Software Engineering
Software Requirements Specification (SRS) Document

Hooplaza

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Version 1.0

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[Honor Code]

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1. Introduction

1.1. Purpose (Kol)

HooPlaza is a neighborhood social networking service. It is designed as a community hub for events, community projects, and clubs. The main objective of this app is to connect community members and ease car-dependency by allowing users to join in activities that are close-by, instead of far away from their neighborhood. HooPlaza is a Web Application that can be reached via the internet, on a web browser. It is designed to allow users to connect to an admin to create a new community and, as a moderator, appoint other users as moderators and keep the community organized. It allows users to join clubs and RSVP to events they may not have otherwise known about.

1.2. Document Conventions (Logan)

The purpose of this Software Requirements Document (SRD) is to describe the requirements of Hooplaza from both a user experience and developer oriented points of view. User-oriented sections will detail the system from the user's perspective. These requirements include descriptions of the different types of users and the actions able to be performed by each. Developer requirements describe the system from a software developers perspective. These requirements include detailed descriptions for the architecture, function, performance, and other necessary requirements.

1.3. Definitions, Acronyms, and Abbreviations (Logan)

Java	A programming language originally developed by James Gosling at Sun Microsystems. This is the language that will be used to develop Hooplaza.
MySQL	Open-source relational database management system.
HTML	Hypertext Markup Language. This is the code that will be used to structure and design the web application and its content.
SpringBoot	An open-source Java-based framework used to create a micro Service. This will be used to create and run our application.
MVC	Model-View-Controller. This is the architectural pattern that will be used to implement our system.
Spring Web	Will be used to build our web application by using Spring MVC. This is one of the dependencies of our system.
Thymeleaf	A modern server-side Java template engine for our web environment. This is one of the dependencies of our system.
Intellij	An integrated development environment (IDE) for Java. This is where our system will be created.
API	Application Programming Interface. This will be used to implement a function within the software where the current date and time is displayed on the homepage.
Communities	The organizational units within the application. Users will be able to interact with each other within them. Communities should correspond to physical locations such as neighborhoods.

1.4. Intended Audience (Logan)

Describe which part of the SRS document is intended for which reader. Include a list of all stakeholders ofthe project, developers, project managers, and users for better clarity.]

Developers: Developers will benefit from sections 2.x, 3.x, 4.x, 5.x, and 6.x of the SRD. Every one of these sections contains data that will be beneficial to the development of Hooplaza.

Project Managers: Project managers will benefit from sections 2.x, 3.x, 5.[5-9], 6.x, as well as 7.x. These sections contain information that are beneficial for understanding the project without unnecessary detail related to the implementation.

Users: Users will benefit from sections, 2.x, 5.7, 5.8, and 7.x as these sections contain data relevant to the use of Hooplaza. They include information that might help a user better understand how to make full use of the platform.

1.5. Project Scope (Logan)

The goal of the software is to provide a centralized platform for users to become connected to their local communities and become engaged in activities. User adoption will lead to a platform for expanded services that will benefit the business as well as the users.

Possible monetizable platform features include:

- Integrated booking of services such as food trucks, or local entertainers.
- Event planning help lines.
- Adding the ability to tip active event organizers, or other active community members.

1.6. Technology Challenges (Logan)

Some of the technology challenges include having to learn how to use and manage databases for the persistent storage of complex, linked data. Combined with having to learn javascript in order to use the Google Maps API which none of us have used before is incredibly challenging.

1.7. References (Logan)

[Mention books, articles, web sites, worksheets, people who are sources of information about the application domain, etc. Use proper and complete reference notation. Give links to documents as appropriate. You should use the APA Documentation model (Alred, 2003, p. 144).]

Google. (n.d.). Google Maps Platform Documentation. Google Maps Platform. https://developers.google.com/maps/documentation

2. General Description

2.1. Product Perspective (Ethan)

HooPlaza was conceptualized by a preemptive step away from car dependency and to bring local communities together. The idea is driven by the condition to improve everyday local socialization and interactions.

2.2. Product Features (Kol)

HooPlaza will generate location-based communities at a users request. It will allow moderators to add members to their community, appoint others to moderators. If a user tries to create a community within an already established community location, the app will notify moderators of the established community that someone would like to be a part of it. Members will be able to create posts to be seen by everyone in their community.

2.3. User Class and Characteristics (Kol)

Admin: Runs operations such as creating communities within a location. Directs users to their community as needed. Appoints/removes moderators.
Moderator: Organizes their respective community. Adds/kicks users from the community
Basic user: Creates posts. RSVPs to events. Requests create community

2.4. Operating Environment (Kol)

This application is designed to work on the web across PC and Laptop devices.

2.5. Constraints (Kol)

The creation of this application was constrained by time with respect to our knowledge of programming applications used to develop this app. Our scope was much larger than we were able to implement, and we had to scale down immensely around halfway through the project.

2.6. Assumptions and Dependencies (Kol)

Assumptions: the API will allow for a visual map of a community area.

3. Functional Requirements

3.1. Primary (Logan)

- FR0: Users should be able to view and join communities. The user should only be able to interact in communities they have joined.
- FR1: Users should be able to make, and read posts in communities they have joined.
- FR2: Users should be able to request for a new community to be made if one for the location they wish is not available.
- FR3: Each community should have moderators which have the power to remove users from a group, as well as add other moderators.
- FR4: There should be site admins that have the ability to approve community creation requests, and ban users from the site.

3.2. Secondary (Logan)

- Duplicate communities should not exist
- Authorization scheme such that no users will be able to perform actions they are not supposed to. Authentication should be done through passwords.

4. Technical Requirements

4.1 Operating System and Compatibility (Logan)

The system should be compatible with any system that is able to interact with traditional web pages.

4.2 Interface Requirements (Logan)

4.2.1 User Interfaces

There will be a button to make posts. There will be three feed sections: Posts, Events, and Announcements, and Announcements will be viewable from any screen of the app where the user is in a community. There will be a hamburger button that holds all communities the user is a part of, and the user can switch between these communities.

4.2.2 Hardware Interfaces

The application will run on any device able to access the internet and interact with and display webpages. Examples of such devices include smart phones, tablets, laptops, desktop computers and more.

4.2.3 Communications Interfaces

It must be able to connect to the internet as well as some databases for persistent information storage. HTTP will be used for any internet based communication, and the Google maps API should be accessible for location lookup and embedding.

4.2.4 Software Interfaces

The frontend will utilize JavaScript and Springboot Thymeleaf. The JPA (Java Persistence API) will be used for the backend database functionality. Springboot with java will be used to connect the frontend and the backend.

5. Non-Functional Requirements

5.1. Performance Requirements (Logan)

- NFR0: The local version of the database should use less than 100MB of memory
- NFR1: The system should use less than 200MB of memory including the database.
- NFR2: Posts should appear to other users within one minute of a given user posting it.

5.2. Safety Requirements (Logan)

- NFR3: All user input should be sanitized to prevent users from performing SQL injection attacks, such that malicious actors do not have access to the locations and times of events within communities.

