

Requirements Analysis Document

Team Members

Kosisochi Amobi-Oleka, Kai Dalen, Uroosa Imtiaz, Justin McDonald, Andrew Kim, Sophia Kim,
Aaron Ouyang, Jackson Reid

TA
Jihyeon Park

Oct 31, 2025

Broad-View Summary

Background and Purpose

Currently, the main communication method between student clubs and students at Queen's University is spread between social media, e-mail, and word of mouth. The purpose of this platform is to provide a place for student clubs to be able to communicate with other clubs and make announcements to students interested in the club. The current Queen's AMS clubs page only provides a directory of clubs and links to contact information that can range from emails to social media pages. We aim to address this by providing a common platform for clubs and students so that the broader student community can more easily engage with student clubs in a streamlined fashion. Students will also be able to explore clubs based on their interests, and receive announcements from clubs. On our platform, clubs will also be able to chat directly with other clubs to easily set up collaboration events.

Project Overview

Clubr is a centralized platform that connects university students and student clubs to enhance club discovery, communication, and collaboration.

Currently, Queen's AMS website provides a static view of the Queen's clubs, but there is no unified space for club and user engagement. Clubr provides this engagement by allowing students to:

- Explore clubs by interest clubs
- Receive event updates and announcements
- Message clubs or other students
- Enable clubs to collaborate with each other easily through a centralized platform

Goal

Our goal is to create a web application where clubs can:

- Create profiles, events, and posts
- Communicate with other clubs
- Share updates with interested students

And students can:

- Explore clubs and events by interest
- Follow and message clubs directly
- Get recommendations based on their profile

Definitions and Acronyms

Admin: Users who have been granted permission by another Admin to edit fields of a specific Club Page.

AI: Artificial Intelligence.

AMS: Alma Mater Society, specifically at Queen's University. They are the governing body for student clubs.

API: Application Programming Interface. Set of rules and protocols that allow different software applications to communicate with each other.

Club: An AMS ratified student group.

DB: Database.

DM: Direct message.

OAuth2: OAuth 2.0. Authorization framework that allows users to grant third-party applications limited access to their resources to their credentials.

SSO: Single sign-on. Authentication method allowing users to sign on to multiple platforms with a single set of credentials.

User: Any student registered on our platform.

Inputs

Type	Source	Example
User Profile Data	Users/students, Club admins	Name, email, University, interests, club roles
Club data	Club admins	Club name, description, tags, events
Event data	Club admins	Title, date, tags, collaboration between clubs
Messages	Users/students, Club admins	"Let's collaborate on a fundraiser"
Authentication	OAuth2 / SSO	Login via university or Google Account

Outputs

Type	Destination	Example
Feed content	Users/students, Club admins	Events and clubs matching student's interests
Notifications	Users/students, Club admins	"Event starting soon"
Chat responses	Real-time	Club-to-club or club-to-student messages
Analytics	Club admins	View event reach and engagement metrics

Target Users

User Type	Description	Goals
Students	Individual users enrolled in a university	Discover and join clubs, stay informed, attend events
Club admin	Student-run organizations	Advertise events, communicate, collaborate

General Description of the System

All new users are first brought to a Sign-up/Login page). New users will be prompted to sign-up and then select from a plethora of tags based on their interests; this is to build a feed for new users who have not yet begun to follow any clubs. Both new users and existing users alike are first brought to the home/landing page.

The Home page displays the user's personalized feed (posts/pictures) and upcoming events based on clubs that they are following. For a new user, the feed window would prompt the user to discover clubs to follow under the Discovery tab so that they can see those clubs' posts/pictures in this feed. The navigation bar (accessible from any page) is made up of the following tabs: Home, Discovery, My Clubs, Messages, Profile.

The Discovery page will show all clubs (with recommended clubs based on user's initial interest selection and already followed clubs being shown first), as well as a right panel that shows the upcoming events of *all* clubs. Users can scroll through and click on clubs that interest them, which will take them to that club's profile.

The My Clubs page will show all the clubs that the user is currently following. Users can scroll through and click on these clubs that interest them to go to that club's profile.

