StudyScapes
7/9/20
Version 001

Requirements and Specification Document

Project Abstract

This application, **StudyScapes**, will allow users to **login** to their account and view the Simon Fraser University campus as a virtual map. Login **views** will differ for faculty and students. This uses the **Web API for Google Maps** for location and time updates. As a **real-time feature**, this application will use **Socket.io** to update requests made to professors or students for meetings and study groups in real time. This application enables quick meetups and easy navigation for users. The application is not just practical, but fun! There are minigames incorporated to help the user kill time while waiting between meetups (they can even battle their professors!).

Customers

Faculty: Teachers and TAs at Simon Fraser University that would like to interact in a convenient way with students, plan meetings, coordinate meeting locations, schedule or find events on campus, and enjoy minigames.

Students: Students at Simon Fraser University that would like to communicate with all their professors or TAs in one convenient application. They would like to meet with other students or faculty at SFU, get assistance in finding their way around the school, find specific buildings or rooms, schedule or find events on campus, meet other students, or just have fun through minigames.

Competitive Analysis

What makes StudyScapes so unique is that it applies specifically to the Simon Fraser University Burnaby Campus. It incorporates ideas from many other successful programs into one main application for ease of access. Although Google Maps is useful, it does not provide a detailed view of the Burnaby Campus. StudyScapes will elaborate on the map with this campus in mind, allowing for much more extensive interaction and location finding around the University. SFU Snap was an inspiration for this, as it helped students to search for and travel between rooms and buildings across campus. StudyScapes expands this to allow for scheduling events and meetings around campus with students and faculty alike. It also provides icebreakers for students in the form of minigames and different views for faculty and students, so that each user sees the information that directly applies to their own needs.

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Main Features - Epics

Map: Provide an interactive map that updates to user location so they can find other users and locations on the Simon Fraser University Campus.

Meetings: Enable faculty and students to easily interact and meet up for studying or course/career discussion. They can also chat with each other through the app.

Events: Have events held by clubs, faculty or student societies show on the map as icons in real-time, so users can quickly learn about the activity on campus.

Minigames: Allow students and faculty to interact in mini games with those nearby based on location. This would allow users to play small various games that can act as icebreakers between their fellow peers.

User Stories

Actors:

Faculty (Professors and Teaching Assistants) that can view and cancel meetings. They can also interact with students, view the map, view and schedule events, and play minigames. Students can view, request, reschedule, and cancel meetings with Faculty and other students. They can view and schedule events, view the map for specific rooms and buildings, and play minigames.

Students can view, request, reschedule, and cancel meetings with Faculty and other students. They can view and schedule events, view the map for specific rooms and buildings, and play minigames.

Admin can view all database content including usernames, roles, meetings, and much more. The admin account is used for verification of debugging purposes. For the sake of security and privacy of users, the admin can only view hashed passwords.

Current Iteration Stories

Name/Description: A new student is lost on the Burnaby campus

Actors: New student named ‘Sally’

Triggers/Preconditions: Sally logs in to StudyScapes and opens the map page to find her current location and destination

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Actions/Postconditions: Display a campus map showing her current location and chosen destination (potentially with a path)

Acceptance Tests:

- Location services are enabled
- Current location can be found and display
- Destination is valid and can be displayed

Iteration: Started in iteration 001, to be completed in iteration 002

Name/Description: An admin wants to check a specific user's role

Actors: An Admin

Triggers/Preconditions: The admin logs in using the official admin username and password, then clicks on the page to view the login database.

Actions/Postconditions: All rows from the login database are displayed in a table on the page, including the columns uid, username, password, and role.

Acceptance Tests:

- The admin login is correctly entered and redirects to the admin's home page
- The page displays all database rows, not just admin information
- All passwords are displayed as hashed values (for privacy)

Iteration: Completed in iteration 001

Name/Description: A student wishes to join so she can schedule meetups with professors

Actors: A student, Agnes

Triggers/Preconditions: Agnes clicks the button to create an account and fills out a username, password, and role, then clicks to sign up.

Actions/Postconditions: The username is compared for uniqueness and Agnes' account is added to the login database, upon success.

