
- Create events and schedules
- Generate reports or highlights

**Actors:** Alex (Customer), Students (Users), TeamMate (Company)

**Assumptions:**

>Alex is responsible for managing the school's gaming club

>Alex and the Students have reliable internet access

**Use Case #9**

>Alex is a teacher who is in charge of running a gaming club at a local high school. The club has recently grown in popularity, and many students participate in various games and competitions. However, it is becoming increasingly complex to manage the club with the increase of participants in the club. Alex needs to organize teams, track the players' rankings, and continuously find new opponents for the club to compete against.

>Alex comes across TeamMate in his search for a tool to streamline the management of the gaming club. He creates an account on TeamMate and sets up the club's organization. Students create their own TeamMate accounts and join the gaming club. Alex can then create teams, assign players to these teams, update scores, and track individuals and team rankings based on performance in competitions. This platform also allows Alex to schedule matches, find new teams to compete against, and organize internal tournaments. The students can view their rankings, see their team assignments, and sign up for upcoming competitions. They are also able to communicate with their teammates and receive updates about matches and events. This centralized system allows Alex to efficiently manage the club while the students can stay informed and motivated to participate.
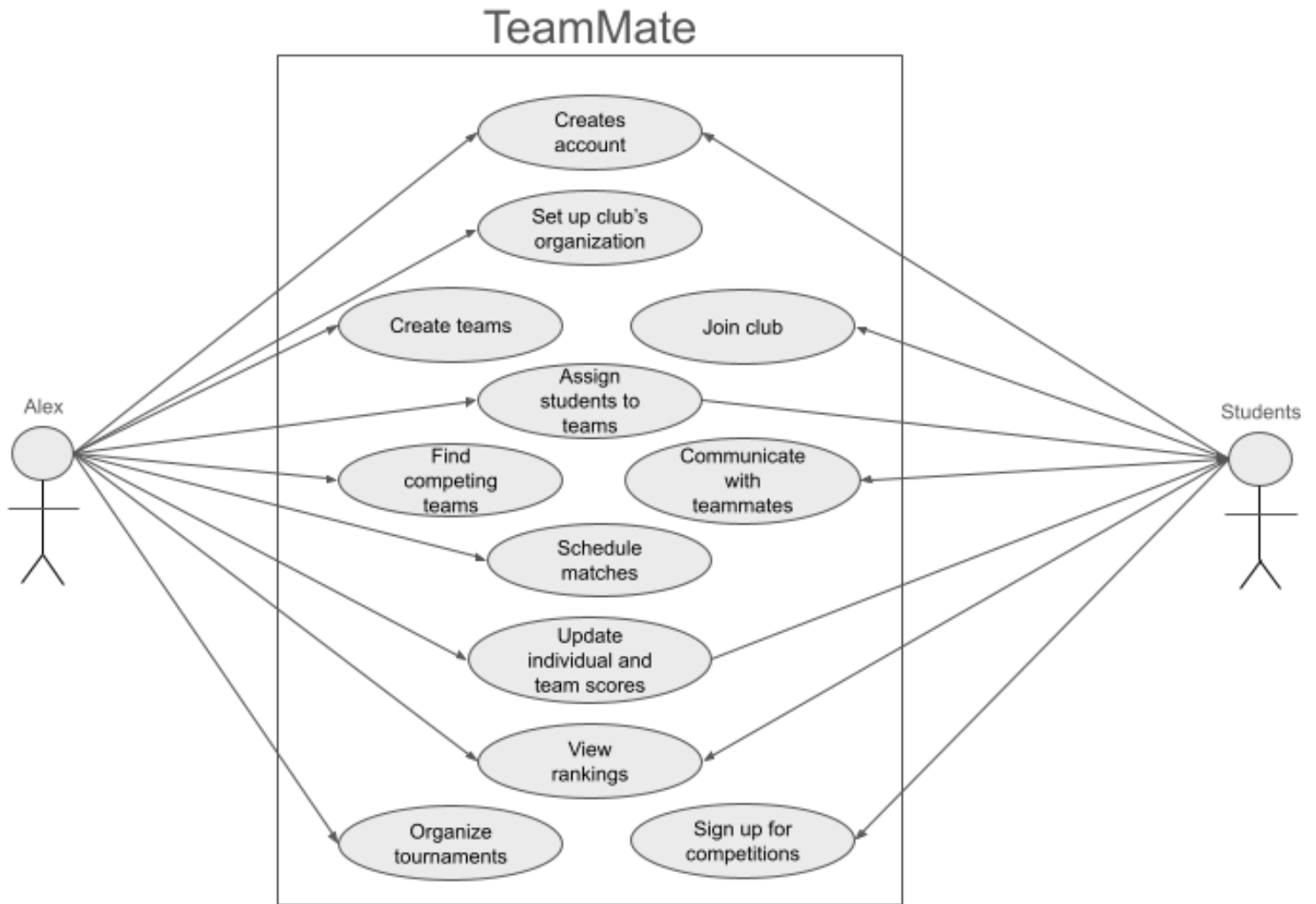
**Benefits:**

>Alex can efficiently manage team assignments, track rankings, and organize competitions in one platform.

