Software Requirements Specifications
University Event Organizer

James Gayfer, Justin Macaulay, David Draker, Christina Araya,
Tyson Bulmer, Tyler Harnadek, Jon Pavelich, John He, Deon Liang

Whole Scope Solutions

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Table of Contents

Revision History

Name	Date	Reason for Changes	Version
Whole Scope Solutions	Jan 29, 2017	Initial creation	R1.0
Whole Scope Solutions	Feb 22, 2017	Add additional content, implement client feedback	R2.0

1 Introduction

1.1 Purpose

This document is set to outline the requirements, functional and non-functional, as well as use cases for the University Event Organizer as laid out in the RFP received from Teck4. The University Event Organizer is an application to be used by students and faculty at the University of Victoria for the purpose of event advertisement.

1.2 Project Scope

The software being proposed is a web application that manages events for the University of Victoria for the use of faculty, students, university clubs, and organizations. This software is meant to better organize and monitor school events and to make sure the activities taking place are good representations of the university’s culture. The application should provide students, faculty and anonymous users with access to legitimate University of Victoria hosted events.

1.3 Glossary of Terms

VPC	Virtual Private Cloud
API	Application Program Interface
RSVP	A tag left in messages asking for response so the sender can tell how many people are attending
UVic	University of Victoria

1.4 References

- RFP, University Event Organizer, 1.2, Teck4

1.5 Overview

This document will contain an overarching description of the Event Planner project to be developed for Teck4. This description includes features, user groups, the system environment, constraints, and any dependencies the system may have. It will outline the features of the system as well as the functional requirements that go along with them, a description of the feature, and how it is intended to function. Any external interfaces used by the system will be discussed in depth. Non-functional requirements will also be outlined as well as any other details necessary for the development of the system.

2 Overall Description

2.1 Product Perspective

The University Event Organizer is an entirely new system being built to fill a need at UVic (University of Victoria). This system is intended to centralize and regulate university event information. It is a stand alone system which does not depend on any previously developed systems at UVic. The system will connect to Facebook and Google events to allow events to be shared or saved to the user's calendar.

2.2 Product Features

The University Event Organizer is being developed to allow UVic student clubs and groups as well as faculty to publicize events. All users will have the ability to view events as well. Anyone with an email address can create an account but only users registered with a UVic email address can RSVP to UVic only events, and only pre-approved members of UVic student organizations or clubs can post or edit events. Administrators will be able to manage user privileges and events displayed. Registered users may RSVP for events, which will be tracked in an exportable calendar.

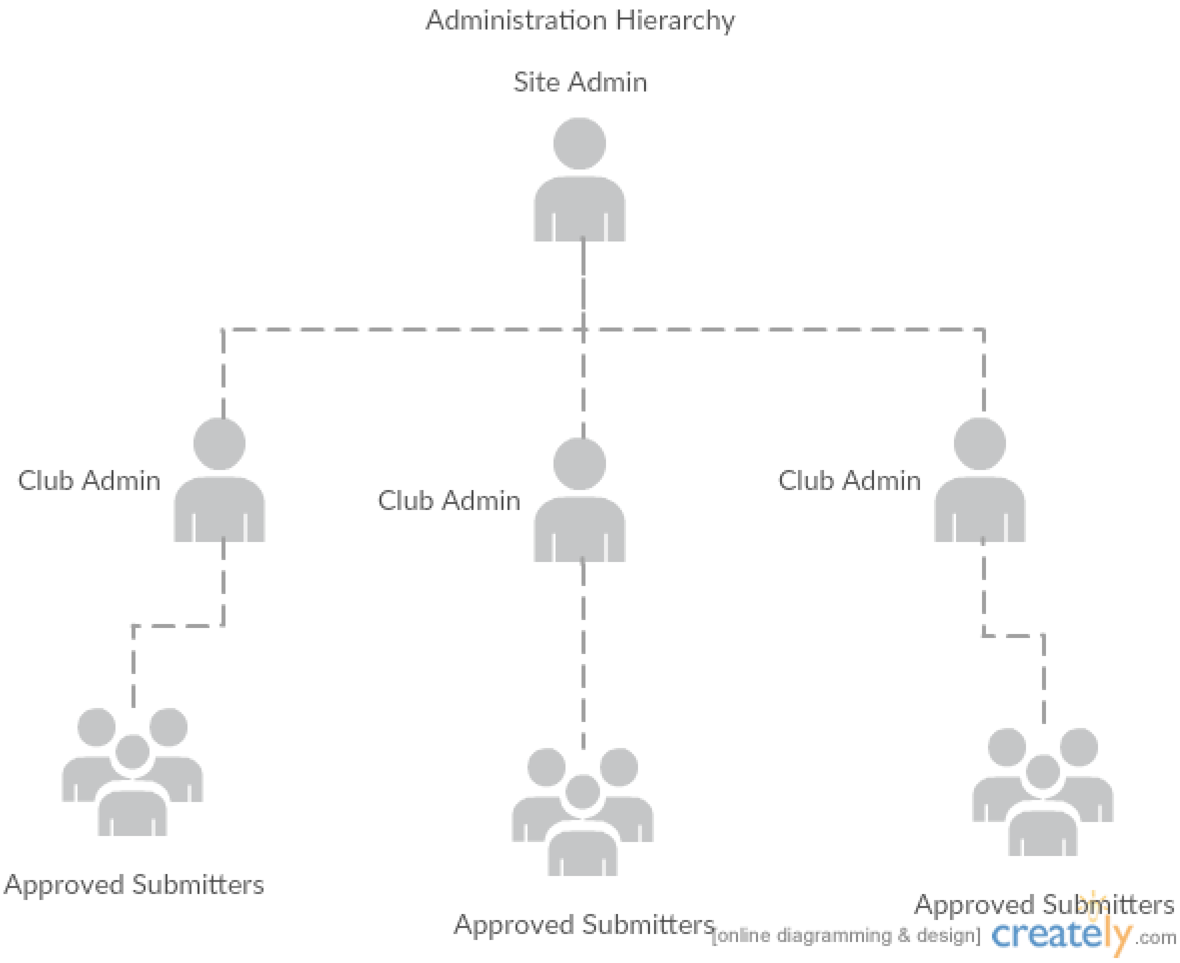
2.3 User Classes and Characteristics

The expected users of the system can be classified by one of the following categories:

- Anonymous User: Any user who is not logged in to an account, a portion of UVic students who have chosen not to set up an account, and any community members who may or may not be associated with UVic.

- Authenticated User: These are persons who have set up an account and authenticated successfully. These users may register for events, export events to external calendar applications and perform all actions of an anonymous user. In order to access and RSVP to UVic specific events user must have a verified UVic email registered to their account.
- Privileged User: Users who have been promoted by club administrators or system administrators, and are generally trusted members (at the discretion of club administrators) who have the ability to create and edit event postings. These users may also perform all actions of an authenticated user.
- Club Administrator: Designated representatives of an organization who grants privileged user access rights and is responsible for moderating events created by their organization. These users may also perform all actions of a privileged user
- System Administrator: A super user role, which entitles said user to remove events, ban users, and register or deregister club administrators.

The majority of expected users should fall under the authenticated user class, while requiring most system functionality would be the club administrator class. The administration hierarchy can be represented by the following figure.



Approved submitters may also be referred to as the ‘Privileged Users’. Anonymous users and authenticated users are disjoint from the above image, as they have no involvements with the presented hierarchy.

2.4 Operating Environment

The system will be hosted on an Amazon EC2 M4.2xlarge instance, which provides a 2.3 GHz Intel Xeon® E5-2686 v4 (Broadwell) processor, 32GB of memory and 1000 Mbps dedicated bandwidth. This hosted server will be running the latest stable version of Debian OS (v8.0) 64-bit. The EC2 instance will be hosted inside an Amazon VPC to ensure a greater level of security as well as the MySQL database which will also be hosted on a M4.2xlarge instance.

2.5 Design and Implementation Constraints

The most pressing constraint on the design and implementation of the system is in regard to our limited access to UVic data. Information privacy and security has to be considered for legal and ethical reasons in this publicly accessible system. Event calendar and export information must conform to external application interfaces.

2.6 Assumptions and dependencies

The system’s view event page will include a Facebook share option, as well as the ability to export the event to the user’s google calendar or to their iOS calendar application. To use either of these features the user will be required to have a registered account. The use of these external services is completely optional, and is not required for the core functionality of the application.

If the user registers with a valid UVic email, or adds their UVic email as their student email during registration or when logged in to the system, they will be registered as a UVic student and have access to UVic specific events.

3 System Features

3.1 Create an Event

3.1.1 Description and Priority

This feature should allow Privileged users, Club administrators and Administrators to create new events and post them to the web application. Event creation is High priority and should be one of the first features implemented.

3.1.2 Stimulus/Response Sequences

Stimulus	User requests new event
Response	System returns the new event page with multiple inputs

Stimulus	User specifies event data and submits
Response	System exits to the main page, event is created

3.1.3 Functional Requirements

[R.3.1.1] If an event was created by a privileged user, it must be sent to the appropriate club administrator or the system administrator for approval. Events created by a club administrator or system administrator are automatically approved.

[R.3.1.2]: Any new event without the required information will not be created, if a user attempts to create an event without the required parameters (i.e. the event description, name, date, time, location) the system will respond with a request for the user to submit the missing parameters.

[R.3.1.3]: In the case that a user tries to input more than 5 images into a single event the system will respond with a prompt that that cannot add more than 5 images to an event and return the user to the new event page.

[R.3.1.4]: The user should have the ability to mark the event as an 18+ event.

[R.3.1.5]: Should allow users to create a new event for the system.

3.1.4 Rationale

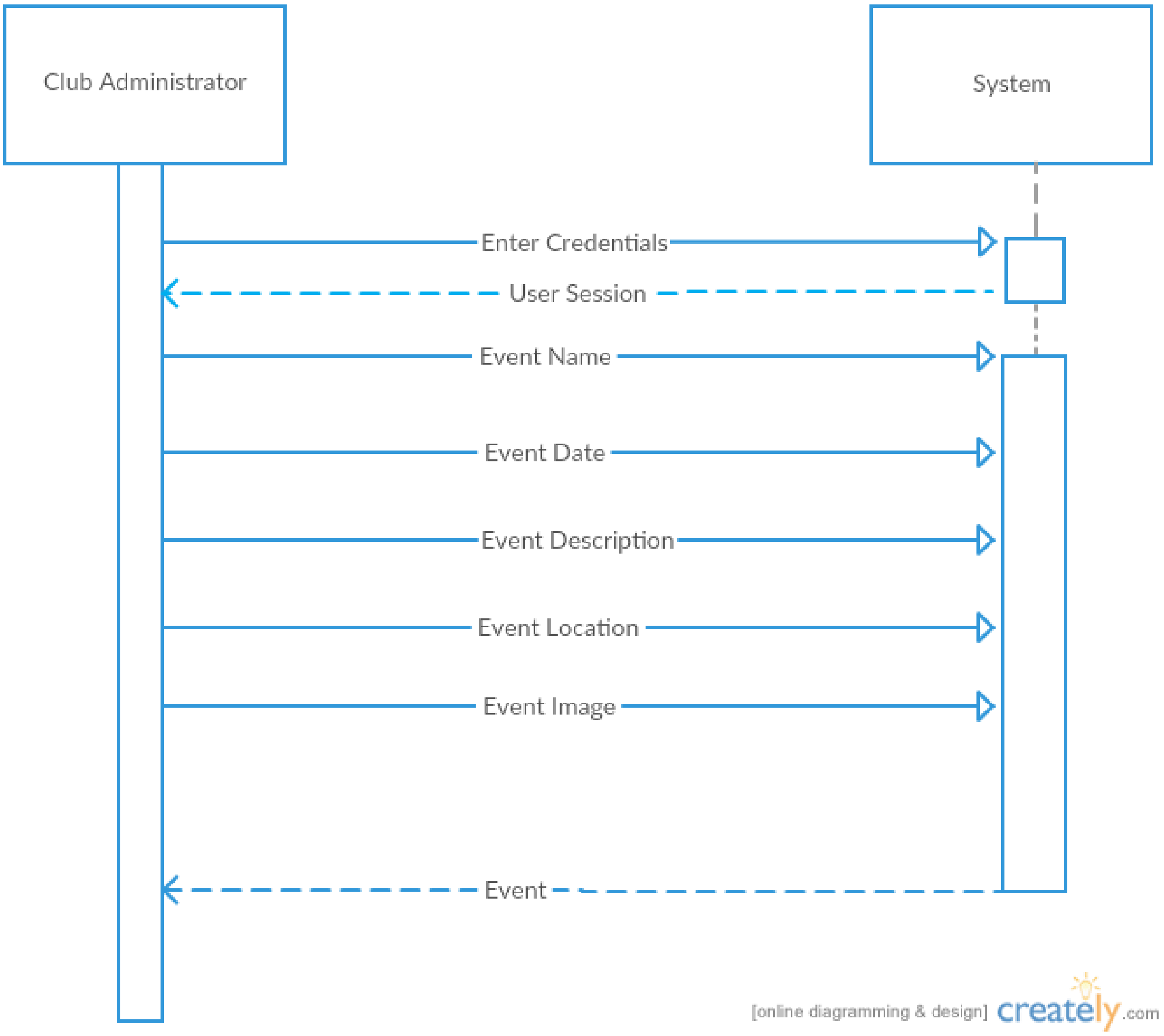
Clients wants student and club organizations to be able to advertise their events.