Acceptance Tests:

- The username is unique and doesn't conflict with the database
- The row is successfully added to the database
- The password is encrypted as a hashed password

- The page is redirected to login, on success, and refreshes the signup page on failure

Iteration: Completed in iteration 001

Name/Description: A faculty member logs in to view his account information

Actors: A faculty member, Professor Huck

Triggers/Preconditions: Professor Huck logs in using his correct username and password.

Actions/Postconditions: The app loads the faculty home page and displays Professor Huck's uid, username, and role.

Acceptance Tests:

- The login successfully redirects to the correct home page (faculty)
- The information displayed corresponds to the correct login information
- Only one user's data is shown
- The home page retains the same data upon switching between other pages (the correct user data is always displayed while logged in)

Iteration: Completed in iteration 001

Future Iterations

Name/Description: A professor wants to cancel a scheduled meetup

Actors: A faculty member (Professor Bee) and a student (Erik)

Triggers/Preconditions: Professor Bee chooses to cancel her meeting with Erik from her meetups page, by clicking the cancel button next to the listed meeting

Actions/Postconditions: The meeting is listed as cancelled on the table (greyed out) and Erik is notified of this cancellation on his meetups page.

Acceptance Tests:

- The isCancelled attribute for that meeting is set to true
- The row is greyed out and the cancel button is no longer clickable
- Erik is able to view the meetup as cancelled through his meetups page
- The scheduled meeting remains in the database

Iteration: to be implemented in *iteration 002*

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Name/Description: A student responds to a cancelled meeting

Actors: A faculty member (Professor Bee) and a student (Erik)

Triggers/Preconditions: Erik wishes to view the meeting that was cancelled by Professor Bee, and confirm the cancellation

Actions/Postconditions: Erik clicks 'confirm cancellation' from the meetups page and the meeting is removed from both his and Professor Bee's meetups

Acceptance Tests:

- The meetup (row) is removed from the *meetup* database
- Erik's page is refreshed to no longer show the meeting
- Professor Bee can no longer see the meeting on her meetup page

Iteration: to be implemented in *iteration 002*

Name/Description: A student wants to meet with another student

Actors: Multiple students named 'Maddie' and 'Bud'

Triggers/Preconditions: Maddie accesses the meetup page and schedules a meeting with Bud

Actions/Postconditions: Displays a form for Maddie to specify the meeting location and time, then sends a request to Bud

Acceptance Tests:

- Meetup form is displayed properly
- Bud is an existing student and a request can be sent to him
- Meeting location is valid and can be chosen
- Form can be submitted
- Meeting data is stored in the meetup table

Iteration: to be implemented in *iteration 002*

Name/Description: A professor wants to review their scheduled meetups

Actors: A faculty member, Professor Abe

Triggers/Preconditions: Professor Abe views the meetups page on their account

Actions/Postconditions: Displays a table that only lists the meetings including Professor Abe. Each row shows the corresponding student, the requested room, and the requested time.

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Acceptance Tests:

- Meetup table is displayed with just Professor Abe's meetings
- Valid rooms and times are displayed
- The corresponding student exists
- Finished/cancelled meetups are not displayed

Iteration: to be implemented in *iteration 002*

Name/Description: A new student is lost and looking for their classroom.

Actors: A new student, Justin

Triggers/Preconditions: Student Justin clicks the Room Finder Tab on their page.

Actions/Postconditions: Shows a map allowing Justin to search for his classroom or view the entire university as a whole.

Acceptance Tests:

- View every classroom
- Rooms are searchable

Iteration: to be implemented in *iteration 002*

Name/Description: A new student is looking to make new friends at SFU, wants to play a game.

Actors: A student, Sophia, wants to play a game with someone.

Triggers/Preconditions: Student Justin clicks Minigames tab on their page.

Actions/Postconditions: Shows different types of minigames and allows them to play with people nearby.

Acceptance Tests:

- Able to connect with other players
- Game logic is correct
- Able to choose what type of game to play
- Able to correctly interact with game buttons.

Iteration: to be implemented in *iteration 002*

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Name/Description: Viewing upcoming events on campus.

Actors: A user (student/faculty)

Triggers/Preconditions: User clicks the "View Upcoming Events" on a page.

Actions/Postconditions: Shows a page with a table where the rows are Events showing its name, host group, website link, location, time, and date in chronological order.