5.3. Security Requirements (Logan)

- NFR4: Only users within a comunity should be able to access or make posts withing a community.
- NFR5: Users should be required to authenticate before they can access the system.

5.4. Software Quality Attributes (Kol)

5.4.1. Availability

HooPlaza must be usable with multiple communities filled with multiple users & moderators

5.4.2. Correctness

N/A

5.4.3. Maintainability

Will be maintained by developers and admins

5.4.4. Reusability

N/A

5.4.5. Portability

As a web application, HooPlaza will be usable in any internet browser

5.5. Process Requirements (Kol)

5.5.1. Development Process Used

Scrum

5.5.2. Time Constraints

Must be finished by end of November. All developers have different availabilities, so planning meetings may be difficult

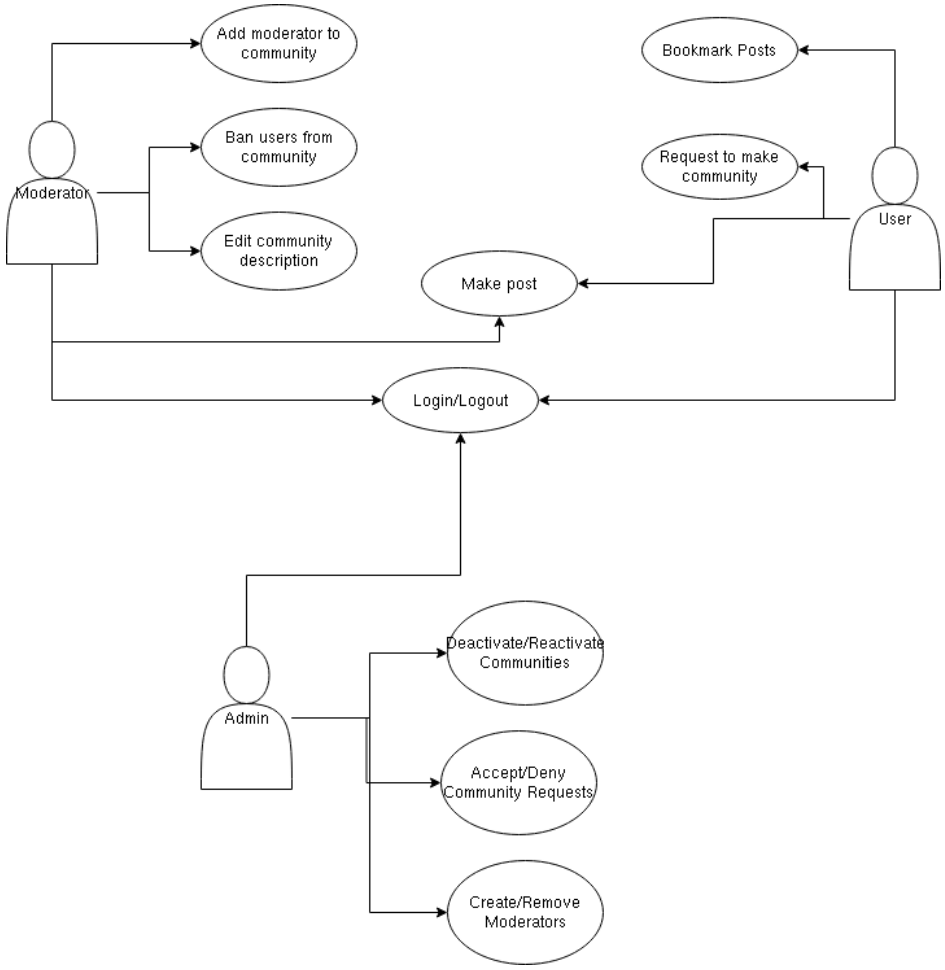
5.5.3. Cost and Delivery Date

$0. Estimated delivery date: December 5

5.6. Other Requirements (Logan)

The user interface should be intuitive and easy to use.

5.7. Use-Case Model Diagram



5.8. Use-Case Model Descriptions (Kol)

5.8.1. Actor: Admin (Logan Roberts)

- **Use-Case Name**: Create Community
- **Use-Case Name**: Delete Community

5.8.2. Actor: Moderator (Ethan Mongelli)

- **Use-Case Name**: Make Announcement
- **Use-Case Name**: Ban User

5.8.3. Actor: Basic User (Kol Herget)

- **Use-Case Name**: RSVP Event
- **Use-Case Name**: Request to Create Community

5.9. Use-Case Model Scenarios (Kol)

5.9.1. Actor: Admin (Logan)

- **Use-Case Name**: Create Community
  - **Initial Assumption**: There may or may not be an existing community at the requested location.
  - **Normal**: Community information is stored in a community on a MySQL server. Community is made and requester is given Moderator role in that community
  - **What Can Go Wrong:** Community is already created in the requested location

- ∉ **Other Activities**: Community is viewable and given the ability to change description in community-details page when ‘details’ button is pressed
- ∉ **System State on Completion**: New community is backed up, as well as requester’s moderator status.

– **Use-Case Name**: Delete Community
- ∉ **Initial Assumption**: The community exists.
- ∉ **Normal**: The community is deactivated (variable community_active set to 0 as ‘false’)
- ∉ **What Can Go Wrong**: The community does not exist.
- ∉ **Other Activities**: Community is removed from Communities view in Admin and placed into Communities-removed view.
- ∉ **System State on Completion**: Updates are backed up

5.9.2. Actor: Moderator (Ethan)

– **Use-Case Name**: Edit Community Description
- ∉ **Initial Assumption**: Community Exists
- ∉ **Normal**: Description is changed in the Details page of the Community
- ∉ **What Can Go Wrong**: Community DNE or is inactive
- ∉ **Other Activities**: None
- ∉ **System State on Completion**: Description changes are backed up

– **Use-Case Name**: Add Moderator
- ∉ **Initial Assumption**: User to be modded is in the community
- ∉ **Normal**: User is added to mods list in Community
- ∉ **What Can Go Wrong**: User not in the community – cannot be modded
- ∉ **Other Activities**: If User is not Moderator of any other Communities, their status is changed to MOD in server
- ∉ **System State on Completion**: Community’s mods list updated and backed up