>Students can easily view their ranking, team assignments, and view upcoming competitions.

>The club can find new teams to compete against, enhancing the overall gaming experience.

# Diagram

## TeamMate

Alex

Students

- Creates account
- Set up club's organization
- Create teams
- Join club
- Assign students to teams
- Find competing teams
- Communicate with teammates
- Schedule matches
- Update individual and team scores
- View rankings
- Organize tournaments
- Sign up for competitions

**Actors:** John (Customer, a sport team leader), John's Teammates (Customers, sport team teammates), TeamMate (Company)

**Assumptions:**

John is a full-time basketball team leader, but he has a lot of part time jobs so it makes it hard to use the little time he has to manage the team he has.

John and his teammates have access to the internet and the TeamMate platform.

**Use Case #10**

John is a full-time basketball team leader, who is trying to get his team in the professional league. But right now he's running multiple part times to make sure the team has enough fundings. While the team is benefited by the extra money they have, John is having an extra hard time managing the team. Such as, to manage the team activities, setting up a training time and locations, keeping track of everyone's physical condition or even having group communications.

One member of the basketball team introduced John TeamMate, it was an app to make managing more convenience that promises to be a life changer. John created an account on this app, and setted up his organization. His teammates always create an account and join the organization. Then he can conveniently assign tasks for his team to complete, keeping track of the team progress, making announcements, or even rewarding the players who actively complete tasks. With the help of this app, John and his team feel more connected to each other. Players within the teammate will compete with a positive environment, also encouraging players to be more engaged..
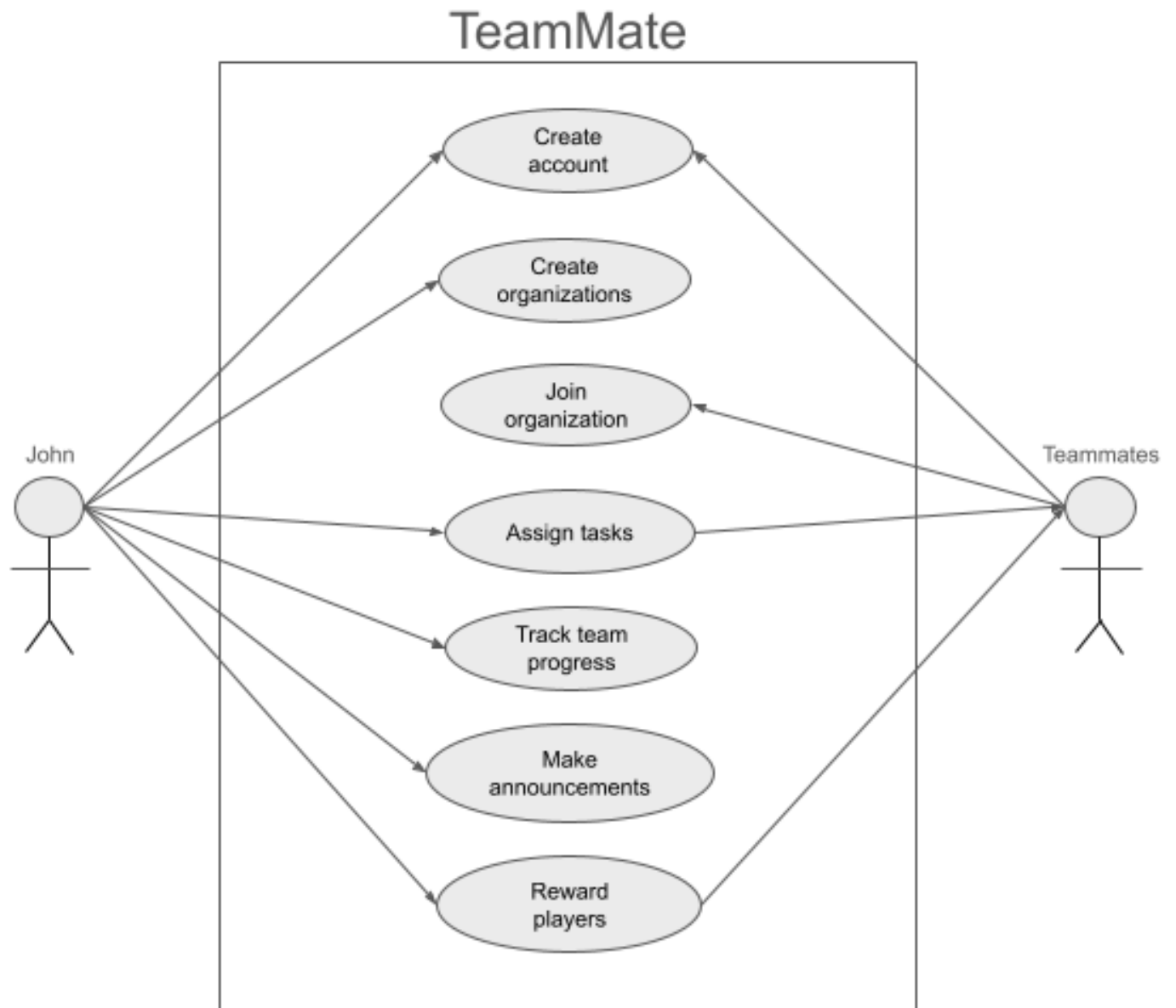
**Benefits:**