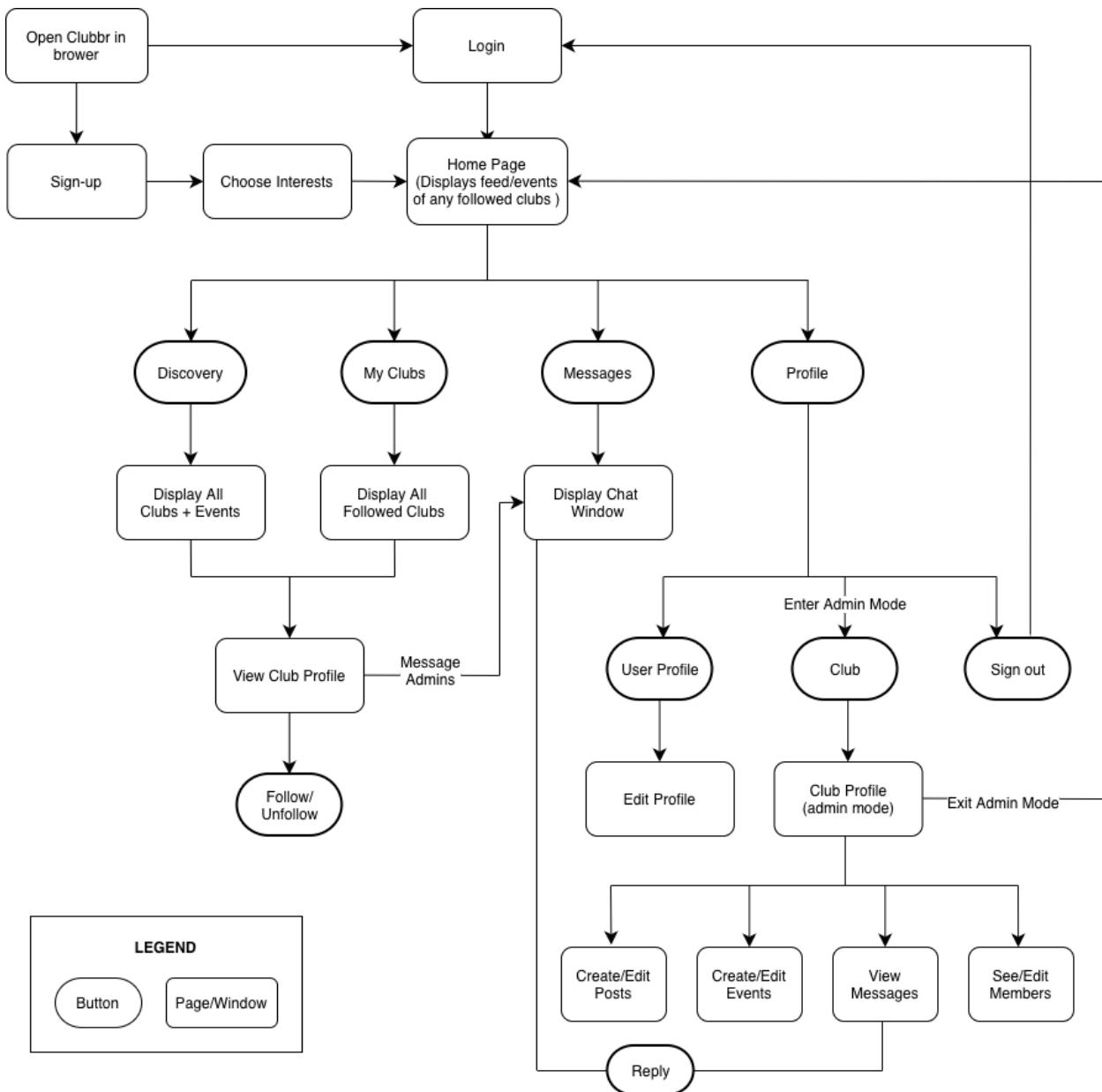
For users who are not admins of that club, they'll see the club's profile, which includes all of that club's posts, events, members, as well as an "about" section of *that* specific club. Users are able to follow/unfollow clubs from this page, as well as message the admins.

The Messages page will allow users to message club admins. Messages are enabled between admin to admin or user to admin/admin to user, but not user to user.

The Profile dropdown consists of tabs to the user's personal profile (edit/see user info), sign out button, or (if they're an admin of any club) a list of clubs for which the user is an admin. Once they click on one of these clubs, they have now entered Admin Mode and will be taken to that club's profile page. As they are in Admin Mode, they can make edits to the club's profile which include creating/editing posts and events, view club messages from other clubs or general user,

and see/edit members. Admin Mode is differentiated across all pages via a banner at the top that shows which club's view they are currently seeing. Under this view, the club admin can navigate that club's specific Home, Discovery, My Clubs, and Message tabs so as to keep interests separate from the user's own personal profile. Once the user is finished conducting club business and wishes to return to their own personal user view, they exit Admin Mode.