Acceptance Tests:

- An Events table is displayed with information described in postconditions.
- Events are listed in chronological order (closest to farthest from current time).
- Events prior to current time are not shown.
- Cancelled events have colored text (red) and shows "CANCELLED" under "time" ("CANCELLED" should be reflected in the database under "time" also).

Iteration: to be implemented in *iteration 002*

Name/Description: Viewing events happening today on the map.

Actors: A user (student/faculty)

Triggers/Preconditions: The user goes to the campus map page (not viewing room finder)

Actions/Postconditions: The map loads showing SFU campus. Events listed to happen today are shown with event markers at their respective locations.

Acceptance Tests:

- The map is rendered correctly, showing SFU campus.
- Each event marker represents an event happening *today*.
- Each event marker is shown at their correct locations.
- Clicking on a marker displays detailed information regarding the event.

Iteration: to be implemented in *iteration 002*

Name/Description: Hiding a type of marker on the map.

Actors: A user (student/faculty)

Triggers/Preconditions: The user clicks on any of the box from a group of checkbox options to for hiding a type of marker on the map (i.e. hide location markers, hide event markers, etc.).

Actions/Postconditions: The map is re-rendered with the desired markers to be hidden gone.

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Acceptance Tests:

- The map is re-rendered with the same position and zoom level as prior to triggering the event.
- The desired markers to be hidden are not seen while the others are still shown.
- The hidden markers cannot be interacted with.

Iteration: to be implemented in *iteration 002*

Name/Description: A student has a 5-hour break between two classes, and he/she wants to pass some time while being on the campus

Actors: Stacey, a fourth-year student

Triggers/Preconditions: Stacey logs in to StudyScapes and opens the mini games

Actions/Postconditions: Display different options for mini games

Acceptance Tests:

- Game services are enabled
- Scores can be found and display

Iteration: to be implemented in *iteration 002*

Name/Description: A new student wants to meet other students with similar interest on the Burnaby campus

Actors: New student named ‘Patrick’

Triggers/Preconditions: Patrick logs in to StudyScapes and opens the events page

Actions/Postconditions: After finding a suitable event he can now meet students who share same interests as him

Acceptance Tests:

- Different events are displayed to the users
- Students can drop into their desirable event