John can use TeamMate to manage the whole group, which it was hard to do with one app before. Increasing efficiency.

The features in the app keeps the team more connected to each other, which can potentially increase morale.

# Diagram

## TeamMate



John

Teammates

Create account

Create organizations

Join organization

Assign tasks

Track team progress

Make announcements

Reward players

**Actors:** Eric (An orphanage Director, Customer), Faculty (Orphanage Faculty, Customers), Volunteers (Customers)

**Assumptions:**

The orphanage Eric runs lacks hands, he wants to hire some volunteers to help.

Everyone in the orphanage has access to a stable internet, and has basic knowledge about phone apps.

**Use Case #11**

Eric has a huge orphanage to direct, and it's lacking faculties to run the place. He's trying to hire some volunteers to help out, but he is concerned if he can manage all the volunteers who don't have much experience. Then one of Eric's colleagues introduced Eric the TeamMate app, which is an app to help management. This app comes just in time, Eric was feeling overwhelmed with work, and he can't manage the volunteers without help. He decides to create an account along with his faculty and volunteers. With the help of this app, which integrates communication, assigning tasks, rewarding system, and leaderboard all together, Eric should be able to manage the volunteers easier.

The use of TeamMate did create so much convenience, but Eric is still having a hard time managing due to how busy he is. Eric then lets one of the faculties create an account on TeamMate, who is assigned to be an administrator which allows him to also provide awards or assign tasks. Now with the help of his colleagues, Eric's workload is drastically decreased. Eric can even check the active volunteers, and make them the temporary leaders.
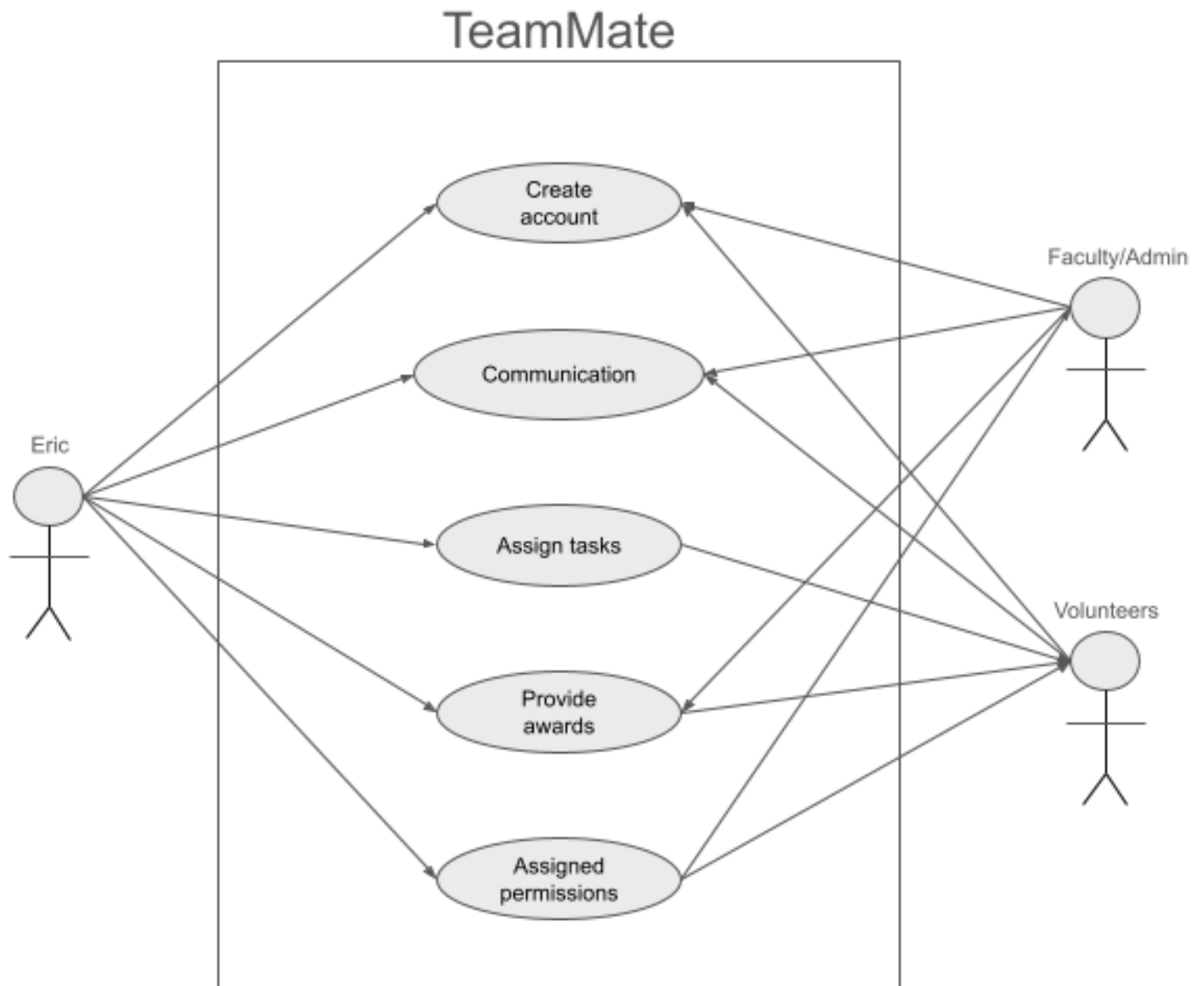
**Benefits:**