3.1.5 Test Scenario

Have a privileged user log into the system. Go to the create event page of the site. Enter the information provided to create an event. Create the event. Have an administrator account ensure the event is trapped for approval. Approve the event. Navigate to the view events portion of the site and ensure that the event posting is there.

Repeat the above steps for a club administrator and a system administrator.

3.1.5 Sequence Diagram



3.2 View Event

3.2.1 Description and Priority

This feature should allow any user of the system to view an event, this function can be accessed from searching or the user's existing schedule. This feature is of high priority because it is used to access many other features including the RSVP feature, the reporting events, and editing an event.

3.2.2 Stimulus/Response Sequences

Stimulus	User requests to view an event
Response	System displays the event

3.2.3 Functional Requirements

[R.3.2.1]: A user can view an event

[R.3.2.2]: Each event should track and display how many times it has been viewed

[R.3.2.3]: Allows user to access other functionality, such as RSVP, reporting and editing for owned events

3.2.4 Rationale

Clients want students to be able to access information on events created by student and club organizations.

3.2.5 Test Scenario

See create event test scenario.

3.3 Register Club Administrator

3.3.1 Description and Priority

This feature should allow System Administrator users to appoint club administrators. This feature is of high priority, due to its required implementation for the system to work, as club administrators are required to create events which users register for. The current user must be an administrator for this action and the selected user must have an account in the current system.

3.3.2 Stimulus/Response Sequences

Stimulus	Administrator requests a user profile
Response	System displays user profile
Stimulus	Administrator requests to upgrade user account
Response	System upgrades said user to Club Administrator

3.3.3 Functional Requirements

[R.3.3.1]: Once a user is registered as a club administrator, they should receive an email notifying them of their new privileges. This should only occur once.

[R.3.3.2]: Allows a System administrator to register another user as a club administrator

3.3.4 Rationale

Clients want System Administrators to have the ability to appoint Club Administrators with the ability to control events and users in their domain.

3.3.5 Test Scenario

Have a System Administrator log into the system, they should navigate to the administration page where they can filter through the existing users of the system. There if they select the user they want to promote they should have the ability to promote them to a higher tier of access, if they are already a privileged user, they can be promoted right away to Club administrator, if they are a regular user they should be promoted to a privileged user status first. The administrator may then assign the user to a club or other organization.

After this has been done the newly promoted user should have access to systems and features associated with Club Administrator status.

3.4 Registering a Privileged User

3.4.1 Description and Priority

This feature allows a club administrator or the system administrator to upgrade a normal user account to a privileged user. To do this the user must already have an account with the system. This is considered a high priority feature as it is required for non admin users to post events. The administrator must be logged in and have club administrator status or better to register a privileged user. The user to be promoted must have an existing registered account with a UVic email.

3.4.2 Stimulus/Response Sequences

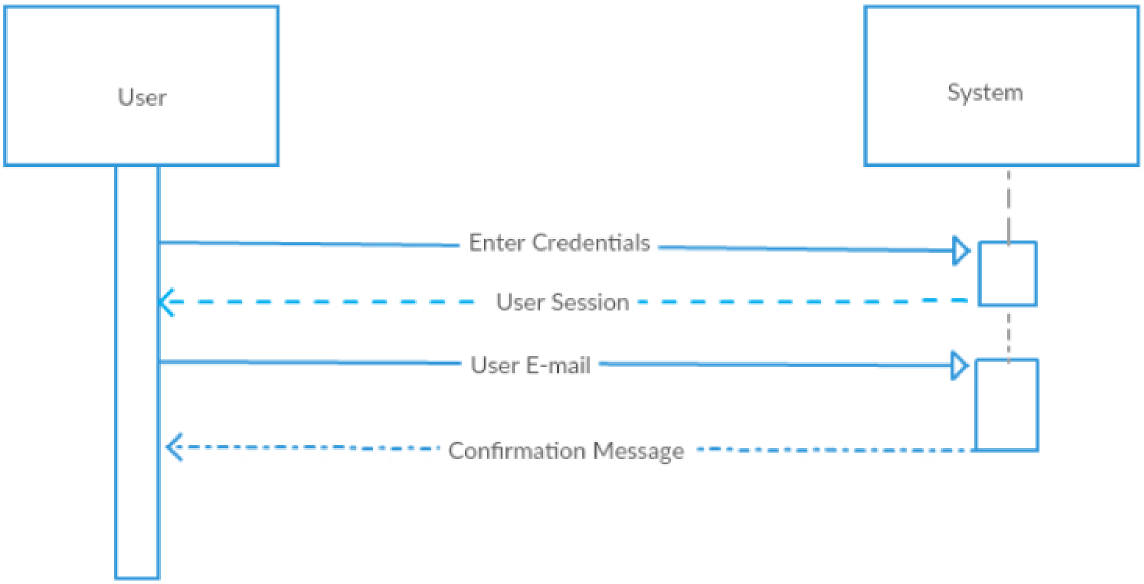
Stimulus	The administrator requests to view the user profile
Response	The system displays the requested user profile
Stimulus	The administrator requests to grant privileged status
Response	The system upgrades the user to privileged status

3.4.3 Functional Requirements

[R.3.4.1]: After the user has been given the privileged user permissions, they should be sent an email notifying them of their new permissions.

[R.3.4.2]: Logged in user can promote a user to a privileged user status.

3.4.4 Sequence Diagram



3.4.4 Rationale

Clients want System Administrators or Club Administrators to have the ability to appoint Privileged Users with the ability to control events in their domain.

3.4.5 Test Scenario

Have a System Administrator log into the system, they should navigate to the administration page where they can filter through the existing users of the system. There if they select the user they want to promote they should have the ability to promote them to a higher tier of access, if they are a regular user they can be promoted to a privileged user. Before they promote the user they must choose what domain that user belongs to.

After this has been done the newly promoted user should have access to systems and features associated with Privileged User status.

This test scenario was performed with System Administrators, Club administrators also have the ability to promote users to privileged status, however they can only choose the domain(s) that they belong to when promoting the user.

3.5 Register User

3.5.1 Description and Priority

This feature allows any person without an account to create a new account to log in with. This action is of high priority since no authenticated users can exist without it.

3.5.2 Stimulus/Response Sequences

Stimulus	The anonymous user requests registration
Response	The system responds with the appropriate registration form

Stimulus	User inputs registration details and submits the form
Response	System validates information, creates user, and sends verification email

Stimulus	User visits email verification page
Response	System enables account to allow login, and redirects user to login page

3.5.3 Functional Requirements

[R.3.5.1] System must read user information from the database to avoid creating duplicate users.

[R.3.5.2] System must write user information to the database to create and enable users.

[R.3.5.3] System must sanitize and validate user data entered into registration form.

[R.3.5.4] Anonymous users can register in the system as a user

[R.3.5.5] Users can register as a UVic student by providing their student email address

3.5.4 Rationale

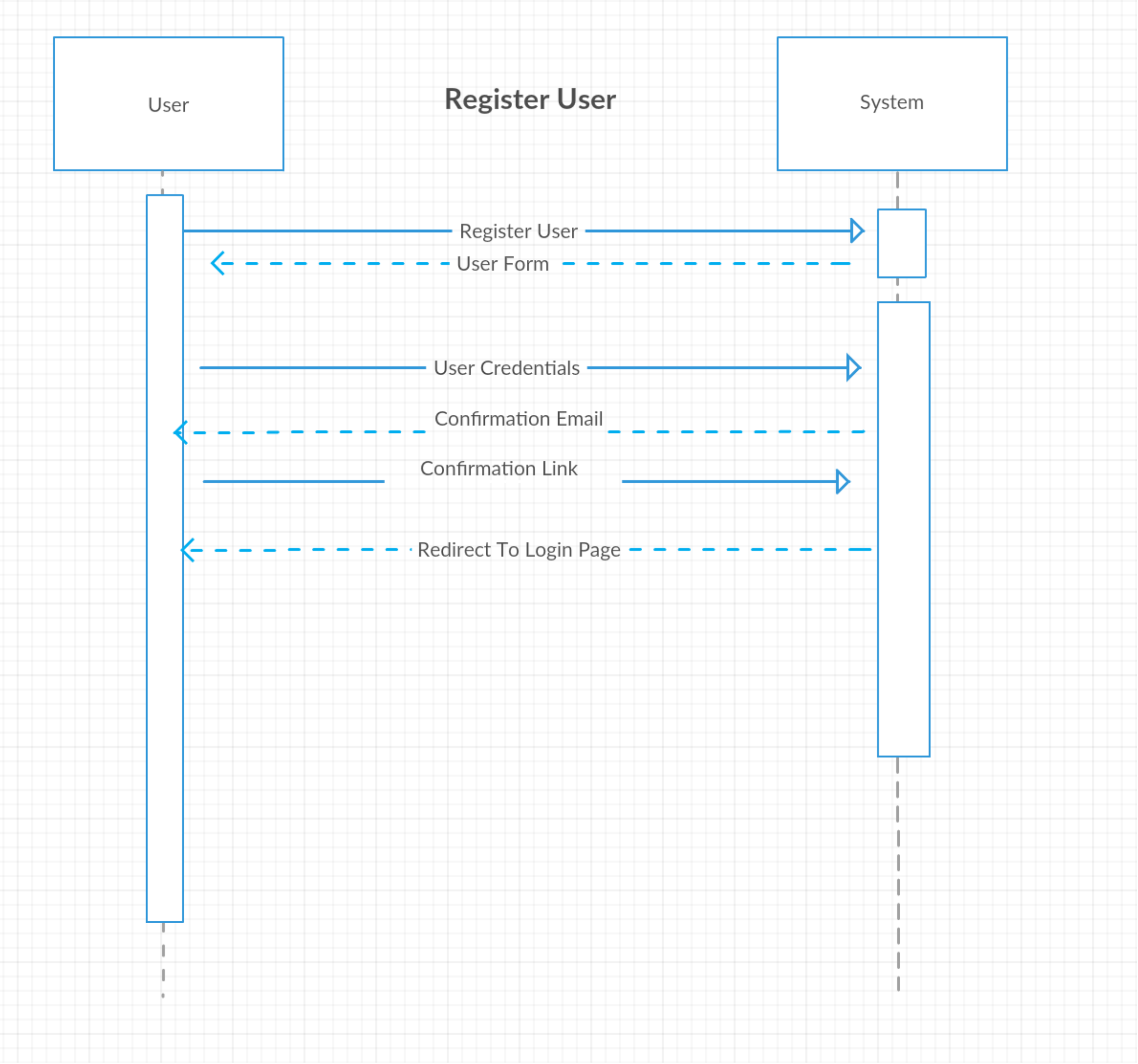
Clients want the system to be able to create new users.

3.5.5 Test Scenario

Anonymous user should navigate to the main page and select login, from there they should be able to navigate to the registration page. There they should enter their information including required details: date of birth, name, main email and password. They should optionally be able to enter their student email (this option should be available any time a user isn’t registered with a student email). A verification email will be sent to their main email, and optionally to their student email. If a user verifies their main email, they should have a new account with regular user access but no access to student only posts. If they optionally also verify their student email they should have the ability to view student events. Main emails in the system should be unique, and passwords must have capital letters, unique characters and be at least 8 characters long.

After this process is finished the new user should have access to features available to regular users.

3.3.6 Sequence Diagram



3.6 Log in

3.6.1 Description and Priority

This feature allows anyone with an account to access the system as a user. This action is of high priority since no user can access their special features without it.

