

# Chapter

## Hi-Fi Prototype Report

|            |                      |
|------------|----------------------|
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### I. Introduction

**Value proposition:** Discover locally curated activities for a location and document personal memories.

### II. Problem and Solution Overview

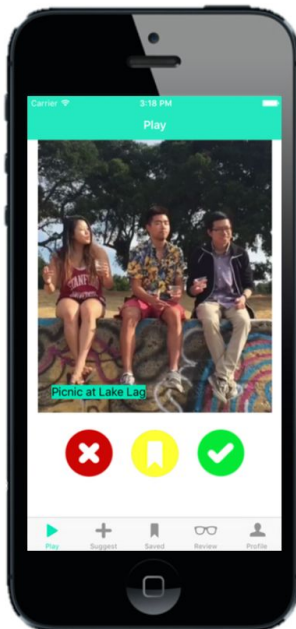
**Mission Statement:** Finding exciting and memorable things to do in a new settings is hard, and it's even harder to document all the meaningful interactions you have on a consistent basis. Whether you are a tourist in a foreign country or a local in your nearby town, *Chapter* allows you to experience new exciting activities to do. You can find locally crowdsourced activities that you can participate in with your friends and other strangers. After you're done, you can share and relive the memories you made by viewing your own personal scrapbook generated by *Chapter*.

**Problem Solution:** How do you find the best activities to do at a location? Because locals in the area know the coolest spots around, they can crowdsource fun, engaging activities to do. After you do these activities, *Chapter* creates a new story in your book of adventures for you to relive and share with friends.



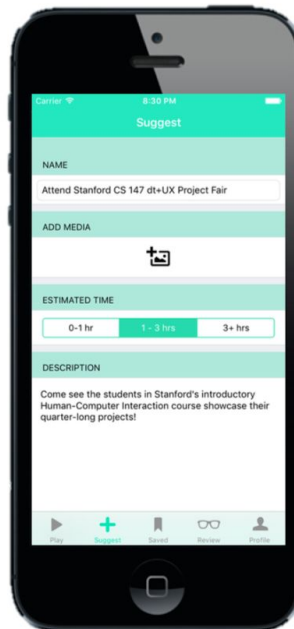
Play

Whether in a new or familiar area, find exciting activities suggested by locals



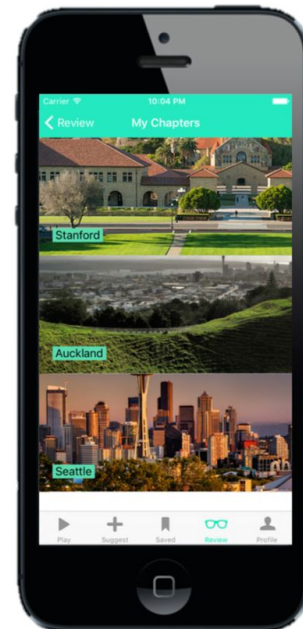
Suggest

Recommend your own favorite activities that others can enjoy



Review

Share the memories you made with people you care about

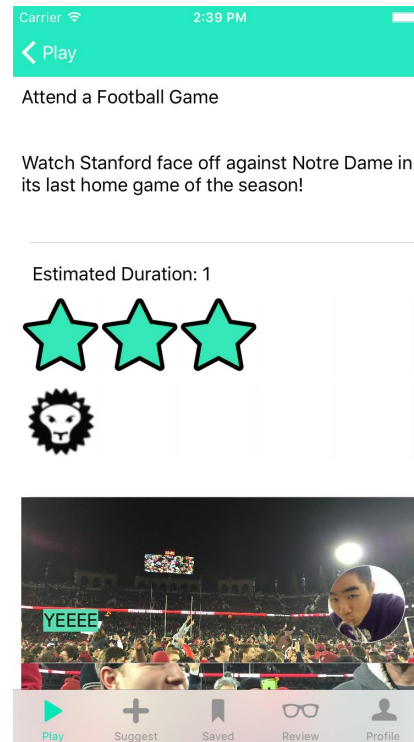
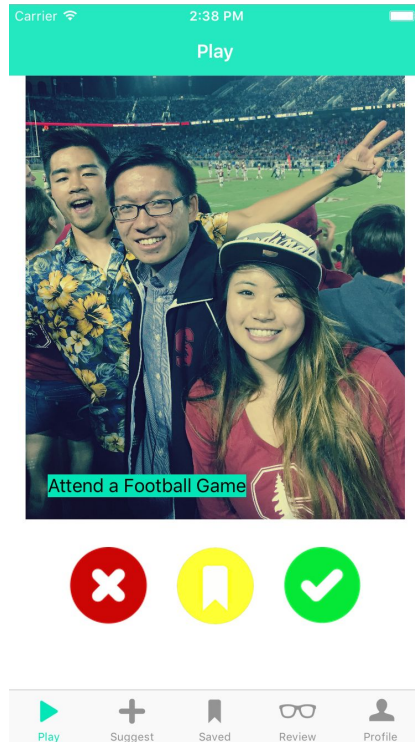