Increase the efficiency when managing a large group.

Can quickly see who's active over a group of people, and see who's not active.

# Diagram

## TeamMate

**Actors:** Clianci (Yoga Center Director), Yoga students (users) TeamMate (Company)

**Assumptions:**

Clianci struggles to keep track of students' goals and what they need to do in order to achieve them.

Clianci has used other apps in the past to keep track of her goals but no apps seem to help her.

Students can oftenly keep track of what goal they are planning to achieve.

**Use Case #12**

Clianci is the director of a Yoga class in Novato, she teaches Yoga classes every other day of the week, Monday, Wednesday, and Friday. Clianci wants each of her students to have new exercises/goals for her class 1 time each month. Each goal has to be achieved by the end of the month because new goals need to be created at the beginning of each month. Clianci has students that tend to have difficulty in constantly staying motivated to achieve those goals and keep working to reach where they want to reach. She decides to use the TeamMate app and create an account for her Yoga class students to be able keep track of each student's goals and achievements during each month, also to keep track of what methods her students are using to achieve those goals. She is also able to keep track of what obstacle is preventing a student from achieving that Yoga exercise/goal. For example an obstacle can be being tardy everyday, not attending class regularly, procrastination, distractions (doing other things, other then yoga in class). She will also keep track of the days a student specifically designated to work on these achievements (one by one)
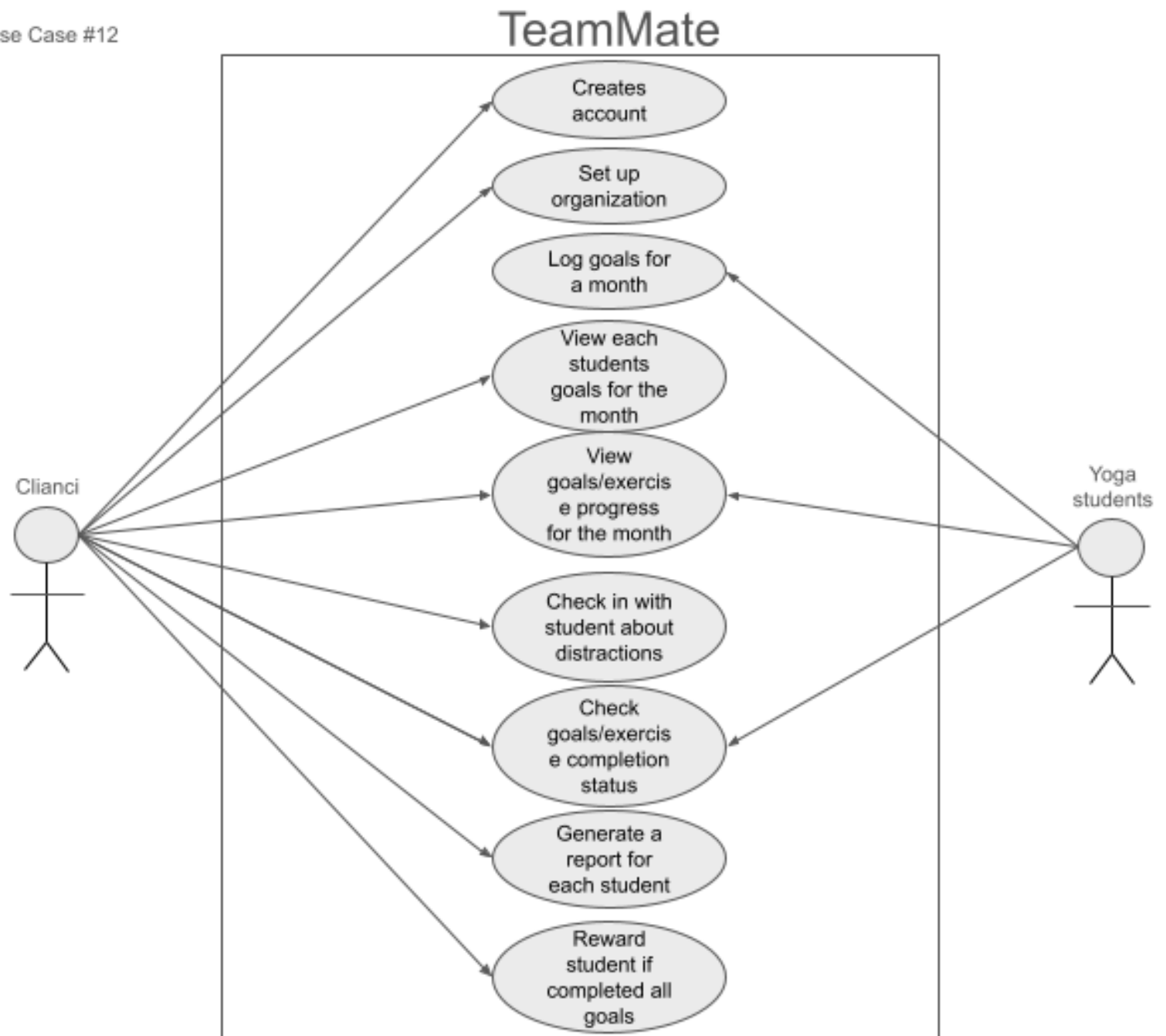
**Benefits:**