3.6.2 Stimulus/Response Sequences

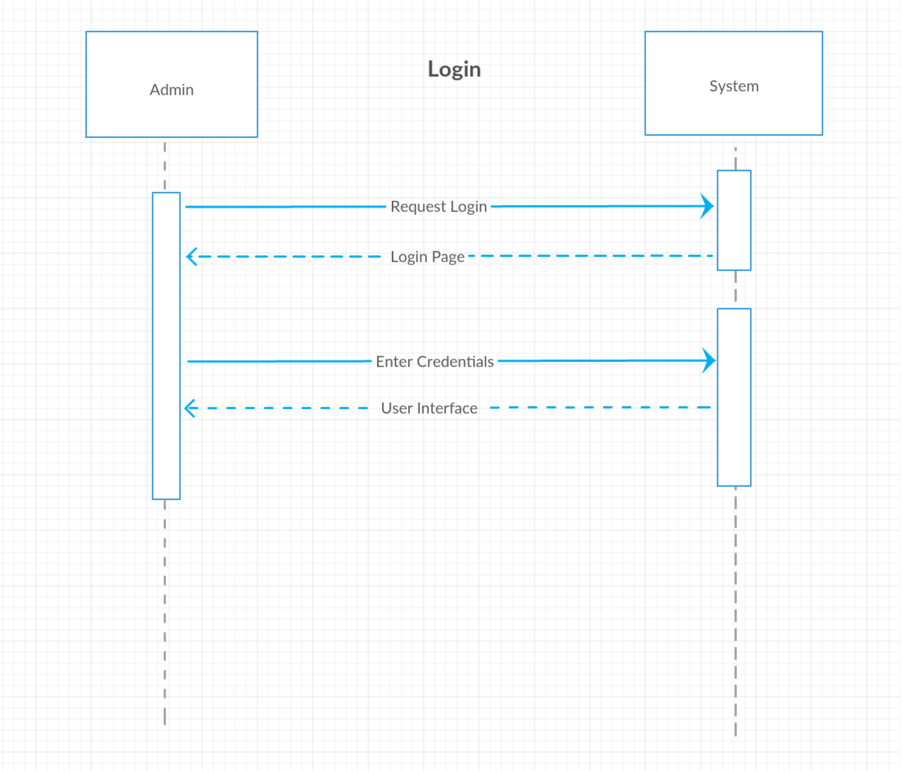
Stimulus	The anonymous user requests to log in
Response	The system responds with the appropriate form
Stimulus	User inputs login details and submits the form
Response	System redirects to main page with additional features for logged in user

3.6.3 Functional Requirements

[R.3.4.1] System must import user information from the database

[R.3.4.2] Session must be created to log the current user into the system allowing them access to more features

3.6.4 Sequence Diagram



3.6.4 Rationale

Clients want users to be able to access system features specific to their user status.

3.6.5 Test Scenario

Any verified registered users should navigate to the main page, then to the login page and enter their unique account email address and passwords. Then they should select login and if they entered the correct credentials, their user session should be created and they should have access to the system features associated with their access level.

3.7 Search Event

3.7.1 Description and Priority

This system feature enables all users to search for school events that are stored on the System's database. The user could provide keywords for different search fields as desired for different search results. The system will return events that matches all of the keywords provided by the user. This feature is to be considered *High* priority. The reason is that searching an event is one of the the main method for users to find events in the system.

3.7.2 Stimulus/Response Sequences

Stimulus	User request to search for events
Response	The system displays resulting events

All users should be able to search for events. If the user does not provide any search parameters, the system will display all of the available events. If a keyword was given by the user, the system will only display the events that matches the given keywords. If the user chooses to search by category, the system will return all events with the given category. The user may also filter out by category. Filtered out categories will not appear. Only privileged users are allowed to search for restricted events.

3.7.3 Functional Requirements

[R3.6.1] The Search Event screen shall allow the users to search events by using keywords such as name, category, date.

[R3.7.2] The Search Event screen shall display the events that the users has searched for.

[R3.7.3] The Search Event screen shall allow users to select an event for viewing.

[R3.7.4] The Search Event should allow users to search by event tags

[R3.7.5] The Search Event should allow users to search by event categories

3.7.4 Rationale

Clients want the system to be able to filter the events by relevant search criteria.

3.7.5 Test Scenario

Anonymous user should navigate to the listings page, there they can enter a string to search by tags, or access the filters for a more advanced search. In the filtering system the user should be able to search for events within a specific period of time, and select day's they want events to appear for. They should also be able to select categories they want their events to match, as well as if the event is age restricted or a student only event (non students may not access this feature).

After filters have been set the user should be able to press the search icon and populate their calendar or tiled list with matching events.

3.8 Approve Event

3.8.1 Description and Priority

This feature provides the ability for system and club administrators to approve pending events proposed by privileged users. This feature is to be considered *High* priority.

3.8.2 Stimulus/Response Sequences

Once the administrator has navigated to the appropriate view of pending approvals:

Stimulus	System or Club administrator approves event
Response	User is notified of events approval status change

3.8.3 Functional Requirements

[R3.8.1] : When an event is approved, the event information needs to be made publicly available and searchable.

[R3.8.2]: Event acted upon is marked as approved in the database.

[R 3.8.3]: Event can no longer be reported unless it is edited again.

3.8.4 Rationale

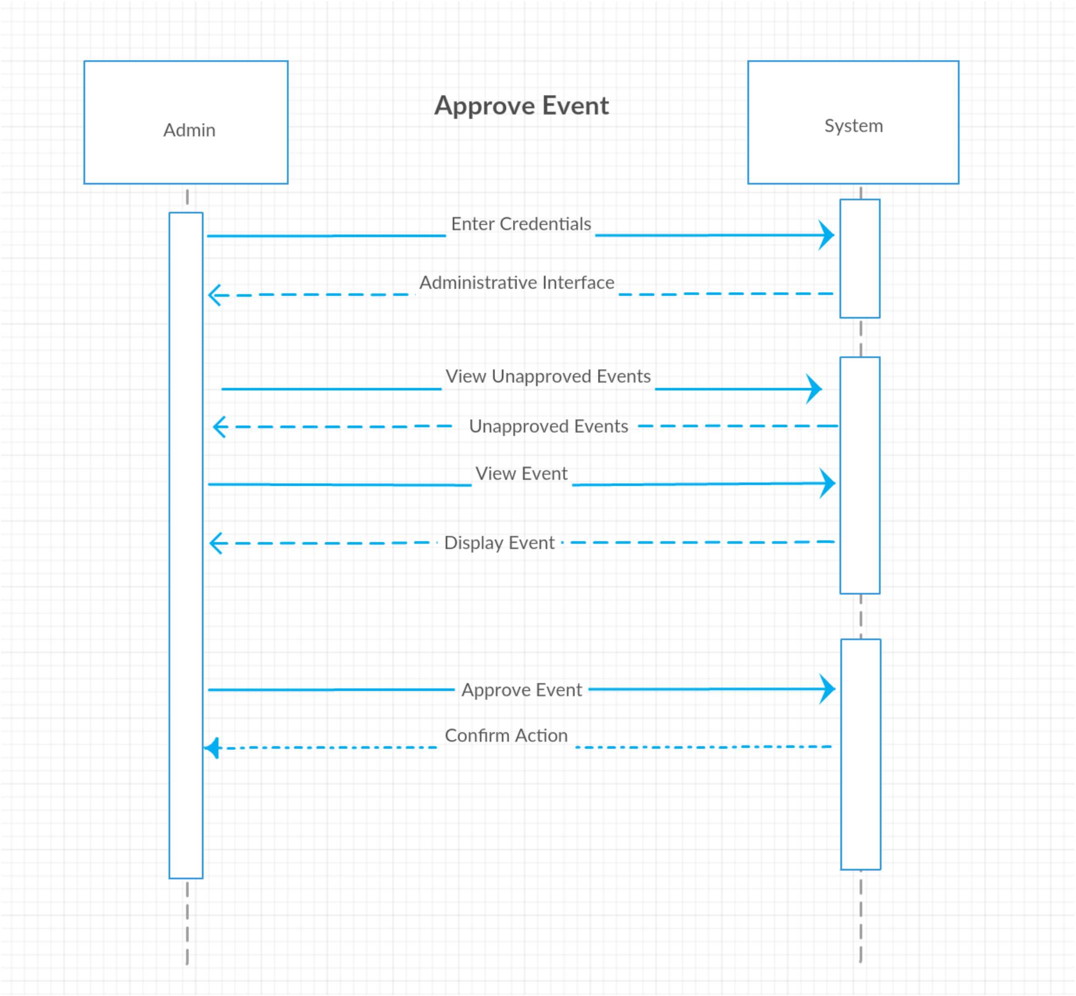
Clients want a reviewal process for events created in order to lower the chances of inappropriate events of becoming viewable to the general public.

3.8.5 Test Scenario

System Administrator logs in. The system administrator proceeds to the pending events page. The administrator reviews and approves the event. The system administrator account is logged out. A normal account is logged in and the event is viewed.

Complete the above for a club administrator as well with the added:
Club administrator ensures they can only see events created by their privileged users.

3.8.6 Sequence Diagram



3.9 Remove an Event

3.9.1 Description and Priority

This feature provides the system administrator the ability to remove posted events, or the club administrator for their club events only. This feature is to be considered *High* priority.

3.9.2 Stimulus/Response Sequences

When viewing desired event to be removed:

Stimulus System or club administrator selects to remove event
Response System prompts for confirmation of removal

Stimulus System or club administrator confirms the removal of the event
Response System dismisses prompt and redirects user to landing page

3.9.3 Functional Requirements

[R3.9.1]: When an event is removed, the event information needs to be made not publicly available and not searchable.

[R3.9.2]: Club administrators may only remove events that are registered under their club

[R3.9.3]: Event information must be hidden from general consumption

[R3.9.4]: Removed event must remain in database for six months after they are flagged as removed

3.9.4 Rationale

Administrators and event creators want to be able to remove events to due to circumstances such as event being cancelled or event being reported frequently by other users.

3.9.5 Test Scenario

System Administrator logs in. The system administrator proceeds to the view events page for the event to be removed. The system administrator clicks the button to remove the event. The system administrator then confirms the removal of the event. The system administrator account is logged out. A normal account is logged in and the event removal is verified.

Complete the above for a club administrator as well with the added:
Club administrator ensures that the remove events button is only available on events created by their privileged users.

3.10 RSVP For an Event

3.10.1 Description and Priority

This system feature allows registered users to register for posted events. This action will add the event information to that user's application calendar information which will be available for export in other features. This feature will update the information regarding the attendance quantity. This feature is to be considered *Medium* priority.

3.10.2 Stimulus/Response Sequences

Stimulus	User selects an event to register for
Response	User is notified of successful (or failed) registration

3.10.3 Functional Requirements

[R3.10.1]: When a student RSVPs for an event, this information needs to be saved to the event so that other users can see how many people are planning to attend an event.

[R3.10.2]: Adds event to users calendar

[R3.11.3]: Increases the user amount that are RSVPing to the event in the database

3.10.4 Rationale

Clients want the system to be able to report users that are attending an event.

3.10.5 Test Scenario

Any user with an account should login to the system, navigate to the events listing and select an event. They should then be able to view the events details and RSVP if that event has a limit to their attendees. When the user selects RSVP they should be notified that they've successfully registered for that event and get notification emails about the event a day before the event occurs.

3.11 Share an Event

3.11.1 Description and Priority

This system feature allows any logged in user to share a posted event through Facebook. This feature is to be considered *Medium* priority.

3.11.2 Stimulus/Response Sequences

When a user is viewing an event:

Stimulus	User selects to share an event
Response	A Facebook prompt is displayed where they can share the event
Stimulus	User shares event
Response	Event is shared through Facebook and regular system resumes

3.11.3 Functional Requirements

[R3.11.1]: Sharing the event to Facebook does not affect any existing data in the database.

[R3.11.2]: Event is shared to Facebook

3.11.4 Rationale

Clients want the system to be able to share an event to Facebook.

3.11.5 Test Scenario

See 3.10.5 test scenario for RSVP.

If the user is registered for an event they should have the option to export that event to facebook while viewing it. The user should enter their Facebook credentials after selecting the option of they aren't already logged into Facebook. The Facebook integration system will ask for confirmation, and allow the user to share the event to their timeline.

3.12 Export an Event to Calendar

3.12.1 Description and Priority

This system feature allows any logged in user to export their calendar of events they have registered for to their Google Calendar or IOS calendar. This feature is to be considered *Medium* priority.

3.12.2 Stimulus/Response Sequences

From the user's calendar page:

Stimulus	User selects to export their calendar
Response	A Google prompt is displayed for exporting options
Stimulus	User finalizes export
Response	Google prompt is dismissed

3.12.3 Functional Requirements

[R3.12.1]: Exporting the calendar does not affect any existing data in the database.

[R3.12.2]: Calendar is exported to IOS or Google calendar

3.10.4 Rationale

Clients want the system to be able to export an event to the native IOS calendar, or google calendar.

3.10.5 Test Scenario

See 3.10.5 test scenario for RSVP.

Google:
If the user is registered for an event they should have the option to export that event to a calendar while viewing it, and select google calendar. The user should enter their Google credentials into the window that appears after selecting the option of they aren't already logged into Google.The event should then be incorporated into their google calendar.