### III. Tasks & Final Interface Scenarios

| Tasks   | How It's Accomplished  |
|---|--|
| 1. As a newcomer, finding interesting activities to do at a location (i.e., Stanford) | The app presents activities one by one and users swipe left to pass, right to do, and down to save the event for later. Each swipe right gives the user detailed information about the locations of the event and others who are currently doing the activity.                 |
| 2. As a local, suggesting interesting activities to do or places to go at a location  | Users input the name, description, location, and a photo or video of the activity. After publishing the activity, the user is brought to a list of activities that he or she has suggested, along with statistics of how much the activities were liked and done.              |
| 3. Creating a story of memories when in a new place.                                  | Completing an activities prompts the user to record a photo/video as well as a description. The app lists the completed stories in the format of a Table of Contents organized by location, so that the user can easily navigate and select what memories they want to review. |

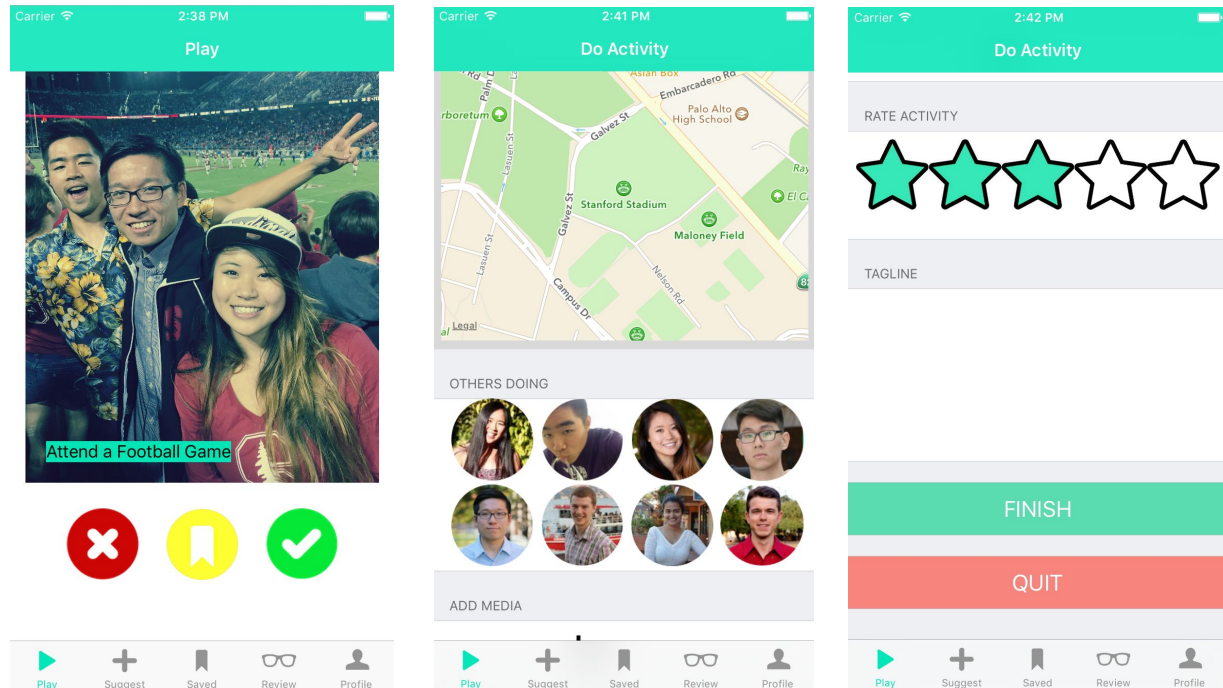
## Final Interface Storyboard Walkthroughs