If she uses the app to keep track of all the recent and future achievements each student of hers has, she can clearly see how much they have done during the month, it gives a sense of satisfaction to see how much her students are able to complete during a month or guides to implement changes in her class that would help the student be more engaged and complete their exercises/ achievements .

She will learn how to be more organized. All students' goals/exercises have to be completed one by one depending on what motivates them and how much time students designate each day to work towards that certain goal. As soon as they achieve the accomplishment of the goal she will reward each student with something (if the goal is reached before the month ends)

Diagram

Use Case #12

## TeamMate

Clianci

Yoga students

- Creates account
- Set up organization
- Log goals for a month
- View each students goals for the month
- View goals/exercise progress for the month
- Check in with student about distractions
- Check goals/exercise completion status
- Generate a report for each student
- Reward student if completed all goals

# Main Data Entities

- Account - Store user data.
  - Used to store data like username, email, password, etc to allowed users to register and login.

- Organization - Store organization data.
  - Used to store organization information, and also customization data, allowed people to rename.

- Member - Store organization member data.
  - Used to associate an account with an organization, holds organization specific information. Allowed to have one per-account per-organization.

- Events - Stores instances of events.
  - Used to store event information data, dates, times, and attendance.

- QualificationTypes - Stores types of qualifications and certifications.
  - Used to store different types of qualifications. Separated from an instance to allow easy mass-editing and issue.

- Qualifications - Stores instances of qualifications and certifications.
  - Used to store instances of qualifications, including date and time received along with any optional information about issuing party and notes.

- AwardTypes - Stores types of awards.
  - Used to store different types of awards. Separated from an instance to allow easy mass-editing and issue.

- Awards - Stores instances of issued awards.
  - Used to store instances of awards, including date and time received along with issuing party, citation, and any additional notes.

- Sections - Stores custom sections and pages for any purpose.
  - Used to store custom sections, which will be displayed on the dashboard, that invited members can access external and embedded apps on.

- Comments - Stores comments and their corresponding information.
  - Used to store comments and what page they are for, which will be displayed on their respective pages.

# Functional Requirements

**Account**

- Users shall register for a new account.
- Accounts shall have unique emails.
- An account shall have a username.
- An account shall have a password.
- An account shall have secure passwords as per modern standards.
- Users shall log into an existing account.
- An account shall be able to upload a profile picture.
- An account shall be able to update profile information.
- An account shall be able to update the password.
- An account shall be able to update the associated email.
- An account shall create a new organization.
- Accounts shall join an existing organization.
- Accounts shall view all organizations they have joined.
- Accounts shall view all public organizations another account has joined.