IOS:
If the user is registered for an event they should have the option to export the event to a calendar, and select IOS application. The user should be able to export the event straight to their IOS calendar if they are on their apple device. If they aren't on their apple device they should enter their credentials into the window that appears before the action will complete.

3.13 Edit an Existing Event

3.13.1 Description and Priority

This feature allows system administrators, club administrators and privileged users to edit information of events. The events a user may edit varies on the user's level:

- System administrators may edit any event in the system.
- Club administrators may edit any event that is registered under their domain, such as created by them, or their derived privileged users.
- Privileged users may only edit events they created.

This feature is to be considered *Medium* priority.

3.13.2 Stimulus/Response Sequences

Stimulus	User selects to edit an event they have the ability to edit
Response	System takes user to the event edit view
Stimulus	User modifies desired information and saves changes
Response	System saves changes and redirects user to normal viewing of event

3.13.3 Functional Requirements

[R3.13.1]: The event information is updated in the database and displayed correctly on normal viewing of the same event.

[R3.13.2]: If the event has been previously approved, the edited event does not need to be approved again

[R3.13.3]: Event data is modified

3.13.4 Rationale

Event creators want to edit information on an event if mistakes are made in the description, or if postponing the event is necessary due to unforeseen circumstances.

3.13.5 Test Scenario

System Administrator logs in. The system administrator proceeds to the view events page for the event to be edited. The system administrator clicks the button to edit the event. The event is edited. The edit is confirmed. The system administrator account is logged out. A normal account is logged in and the event edit is verified.

Complete the above for a club administrator as well with the added:
Club administrator ensures that the edit events button is only available on events created by their privileged users.

Complete the above for a privileged user as well with the added:
Privileged user ensures that the edit events button is only available on events created by them.

3.14 Remove a Privileged User’s Privileges

3.14.1 Description and Priority

This feature allows a system or club administrator to remove a privileged user’s privileges from the system. A system administrator may revoke club administrators and privileged user’s privileges. A club administrator may only remove privileges from privileged users in which they initially granted. This feature is considered to be *Medium* priority.

3.14.2 Stimulus/Response Sequences

From the user management module:
Stimulus The administrator selects to revoke a user’s privileges
Response The system prompts for confirmation of the revocation.

Stimulus The administrator confirms to revoke a user’s privileges.
Response The system dismisses the prompt.

3.14.3 Functional Requirements

[R3.14.1] The revoked privileged user’s information in the database is updated to reflect new user status.

[R3.14.2] The user's privileges are revoked and now are the same as a regular user.

3.14.4 Rationale

Club administrators would like the ability to remove privileges from users who are no longer a part of their club.

3.14.5 Test Scenario

Club administrator logs in. The club administrator navigates to their registered users page. The club administrator chooses a user from the list and clicks button to revoke their privileges. They confirm the removal. That account is then logged in to confirm it no longer has privileged user status.

3.15 Remove a Club Administrators Privileges

3.15.1 Description and Priority

This feature allows a system or club administrator to remove a privileged users privileges from the system. A system administrator may revoke club administrators and privileged user’s privileges. A club administrator may only remove privileges from privileged users in which they initially granted. This feature is considered to be *Medium* priority.

3.15.2 Stimulus/Response Sequences

From the user management module:
Stimulus The administrator selects to revoke a user’s privileges
Response The system prompts for confirmation of the revocation.

Stimulus The administrator confirms.
Response The system dismisses the prompt.

3.15.3 Functional Requirements

[R3.15.1] The revoked privileged user’s information in the database is updated to reflect new user status.

[R3.15.2] The Club Administrator now only has a regular user’s permissions.

3.15.4 Rationale

Club administrators will want the ability to change who is in charge of the club as students graduate and move on.

3.15.5 Test Scenario

System administrator logs in. The System administrator navigates to the registered club administrators page. The System administrator chooses a club administrator from the list and clicks button to revoke their privileges. They confirm the removal. That account is then logged in to confirm it no longer has club administrator status.

3.16 Ban a User

3.16.1 Description and Priority

This feature allows the system administrator to ban a user from the service for various reasons. This feature is considered to be *low* priority.

3.16.2 Stimulus/Response Sequences

Stimulus System administrator enters the user email or user name of the account to be banned.
Response The system prompts for confirmation of the user ban.

Stimulus The System Administrator confirms the ban.
Response The system bans the user and displays a confirmation or failure message.

3.16.3 Functional Requirements

[R3.16.1] The user being banned must be flagged as banned in the database

[R3.16.2] Users that are banned can no longer report events

[R3.16.3] Users can use the system as normal

[R3.16.4] The chosen user is flagged as banned from system

[R3.16.5] The Administrator can search for problem users using email or username

3.16.4 Rationale

System administrators can prevent problem users from repeatedly banning events by “banning” users.

3.16.5 Test Scenario

System administrator logs in, navigates to the administration page and browses the listing of users. They cen select a user and view more detailed listings about their activities on the site. They may then choose to promote or ban the user. If they choose to ban the user, that user can no longer report events.

3.17 Report an Event

3.17.1 Description and Priority

This system feature any user with a valid account with the system to report events that they deem inappropriate in nature. This is a Low priority feature as much of the system can function without this feature implemented.

3.17.2 Stimulus/Response Sequences

Stimulus	User selects report event on a currently selected event
Response	System responds with an input form
Stimulus	User writes concerns about the event and submits the form
Response	System closes the orm with an appropriate message

3.17.3 Functional Requirements

[R3.17.1]: Once an event is reported, the system marks the event in the database as flagged, and logs the user message.

[R3.17.2]: The event, is added to the club administrators queue along with the user messages if there was more than one report made.

[R3.17.3]: The event is reported in the system

[R3.17.4]: Approved events cannot be reported, unless they've been edited

3.17.4 Rationale

System and Club administrators want to be notified if an event that is inappropriate has been posted and needs removal.

3.17.5 Test Scenario

An authenticated logs in. The user navigates to an event and views the event. The user clicks the button to report the event. The user fills in the message box with concerns about the event. A Club administrator logs in. The club administrator navigates to their main page. They confirm the event has been reported and that the message has been passed correctly.

Complete the above for a system administrator as well.

4 External Interface Requirements

4.1 Hardware Interfaces

The application must be web responsive and compatible with mobile and desktop devices. Any device running this software must have a compatible web browser installed. Keyboard, touch, and mouse input must be captured for this application to function properly.

4.2 Software Interfaces

The application uses a MySQL database of version 14.14 for the storage of user data, event statistics and events. This software should run well on versions Windows XP and OS X 10.8 Mountain Lion or greater. Software should also run well on current Unix distributions produced after 2004. Web application should utilise API keys for Google and Facebook for calendar exporting and event sharing. Calendar exporting should utilise a call to a google calendar API to export the users schedule or event listing to their google account. Calendar exporting should also accommodate the native IOS Calendar application. Event sharing should use facebook's api to share a selected event to a user's friends their facebook account. Event title, descriptions, date, time and location should be shared when the event sharing functionality is called. For the calendar update function, title, description, date and time should be shared to the Google calendar. Tools for development will include any web browser with adequate inspection tools, sublime text and Visual Studio Professional Edition 2015. The application needs to be compatible with modern web browsers such as Google Chrome, Firefox, Opera, and Internet Explorer, and any other browser compatible with HTML 5.

4.3 Communications Interfaces

Each user account must register with a valid email account for notifications and can be or include a student email for student verification. The software uses TCP connections with http responses for network server communications. This application will use a google and Facebook connection to share event information.

5 Other Non-Functional Requirements

5.1 Performance Requirements

Web application needs to be web responsive and function on any modern Android or iOS mobile device with browser support. The application must use an SQL database to store user and event information. Down time must be limited to 10 PM to 9 AM Pacific time, with outages limited to 2% of the uptime of the system. Downtime cannot exceed 8 hours at any one given time. User data must be encrypted and stored on a secure server. In the case of RSVPing to an event, only the amount of users that have RSVP'd should be viewable to Club and system administrator and a user code for each be stored. User schedules will not be stored by the system, but a user's scheduled events should be encrypted and saved to their profile for the export and sharing functionality. The users are expected to get responses within the time of from 50ms to 200ms during the frequent use hours. Before the system can be deployed, the system must go through a series of unit testing to eliminate errors that could occur to the system. Errors can include data loss, UI bugs, and incorrect functionality implementation.

5.2 Safety Requirements

The system allows a user with privileged or higher status to create events. [R.3.1.1] Events are approved by administrators, but this does not eliminate the possibility of an inappropriate event being posted and seen by users. To combat this issue registered users can report inappropriate events. Administrators are notified of reported events by email. Only administrators have the power to remove any event as defined in the *Remove an Event* System Feature.

Users who post inappropriate events are tracked. To avoid registered users from reporting legitimate events the system will associate reports with their respective user account. Administrators can issue a warning to a user and can decide if they need to demote or ban a user. Demoting and banning users are described in *Ban User, Remove a Privileged User's Privileges* and *Remove a Club Administrators Privileges* system features.

5.3 Security Requirements

To create an account a user needs a UVic email address. To maximize user privacy only a minimal amount of user information will be stored. Only administrators can view a user's account information. User information includes but not limited to age, event creation history, event reporting history, and RSVPs.

The servers will be physically secured by Amazon as the system is running on AWS. Data must be encrypted at rest, and communication between the client interfaces and central servers must be encrypted. Internal audits will be conducted quarterly to ensure continued commitment to security guidelines.

5.4 Software Quality Attributes

Availability

Description: The amount of time the system is up and running correctly
Metric: The percentage of time the system is up in a year
Goal: The system should be available for at least 95% of the time in a year

Maintainability

Description: Issues should be able to be fixed and new functionalities should be able to be added to the system without the system going down.

Metric: Number of changes made directly to a production system without proper staging.

Goal: No changes should be made directly to a production system without proper staging.

6 Other Requirements

<Define any other requirements not covered elsewhere in the RS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

Appendix A: Analysis Models

A.1 Use cases

Use Case Name

Make new event

Description

In which a Privileged User, Club Administrator or an Administrator uses the web application to create a new event.

Actors

Privileged User, Club Administrator or Administrator

Pre-Conditions

Users must have an account with privileged access or greater, know event location, date, time, categories, description, event tags and age restriction.

Main flow

1. User opens the web application
2. **<User Authentication>** User logs in with a Privileged user account
3. System redirects back to main application with user information
4. User selects option to create and event
5. **<User input>** System displays new event page with several form options
6. User inputs Date(s) of event
7. User specifies event location (address, room number, etc)
8. Adds time(s) the event is being run
9. User adds a description of the event
10. User inputs the permitted age for the event (18+)
11. User adds some relevant event categories
12. Actor includes some event tags
13. Actor selects add an image
14. **<import image>** System prompts for an image file
15. User chooses an image to upload
16. **<load file>** System includes the image in the post
17. User choses to allow RSVP to the event specifies target email
18. User submits the form
19. System returns user to main application
20. User sees that the event has been created successfully with correct information

Post-Conditions

Post shows an rsvp option to signed in users. Only users 18+ can RSVP to 18+ events.

Alternative flows

A. At <User Authentication>, if the user entered incorrect login details
    a. The system displays a message saying “the username/password was not correct please try again”

    Return to <User Authentication>

B. At <User Input>, if the user neglects to include one or more of the steps 5-9 and submits the form
    a. The system displays a message saying “you are missing some fields” and specifying what fields were missed and does not leave the page

C. At <User Input>, if the user neglects to include one or more steps 10-16 and submits the form
    a. The system submits the post as is with the specified information

D. At <load file>, if the user chooses to add another image
    a. Loop back to step 13
    b. When file is loaded system allows user to choose a preferred image

E. At <load file>, user chooses to add an image when they already have 5 added
    a. System displays a message ”cannot add more than 5 images to an event”
    b. System returns to new event form

Use Case Name

Edit an existing event

Description

In which a Privileged User, Club Administrator or an Administrator uses the web application to edit an existing event.

Actors

Privileged User, Club Administrator or System Administrator

Pre-Conditions

Users must have an account with privileged access or greater and have ownership rights over the event.

Main flow

1. User opens the web application
2. **<User Authentication>** User logs in with a Privileged user account
3. System redirects back to main application with user information
4. User selects option to edit an event
5. **<User input>** System displays event page with several form options

6. User edits intended information fields
7. User saves information
8. System returns user to main application
9. User sees that the event has been created edited with correct information

Post-Conditions

Post shows an rsvp option to signed in users. Only users 18+ can RSVP to 18+ events. Privileged users can only edit events from one of their associated clubs.

Alternative flows

A. At <User Authentication>, if the user entered incorrect login details
    a. The system displays a message saying “the username/password was not correct please try again”
    b. Return to <User Authentication>
B. At <User Input>, if the user clears a required field
    a. The system displays a message saying “you are missing some fields” and specifying what fields were missed and does not leave the page

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Use Case Name

Search for an event

Description

A user wants to find an event posted on the system.