### Task #1:



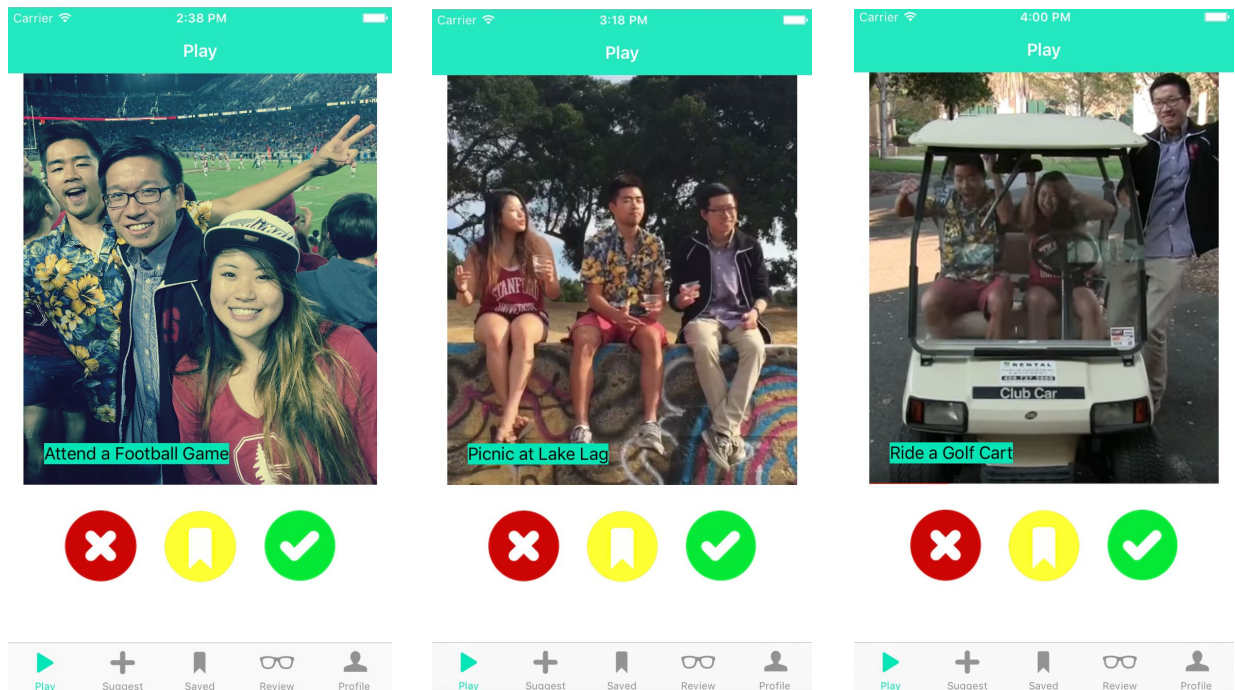
Tapping on the picture of an activity brings up a screen with the details of the activity (title, description, rating, etc.). The activity details screen also has pictures that other users have posted about the activity, along with their taglines and profile photos.