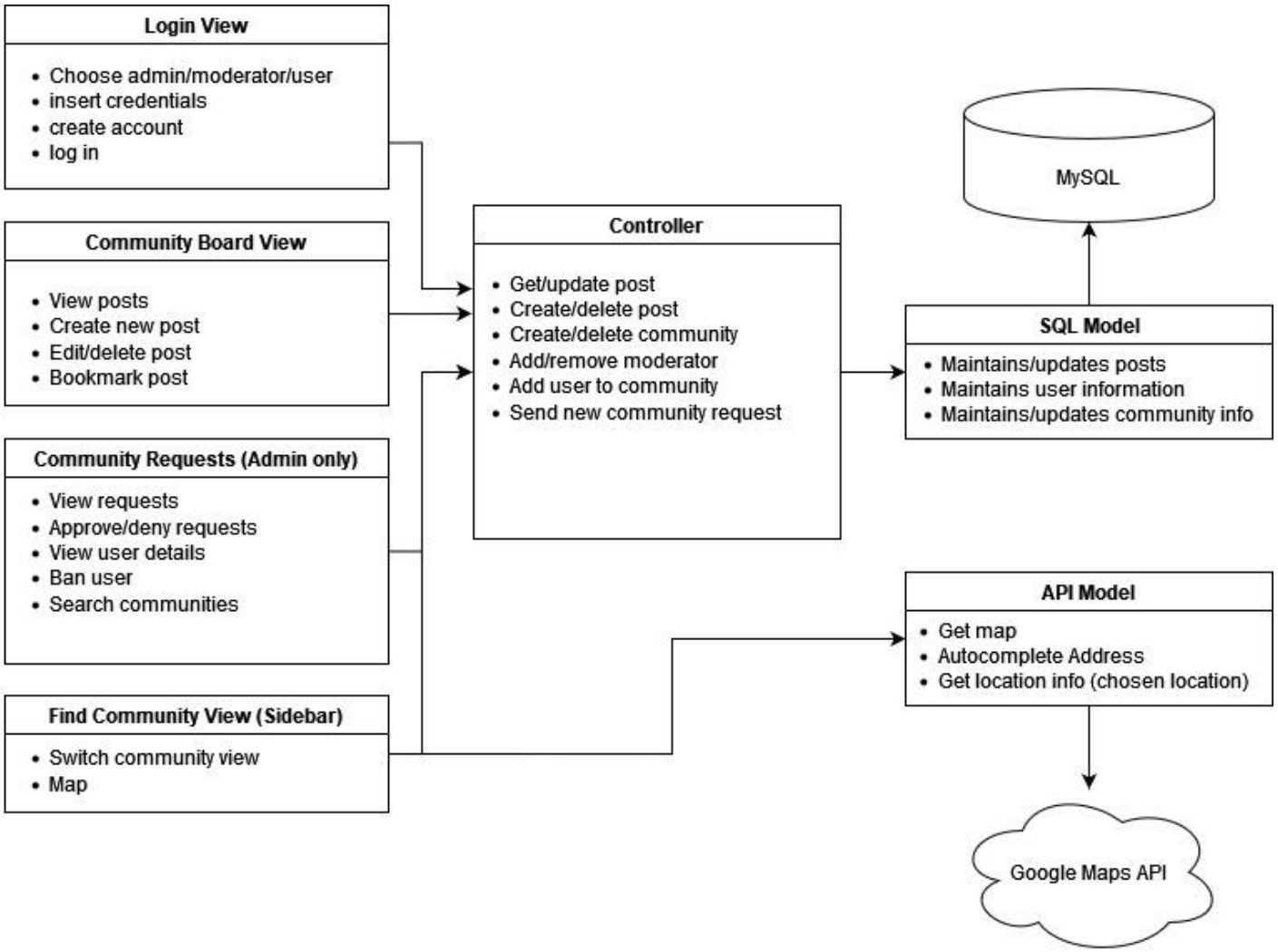
5.9.3. Actor: Basic User (Kol)

– **Use-Case Name**: Bookmark Post
- ∉ **Initial Assumption**: post exists
- ∉ **Normal**: Button is clicked, post is saved as bookmark
- ∉ **What Can Go Wrong**: Post already bookmarked
- ∉ **Other Activities**: Bookmark will show in Bookmarks page in User/Moderator
- ∉ **System State on Completion**: Post is saved to User’s bookmarks List and backed up

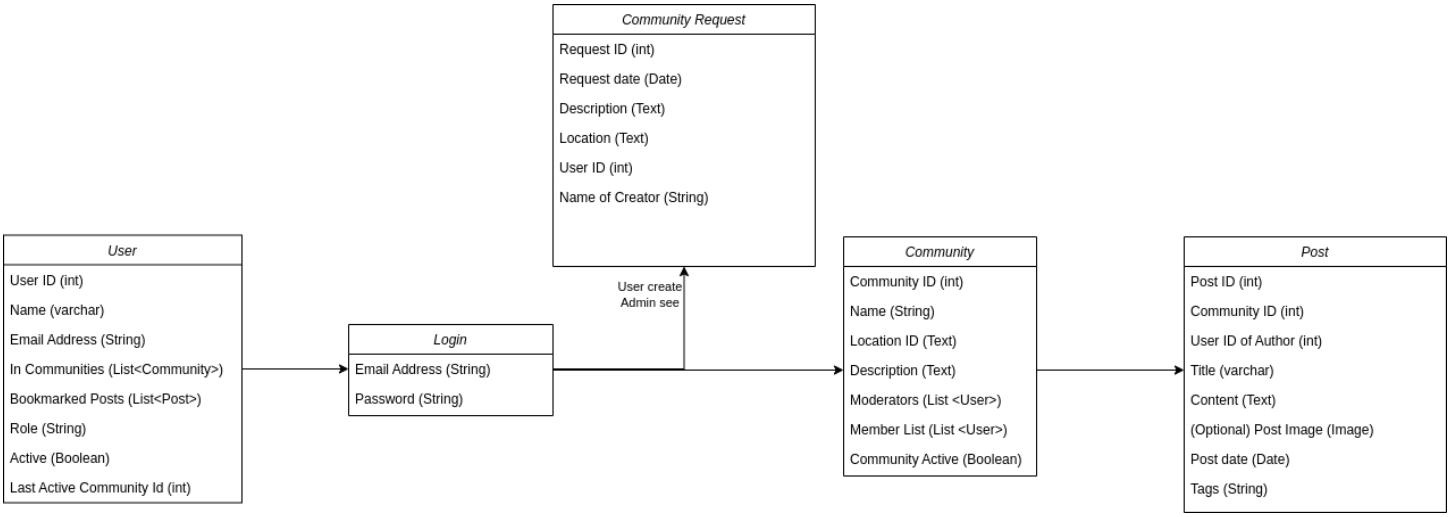
– **Use-Case Name**: Request to Create Community
- ∉ **Initial Assumption**: Community not already created in requested location
- ∉ **Normal**: Request is sent to admin, admin does use-case “Create Community”
- ∉ **What Can Go Wrong**: request unable to send – blocked servers. Community already established
- ∉ **Other Activities**: Community and requester information stored in community_request database
- ∉ **System State on Completion**: Admin receives request