Actors

Anonymous user

Pre-Conditions

Any level of user may search for an event using the system. User must have internet access. Users registered with a student email can view student only events.

Main flow

1. User opens the web application
2. **<Search Criteria>** Fills a search criteria with keywords for event they are seeking
3. System displays events related to keywords

Post-Conditions

To continue to register for events, users must be signed in.

Alternative flows

A. At <Search Criteria>, if the user is signed in

    a. There will be suggested filters or search history recommended

B. At <Search Criteria>, user searches with
    a. Time and date selectors for include/exclude specific times
    b. Category blocks to include/exclude a faculty or topic etc
    c. General descriptions to search by tags

Use Case Name

RSVP to event

Description

Allow a user with an account can rsvp to an event

Actors

User, Privileged User, Club Administrator or Administrator

Pre-Conditions

The user must have an account

Main flow

1. User opens the web application
2. **<User Authentication>** User logs in
3. System redirects back to main application with user information
4. User searches for an event with relevant criteria
5. **<Returns Events>** system returns events matching the input criteria
6. User selects an event with the option to rsvp
7. **<View Event>** system displays event information
8. User chooses to rsvp to event
9. System displays that the rsvp action was performed successfully

Post-Conditions

User’s event organizer calendar should update with the date and time of the event
Only students that are registered as UVic students can view student only events.

Alternative flows

A. At <view event> user cancels the rsvp
    a. Use case ends

B. At <view event> event is at full capacity
    a. System prompts user “event is full you can’t rsvp at this time”
    b. Event owner is notified when the event is at full capacity in the application

Use Case Name

Register Privileged User

Description

Elevate a Student User to a Privileged User

Actors

Administrator or Club Administrator, Student user, Privileged user

Pre-Conditions

User must have Club administrator access or higher

Main flow

1. User opens the web application
2. **<User Authentication>** Administrator logs in
3. System redirects back to main application with user information
4. Administrator selects option to register a Privileged User
5. The system displays list of eligible users the administrator has authority over
6. **<User Input>** The system will filter users with keywords
7. Select the user to give privileged status
8. **<Confirm Action>** The system displays message prompt to confirm action
9. Administrator confirms the action and the selected user is now registered as a Privileged User

Post-Conditions

The new Privileged User can now Create and Edit Events

Alternative flows

- A. At <User Authentication>, if the user entered incorrect login details
- b. The system displays a message saying “the username/password was not correct please try again”
- c. Return to <User Authentication>

B. At <User Input>, if the admin clears a required field

- d. The system displays a message saying “you are missing some fields” and specifying what fields were missed and does not leave the page

C. At <Confirm Action> if the administrator selects Cancel

- a. The selected user will not be given privileged status

Use Case Name

Register Club Administrator

Description

Elevate a Student or Privileged user to a Club Administrator

Actors

System Administrator, Club Administrator, Student user, Privileged user

Pre-Conditions

User must have a System Administrator Account

Main flow

10. User opens the web application
11. **<User Authentication>** Administrator logs in
12. System redirects back to main application with user information
13. Administrator selects option to register a Club Administrator
14. The system displays list of eligible users the administrator has authority over
15. **<User Input>** The system will filter users with keywords
16. Select the user to give Administrator status
17. **<Confirm Action>** The system displays message prompt to confirm action
18. Administrator confirms the action and the selected user is now registered as a Club Administrator

Post-Conditions

The new Club Administrator can now create and edit (if they were previously a regular user), register privileged users and approve events

Alternative flows

B. At <User Authentication>, if the user entered incorrect login details

b. The system displays a message saying “the username/password was not correct please try again”

c. Return to <User Authentication>

B. At <User Input>, if the admin clears a required field

d. The system displays a message saying “you are missing some fields” and specifying what fields were missed and does not leave the page

D. At <Confirm Action> if the administrator selects Cancel

a. The selected user will not be granted club administrator access

b. The use case ends

Use Case Name

Share Event (Facebook)

Description

A user wants to share an event to their Facebook timeline so that it is visible to their friends

Actors

Student, Privileged User, Club Administrator or System Administrator, External Application (Facebook)

Pre-Conditions

The user must have an account in the system, a pre existing Facebook account, and there must be an event already in the system for the user to view.

Main flow

1. User opens the web application
2. **<User Authentication>** User logs in
3. System redirects back to main application with user information
4. User selects to share an event to Facebook
5. External application opens, prompting user for credentials
6. User is prompted by external application to confirm that they want to share the event to their timeline
7. The user confirms that they would like the post the event to their Facebook timeline

Post-Conditions

User's Facebook timeline should now display the event that was just shared

Alternative flows

A. At <User Authentication>, if the user entered incorrect login details
    a. The system displays a message saying "the username/password was not correct please try again"
    b. Return to <User Authentication>

Use Case Name

Ban User

Description

In which a System Administrator uses the web application interface to disable a user from accessing the system.

Actors

System Administrator

Pre-Conditions

Users must have an account with administrator access, the highest privilege in the system.

Main flow

1. Administrator opens a application to access the system.
2. **<User Authentication>** User logs in with a Administrator account.
3. System redirects back to main application with the administrator user interface.
4. User selects the option Ban User.
5. The system display a list of all eligible users in the current system.
6. **<User input>** The system will filter the list of users with keywords.
7. The system will display only the users matching the given keywords.
8. Administrator disables the correct user by selecting Ban User.
9. **<Confirm Action>** The system prompts a message to reassure the Ban User action.
10. The Administrator confirms the action and the correct user is banned.

Post-Conditions

The user which was banned from the system administrator can no longer report events, all other system functionality is available to them.

Alternative flows

A. At <User Authentication>, if the user entered incorrect login details
   c. The system displays a message saying “the username/password was not correct please try again”
   d. Return to <User Authentication>

B. At <User Input>, if the admin clears a required field
   e. The system displays a message saying “you are missing some fields” and specifying what fields were missed and does not leave the page

C. At <Confirm Action>, if the administrator selects No
   a. The selected user will not be disabled from the system

Use Case Name

Export to calendar

Description

A user exports the event times they’re registered for to their external calendar manager application.

Actors

Student, Privileged User, Club Administrator or Syste, Administrator, External Calendar Application (eg Facebook, Google Calendar, IOS Calendar)

Pre-Conditions

The user must have an account in the system, and an existing account in an External Calendar Application, and be registered for at least one event in their calendar.

Main flow

8. User opens the web application
9. **<User Authentication>** User logs in

10. System redirects back to main application with user’s information
11. User reviews calendar and exports it to External Calendar Application
12. The use case ends.

Post-Conditions

User’s external calendar app should have the correct information that was exported.

Alternative flows

B. At <User Authentication>, if the user entered incorrect login details
    a. The system displays a message saying “the username/password was not correct please try again”
    b. Return to <User Authentication>

Use Case Name

Remove Event

Description

Make an event invisible from users.

Actors

System Administrator

Pre-Conditions

A user must have system administrator access

Main flow

1. User opens the web application
2. **<User Authentication>** User logs in as a system administrator\
3. The system notifies the administrator that an event was reported
4. System redirects back to main application with an administrative interface
5. User selects option to view list of events
6. System displays list of all events and a separate list of reported events
7. User selects an event from the list to view details of the event
8. User selects the option of delete event
9. **<Confirm Action>** System prompts user to confirm removal of event
10. User confirms action and the event is removed

Post-Conditions

Event is flagged as removed and is visible in a separate list. Event hosts will be notified that their event has been flagged as removed.

Alternative flows

A. At <User Authentication> , if the user entered incorrect login details
    a. The system displays a message saying “the username/password was not correct please try again”
    b. Return to <User Authentication>
B. At <Confirm Action>, if the administrator selects No
    a. Selected event will not be removed
    b. Use case ends

Use Case

Approve Event

Description

Approve an event list of unapproved events

Actors

System Administrator

Pre-Conditions

A user must have system administrator or club administrator access

Main flow

1. User opens the web application
2. **<User Authentication>** User logs in as a system administrator
3. System redirects back to main application with an administrative interface
4. User selects option to view list of unapproved events
5. System displays list of all unapproved events
6. **<At view event>** User selects an event from the list to view details of the event
7. User selects the option of approve event
8. **<Confirm Action>** System prompts user to confirm approval of event

Post-Conditions

Event is approved and visible to any user of the system.
Club administrators may only approve events designated to their organization.

Alternative flows

A. **<At view event>** User has the option of removing event instead of approving it.
    a. User removes the event
    b. Use case ends

Use Case Name

Log in

Description

A user logs into their account on the web application.

Actors

Student, Privileged User, Club Administrator or Administrator

Pre-Conditions

The user must have an account in the system.

Main flow

1. The user opens the web application
2. The enters the email and password associated with their account.
3. **<User Authentication>** The user is then logged into the application.

Post-Conditions

The user is redirected to the home page

Alternative flows

A. At <User Authentication>, if the user entered incorrect login details
    a. The system displays a message saying "the username/password was not correct please try again"
    b. Return to <User Authentication>

B. At **<User Authentication>**, if the user entered email does not have an account associated with it:
    a. The system redirects the user to the register page.

C. At <User Authentication>, if the user presses forgot password
    a. System sends email with reset password link to registered email
    b. Return to <User Authentication>

Use Case

View event

Description

After any user searches, or if they are on their main calendar view they have the chance to select an event. After an event is selected the system responds with the information. The event has a date and time as well as a description and various other fields; when on this page the user can decide to perform more actions depending on their access level.

Use Case Name

Register User

Description

Create a new account on the system to log in with

Actors

Anonymous users

Pre-Conditions

User must have a valid email address which they can verify (via a unique link sent by email)

Main flow

1. User opens the web application
2. User navigates to the register page
3. **<Enter Information>** User enters required registration information:
    a. Email address
    b. Desired password
    c. Date of birth
4. **<Submit information>** User submits the registration information, system checks that entered data is valid
5. **<Create Account>** System creates user in database with provided information and hashed password, account is not marked as enabled
6. System sends confirmation email to provided address with unique link
7. Users visits unique link
8. System marks user as enabled
9. End of use case

Post-Conditions

User is able to log in with chosen email address and password

Alternative flows

A. At <Submit Information> if email is in database as an existing user
    a. If the existing user is marked as enabled:
        i. The system displays a message notifying the user the specified email is in use. System prompts them to enter new email address or visit the login page to reset their password.
        ii. Return to <Enter Information>
    b. If the existing user is not marked as enabled:
        i. Overwrite existing data with new data
        ii. Proceed to <Create Account>

B. At <Submit Information> if password is less than 8 characters in length

        a. Display message prompting the user to choose a password which is 8 characters or longer.
        b. Return to <Enter Information>.

C. At <Submit Information> if valid uvic email is presented
    a. System sends a verification email to uvic email address with appropriate message.
    b. Return to <Enter Information>.

Use Case Name

Report Event

Description

Report an inappropriate event to notify administrators for review

Actors

Authenticated User, Privileged User, Club Administrator, System Administrator

Pre-Conditions

The user must have successfully logged in

Main flow

1. User views an event which they believe to be inappropriate
2. **<Report Event>** User chooses the “Report Event” option
3. **<Choose Reason>** User selects the reason why they have reported the event
4. The system notifies the user their report has been submitted, and an administrator will review the event

Post-Conditions

The event is added to the queue for evaluation.

Alternative flows

A. At <Report Event> if the event has already been approved by an administrator
    a. If the event has been edited since the last approval:
        i. Proceed to <Choose Reason>
    b. If the event has not been edited since the last approval:
        i. The system displays a message notifying the user the event has already been approved, and they cannot report it.
        ii. End of use case.

B. At <Review Event> if the administrator determines the event is appropriate:
    a. The event is not removed.
    b. The event can no longer be reported (unless edited).
    c. End of use case.