System Purpose Diagram



Objectives and Success Criteria

The primary objective of Clubr is to create a unified digital platform that enables students and campus clubs to seamlessly connect, communicate, and collaborate. The system aims to bridge the gap between existing static club directories and the dynamic social engagement needs of students by offering a live, interactive environment where clubs can promote events, share updates, and network with one another.

The success of Clubr will be measured by several key criteria:

1. **User Engagement:** Students should be able to easily discover, follow, and interact with clubs that match their interests through personalized feeds and tagging systems.
2. **Club Management Tools:** Clubs should have intuitive controls to create events, manage memberships, and collaborate with other clubs.
3. **Reliability and Usability:** The application must maintain consistent performance, intuitive navigation, and responsive design across devices.
4. **Security and Privacy:** User and club data, including messages and event information, must be securely stored and managed following privacy best practices.
5. **Scalability:** The platform should support a growing number of clubs, users, and events without degradation of performance.

Functional Requirements

The following functional requirements will be written using a typical user story format of "As a (stakeholder), I want to (goal) so that (motivation). As our web app caters to two domains of stakeholders (user and club admins), wherein all club admins are users but not all users are club admin, we will specify for some functional requirements if it is a feature specifically for club admins. For example, if the stakeholder is specified below as a user, then we can assume this is a feature that should also be made available to all users who happen to also be club admin. If the stakeholder is specified as club admin, then it is a feature for specifically users who are club admin.

Stakeholder	Goal	Motivation
user	securely sign-up and login using email	I can gain secure access to my different profiles and access all the available features in this web app
user	select my interests upon signing up	I can receive catered recommendations about

		which clubs/events I or my club would be interested in.
user	see a personalized feed of posts from clubs I'm following, as well as their upcoming events in my home page	I can get quick access to what my followed clubs are up to (posts, pictures, upcoming events, info)
user	see the clubs I'm following under My Clubs	I can see the clubs I'm following and get direct access to their profiles
user	see all clubs and upcoming events in the discovery page	I can discover and explore different Queen's clubs that I may not be following
user	message club admin of clubs I'm interested in	I can ask questions and learn more directly from the admins
user	in-app notifications	I can receive real-time updates about and from clubs I'm following or messaged
club admin	message users who've messaged me/my club and message other clubs	I can respond to questions from users interested in the club, while also directly communicating with other clubs in order to discuss potential collaborations
club admin	create posts and events	I can communicate/advertise my club's activities
club admin	manage my club's info through its profile	I can see/edit/update posts, events, members, and general club info

Non-Functional Requirements

As a user, I want to access the platform on both desktop and mobile devices with a responsive design for accessibility on all screen sizes.

As a user, I want the interface to be intuitive and consistent, so that navigation between discovering clubs, messaging, and viewing events feels natural.