6. Design Documents

6.1. Software Architecture

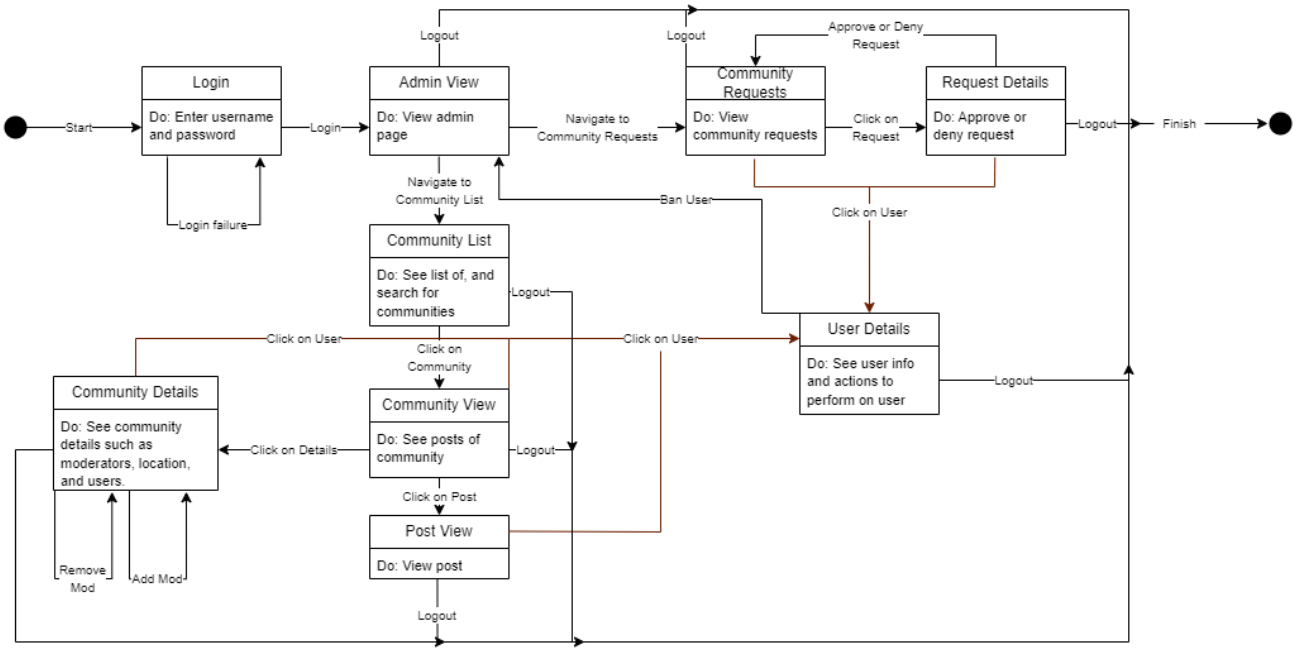


6.2. High-Level Database Schema (Logan)

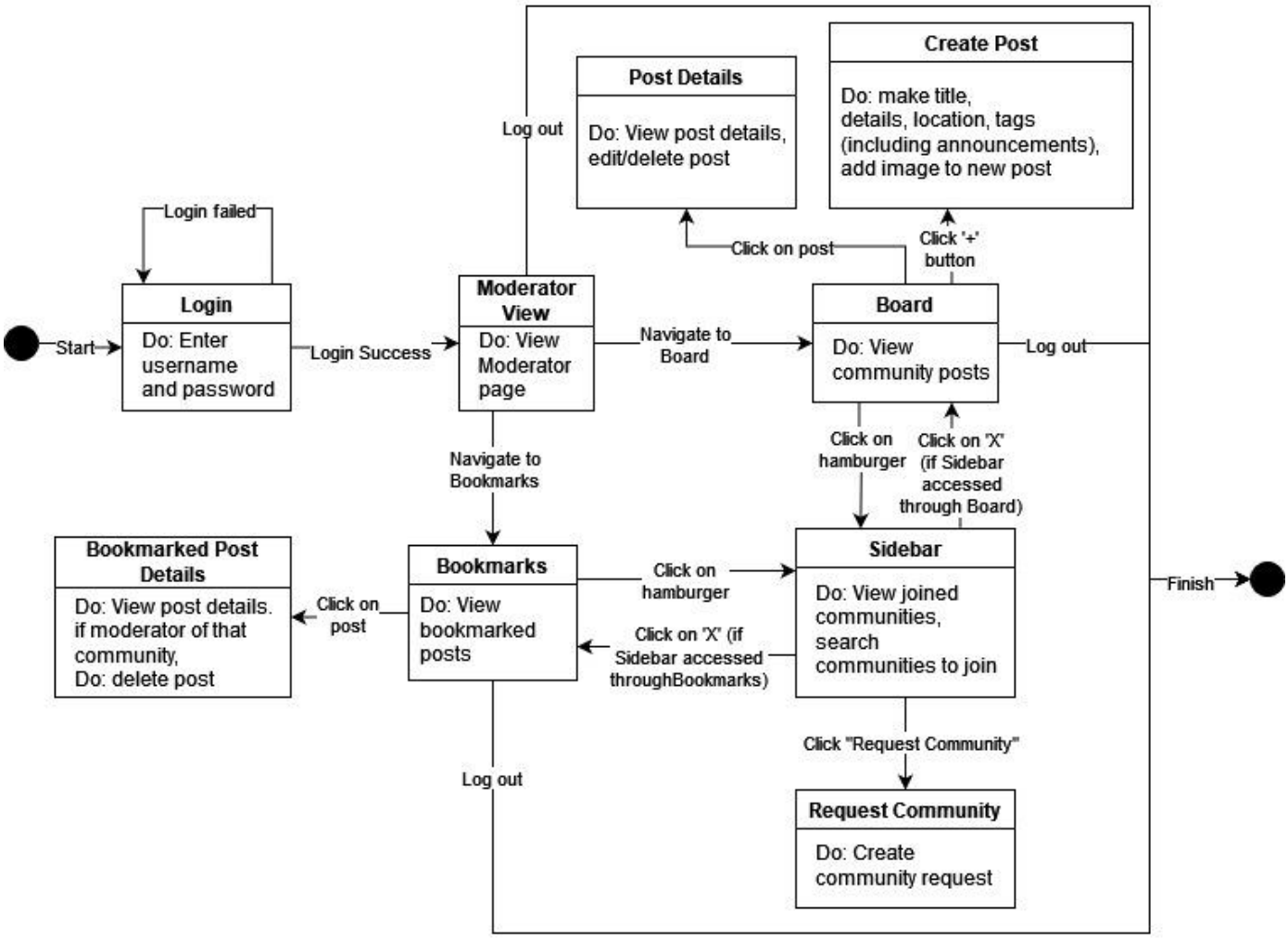


6.3. Software Design