Use Case Name

Reset Password

Description

Set a new password for a user account

Actors

Anonymous User, Authenticated User, Privileged User, Club Administrator, System Administrator

Pre-Conditions

The user has an existing account

Main flow

1. User navigates to log in page
2. User chooses the "Reset Password" option
3. **<Enter Email>** User enters their email address
4. The system notifies the user that an email will be sent to that email if an associated account exists
5. **<Send Email>** The system sends a unique link to the email address
6. The user visits the link
7. **<Choose Password>** The user enters a new password
8. **<Update Password>** The system updates the user account with the new password
9. The user is notified their password has been reset
10. End of use case

Post-Conditions

The user is able to log in with their new password

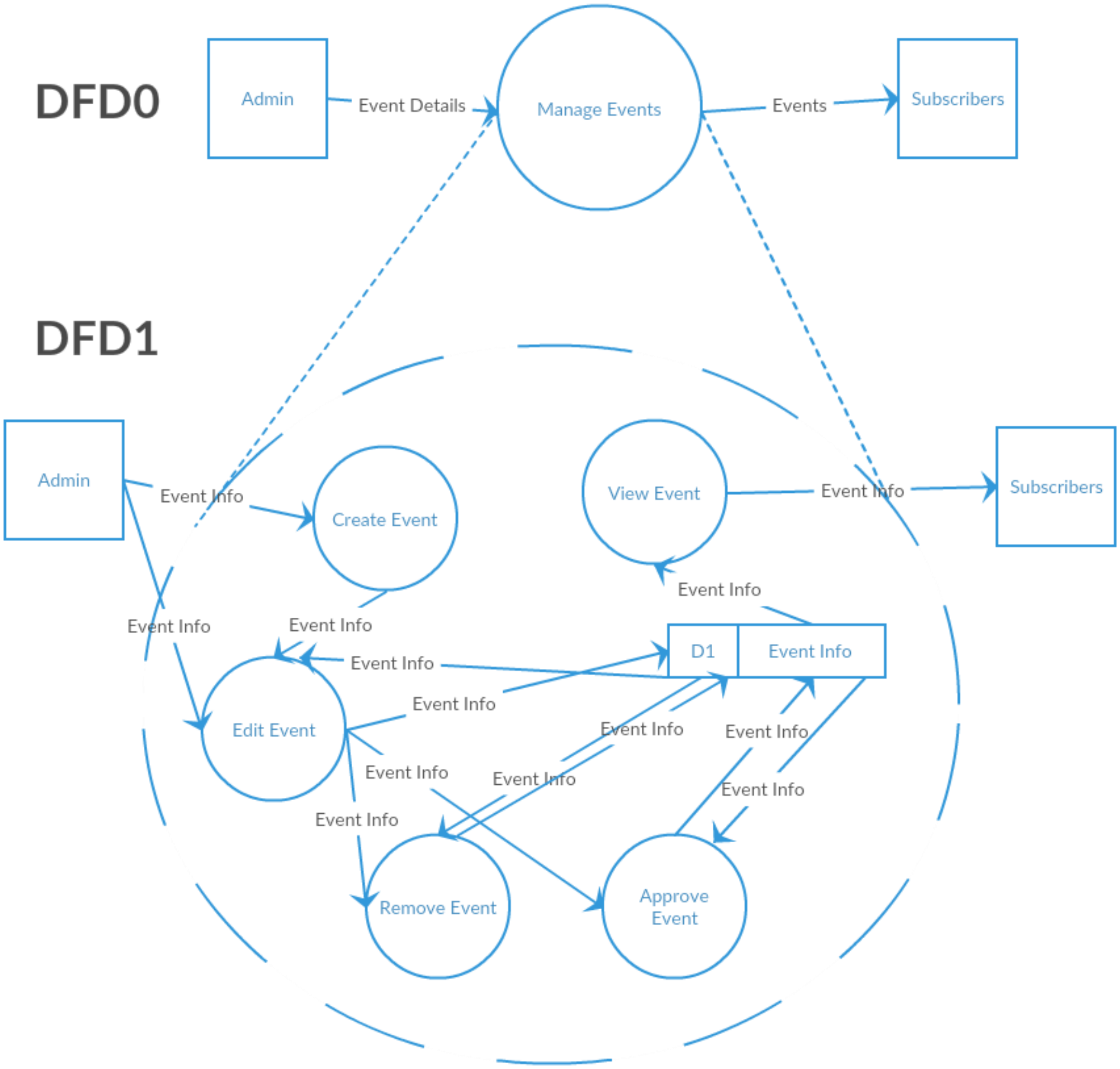
Alternative flows

A. At <Send Email> if the email address is not associated with an existing account:
    a. Do not send an email or notify the user.
    b. End of use case.

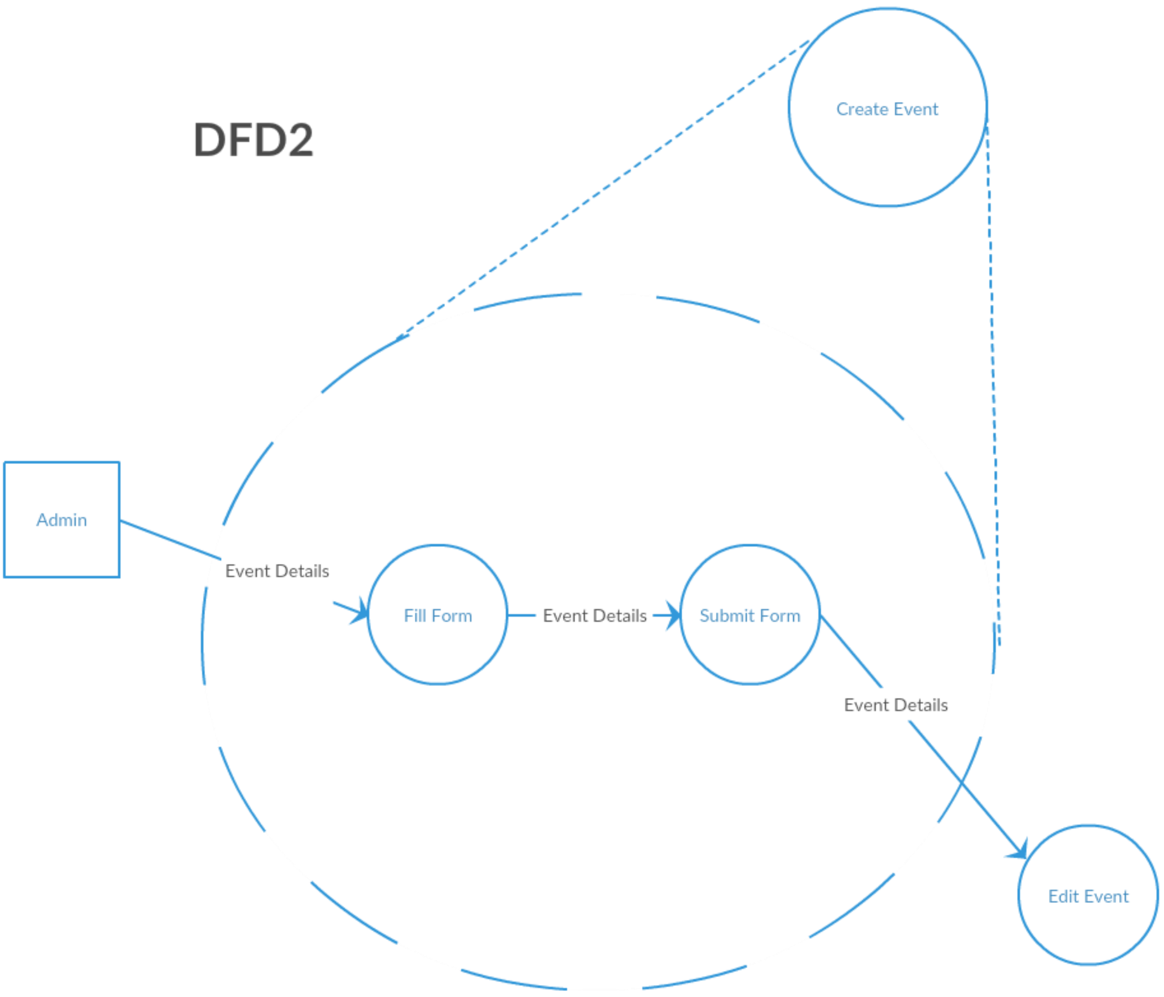
B. At <Update Password>, if the password is less than 8 characters in length
    a. Display message prompting the user to choose a password which is 8 characters or longer.
    b. Return to <Choose Password>.

A.2 Dataflow Diagrams

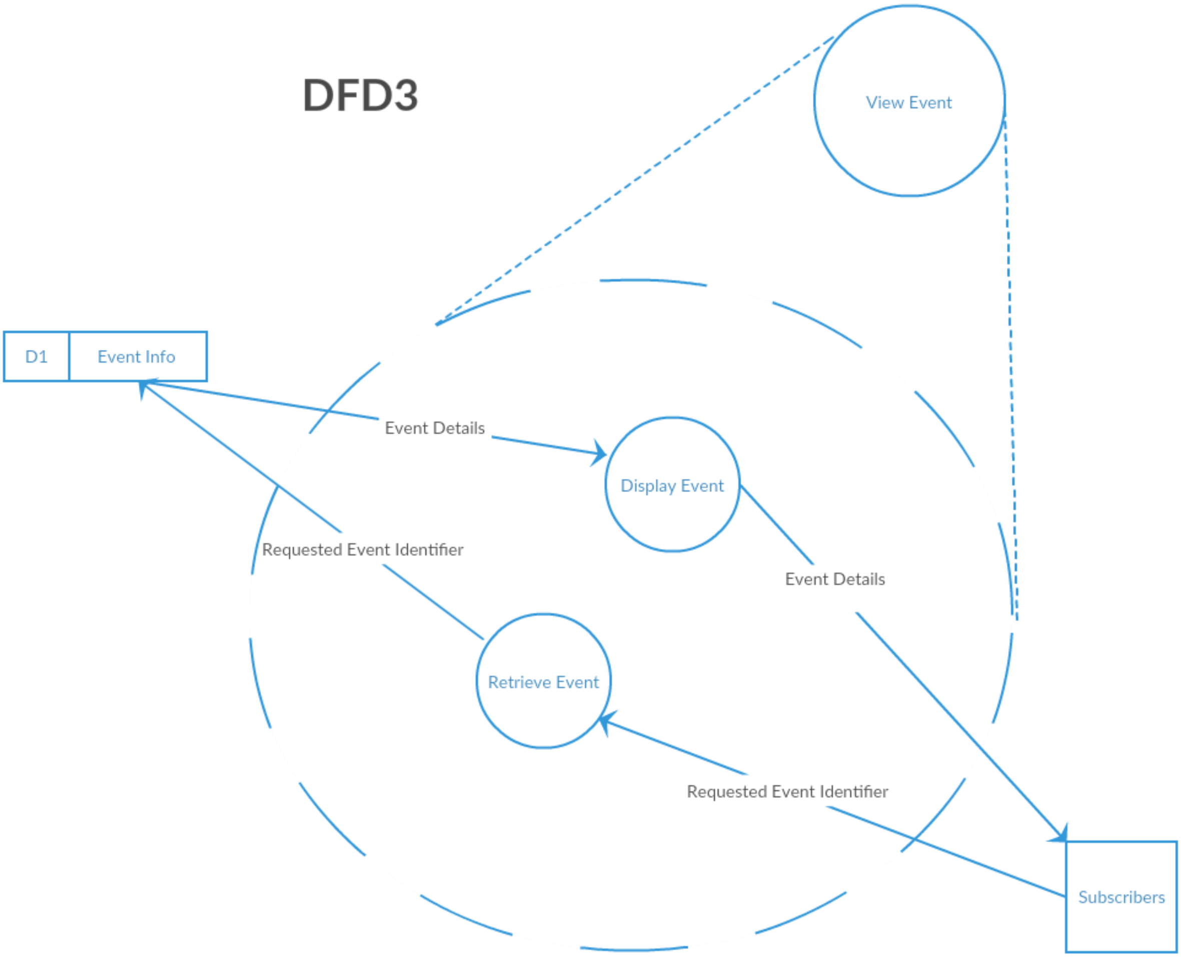
The following are a set of data flow diagrams reflecting a subset of the mentioned use cases:



