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Github: github.com/srz2/CSC470
Team: iOS
MyM - Map your Moments

Stage III: Design

Shneiderman's Eight Golden Rules of Interface Design are a set of standards that should be taken into account with all design projects in order to strive to make the best quality project. These standards are relevant in our project because as projects like ours become more streamlined, such as in a mobile device, the speed and quality of a solution become more and more important. Thinking about the eight rules helps us plan our project to deliver a high quality end result. The rules relate to: consistency, quick use through shortcuts, informative feedback, dialog closure, elegant error handling, reversal of actions, locus of control, and reduced short term memory load. As each of these rules are explained further below, it becomes more apparent how these qualities are not only necessary in a project like ours, but also how most of what they encompass should be expected.

1 - Strive for consistency

Consistent sequences of actions should be required in similar situations; identical terminology should be used in prompts, menus, and help screens; and consistent commands should be employed throughout.

By keeping our visual and interaction design consistent with other iOS applications, we ensure that the learning curve is going to be easier and that the user will enjoy using the application. As a result, the chance of the user not knowing what a specific button does is reduced. The idea is to build an application that is easy to learn and master.

By keeping a consistent visual and interaction design within the application, we ensure the user will always get the expected result out of an action.

For example, we have the "Log In" screen, which looks like any other Log In screen. This ensures that the user will be familiar with what is presented to him, reducing the learning time.

An example of consistency within the MyM application is the screen to post a new Moment. The screens to post new Moments will look similar, regardless of the content the user posts. The only difference is the top half of the screen, which is going to depend on what kind of Moment the user wants to post. This is beneficial because the user will be familiar with the screen layout.

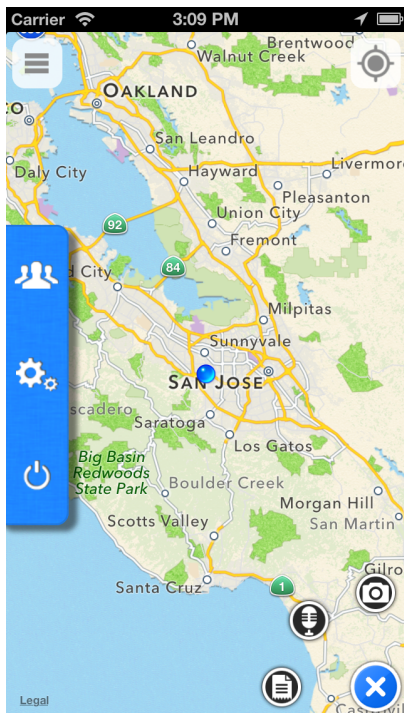
2 - Enable frequent users to use shortcuts

As the frequency of use increases, so do the user's desires to reduce the number of interactions and to increase the pace of interaction. Abbreviations, function keys, hidden commands, and macro facilities are very helpful to an expert user.

We want users to keep using our solution, which is why we are offering every functionality two or three taps away. We will also implement swipe actions, that are fast and intuitive to be used as shortcuts to common tasks.

As an example we have the little menu at the very bottom, that once it is clicked it will expand into three options: share picture, note or video. This is really practical and save us a lot of space in the screen and let the user focus on what is important. On the right we have an example of the swiping menu that will provide fast access to main features.

The application will utilize a swiping menu on the left that gives the user access to all main functionalities.



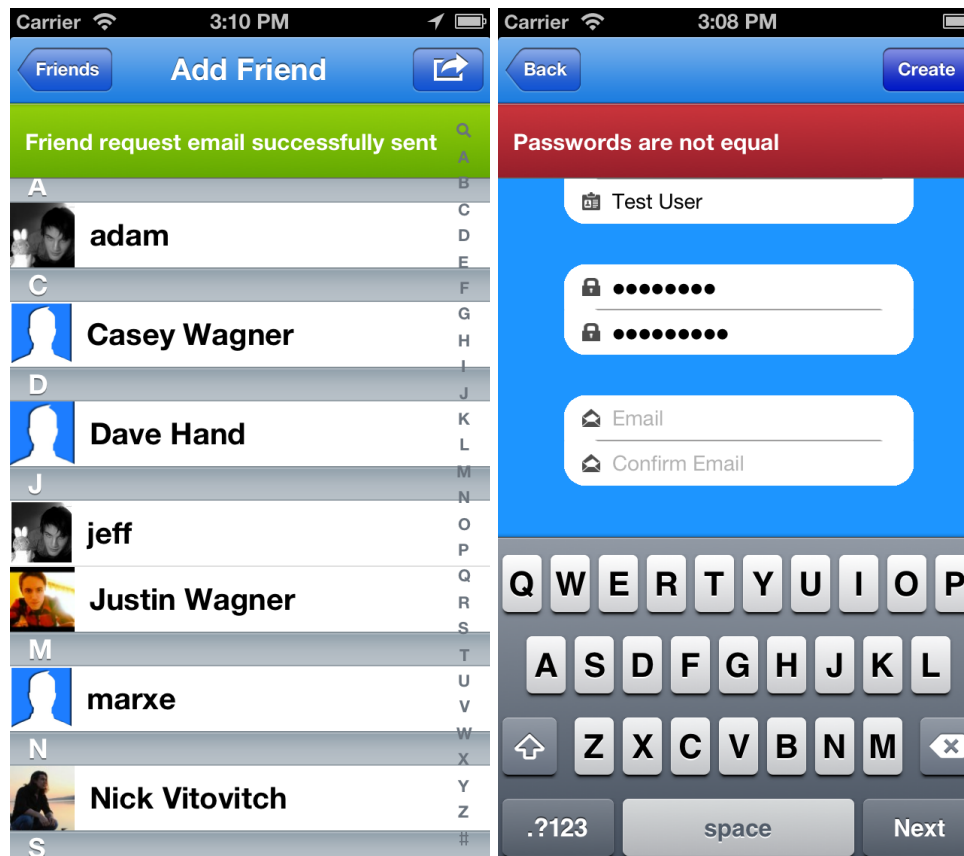
3 - Offer informative feedback

For every operator action, there should be some system feedback. For frequent and minor actions, the response can be modest, while for infrequent and major actions, the response should be more substantial.

The application will be using a mix of colors, animations and pop-ups to give feedback to the user, leaving no ambiguity regarding the status of the action.

The user will always have full control of their actions. At many points we will offer the user the ability to cancel the current process.

A third party library AJNotificationView will be used to display warnings and error messages effectively without being distracting.



4 - Design dialog to yield closure

Sequences of actions should be organized into groups with a beginning, middle, and end. The informative feedback at the completion of a group of actions gives the operators the satisfaction of accomplishment, a sense of relief, the signal to drop contingency plans and options from their minds, and an indication that the way is clear to prepare for the next group of actions.