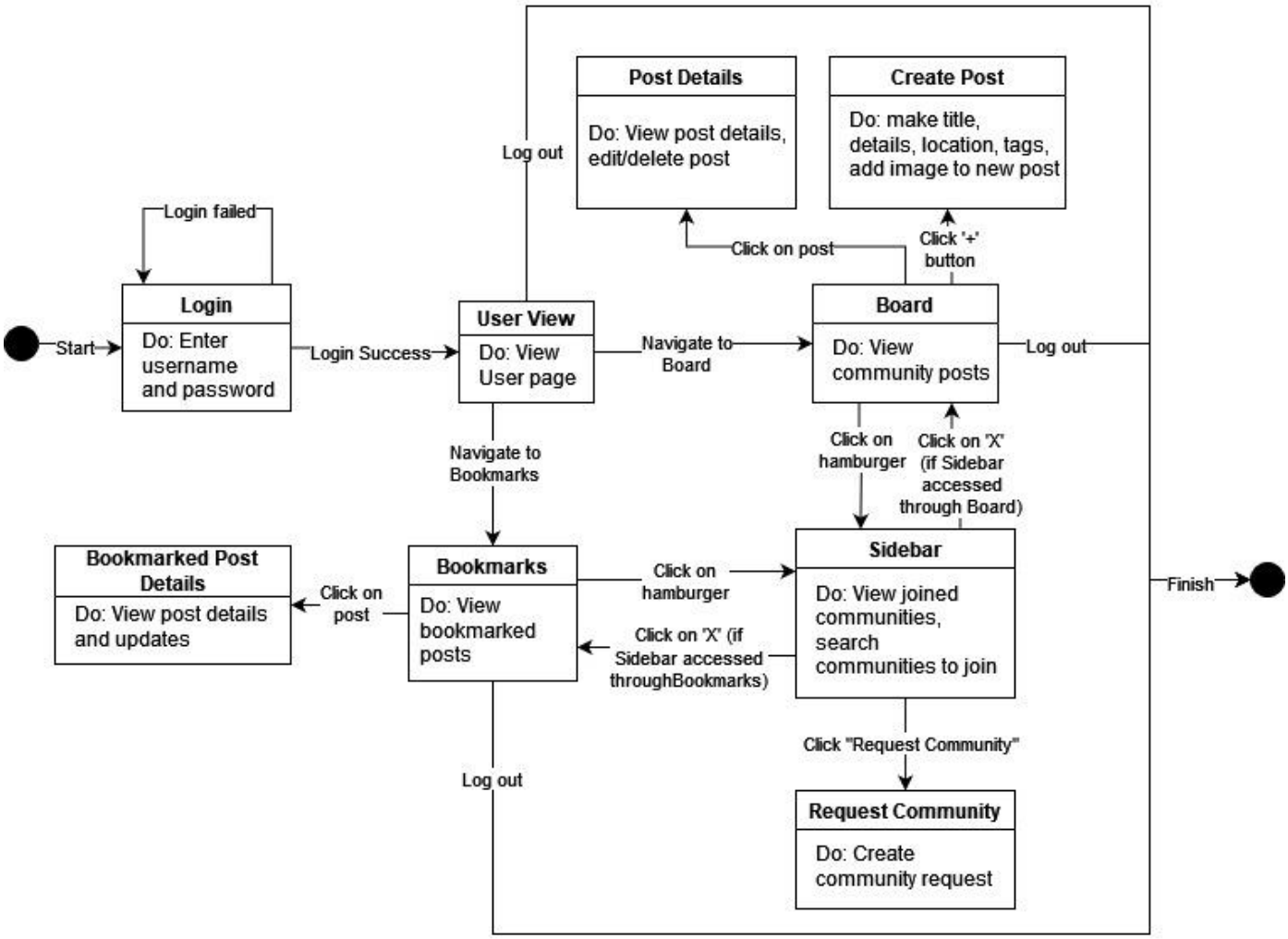
6.3.1. State Machine Diagram: Admin (Logan Roberts)



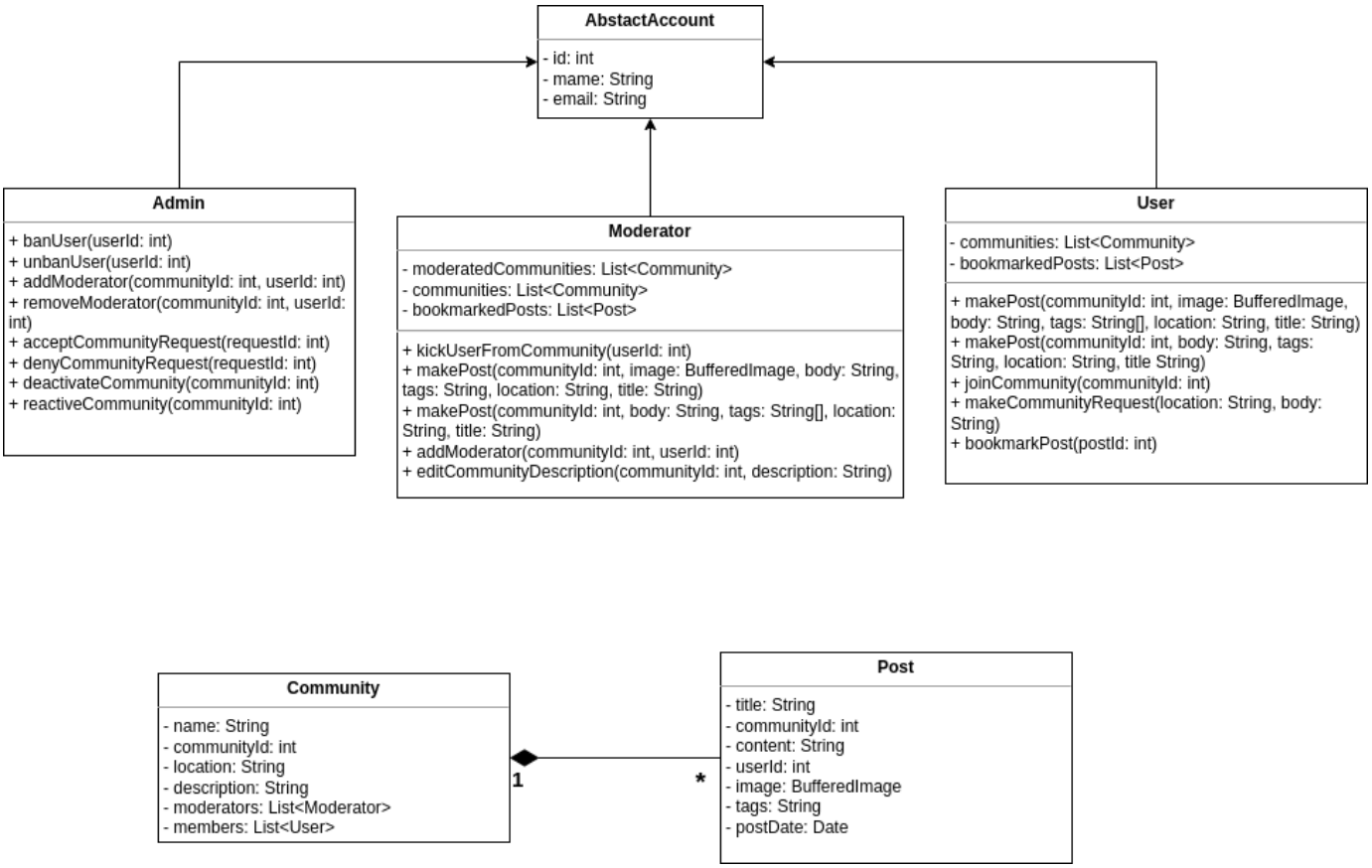
6.3.2. State Machine Diagram: Moderator (Ethan Mongelli)