Iteration: to be implemented in *iteration 002*

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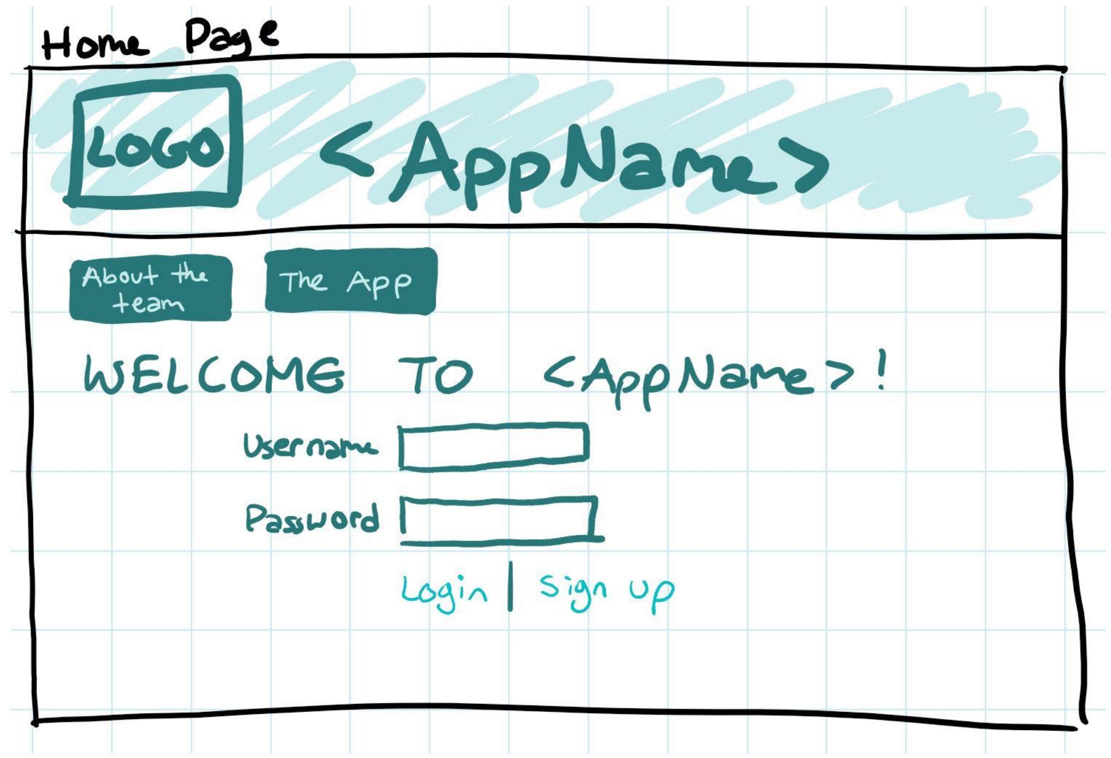
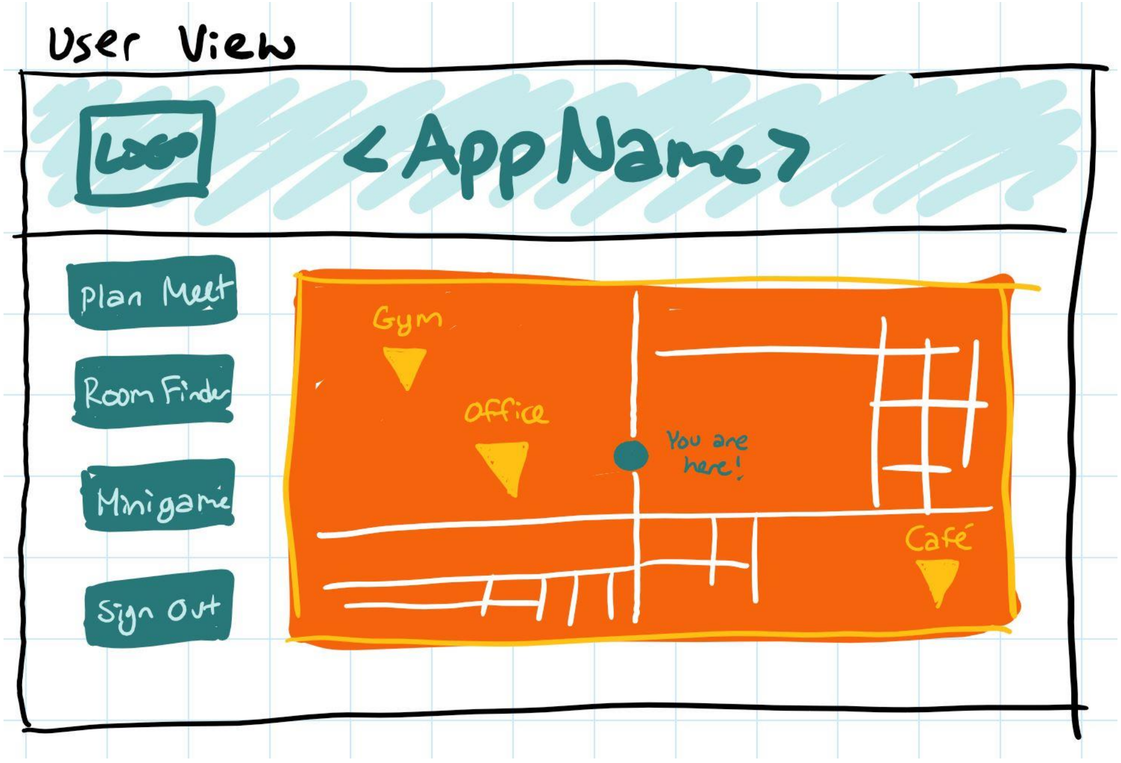
User Interface Requirements