**Member**

- Member permissions shall be members, group leaders, or admins.
- Members shall overwrite their account profile picture with a new picture.
- Members shall set a separate first and last name in each organization.
- Members shall generate event attendance reports.
- Admins shall be able to upload an image for the organization profile.
- Admins shall assign member and group leader permissions.
- Admins shall be able to issue awards to members.
- Admins reset member profile pictures if they are inappropriate.
- Admins reset member names if they are inappropriate.
- Users shall be able to leave comments and endorsements on a member's page.
- Users shall be able to filter for members that have specific attributes.
- A member's page shall show the last time they were logged-in.

- A member's page shall show their information for that organization, along with all attributes, qualifications, awards, etc as a dashboard.

## Organization

- An organization shall have an owner.
- Organization ownership shall be able to be transferred to another member.
- An owner can assign other members to be admins.
- An organization shall have permissions that determine what members, group leaders, and admins are able to create and edit.
- Admins shall create custom sections for tailored purposes.
- Admins shall link external apps and embedded apps in custom pages.
- An organization shall have a roster page that shows all members in the organization separated by groups.
- Admins shall be able to change the order in which groups appear on the organization roster page.
- Users shall click on any member on the roster to access their member page.
- Organizations shall include an inactive or past members group that archives past members for posterity.

## Awards

- Admins shall create award types.
- Admins shall update award types.
- Admins shall delete award types.
- Awards shall have an associated image.
- Awards shall have a title.
- Awards shall have a description.
- Group leaders shall nominate members for awards.
- Admins shall view nominations.
- Admins shall approve or reject nominations.
- Admins shall directly assign awards.
- Members shall view individual award citations.
- Award instances shall have a citation describing the reason for issue.
- Award instances shall have a date received.

- Award instances shall state the issuing member.
- Users shall be able to leave comments on an award instance.
- Users shall have the option to upload an associated pdf file for display with a qualification.

**Qualifications**

- Admins shall create qualifications types.
- Admins shall update qualifications types.
- Admins shall delete qualifications types.
- Qualifications shall have an associated image.
- Qualifications shall have a title.
- Qualifications shall have a description.
- Group leaders shall nominate members for qualifications.
- Admins shall view nominations.
- Admins shall approve or reject nominations.
- Admins shall directly assign qualifications.
- Members shall view individual qualifications.
- Qualification instances shall have a date received.
- Qualification instances shall state the issuing member.
- Users shall have the option to upload an associated pdf file for display with a qualification.

**Events**

- Admins shall create events.
- Group leaders shall create events.
- Events shall be public, by request, or invite only.
- Admins shall assign members to an existing event.
- Group leaders shall assign members to an existing event.
- Members shall join an event if it is public.
- Members shall request to join an event if it is by request.
- Events shall have a title.
- Events shall have a description.
- Events shall have a start datetime.

- Events shall be recurring if desired, automatically creating new events.

- Events shall be able to have pre-requisite qualifications.

- Events shall be able to be restricted to chosen groups or roles.

- Users shall have the option to opt-in for event reminders.

- Users shall be able to see an attendance record for recurring events.

- Users shall be able to leave comments on an event instance.

**Custom Section**

- Admins shall create custom sections.

- Custom sections shall have an editable title.

- Admins shall restrict custom sections based on member attributes.

- Custom sections shall support external application, APIs, and embedded application integrations.

- Custom sections shall be deleted by admins if desired.

# Non-Functional Requirements

**Performance**
- The application shall respond quickly to user prompts with minimal latency.
- The application shall be able to host/handle up to 1,000 accounts without any performance problems.
- The application shall support many active-concurrent users without significant degradation in performance.

**Security**
- The application shall only store hashed passwords.
- The application database shall be backed up regularly.

**Coding Standard**
- The application shall follow consistent coding and naming conventions throughout.
- The application shall gracefully handle errors without detrimentally affecting the rest of the user experience.
- The application shall be well documented for easy understandability for other developers and admins alike.

**Media Storage**
- The application shall restrict profile pictures to 500x500 pixels and 5 megabytes or less.

**Privacy**
- The application shall have the option for organizations to be set as private, preventing users not in the organization from viewing it.
- Data shall be anonymized and pseudonymized wherever possible to minimize damage in the event of a leak.
- Only the minimum amount of data required shall be stored in order to minimize the risk of security breaches.

**Scalability**

- The application shall be designed to scale efficiently to handle an increasing number of users and data without performance degradation.
- The database shall scale down if the workload is low to remain cost effective and optimize resource utilization.

**Reliability**

- The application shall ensure high availability, with a 99.9% uptime, and incorporate robust error-handling mechanism to maintain stability.

**Usability**

- The application shall provide an user friendly interface, ensuring that users can easily navigate and use all features without extensive training.