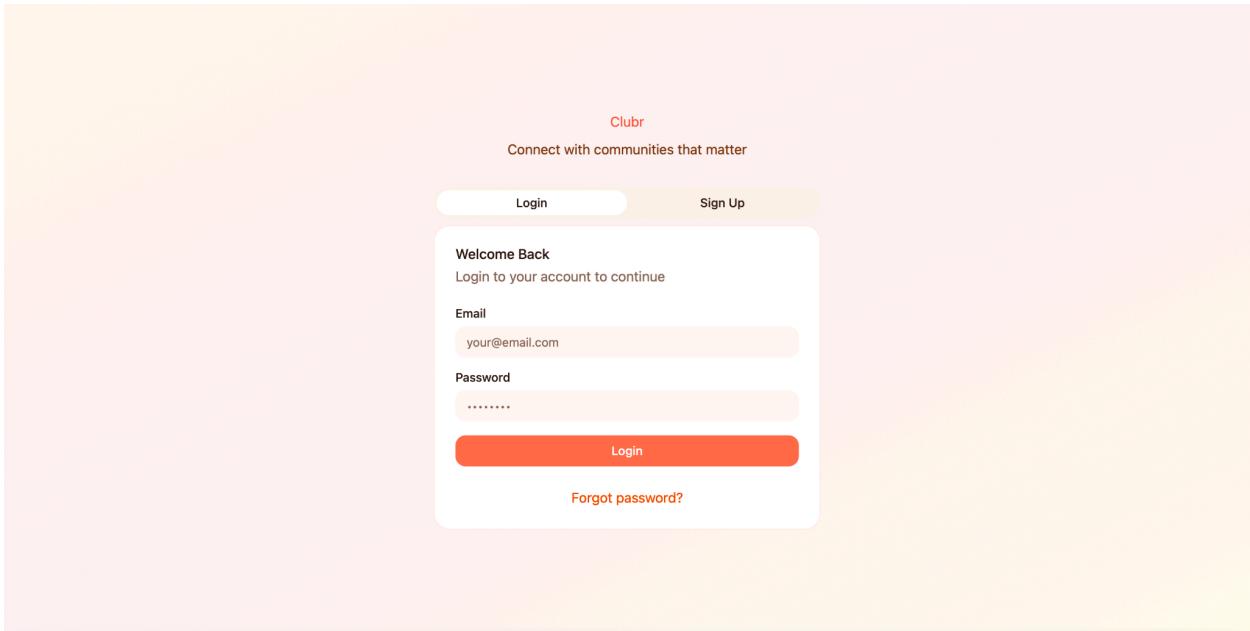
As a user, I want all sensitive data (user credentials, messages, and club updates) to be encrypted in transit (HTTPS/TLS) and at rest in the database.

As a user, I want notifications and announcements to appear instantly (within 1 second) after being posted or updated by a club.

As a club admin, I want form fields (for creating events or updates) to include clear labels, hints, and error messages to prevent mistakes.

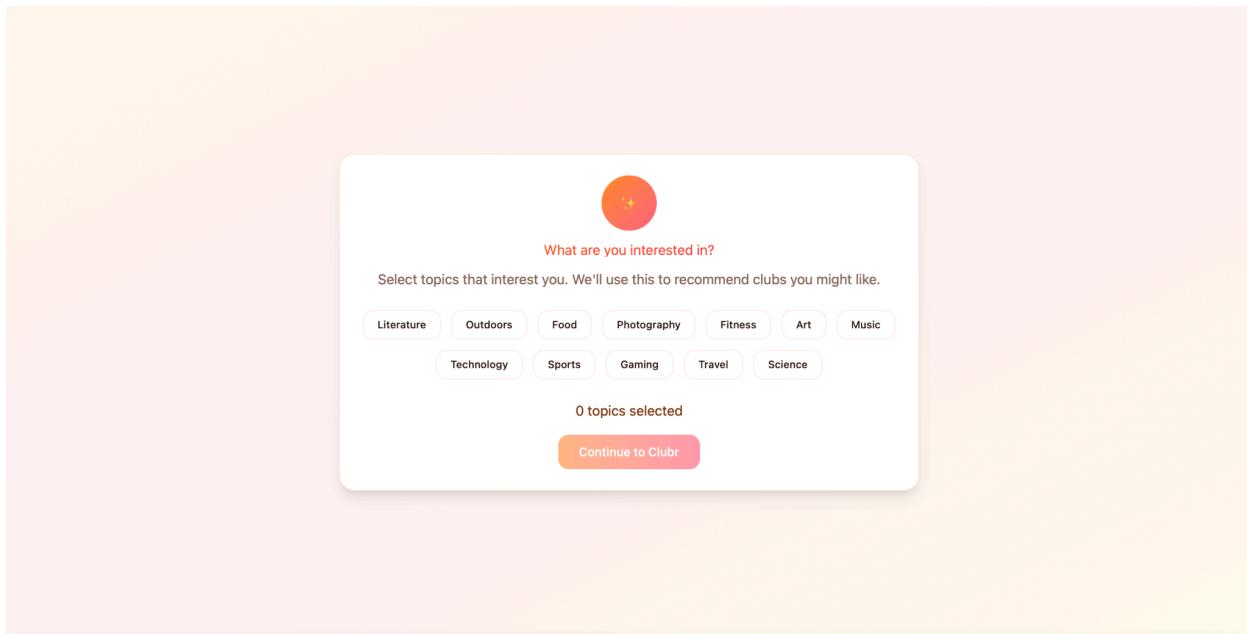
GUI Sketches / Prototypes

Authorization



User entry into the app begins with an account. Users with an existing account will login, or if their login details are saved, will be logged in automatically. New users will be prompted to create an account.