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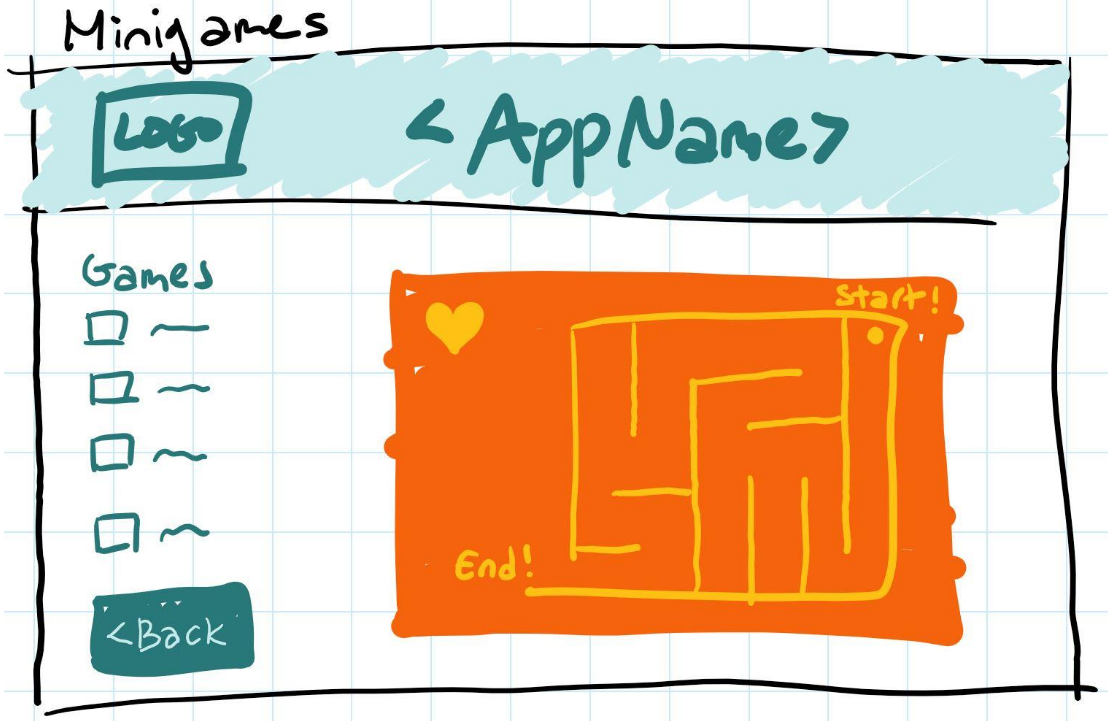