**Compliance**

- The application shall comply with relevant industry standards and regulations, such as for data protection and privacy.

**Expected Load**

- The application shall respond to user queries within 500 milliseconds for requests.
- The application shall handle a minimum of 1000 transactions per second during peak hours.
- The application shall horizontally scale to support up to 10,000 concurrent users without degradation in response time.

**Fault Tolerance**

- The application shall recover from a server failure within 15 minutes without loss of data or interruption of service.
- Critical components of the application shall have a backup system that can take over within 5 minutes of a primary system failure.
- The application shall log all errors and provide automatic recovery for non-critical errors within 60 seconds.

**Database High Level Specs**

- The database shall use appropriate indexes to optimize query performance, especially for frequently accessed data.
- The database should be capable of storing up to 1 terabyte of data efficiently, with automatic data compression for storage optimization.
- All sensitive data stored in the database should be encrypted.

**Browser and OS Support**

- The application shall support Chrome Stable 126 (126.0.6478.153).
- The application shall support Windows 10 22H2 (19045.4651).
- The application shall support Windows 11 23H2 (22631.3737).
- The application shall support macOS Sonoma (14.5).
- The application shall support Amazon Linux (2023.4.20240611.0).

# Competitive Analysis

| Feature/ Company | Discord | Airtable | Google Sheets | PERSCOM | Rippling HCM |
|---|---|---|---|---|---|
| Strengths | - Learning curve is not steep. User interface is simple and clear.<br><br>- Provides customizability like creating bots<br><br>- Provides easy communication among the group, faster response time than emails<br><br>- Provides easy management because of the features like assigning moderators or admins<br><br>- Easy and fast sign up<br><br>- Can create different channels for different purposes. | -A hybrid that combines spreadsheets and databases.<br><br>-Able to import many different file types and other platform links.<br><br>-UX and UI are ease of use, flexibility, design and visual, view system.<br><br>-A wide range of built-in ready-to-use templates.<br><br>-Real time Collaboration and audit trail.<br><br>-Automate tasks<br><br>-Use cases | - Real-time collaboration with other users<br><br>- Accessible from any devices with internet<br><br>-Automatically saves and stores progress to cloud<br><br>-Can integrate with other Google apps such as Google Docs, Drive, etc. | - Personal profile to be able to manage various records and qualifications.<br><br>- It includes tracking, calendar and event management, custom forms and data collection, various suites of communication tools, as well as the ability to integrate your personnel data into any third-party system.<br><br>- Includes a roster to track information from different departments. | -Comprehensive HCM solutions<br><br>-Integrates HR, payroll, and IT management<br><br>-Automation of administrative tasks<br><br>-Strong integration capabilities<br><br>-Detailed reporting and analytics<br><br>-Scalable for companies of all sizes<br><br>-Strong data security |
| Weaknesses | - Don't have much built in features, like payroll or leaderboard<br><br>- Hard to track chat history or files.<br><br>- Discord mostly need to be used with other | -There is a learning curve for some advanced features<br><br>-Some platform features require fees.<br><br>-Time consuming to set up a database system | - Complex for most users to use advances features to automate tasks. They must be familiar with formula or have experience with scripting<br><br>- Does not support a more | - The organization of each category is displayed in tabs, Not quick to find information<br><br>- Complex interface, difficult to understand<br><br>- The website doesn't suit | -Can be complex to set up initially<br><br>-Pricing might not be suitable for smaller size teams or for individuals<br><br>- Feature set focuses entirely on professional |

|  | softwares like google docs or google calendars to make it more efficient | when you start from scratch. | formal role or team management. You can only really give others view or edit permissions. | everyone or other purposes<br><br>- Does not keep a reference of the data imputed overtime | use, not friendly for volunteer, non-profit, non-professional organizations. |
|---|---|---|---|---|---|
| Pricing | Mostly Free, only some not so essential features are charged. Features such as large file sharing, HD video calls, etc. | Mostly Free, fees required for larger applications or databases or more collaborators. | - Free for basic use, but subscription based if you want Google Workspace for additional features like video conferencing with a lot of people. | - Has three different tiers with a free one week trial. Pricing increases as the user base increases. Access to powerful API, widgets and website integration, custom subdomain, and ticket and email support are locked behind higher tiers. | - Personalized and tiered pricing based on features and company size. |
| Social Media | - Very active on Twitter, YouTube, and other famous platforms. Lots of additional user generated content and awareness. | -They are on a number of famous sites, like Linkedin, Facebook, Instagram and so on. And they post or update their blogs regularly. | -Active on Twitter, Facebook, LinkedIn, and Youtube | Community Forums, Submitting a support ticket, giving feedback, submitting feature requests | - Active on social media, Linkedin, facebook, and Twitter<br><br>- Community forums and help centers |
| Onboarding | - Simple and fast. As easy as creating an account and inviting people to the group | - Simple and easy. A user can sign up with username and password. And the user can sign in with google or other platform accounts. | - Simple since most people already have Google accounts. There are also a bunch of tutorials and support documentation online. | - Self-guided onboarding. Documentation included, but little support from providers. | - Comprehensive and guided onboarding with direct support and tutorials. |