Interests



Upon creating an account, users will be prompted to select topics that interest them. This information will be stored and used later to recommend clubs to join via the discovery feed.

Navigation Bar



Becoming visible upon logging-in, the navbar will be present on any page, allowing the user to quickly move to whatever page they want to. Clicking the Clubr logo or Home button will return to the Home Page. Clicking Discovery will bring the user to their Discovery Page. Clicking My Clubs will show the user an index of the clubs they've joined, allowing them to navigate to the club's landing page. Messages will bring the user to their messages tab.

The profile button will show the user their account, where they can make changes to their photo, about-me, and preferences, as well as being able to sign out. Additionally, club admins can also change to "admin mode" from the profile dropdown, which will allow them to access their club's specific view and all its accompanying features.

Home Page

The screenshot shows the Clubr platform's Home Page. At the top, there is a navigation bar with tabs for Home, Discovery, My Clubs, and Messages. A user profile icon is also present.

Following Feed: This section displays posts from clubs the user follows. It includes a post from "Queen's Journal" about their latest edition and another from "Queen's Badminton Team" about a recent win.

Upcoming Events: This section lists events from clubs the user follows. It includes the "Journalism Workshop: Investigative Reporting" on Nov 4, 2025, and the "OUA Championship Tournament" on Nov 7, 2025.

For users that are already following a club they will be taken to the default Home Page. Contained within this Home Page is a “Following” feed which will display posts from clubs which the user follows. Clicking on these posts will take the user to the post within the club’s own page. Next to that will be some form of calendar, displaying upcoming events for clubs that the user is following. Similar to posts, clicking on events will bring the user to the event on the club page. For users that are not following any clubs, the Home Page will prompt them to explore and follow clubs using the Discovery Page to populate their Home Page.

Discovery Page

The screenshot shows the Clubr platform's Discovery Page. At the top, there is a navigation bar with tabs for Home, Discovery, My Clubs, and Messages. A user profile icon is also present.

Discover Clubs: This section recommends clubs based on the user's interests. It features two cards: "Queen's Model Parliament" (Politics) and "Vogue Charity Fashion Show" (Fashion).

All Events: This section displays upcoming events from all clubs. It includes the "Journalism Workshop: Investigative Reporting" on Nov 4, 2025, the "OUA Championship Tournament" on Nov 7, 2025, and the "Annual Charity Fashion Show" on Nov 9, 2025.

The Discovery Page will look similar to the Home Page, with a feed and an upcoming events calendar. In this case, rather than posts the feed will contain all clubs which the user is not a member of. This feed will be populated in-order based on the user's interests with clubs similar to clubs they're already in, being shown near the top. Next to the feed will be a display for all upcoming events from all clubs, with events from recommended clubs from prioritized.

Clicking on the clubs in the Discovery Page will bring the user to the club's landing page, where they can learn more about the club and follow/message them.

My Clubs Page

The screenshot shows the 'My Clubs' page with a light pink header bar. On the left, there is a 'Club' button. To the right are navigation links: 'Home', 'Discovery' (highlighted in orange), 'My Clubs' (highlighted in red), and 'Messages'. A profile picture placeholder is on the far right. Below the header, the title 'My Clubs' is displayed above a subtitle 'Clubs you're following'. Two club cards are shown side-by-side:

- Queen's Journal** (Media): An image of a person holding a newspaper. Description: 'Queen's independent student newspaper since 1873. Join our team of writers, editors,...'. Members: 87. Following button: 'Following'.
- Queen's Badminton Team** (Sports): An image of a badminton court. Description: 'Competitive and recreational badminton for all skill levels. Weekly practices, tournaments,...'. Members: 45. Following button: 'Following'.

The My Club Page contains all the clubs the User has joined or followed. Clicking on the Club icon will take you to the club's page. Users can also unfollow clubs here.