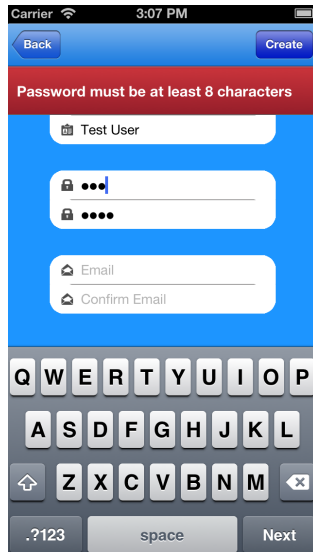
Our application has three major action sequences available to the user: sharing a moment, adding a friend, and viewing a moment. All main action sequences end with the user viewing the main map screen or an appropriate AJNotification. Users will be directed through the action sequences if they so choose, but will know they have completed their chosen action when the map reappears with new content or they receive a notification.

5 - Offer simple error handling

As much as possible, design the system so the user cannot make a serious error. If an error is made, the system should be able to detect the error and offer simple, comprehensible mechanisms for handling the error.

There will be a large amount of redundancy built into the application to assure that serious errors are not incurred. Moments, for instance, will not be able to be shared with anything less than the required amount of content.

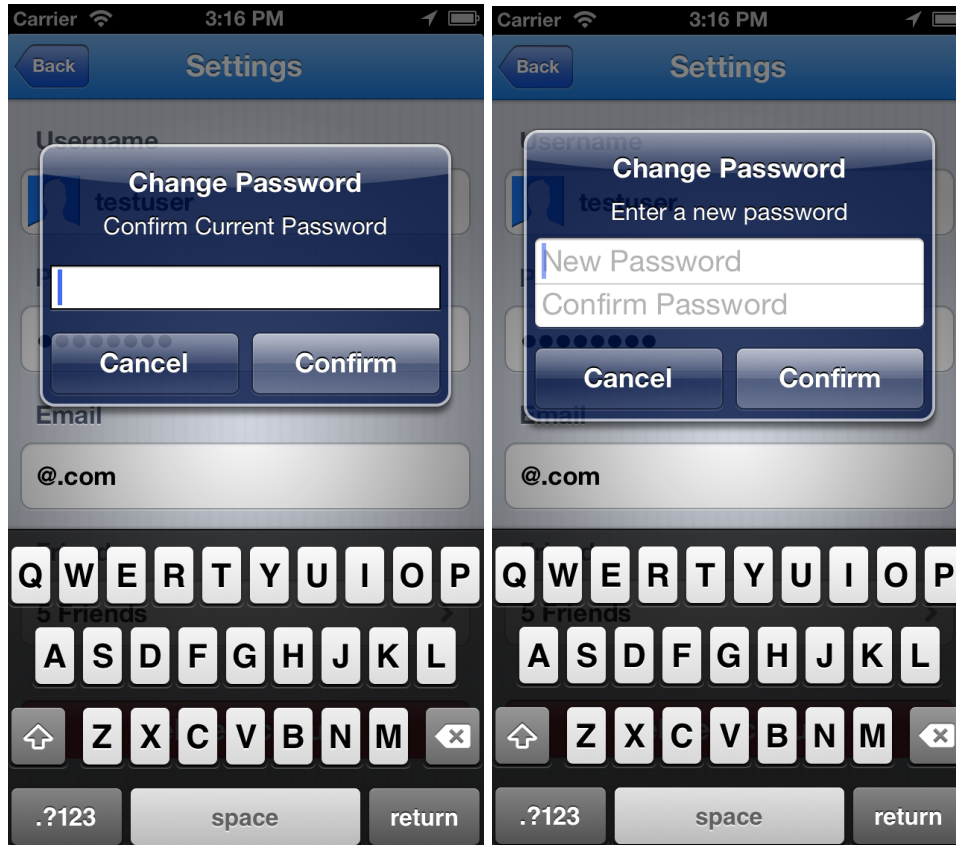
Another issue is network connectivity. Although not necessarily under the user's control, the app should not allow the user to enter or access content without a stable network connection. If it did, the user could encounter the frustrating case of a hanging or unresponsive app. If the user loses a network connection, the application will gracefully save its state, including any existing user input, and display a modal notifying the user of the dropped connection.



6 - Permit easy reversal of actions

This feature relieves anxiety, since the user knows that errors can be undone; it thus encourages exploration of unfamiliar options. The units of reversibility may be a single action, a data entry, or a complete group of actions.

Users will always be able to undo their actions. The application will allow the user to: edit account, remove moment, and remove account. This will let users fix/undo any undesired actions.



7 - Support internal locus of control

Experienced operators strongly desire the sense that they are in charge of the system and that the system responds to their actions. Design the system to make users the initiators of actions rather than the responders.

The default state of the application is the map view, displaying the user's and their friends' moments. The map view will not change unless the user takes an action: posting a moment, navigating the map, or opening up one of the menu options. If the user posts a moment, the map will zoom to the new moment. If the user navigates the map, it will respond appropriately. The application will at no time bother the user to attend to notifications, bug them to post something, or otherwise get in the way of the user's experience. It will simply display appropriate options at each point in time, making them available yet unobtrusive.

8 - Reduce short-term memory load

The limitation of human information processing in short-term memory requires that displays be kept simple, multiple page displays be consolidated, window-motion frequency be reduced, and sufficient training time be allotted for codes, mnemonics, and sequences of actions.

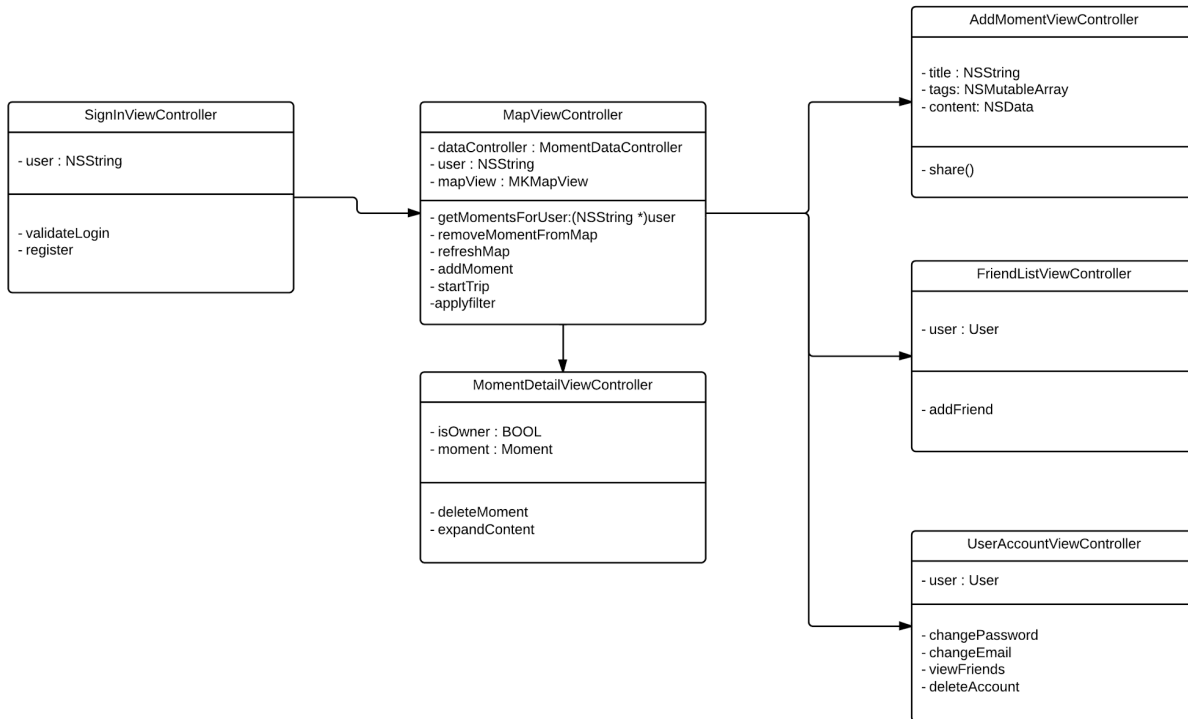
A user only ever has to worry about one action at a time, and each action is walked through in a logical order, so the user only has to input one thing at a time.