Level 0 and 1 data flow diagram



Level 2 data flow diagram



Level 3 data flow diagram

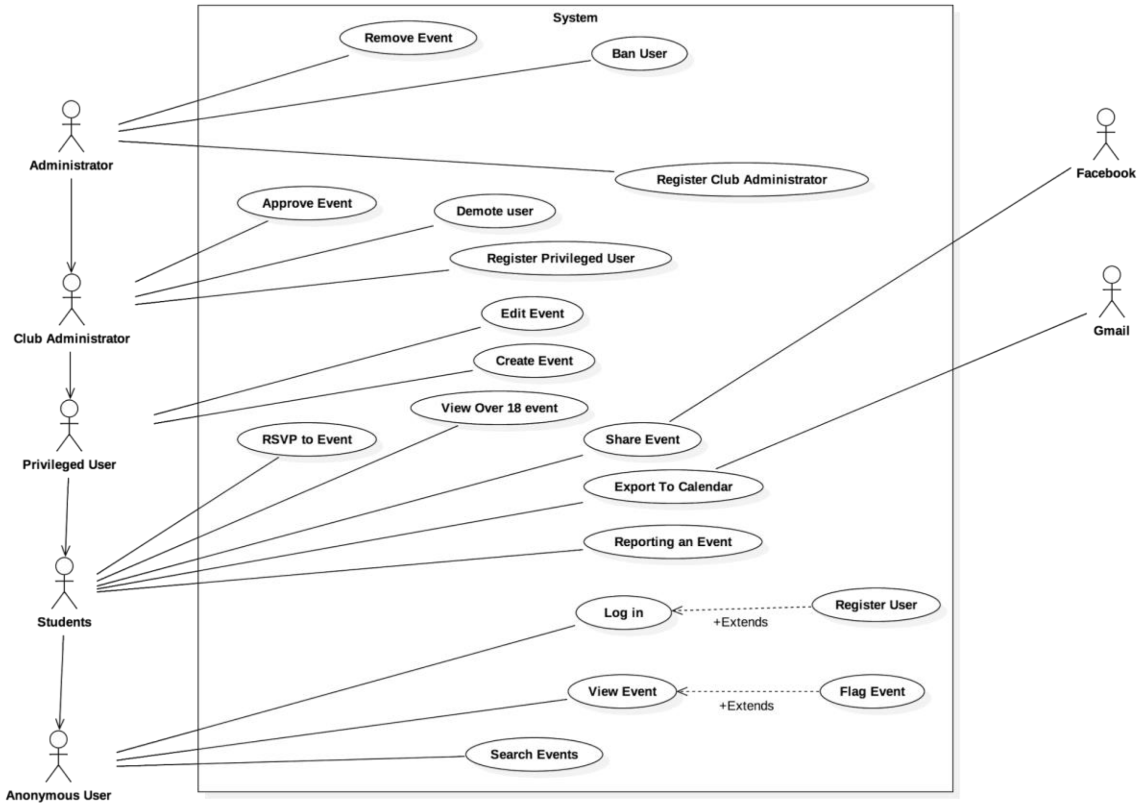
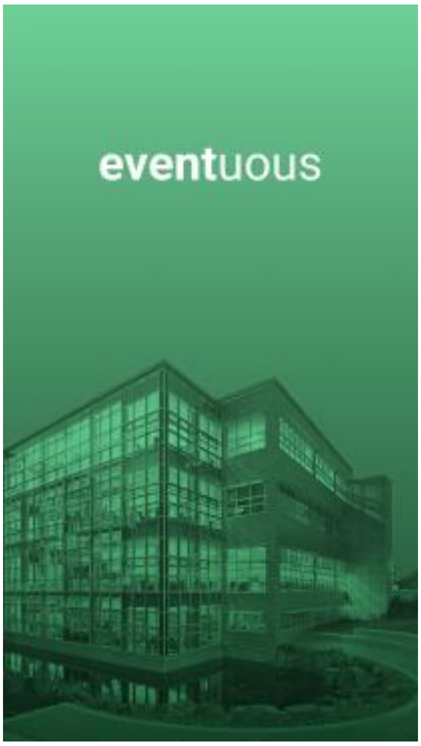


Figure 1 - Use Case Model

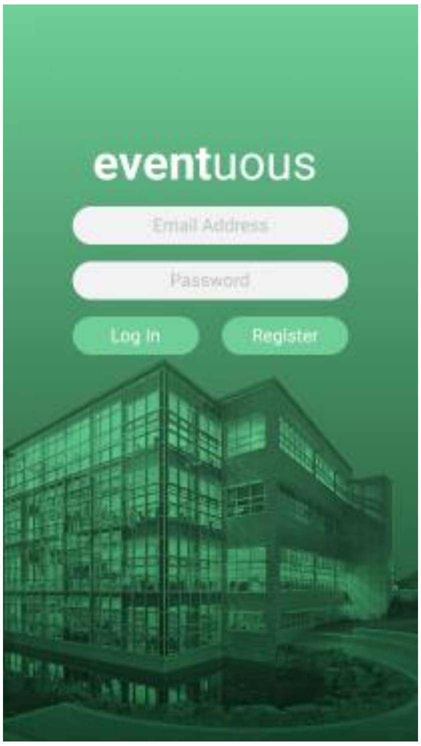
A.3: UI Mockups

The web application is responsive, and changes based on screen size. The UI Mockups pictured below are mostly displayed on mobile screens (based on the size of the iPhone 7 Plus screen). All views exist on both desktop and mobile, as well as any intermediate screen sizes (e.g. tablets).

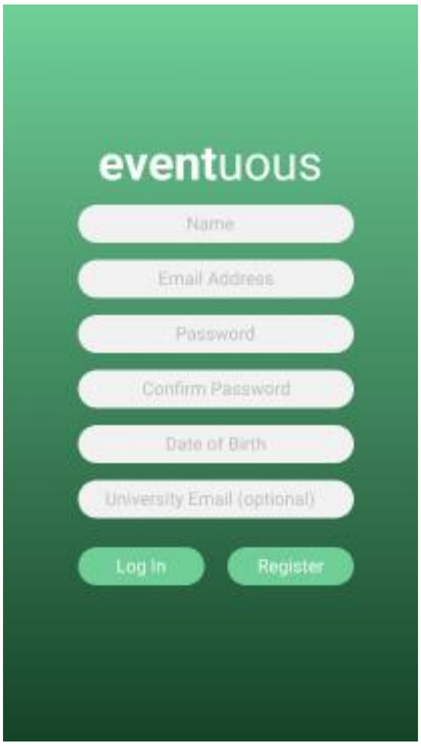
A.3.1: Loading Screen



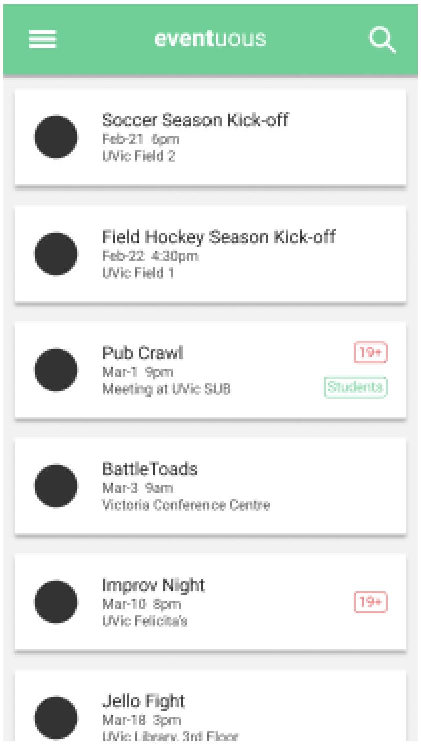
A.3.2: Log In Screen



A.3.3: Register Screen



A.3.4: Events Screen



Soccer Season Kick-off
Feb-21 6pm
UVic Field 2

Field Hockey Season Kick-off
Feb-22 4:30pm
UVic Field 1

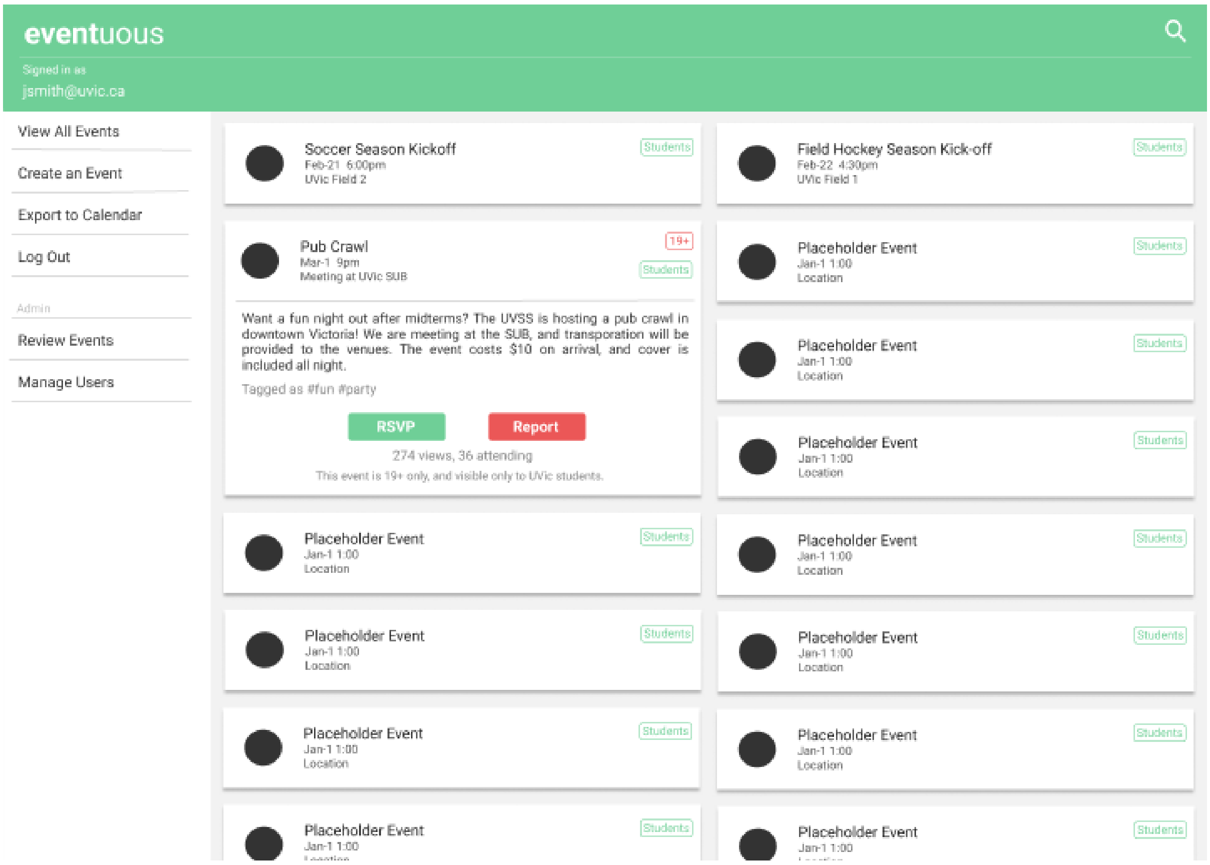
Pub Crawl
Mar-1 9pm
Meeting at UVic SUB
19+
Students

BattleToads
Mar-3 9am
Victoria Conference Centre

Improv Night
Mar-10 8pm
UVic Felicita's
19+

Jello Fight
Mar-18 3pm
UVic Library 3rd Floor

A.3.5: Events Screen (Desktop)



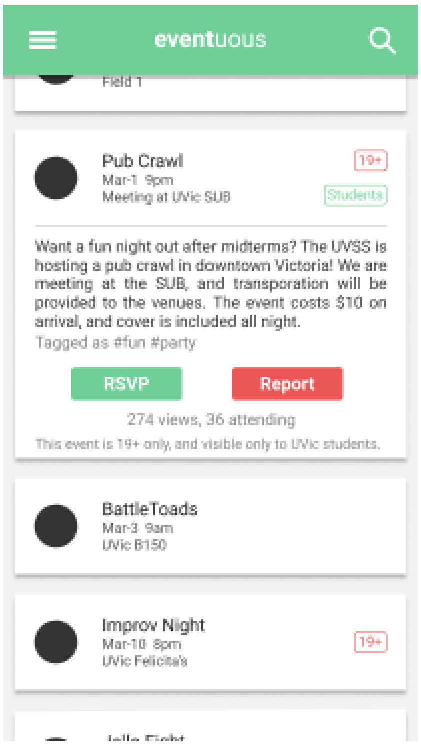
Want a fun night out after midterms? The UVSS is hosting a pub crawl in downtown Victoria! We are meeting at the SUB, and transporation will be provided to the venues. The event costs $10 on arrival, and cover is included all night.

Tagged as #fun #party

274 views, 36 attending

This event is 19+ only, and visible only to UVic students.

A.3.6: Expanded Event Screen



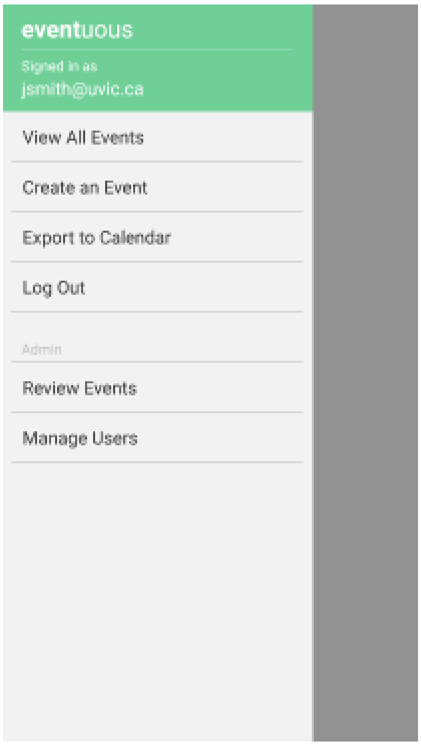
Want a fun night out after midterms? The UVSS is hosting a pub crawl in downtown Victoria! We are meeting at the SUB, and transporation will be provided to the venues. The event costs $10 on arrival, and cover is included all night.