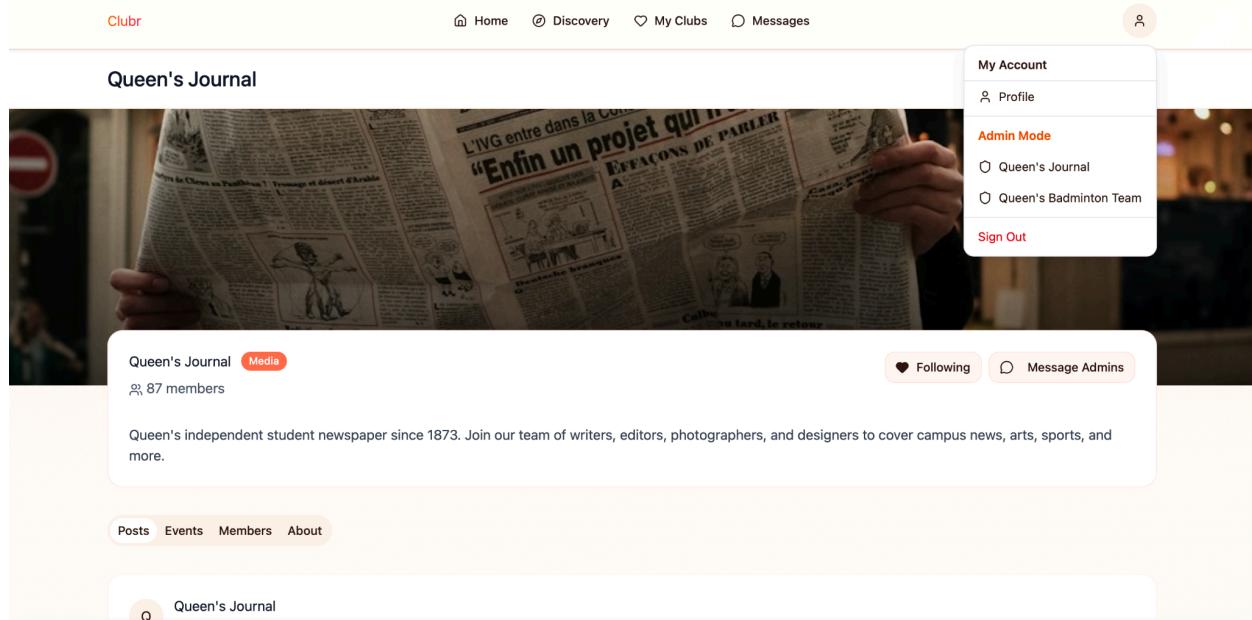
Club Page

The screenshot shows the Clubr Club Page for "Queen's Journal". At the top, there is a navigation bar with links for Home, Discovery, My Clubs, and Messages, along with a user profile icon. Below the navigation bar, the club name "Queen's Journal" is displayed in bold black text. A large image of a person holding a newspaper is centered above the club's bio. The bio itself is contained within a white box with rounded corners, featuring the club's name, a "Media" button (which is red), and a member count of "87 members". Below the bio, a short description reads: "Queen's independent student newspaper since 1873. Join our team of writers, editors, photographers, and designers to cover campus news, arts, sports, and more." At the bottom of the bio box, there are four small buttons labeled "Posts", "Events", "Members", and "About". In the footer area, there is a small placeholder box labeled "Queen's Journal" with a "Q" icon.

The Club Page functions as a landing page for any given club. Users will be able to see the club's posts, upcoming events, as well as additional information about the club including club members. From here users will be able to follow and/or apply for the club. Additionally the user can press a button to be redirected from this page to a chat with club admins.