A user is always doing only one of the following:

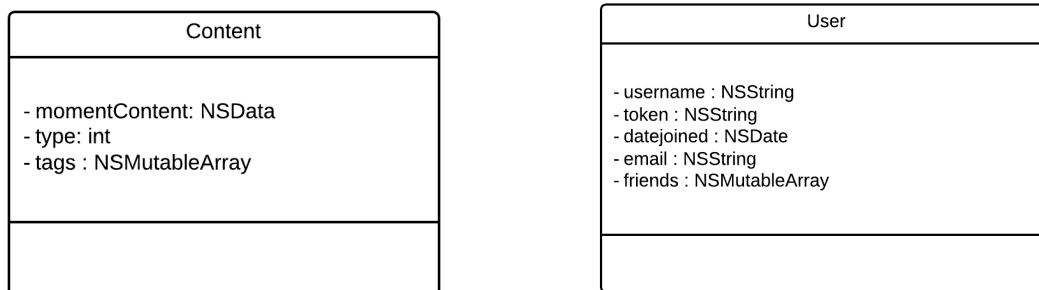
- Sharing a moment
- Viewing the map
- Viewing a moment
- Viewing Friends
- Editing the settings / profile

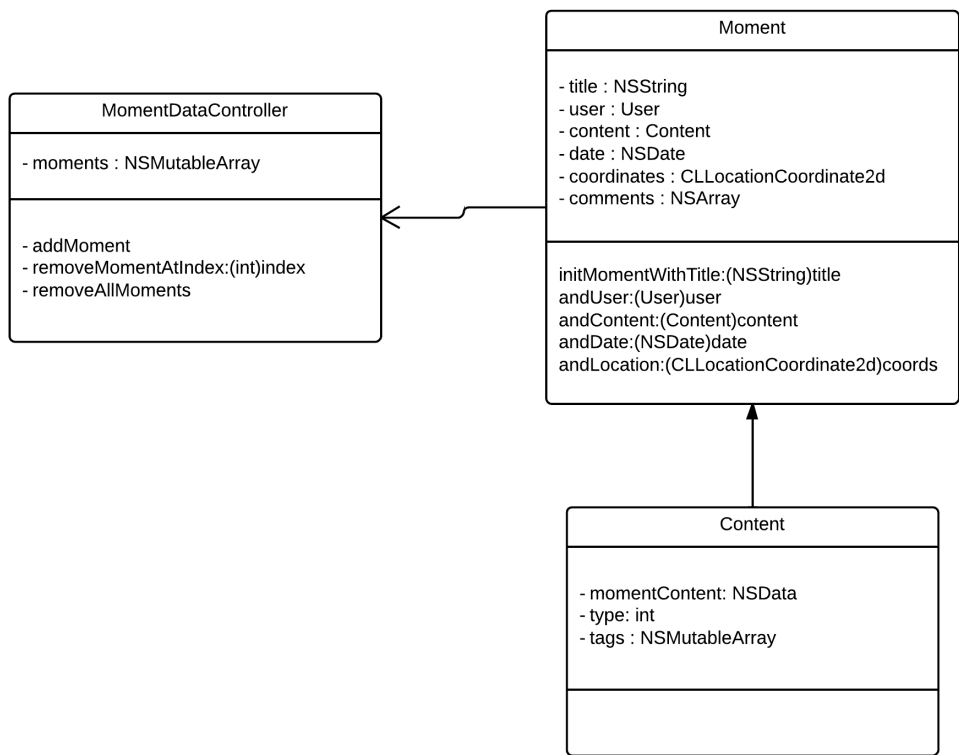
Class Diagrams

View Controller Class Design Diagrams



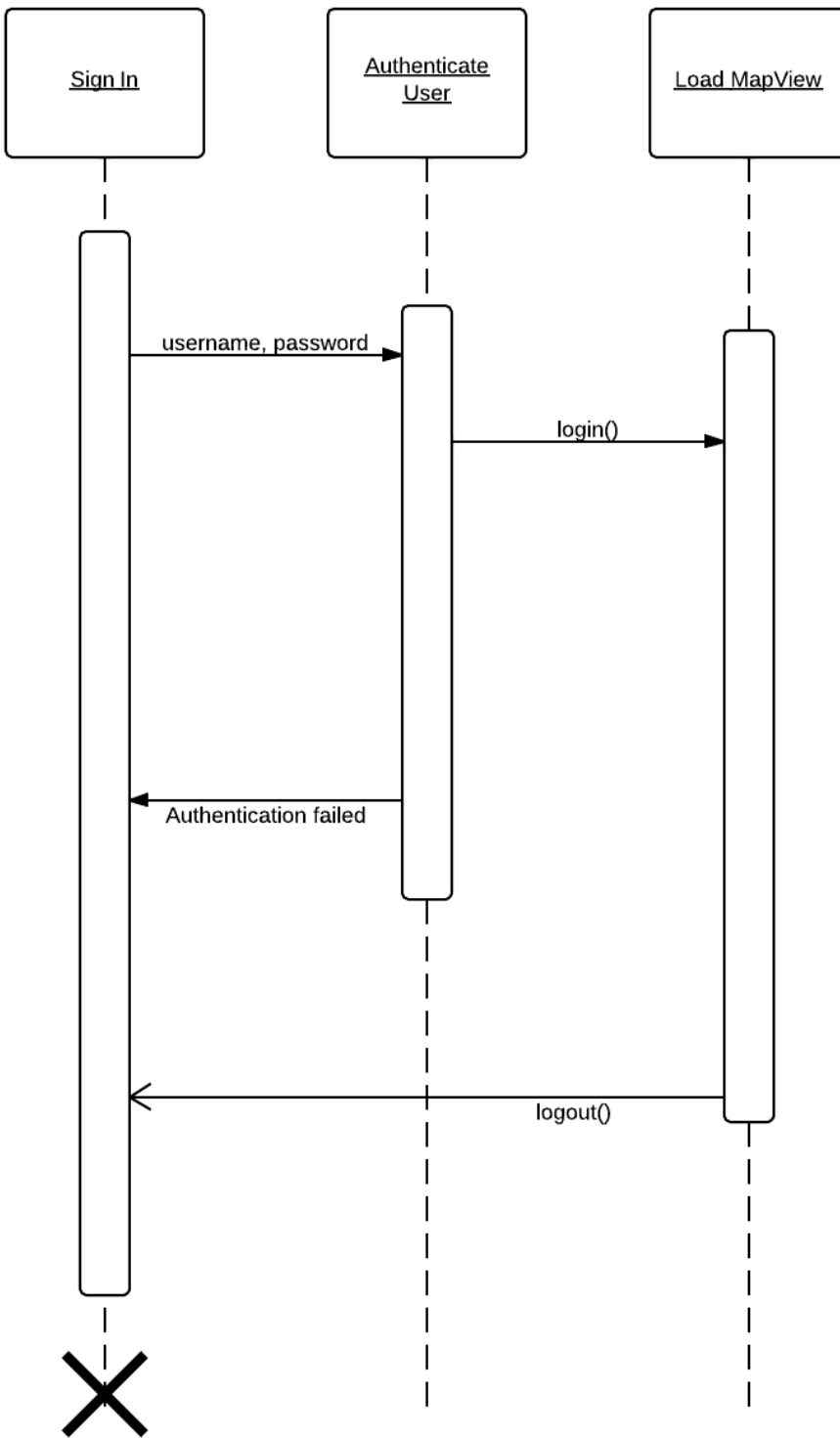
Model Class Design Diagrams



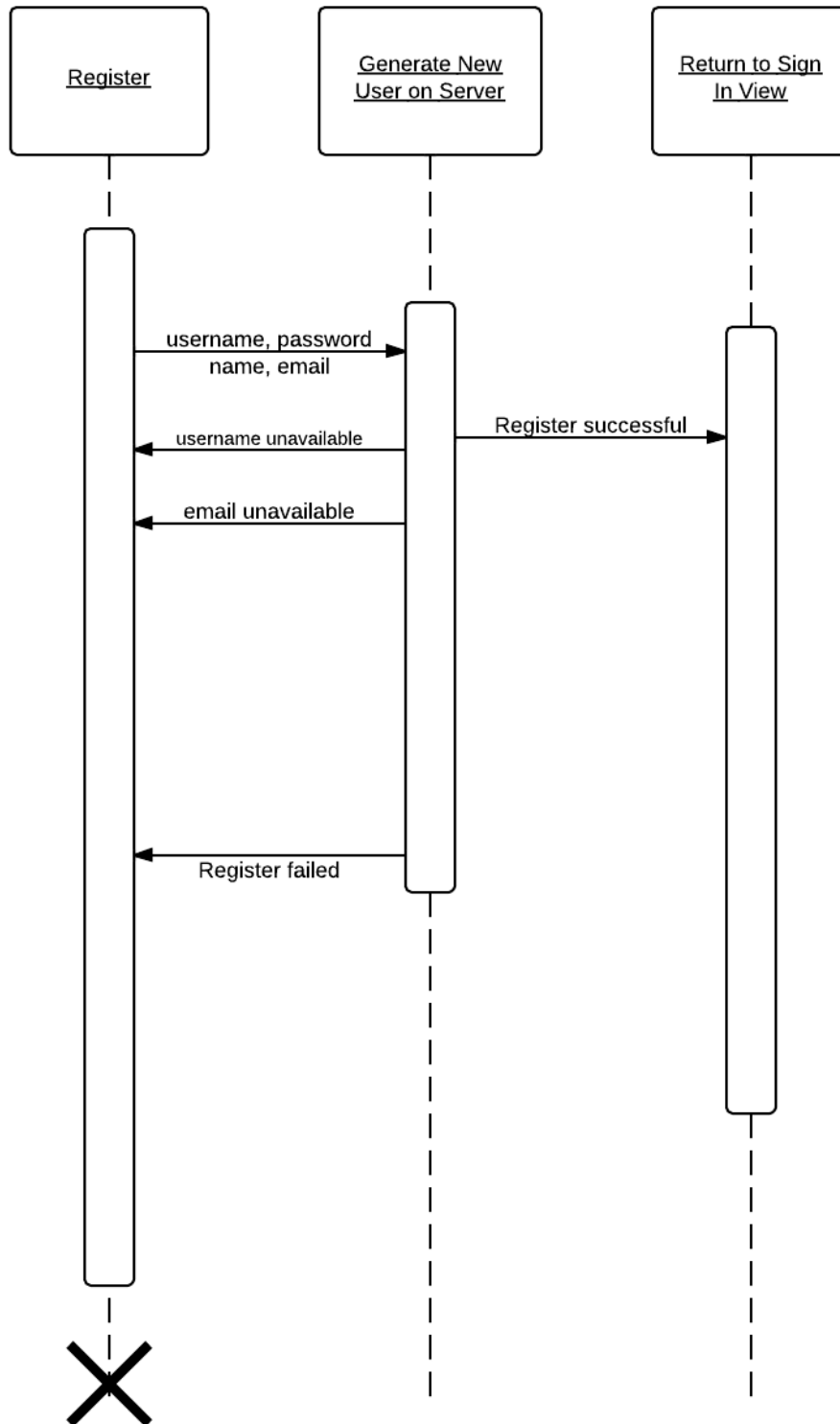


System Sequence Diagrams

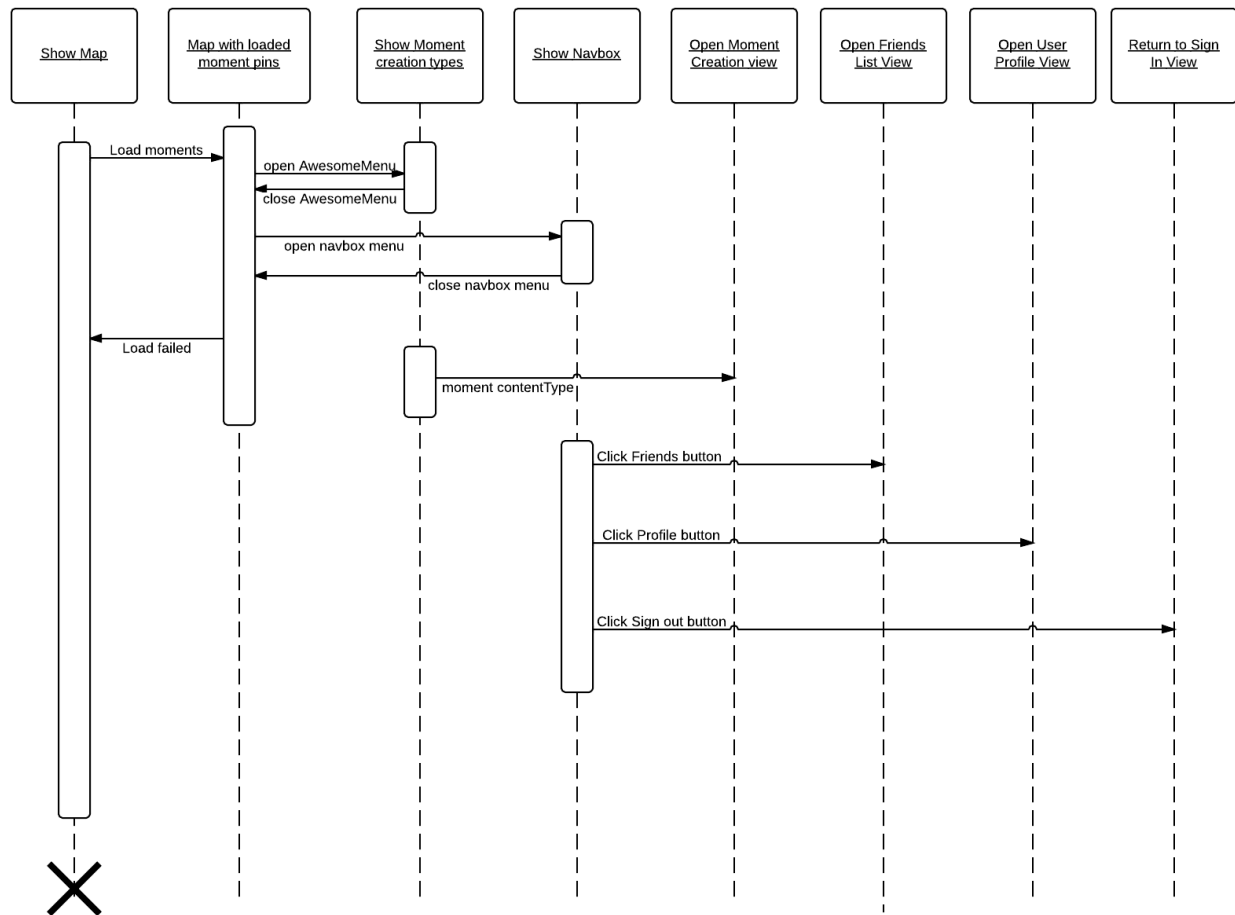
Sign In



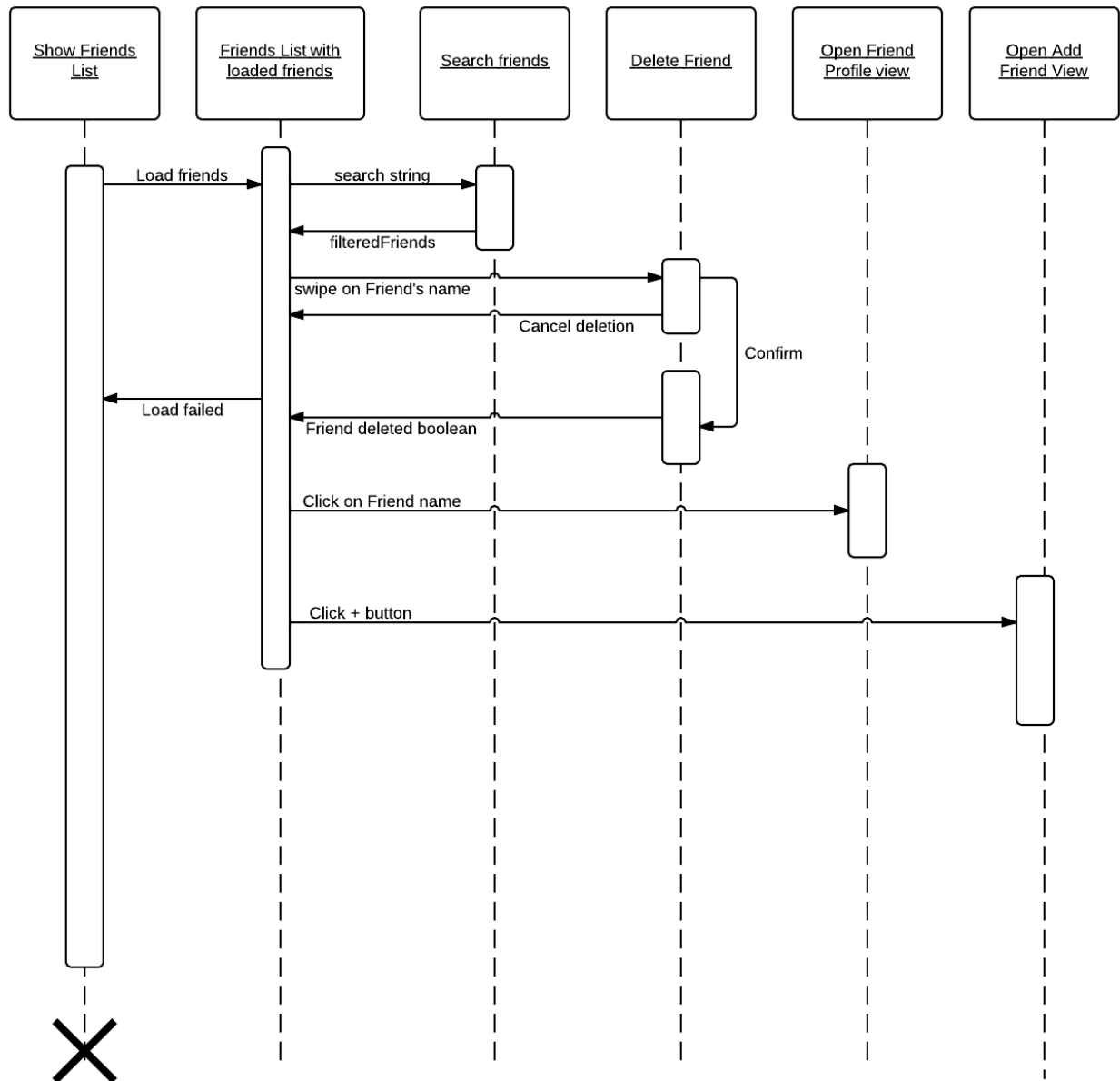
Register New User



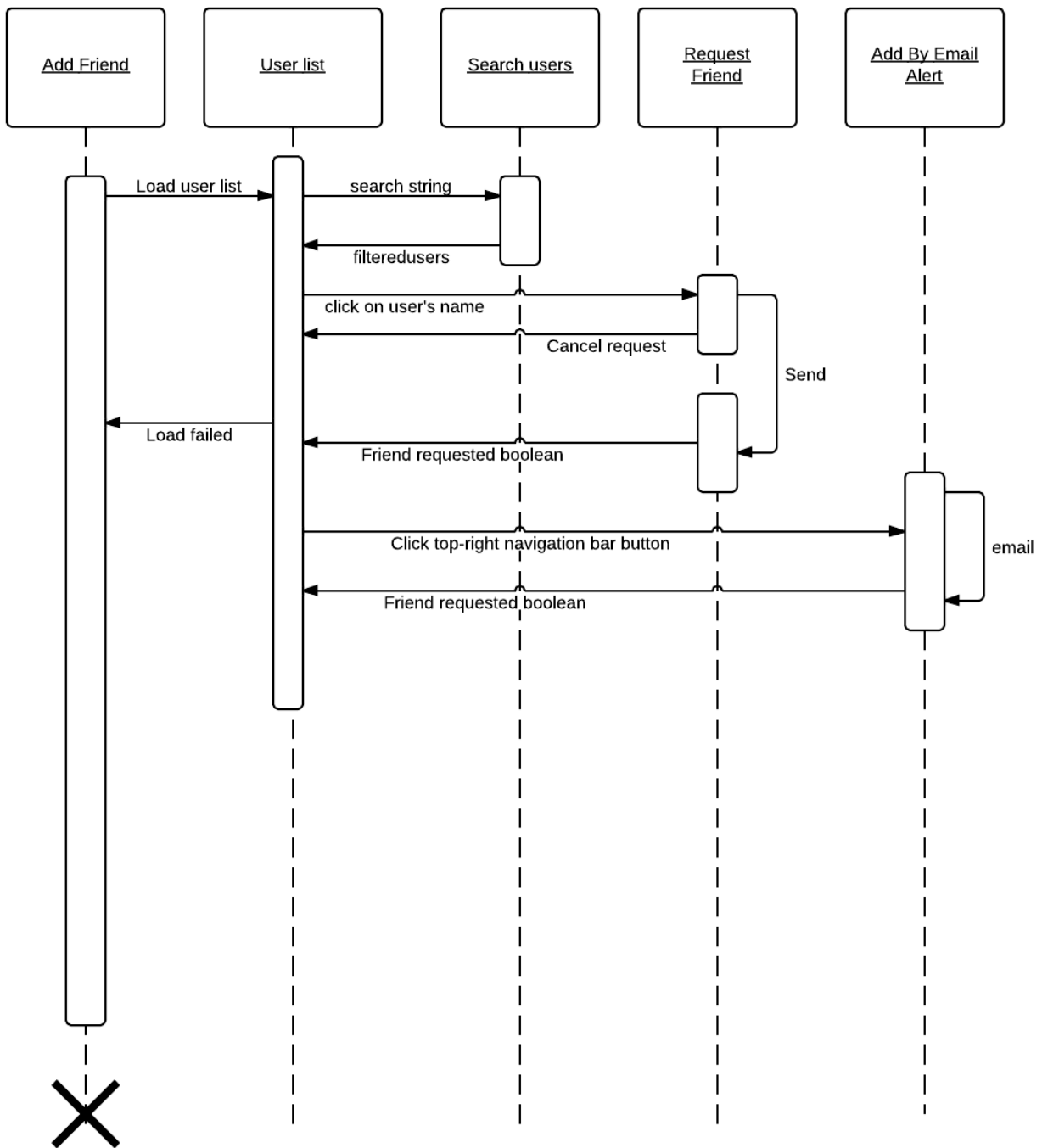
Map



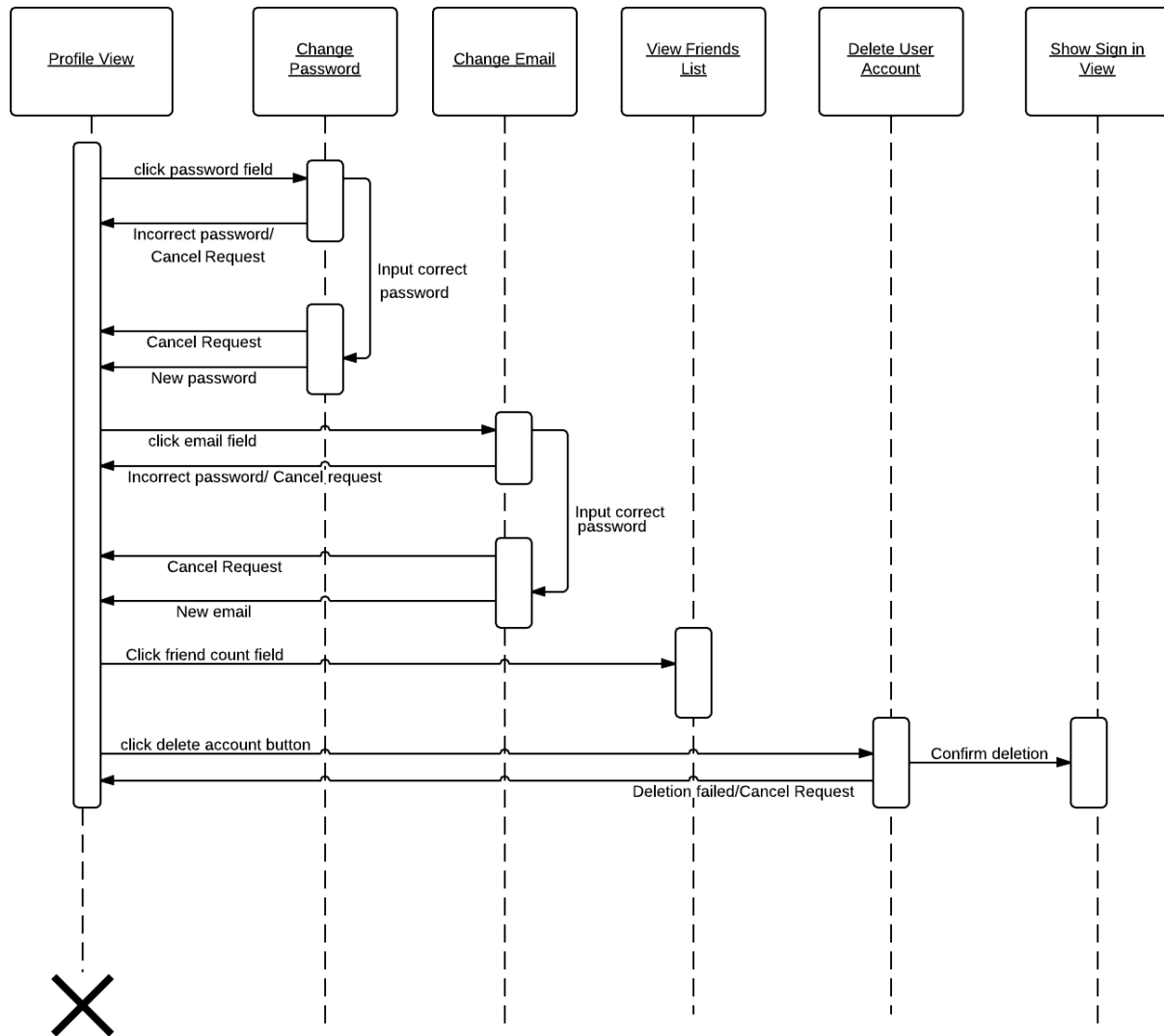
Friends List



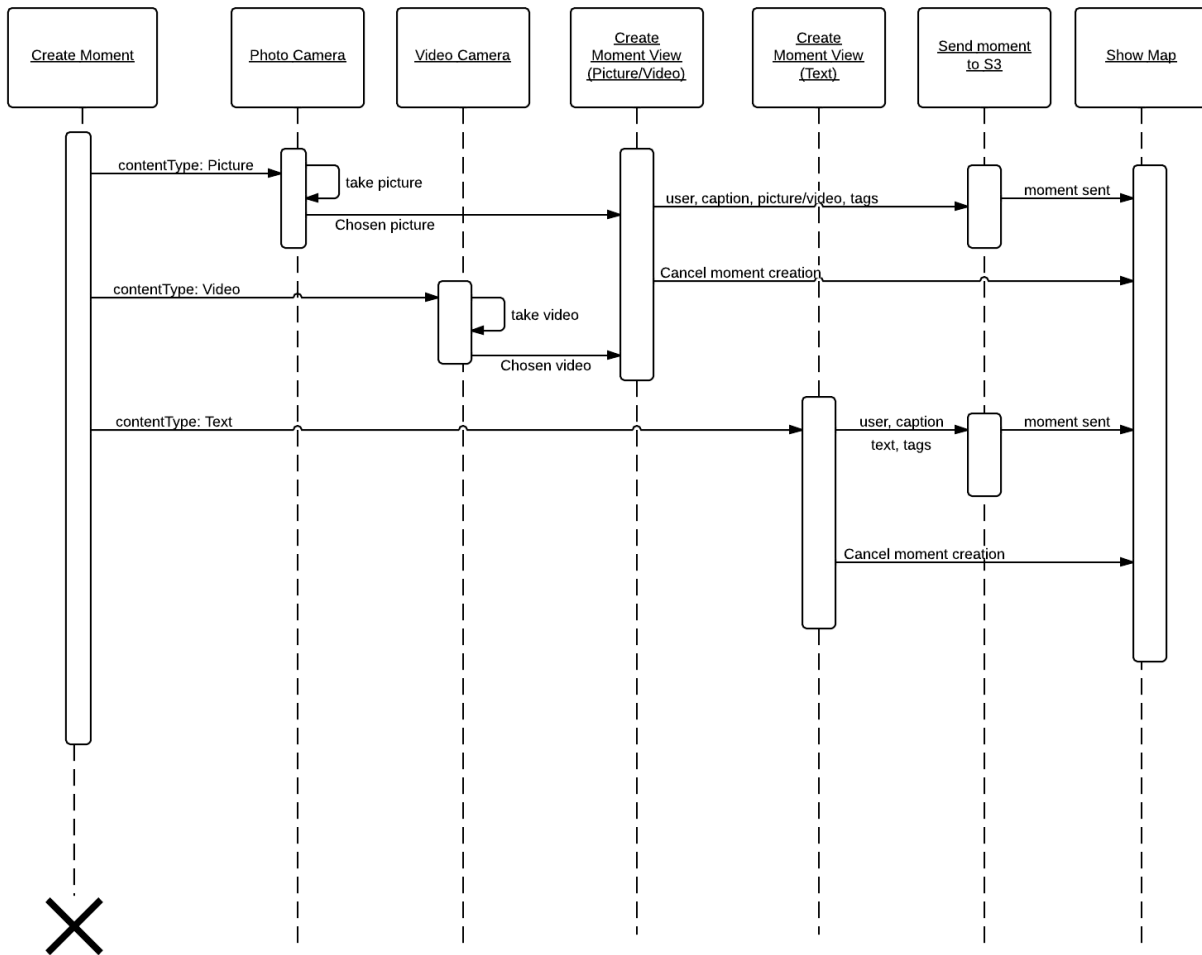
Add Friend



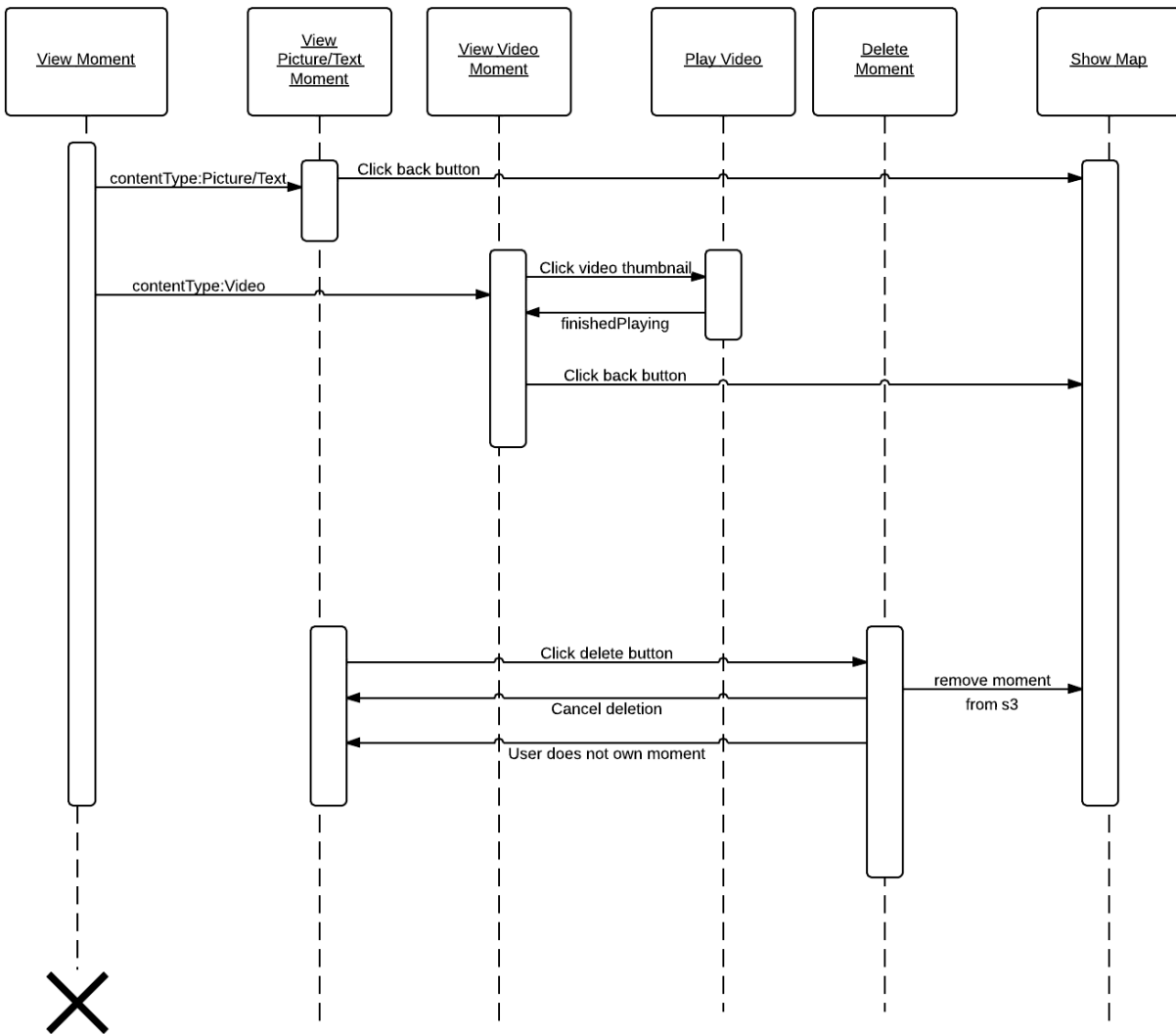
Profile & Settings



Create Moment



View Moment



End of Final Report

Original Report

*** Final report was edited for grammar and consistent clarity. No significant changes were made aside from updated interface images and diagrams.***

Stage III: Design

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Shneiderman's "Eight Golden Rules of Interface Design"

1 - Strive for consistency

Consistent sequences of actions should be required in similar situations; identical terminology should be used in prompts, menus, and help screens; and consistent commands should be employed throughout.