6.3.3. State Machine Diagram: User (Kol Herget)



6.4. UML Class Diagram (Logan)

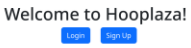


7. Scenario

7.1. Brief Written Scenario with Screenshots

7.1.1 Admin (Scenario and development by Logan Roberts):

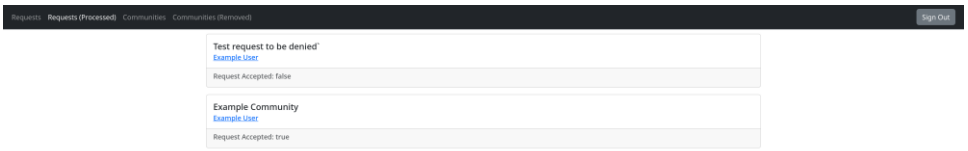
The admin scenario will walk through the actions an admin user can take starting from the situation where there is are 2 community requests.
Whenever a user initially navigates to the page they will be greeted with the home page:



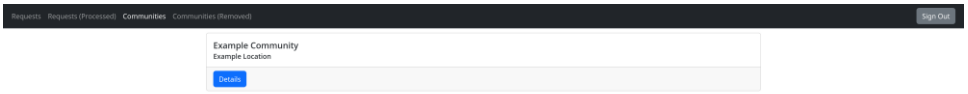
Admins will already have accounts and will go to the login page:

After the admin logs in this is the page they see:

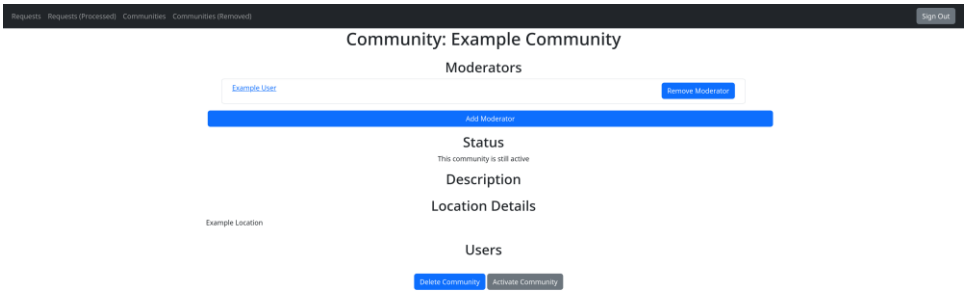
From here the admin can accept or deny requests and they will be removed from the requests page. They will still be viewale under the “Requests (Processed)” page. Which will look like so after some requests have been processed:



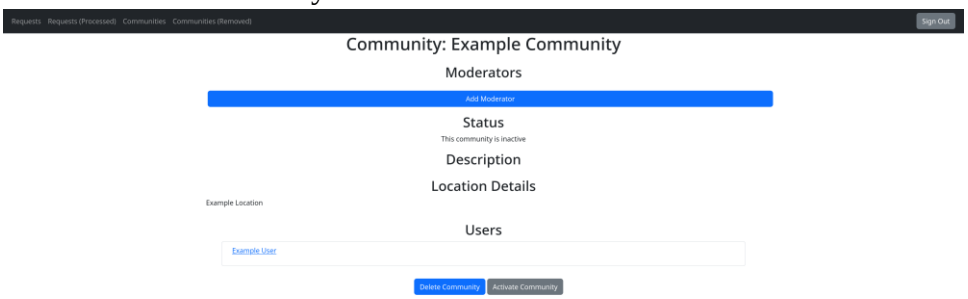
If an admin wants to view and manage existing communities, they can go to the communities page.



From here they can view community details where they can see all moderators/users as well as add more moderators:

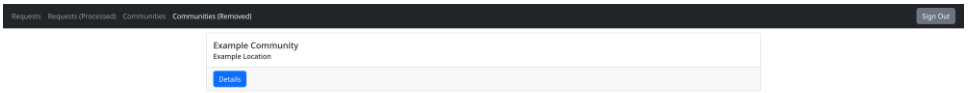


The description is able to be editited by the moderators. If the admin were to remove the current moderator and make the community inactive it would look like this:



Admins can also click on users to see details about them. On this page the admin can ban or unban the user.

The admin can also see removed communities by going to the “Communities (Removed)” tab.



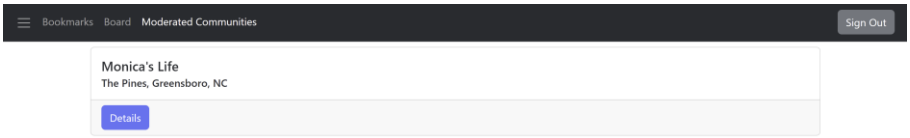
From here the actions that can be performed are the same. Now however the community is not visible under the Communities tab. When the admin is done they can click the “Sign Out” button and they are returned to the home screen.

7.1.2 Moderator (Scenario by Kol Herget, development by Kol Herget and Logan Roberts):

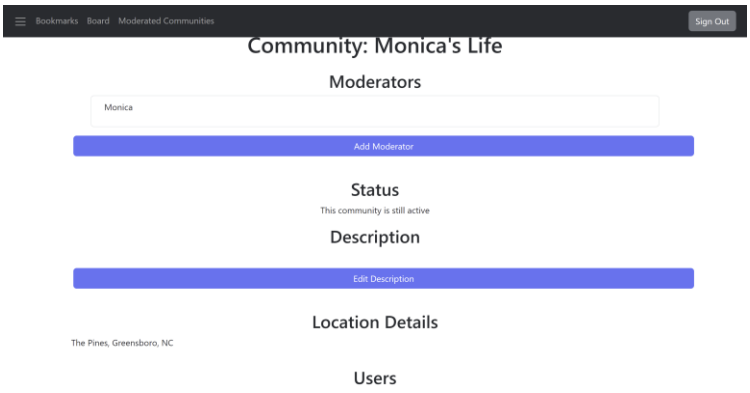
The moderator scenario will walk through the actions a moderator user can take starting from the situation where their community has just been created.
A Moderator will log in in the same way that an Admin or User would. As they would have been users who became moderators, they will already have login information to sign in with.

Once logged in, a Moderator is taken to their Bookmarks page.

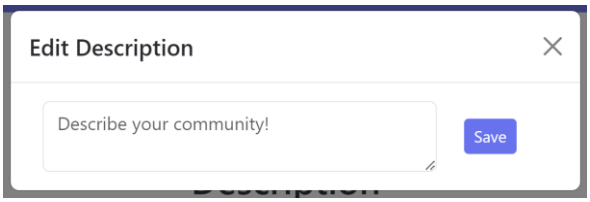
They can click on the ‘Moderated Comunities’ tab at the top of the screen to be taken to the list of communities they moderate.