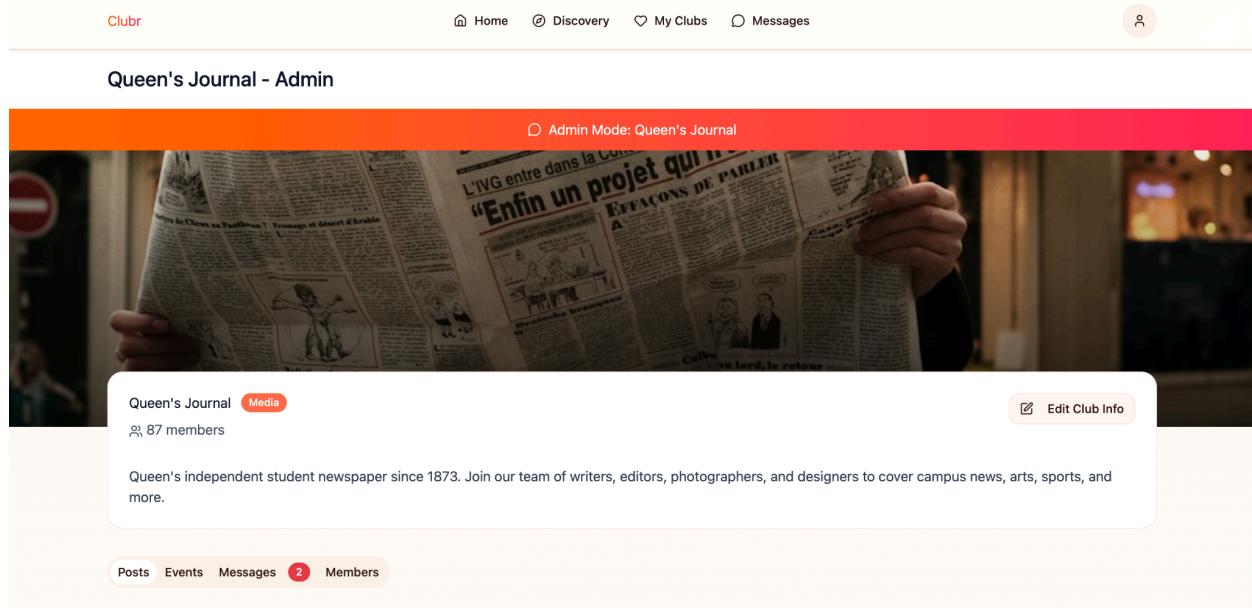
Club Page (Admin Mode)

The Club Page (in admin mode) will appear slightly different to admins, with more options visible. Users flagged as admins for a club will be able to edit the about section, make and remove posts, create events, and add and remove members.



This screenshot shows the Queen's Journal club page on Clubr. At the top, there are navigation links: Home, Discovery, My Clubs, and Messages. A user profile icon is in the top right. On the right side, a sidebar titled "My Account" lists "Profile", "Admin Mode" (which is highlighted in red), "Queen's Journal", "Queen's Badminton Team", and "Sign Out". The main content area features a large image of a person holding a newspaper. Below the image, the club name "Queen's Journal" is displayed with a "Media" button. It shows "87 members". A descriptive text block says: "Queen's independent student newspaper since 1873. Join our team of writers, editors, photographers, and designers to cover campus news, arts, sports, and more." Below this are buttons for "Following" and "Message Admins". At the bottom of the page, there are links for "Posts", "Events", "Members", and "About".

Admin mode for a club can be entered from the top right member button if the user is an authorized Admin for a club.



This screenshot shows the same Queen's Journal club page, but with a red ribbon at the top indicating "Admin Mode: Queen's Journal". The rest of the interface is identical to the standard mode screenshot above, including the sidebar, the main content area with the newspaper image, and the footer links.

While in Admin Mode, it will show a ribbon on top (can only enter admin mode for a single club at a time).

The screenshot shows the Queen's Journal club page on Clubr. At the top, there are navigation links: Clubr, Home, Discovery, My Clubs, and Messages. Below the header, the club's profile picture and name "Queen's Journal" are displayed, along with a "Media" button and a member count of 87 members. A "Edit Club Info" button is also present. The club's bio states: "Queen's independent student newspaper since 1873. Join our team of writers, editors, photographers, and designers to cover campus news, arts, sports, and more." Below the bio, there are tabs for Posts, Events, Messages (with a red notification badge), and Members. A prominent "Create Post" button is visible. A recent post by "Queen's Journal" from 2 hours ago is shown, reading: "This week's edition is out! Featuring an exclusive interview with the AMS President and coverage of Homecoming 2025. Pick up your copy around campus!" It has 34 likes, a comment icon, and a share icon.

Admin - Add Posts function

The screenshot shows the Queen's Journal club page on Clubr, similar to the previous one but with an event added. The event is titled "Journalism Workshop: Investigative Reporting" and is scheduled for Nov 4, 2025, at 7:00 PM in the Journal Office - Carruthers Hall. The event details are displayed in a box below the main post area. The rest of the interface is identical to the first screenshot, including the navigation bar, club info, and member count.

Admin - Add/Edit Events

The screenshot shows a club profile page for "Queen's Journal". At the top, there are navigation links: Clubr, Home, Discovery, My Clubs, and Messages. Below the header, the club's name "Queen's Journal" is displayed with a "Media" button. It shows 87 members and a brief description: "Queen's independent student newspaper since 1873. Join our team of writers, editors, photographers, and designers to cover campus news, arts, sports, and more." A "Edit Club Info" button is visible. Below this, a navigation bar includes Posts, Events, Messages (with a red notification badge), and Members. A section titled "Member Messages" displays a message from "Alex Thompson" posted 2 hours ago: "Hi! I'm interested in joining the club. When is the next meeting?". A "Reply" button is shown. The overall theme is light orange and white.