| Feature | Discord | Airtable | Google Sheets | PERSCOM | Rippling HCM | TeamMate |
|---|---|---|---|---|---|---|
| Real-time Collaboration | + | + | ++ | + | + | + |
| File Sharing | ++ | - | - | + | + | + |
| Text Chats | ++ | - | - | - | + | - |
| Voice/Video Calls | ++ | - | - | - | - | - |
| User Interface | + | + | + | + | + | ++ |
| Mobile Support | ++ | + | + | - | + | + |
| Customization | + | + | ++ | + | - | + |
| Role/Group Management | + | + | + | + | + | ++ |
| Reports/Analytics | - | - | - | + | + | ++ |
| Data Recovery | - | + | + | - | + | + |
| Event Management | + | - | - | + | + | ++ |
| Payroll and Health Insurance | - | - | - | - | ++ | - |
| Training Scheduling and Qualification Tracking | - | - | - | + | + | ++ |
| Filtering Users based on Attributes | - | + | + | - | + | ++ |
| Attendance Tracking | - | + | + | + | + | ++ |
| External Application Integration | + | - | - | ++ | + | + |

## Summary

Each of the competitors mentioned above serves and focuses on a different niche than we do. Consequently, there are some features that TeamMate either lacks entirely or offers at a level that may seem inferior compared to other competitors. This is not a disadvantage for TeamMate; in fact, it is a strength. TeamMate is designed for a specific, yet sizable, audience that currently lacks purpose-built solutions tailored to their needs. TeamMate is designed to be used alongside other applications, including some of the listed competitors like Discord, to enhance an organization's capabilities. It remains streamlined and user-friendly, avoiding unnecessary bulk that might deter potential users from adopting TeamMate as their solution.

# Checklist

**DONE** - Team found a time slot to meet outside of the class.

**DONE** - Github master chosen.

**DONE** - 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.

**DONE** - Team lead ensured that all team members read the final M1 and agree/ understand it before submission.

**DONE** - Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.).

# Technology Stack

**Server:** AWS EC2.
**Operation System:** Amazon Linux AMI.
**Database:** MySQL 8.0.37 on an AWS RDS instance.
**Web Server:** Express 4.19.2.
**Server-Side Language:** TypeScript.

**Additional Tech:**
**Frontend Framework:** React.
**Backend Framework:** Node.js 22.3.0.
**IDE:** Visual Studio Code, MySQL Workbench.
**SSL Cert:** Lets Encrypt (Cert Bot).
**Docker:** Docker Container on the EC2 instance.

# Team Contributions

- **Krishna**
  - Created Title Page and transcribed Team Discussion into Executive Summary.
  - Created two Main Use Cases.
  - Created Main Data Items and Entities.
  - Created initial Functional and Non-Functional Requirements.
  - Transcribed Competitive Analysis Summary from Team Discussion.
  - Created index and about page, setup repo as per tech stack specifications.
  - Created and set up AWS EC2 and RDS instances.
  - Installed Tech Stack on Cloud Instance and cloned Repository.
  - Writing credentials and cloud connection documentation and instructions.

- 
  - Created two Main Use Cases and corresponding Diagrams.
  - Created additional Main Use Case Diagrams.
  - Researched Google Sheets as a Competitor.
  - Filled out overview table in Competitive Summary.
  - Filled out features table in Competitive Summary.
  - Created about page.
  - Appended index page.

- 
  - Created two Main Use Cases and corresponding Diagrams.
  - Researched Discord as a Competitor.
  - Filled out overview table in Competitive Summary.
  - Filled out features table in Competitive Summary.
  - Created about page.
  - Appended index page.

- 
  - Created two Main Use Cases and corresponding Diagrams.
  - Added additional Functional Requirements.
  - Added additional Non-Functional Requirements.
  - Researched Airtable as a Competitor.
  - Filled out overview table in Competitive Summary.
  - Filled out features table in Competitive Summary.
  - Created about page.
  - Appended index page.

- 
  - Created two Main Use Cases.
  - Researched Rippling HCM as a Competitor.
  - Filled out overview table in Competitive Summary.
  - Filled out features table in Competitive Summary.
  - Created about page.
  - Appended index page.

- 
  - Created two Main Use Cases.
  - Researched PERSCOM as a Competitor.
  - Filled out overview table in Competitive Summary.
  - Filled out features table in Competitive Summary.
  - Created about page.
  - Appended index page.