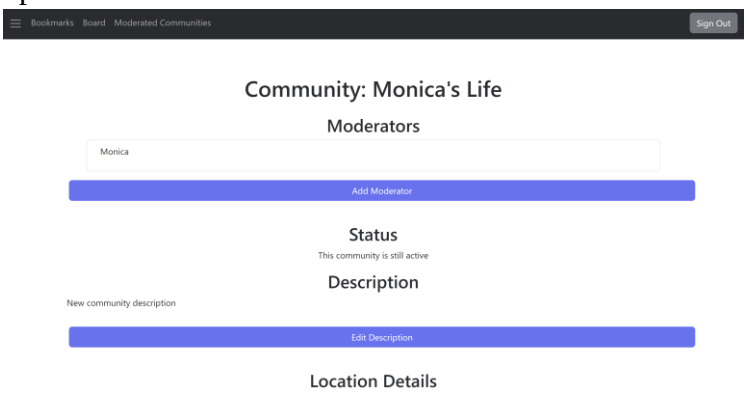
A moderator can click on the ‘Details’ button of any of their communities to be taken to the details page for that community.



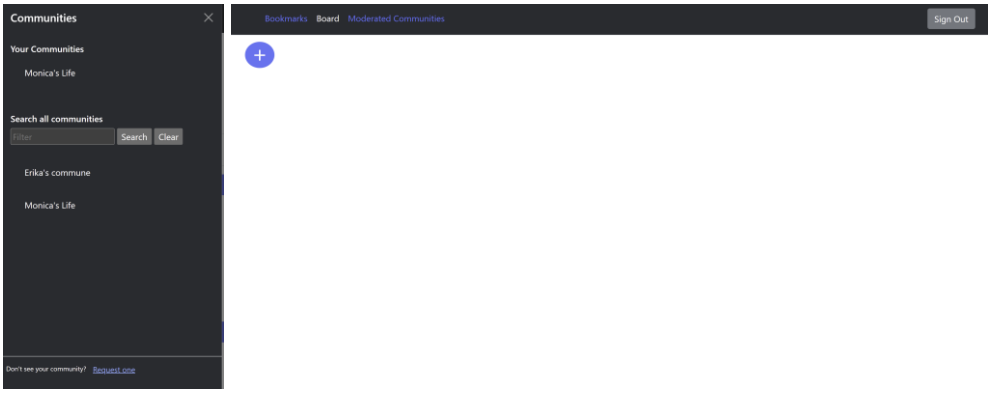
From this page, a Moderator can add other moderators and edit the description. If a Moderator clicks ‘Edit Description’, a modal appears that allows them to create or edit the description as they wish.



Once a Moderator clicks ‘Save’, they are returned to the community details page and the description is updated.

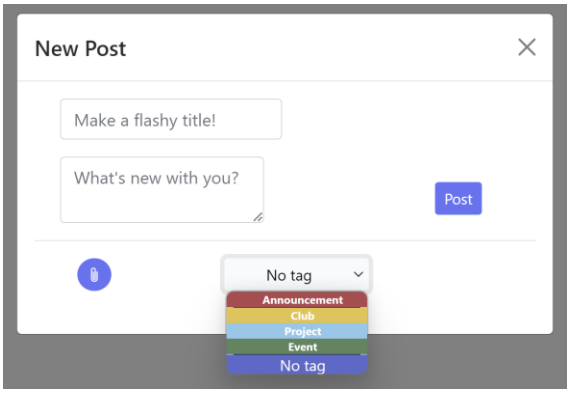


A Moderator can navigate to their board using either the ‘Board’ tab at the top of the page if that was the last community they accessed, or by clicking the hamburger button at the top left of the screen to pull up the sidebar, and navigating to their community directly.

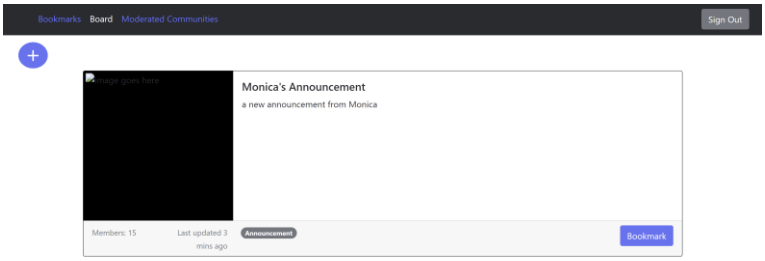


As the example Community is newly created, it currently has no posts. The Moderator can make posts by clicking on the plus button at the top left of the screen, and they can also make announcements the same

way. A modal will appear that will allow them to create a post, and they can choose the type from the tags in a dropdown menu at the modal's footer.



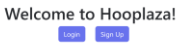
After clicking 'Post', the post will be shown on the Community board. It will have whichever tag is chosen – in this case, the post is an announcement, and has an announcement tag at its footer. Currently, the image will not show in the post, but if an image is added to the post using the paperclip button at the post modal footer, its URL will be saved to the database as well as the rest of the post's information.



Once a Moderator is finished with the app, they can log out using the 'Sign Out' button at the top right of the screen.

7.1.2 User (Scenario by Kol Herget, development by Kol Herget and Logan Roberts. Posts development by Ethan Mongelli):

The user scenario will walk through the actions a user can take starting from their sign-up.
When entering Hooplaza, a user will start on the homepage, where they can log in or sign up.



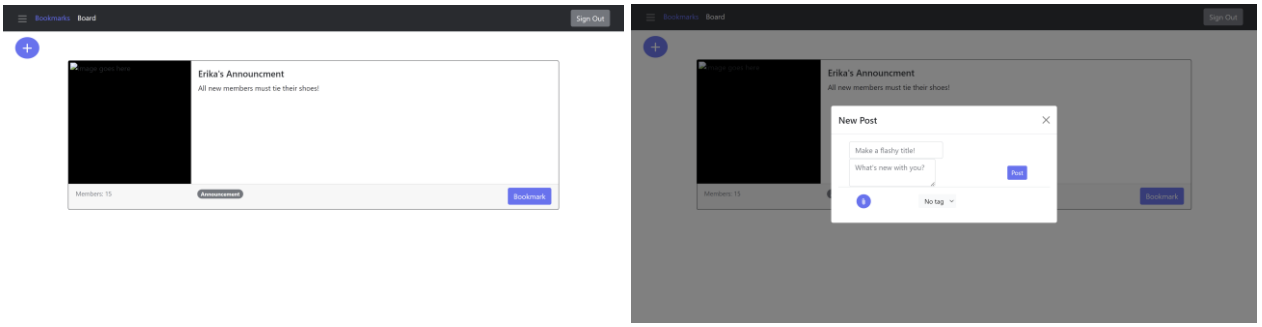
The user can sign up using the form below.

Once a user is signed up, they will be redirected to the login screen to put in their credentials.