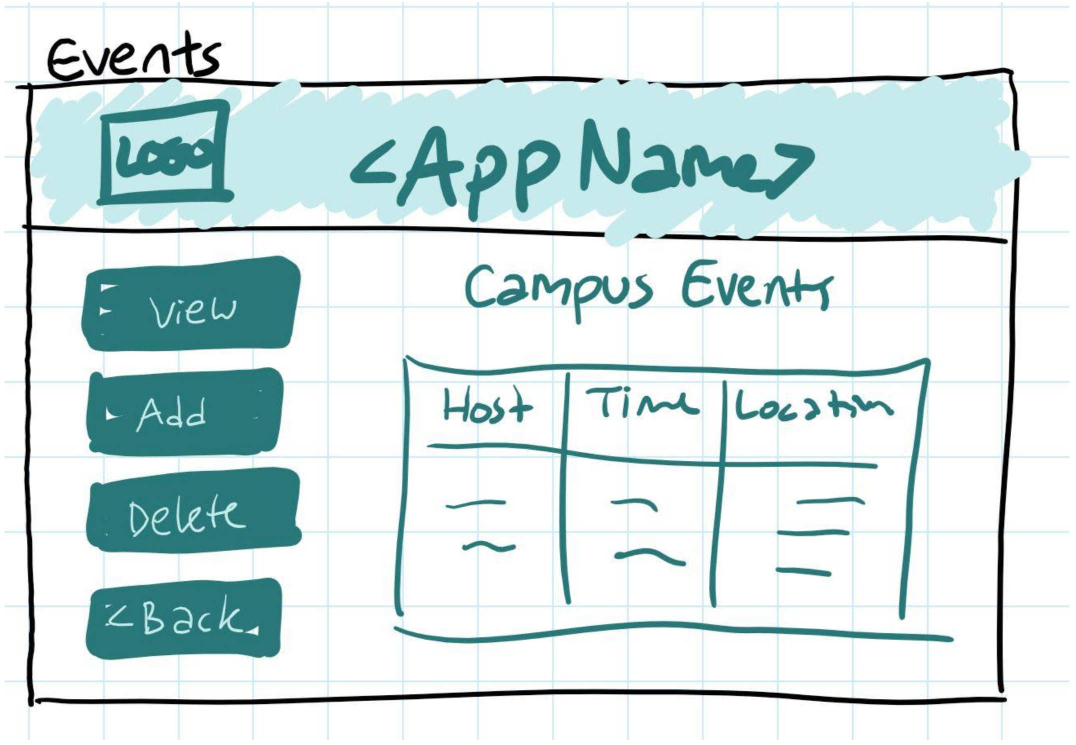

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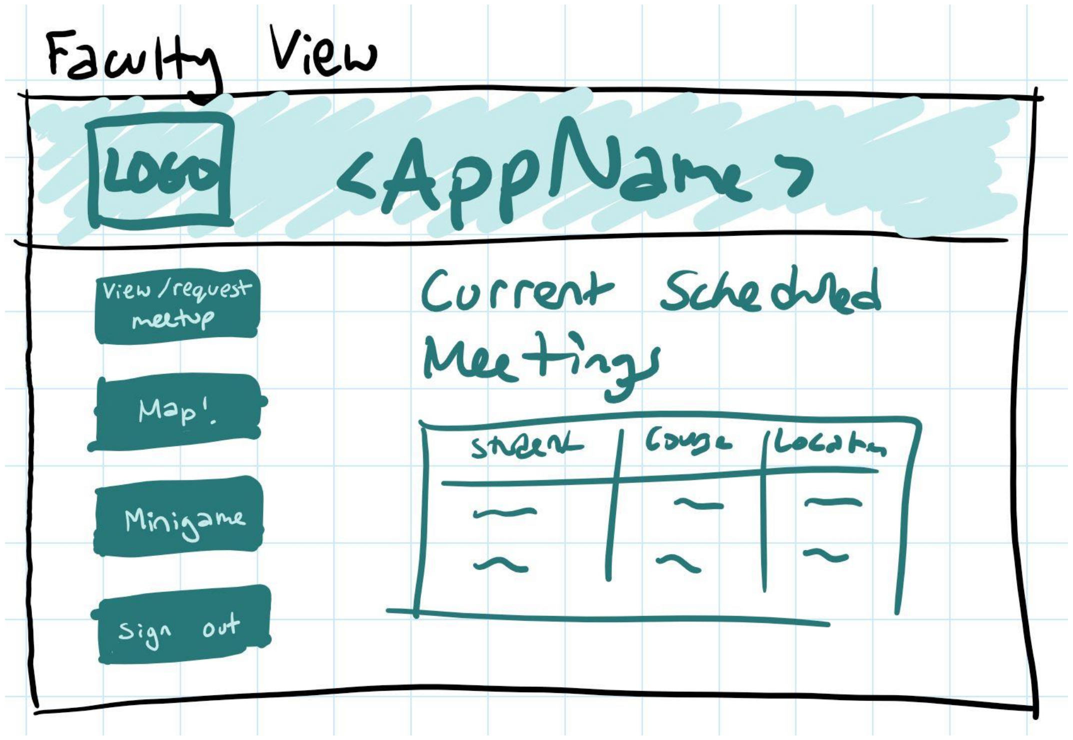