Admin - View/Edit Messages

This screenshot shows the same club profile page for "Queen's Journal" but with "Admin Mode" active. A red banner at the top indicates "Admin Mode: Queen's Journal". On the right side, a vertical menu titled "My Account" is open, showing options: Profile, Admin Mode, Exit Admin Mode, Queen's Journal (Active), Queen's Badminton Team, and Sign Out. The "Admin Mode" option is highlighted with a red background. The rest of the page content is identical to the first screenshot, including the member message from Alex Thompson.

Admin - Exit Admin Mode

Messages Page

The screenshot shows the 'Messages' page in the Clubr app. At the top, there are navigation tabs: 'Clubr', 'Home', 'Discovery', 'My Clubs', 'Messages' (which is highlighted in red), and a user profile icon. Below the tabs, the word 'Messages' is displayed. On the left, a sidebar titled 'Conversations' lists two messages: one from 'Queen's Journal' and another from 'Queen's Badminton Team'. The message from 'Queen's Journal' is expanded, showing a message from 'Q Queen's Journal' about the next meeting on November 5th at 7 PM, followed by a message from 'E Emma - Journal Editor' thanking the user for interest in the journal. The user responds with 'Thank you! When is the next writers meeting?' at 10:32 AM. The message from 'Queen's Journal' is partially visible below. A text input field 'Type your message...' is at the bottom right, with a red send button.

From here users can contact club admins. Admins are also able to talk with each other from this page. The page will display a list of ongoing chats, which upon clicking will display a messaging box where the user can send and receive messages.

Profile Page

The screenshot shows the 'Profile' page for a user named Alex Thompson. At the top, there are navigation tabs: 'Clubr', 'Home', 'Discovery', 'My Clubs', 'Messages' (highlighted in red), and a user profile icon. The main profile area features a large circular placeholder for a photo, with a 'Upload Photo' button below it. The user's name 'Alex Thompson' is displayed, along with their email 'alex.thompson@queensu.ca' and location 'Kingston, ON'. A 'Joined September 2023' badge is shown. A bio describes the user as a third-year Commerce student passionate about community building and trying new activities. Below this, three statistics are listed: '2 Clubs Joined', '2 Admin Roles', and '8 Total Clubs'. A section titled 'Admin Roles' shows 'Queen's Journal' (Admin) with 87 members and 'Queen's Badminton Team' (Admin) with 45 members. At the bottom, a section titled 'My Clubs' shows 'Queen's Journal' (Admin) with 87 members.

Users can edit their profile from default values by clicking Profile on the top right dropdown menu. The profile page contains the user's name, photo, description, email, club roles and memberships.

Assumptions and Constraints

It is assumed that Clubr will be operating within a modern web-browser environment, wherein users have stable internet connections and up-to-date browsers. It is assumed that authentication systems, whether OAuth2 or SSO, will be available and reliable. The system will be hosted on a platform capable of handling both a typical web frontend, as well as the compiled binary backend. Further, it is assumed that AMS will provide or approve of access to club information, and that club administrators will maintain their pages and events.

Key constraints for Clubr will largely come in the form of integration within the tech stack, and time. Being that Clubr is a web app, it will almost certainly be running a typical frontend for web, in Java/TypeScript, and associated frameworks. Integrating this with a backend composed wholly or partially of compiled C++ is atypical for web applications and will likely present challenges with debugging as well as frontend-backend communication, which will not only need to be reliable but also secure in order to protect user data. The abnormal tech stack may also limit hosting options.

Clubr is an ambitious project being built on a short timetable. This will make it difficult to build truly advanced features. Functionality should be achievable but a rich feature-set and presentation worthy of a true public release may require development beyond the life of this course.

Roles and Responsibilities

Programming Roles	Members
Frontend	Andrew K., Kosi, Justin
Backend	Jackson, Kai, Sophia
Database & Integration	Aaron
Security	Uroosa

Additional Team Responsibilities	Members
Primary Software Architect	Jackson
Project Manager	Sophia
Coders, Testers, and Technical Writers	All team members