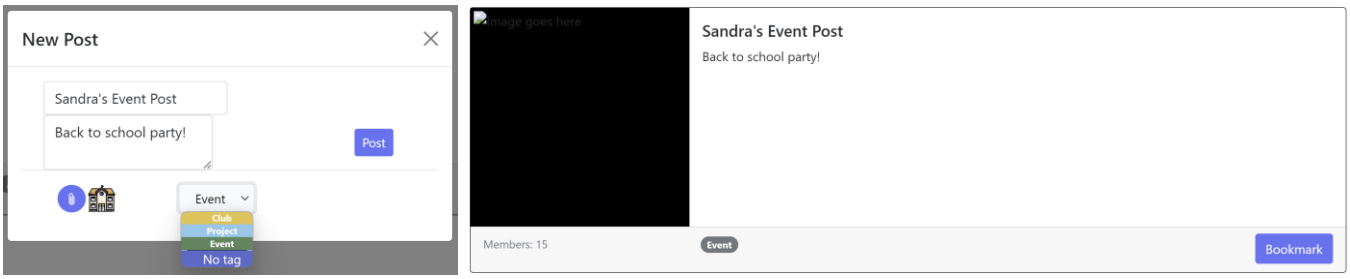
Upon logging in, a user is taken to their bookmarks board to start. They can click on the hamburger button on the top left to see different communities they can look at and interact with.

As the example user is new, they have no communities under ‘Your Communities’, but the user can see all the established communities under ‘Search All Communities’. If the user puts in a keyword in the search bar, it will filter the communities to only include ones with that keyword.

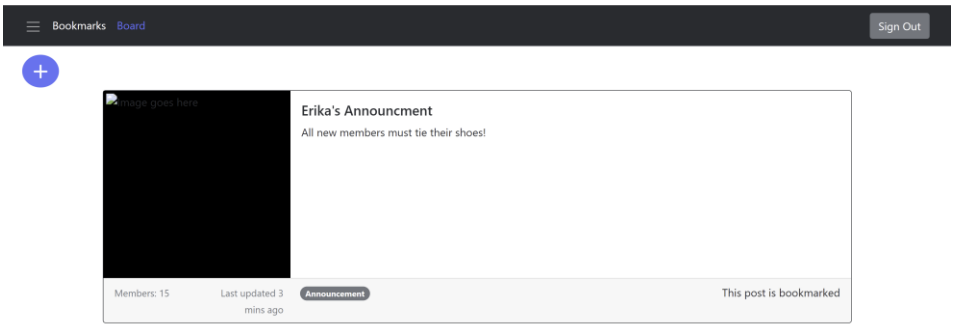
Once a user clicks on the button for a Community, they are taken to its board. A user can see any previous posts in their currently-accessed Community, and make their own posts there by clicking on the plus button on the top left of the screen.



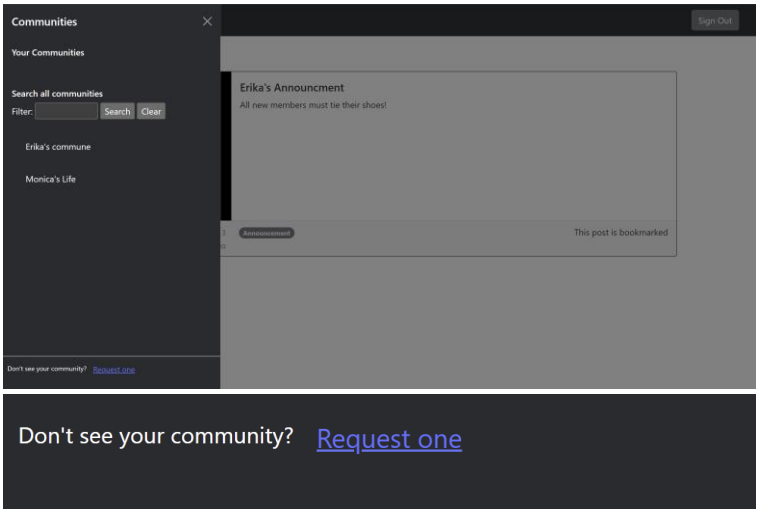
A user can choose a tag and image to include in their post. Once the post button is clicked, all post information is put into the posts database, as well as a created date, the id of the community and of the user for that post. Currently, the image and date do not show up in the post itself, but the data is stored to be able to do so.



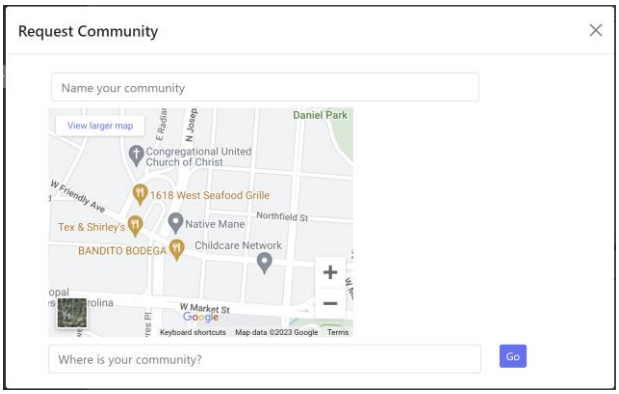
A user can bookmark a post to view in their bookmarks tab.

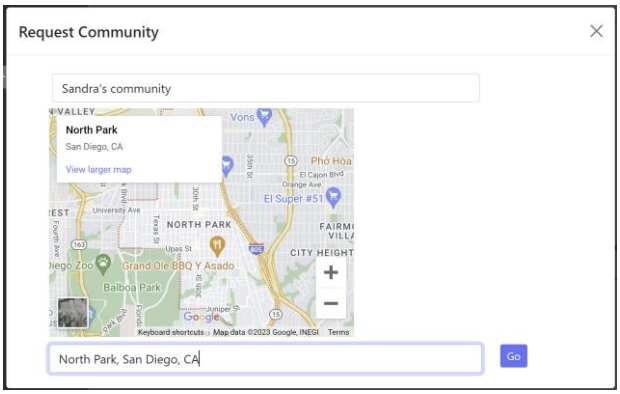


If a user wants to be in a community that does not exist yet, they can create their own by clicking the link to ‘Request one’ at the footer of the sidebar.

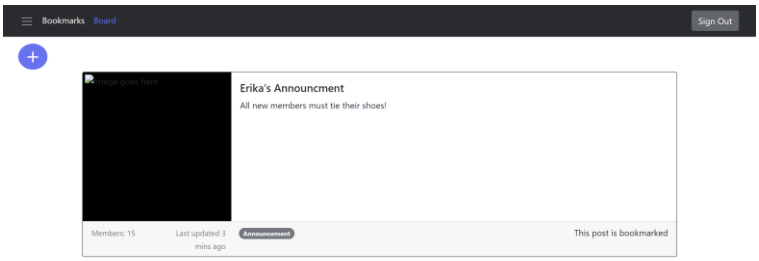


After clicking the link, a modal appears with a map that allows the user to enter the name and location of the community they wish to create.





Once the ‘Go’ button is clicked in the ‘Request Community’ modal, the request is submitted to be reviewed by an Admin, and the User is returned to their most recent tab.



Once a User is finished using the app, they can log out by clicking the ‘Sign Out’ button on the top right of the screen. They will be returned to the home screen.