By keeping consistent with other applications, we ensure that the learning curve is going to be easier and ensure the user will enjoy using the application. As a result, the chances of the user not knowing what a specific button does is reduced. The idea is to build an application easy to learn and master.

By keeping the consistency within the application, we ensure the user is always getting the expected result out of an action.

For example, we have the Log In screen, that looks like any other Log In screen. This ensures that the user will be familiar with what is presented to him, reducing the learning time.

An example of consistency within the MyM application is the screen to post a new Moment. The screens to post a new moment will look similar, regardless of the content the user posts. The only difference is the top half of the screen, which is going to depend on what kind of Moment the user wants to post. This is beneficial because the user will be familiar with the screen layout.

2 - Enable frequent users to use shortcuts

As the frequency of use increases, so do the user's desires to reduce the number of interactions and to increase the pace of interaction. Abbreviations, function keys, hidden commands, and macro facilities are very helpful to an expert user.

We want users to keep using our solution, which is why we are offering every functionality two or three clicks away. We will also implement swipe actions, that are fast and intuitive to be used as shortcuts to common tasks.

The application will utilize a swiping menu on the left, that gives the user access to all main functionalities.

In addition, there will be a small collapsible menu at bottom that will provide fast access to the moment sharing screens.

As an example we have the little menu at the very bottom, that once it is clicked it will expand into three options: share picture, note or sound. This is really practical and save us a lot of space in the screen and let the user focus on what is important. On the right we have an example of the swiping menu that will provide fast access to main features.

3 - Offer informative feedback

For every operator action, there should be some system feedback. For frequent and minor actions, the response can be modest, while for infrequent and major actions, the response should be more substantial.

The application will be using a mix of colors, animations and pop-ups to give feedback to the user, leaving no ambiguity regarding the status of the action.

The user will always have full control of that actions. At many points we will offer the user the ability to cancel the current process.

As an example we have an Alert View that is going to pop-up when the user visits someones page that he is still not friends with. The Alert View allows him to add that user to his friend's list or simply go back.

4 - Design dialog to yield closure

Sequences of actions should be organized into groups with a beginning, middle, and end. The informative feedback at the completion of a group of actions gives the operators the satisfaction of accomplishment, a sense of relief, the signal to drop contingency plans and options from their minds, and an indication that the way is clear to prepare for the next group of actions.