Tagged as #fun #party

274 views, 36 attending

This event is 19+ only, and visible only to UVic students.

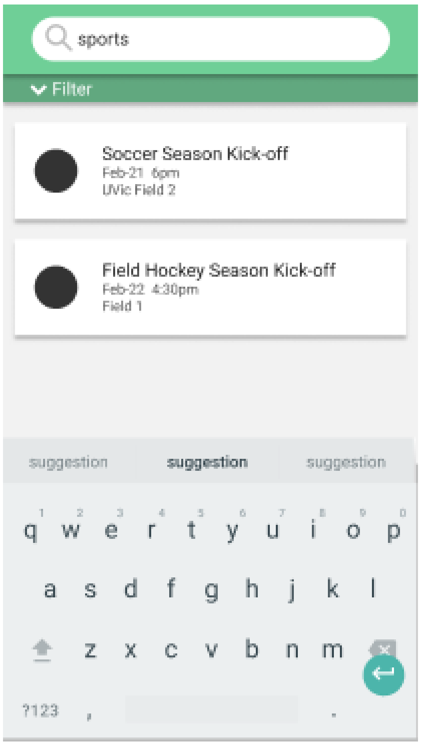
A.3.7: Menu Screen



eventuous

Signed in as
jsmith@uvic.ca

A.3.8: Event Search Screen

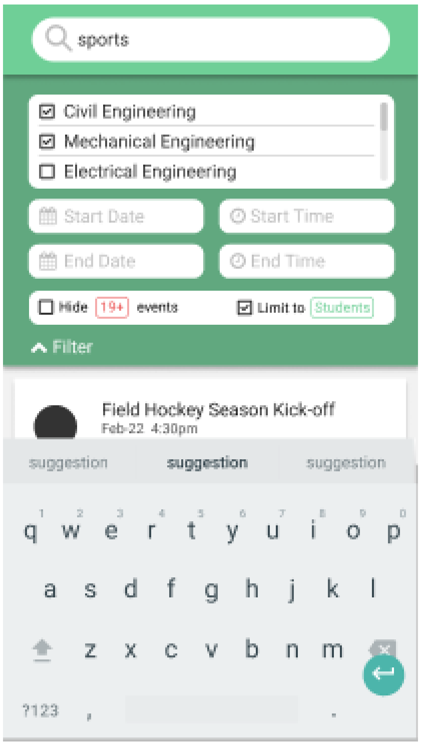


sports

Soccer Season Kick-off
Feb-21 6pm
UVic Field 2

Field Hockey Season Kick-off
Feb-22 4:30pm
Field 1

A.3.9: Event Search Screen (Filtering expanded)



sports

☑ Civil Engineering
☑ Mechanical Engineering
☐ Electrical Engineering

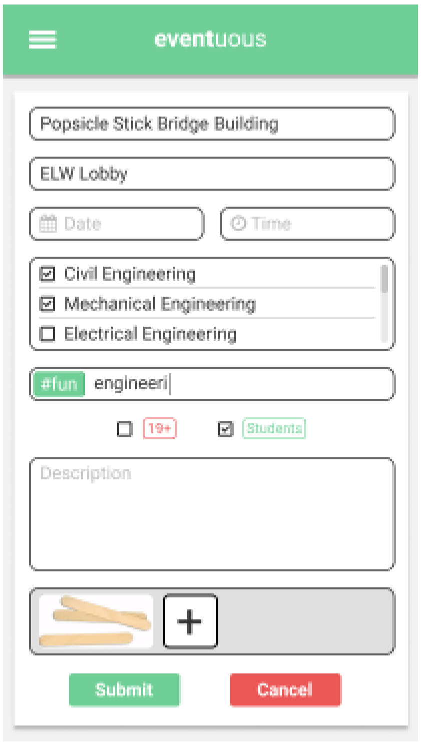
Start Date | Start Time
End Date | End Time

☐ Hide 19+ events ☑ Limit to Students

Filter

Field Hockey Season Kick-off
Feb-22 4:30pm

A.3.10: Create Event Screen



eventuous

Popsicle Stick Bridge Building

ELW Lobby

Date | Time

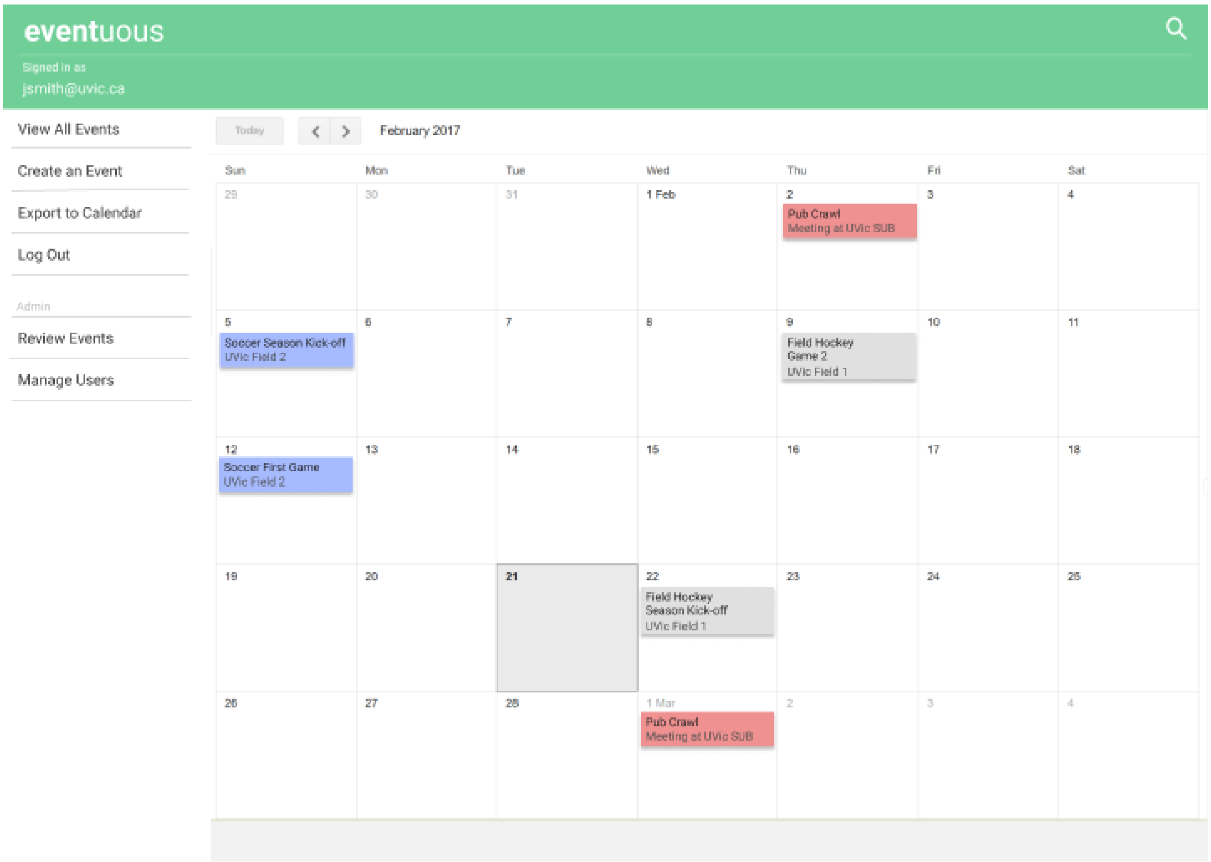
☑ Civil Engineering
☑ Mechanical Engineering
☐ Electrical Engineering

#fun engineeri

☐ 19+ ☑ Students

Description

A.3.11: Event Calendar Screen (Desktop)



eventuous

Signed in as
jsmith@uvic.ca

- View All Events
- Create an Event
- Export to Calendar
- Log Out

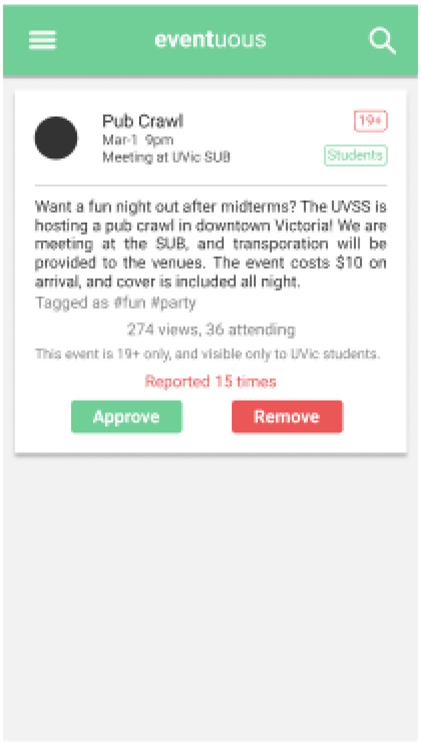
Admin

- Review Events
- Manage Users

Today < > February 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	31	1 Feb	2 Pub Crawl Meeting at UVic SUB	3	4
5 Soccer Season Kick-off UVic Field 2	6	7	8	9 Field Hockey Game 2 UVic Field 1	10	11
12 Soccer First Game UVic Field 2	13	14	15	16	17	18
19	20	21	22 Field Hockey Season Kick-off UVic Field 1	23	24	25
26	27	28	1 Mar Pub Crawl Meeting at UVic SUB	2	3	4

A.3.11: Review Reported Event Screen



eventuous

Pub Crawl
Mar-1 9pm
Meeting at UVic SUB

19+
Students

Want a fun night out after midterms? The UVSS is hosting a pub crawl in downtown Victoria! We are meeting at the SUB, and transporation will be provided to the venues. The event costs $10 on arrival, and cover is included all night.

Tagged as #fun #party

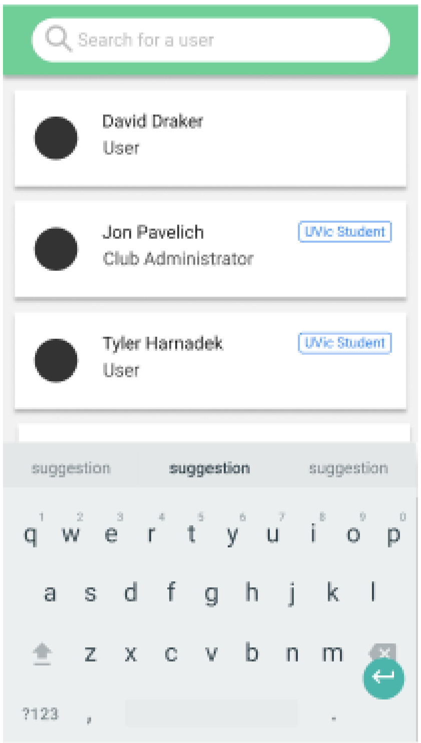
274 views, 36 attending

This event is 19+ only, and visible only to UVic students.

Reported 15 times

Approve Remove

A.3.11: Manage Users

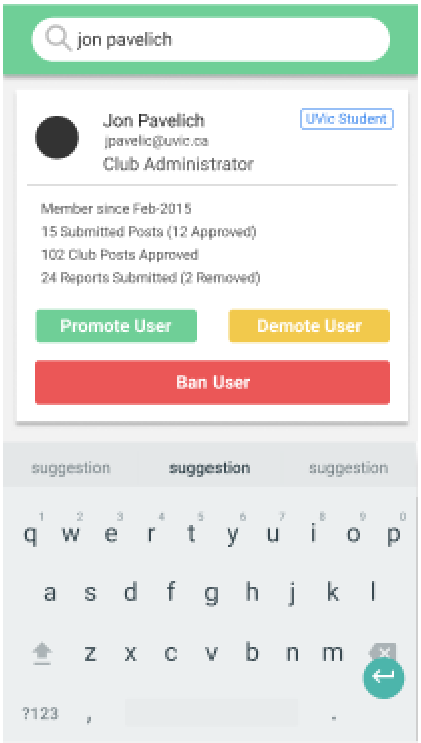


David Draker
User

Jon Pavelich
Club Administrator
UVic Student

Tyler Harnadek
User
UVic Student

A.3.11: Manage Users (Expanded)



jon pavelich

Jon Pavelich
jpavelic@uvic.ca
Club Administrator
UVic Student

Member since Feb-2015
15 Submitted Posts (12 Approved)
102 Club Posts Approved
24 Reports Submitted (2 Removed)

Appendix B: Issues List

For the calendar application will the student’s schedule be a filter for the searching, or added to the calendar so the students can choose to filter by availability. This could help with the calendar export, and students might find it more useful, however it would be storing sensitive information into the database.