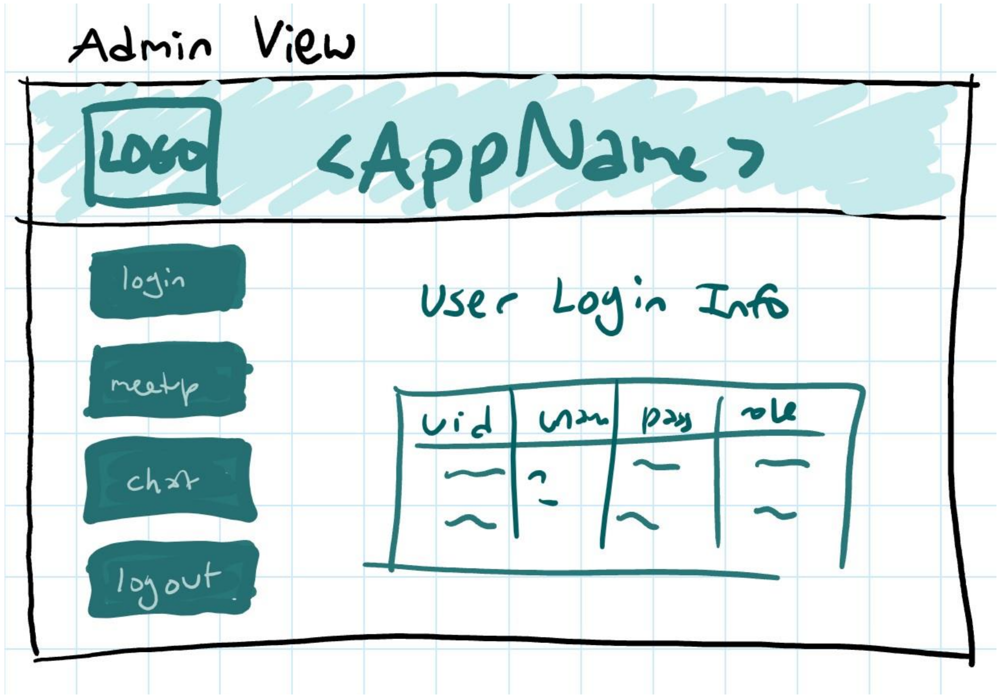

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The Database Plan– Iterations 1 & 2

StudyScapes Database					
login		**meetup**		**meetup_user**	
uid	serial (PK)	mid	serial (PK)	mid	int (FK)
username	char(20)	date	date	uid	int (FK)
password	char(60)	time	time		
role	char(20)	location	char(10)		
		isPending	boolean		
		isCancelled	boolean		

Meeting 2 Overview

Our team discussed separating SFU's Room Finder from our Google map. More research is needed regarding Room Finder and Esri. Our map should be for seeing building locations, nearby students, and current events while Room Finder should be solely used for finding classrooms. We also decided to add an Admin user who can view all database tables for ease of debugging and monitoring.

The plan in iteration 2 will have Celina implement the Meeting Scheduling System, and Josh implement the Events database and integrate Events with the map. Parth plans to start designing minigames, and Mandeepa is looking into sockets to continue work on a messaging system between application users.

URLs

GitHub Repository: *https://github.com/Guojiaxi/sfu-cmpt276proj.git*

Heroku link: *https://cmpt276proj-jlguo.herokuapp.com/*

Heroku Git Link: *https://git.heroku.com/cmpt276proj-jlguo.git*

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Features Board

COMPLETED	IN PROGRESS	TO BE IMPLEMENTED	PREREQUSITE(S) NEEDED	TO BE DESIGNED	BROKEN /REDESIGN
map	Ensure secure logout	Logged-in tracking	Plotted meetings	Meeting notifying system	
Log in and sign up system	Meetings database	Sign-up system	Plotted participating events	Event notifying system	
Login database		Dashboard schedule timetable	Event markers	Meeting creation UI	
		Room finder	meeting invitation/response	Event posting UI	
		Place map markers	minigames	Event submission approval system	
		User location tracking		User profile page	
		Server-side storage for meetings			
		Server-side storage for events			
		Events timetable			

GREEN = FEATURE COMPLETED

BLUE = IN PROGRESS (*Put down who is working on thing*)

RED = FEATURE TO IMPLEMENT (Can be worked on at current moment)

YELLOW = PREREQUSITE NEEDED

PINK = TO BE DESIGNED

GRAY = BROKEN/NEEDS TO BE REDESIGNED

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- -Parameters
    - -guest homepage = ?
    - -user homepage = ?
- -Security
    - -login
        - -login system
        - -logged-in tracking
        - -secured passwords (hashed)
    - -sign-up
        - -sign-up system
    - -logout
        - -ensure secure logout
- -Dashboard
    - -schedule
        - -schedule timetable
        - -plotted meetings (needs schedule timetable)
        - -plotted participating events (needs schedule timetable)
        - -meetup database
    - -user-defined profile page
- -Map
    - -room finder
    - -geolocation
        - -map
        - -place markers (locationArray acquired!)
        - -user location tracking (needs knowledge of sockets)
        - -event markers (needs server-side storage of events)

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- Meeting scheduling
  - meeting creation
    - UI for ‘building’ a meeting
    - server-side storage of meetings
  - meeting communication
    - meeting notifying maybe through email?
    - invitation/response (needs server-side storage and meeting notifying system)
- Campus Event tracking
  - event listing
    - timetable
    - event notifying system (optional)
  - event posting
    - UI for posting an event
    - server-side storage of events
    - event submission approval
- Minigames (needs real-time user location tracking)