Our application has four major action sequences available to the user: sharing a moment, filtering their map, friending or following someone, and adding a moment to a trip. All action sequences end with the user viewing the main map screen in some state, whether with a new moment, a new trip, some other person's content, or with new filters applied.

Users will be directed through the action sequences if they so choose, but will know they have completed their chosen action when the map reappears with new content.

Post moment: (initialize post -> add content -> provide details -> post -> view on map)

Filter map: (swipe to filters -> select filters -> view map with applied filters)

Friend/follow person: (view person -> friend/follow person -> view person's map(if follow, friend pends confirmation))

Add moment to trip: (select moment -> select trip -> view trip on map with added moment)

5 - Offer simple error handling

As much as possible, design the system so the user cannot make a serious error. If an error is made, the system should be able to detect the error and offer simple, comprehensible mechanisms for handling the error.

There will be a large amount of redundancy built into the application to assure that serious errors are not incurred. Moments, for instance, will not be able to be shared with anything less than the required amount of content. The "Share" button will be greyed out until the appropriate content has been given to the post by the user.

Another potential issue is network connectivity. Although not necessarily under the user's control, the app should not allow the user to enter or access content without a stable network connection. If it did, the user could encounter the frustrating case of a hanging or unresponsive app. If the user loses a network connection, the application will gracefully save its state, including any existing user input, and display a modal notifying the user of the dropped connection.

Network error

Disk space error

By design, posts cannot contain null content

By design, trips cannot contain null moments

Invalid credentials

Amazon-specific errors

6 - Permit easy reversal of actions

This feature relieves anxiety, since the user knows that errors can be undone; it thus encourages exploration of unfamiliar options. The units of reversibility may be a single action, a data entry, or a complete group of actions.

Users will always be able to undo any action. The application will allow the user to: Edit post, Edit trip, Edit account, Remove post, Remove trip and Remove account. This will let users fix/undo any undesired actions.

7 - Support internal locus of control

Experienced operators strongly desire the sense that they are in charge of the system and that the system responds to their actions. Design the system to make users the initiators of actions rather than the responders.

The default state of the application is the map view, with the last selected filters applied. The map view will not change unless the user takes an action: posting a moment, navigating the map, or altering the filters. If the user posts a moment, the map will zoom to the new moment. If the user navigates the map, it will respond appropriately. If the user alters the filters, the moments and trips displayed on the map will change as needed. The application will at no time bother the user to attend to notifications, bug them to post something, or otherwise get in the way of the user's experience. It will simply display appropriate options at each point in time, making them available yet unobtrusive.

8 - Reduce short-term memory load

The limitation of human information processing in short-term memory requires that displays be kept simple, multiple page displays be consolidated, window-motion frequency be reduced, and sufficient training time be allotted for codes, mnemonics, and sequences of actions.

A user only ever has to worry about one action at a time, and each action is walked through in a logical order, so the user only has to input one thing at a time.

A user is always doing only one of the following:

- Sharing a moment
- Viewing the map
- Applying a filter
- Editing the settings

Class Diagrams

View Controller Class Design Diagrams

Model Class Design Diagrams

System Sequence Diagram