## Task #1 (continued):

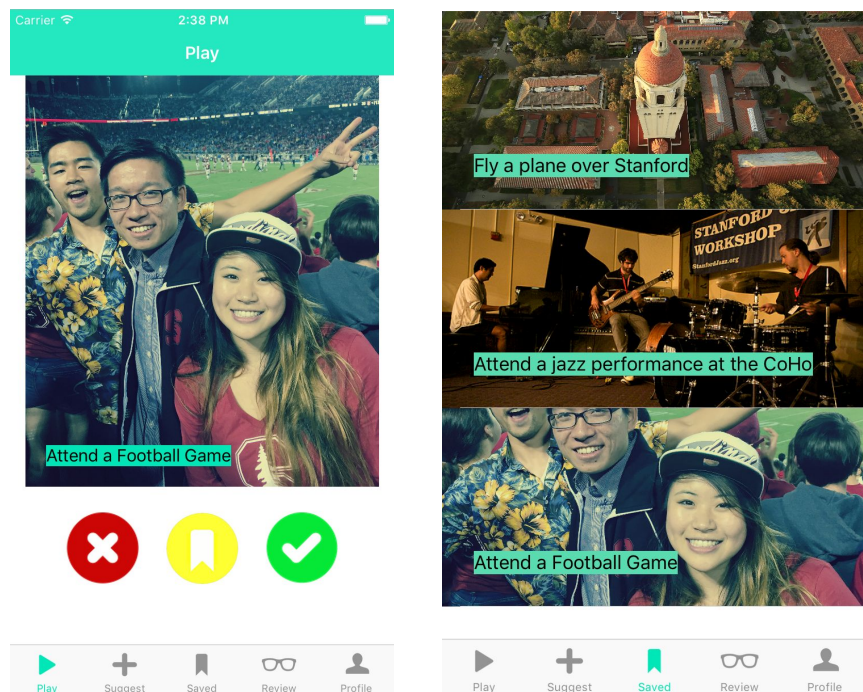


Tapping on the green checkmark button activity brings up the actual activity screen, which includes 1) a map of the activity, 2) other people who are currently engaging in the activity, 3) the option to add media (picture or video) of yourself doing the activity, 4) the option to rate the activity, 5) the option to add a tagline/description of what you did, and 6) Finish and Quit buttons. Tapping on Finish will result in the activity being saved to a corresponding chapter (in the above example, the football game activity will be saved to the Stanford chapter). Tapping on Quit will result in the activity being canceled. The activity will then be re-shown to the user at a later time on the Play screen.

## Task #1 (continued):



Tapping on the red “X” button will result in the app suggesting a new activity for the user.



Tapping on the yellow bookmark button will save the activity for later consideration. The activity will then appear on the “Saved” page. An activity will be removed from the “Saved” page once it is completed.



## Task #2:

Carrier 8:30 PM

Suggest

NAME

Attend Stanford CS 147 dt+UX Project Fair

ADD MEDIA

ESTIMATED TIME

0-1 hr 1 - 3 hrs 3+ hrs

DESCRIPTION

Come see the students in Stanford's introductory Human-Computer Interaction course showcase their quarter-long projects!

Play Suggest Saved Review Profile

Carrier 3:00 PM

Suggest

DESCRIPTION

Come see the students in Stanford's introductory Human-Computer interaction course showcase their quarter-long projects!

INTENSITY LEVEL

LOCATION

Stanford d.school, Stanford, CA

DONE

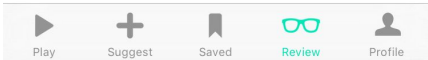
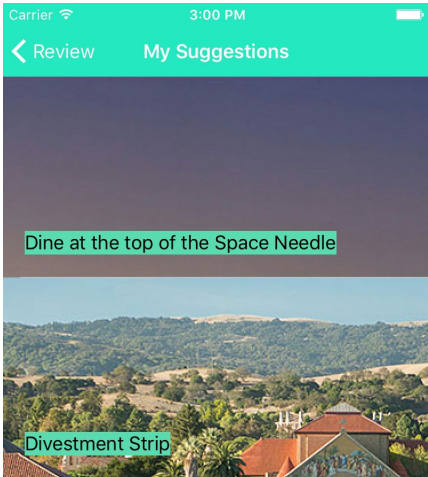
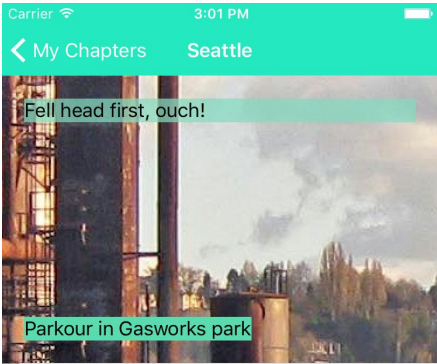
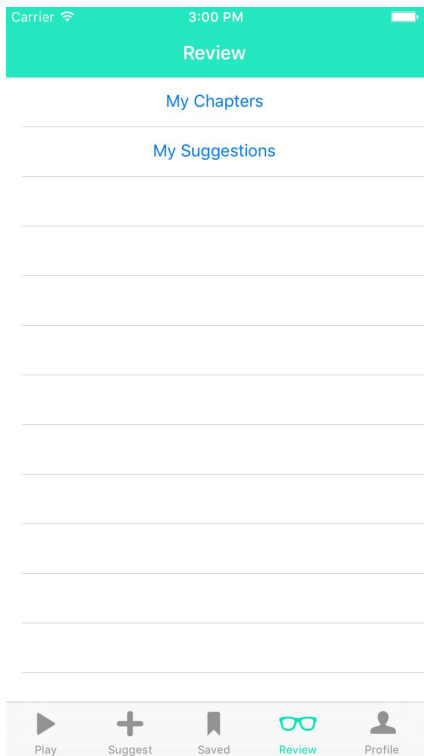
Play Suggest Saved Review Profile

Tapping the “+” Suggest icon allows you to share your own activity. You must provide the following information/data for each suggested activity:

1. Name of activity
2. Some sort of photo/video
3. Estimated time of completion
4. Description of the activity
5. Intensity Level
6. Location of where to do the activity

After pressing “Done”, you can go to “Review” to see your posted suggested in “My Suggestions”.

Task #3:



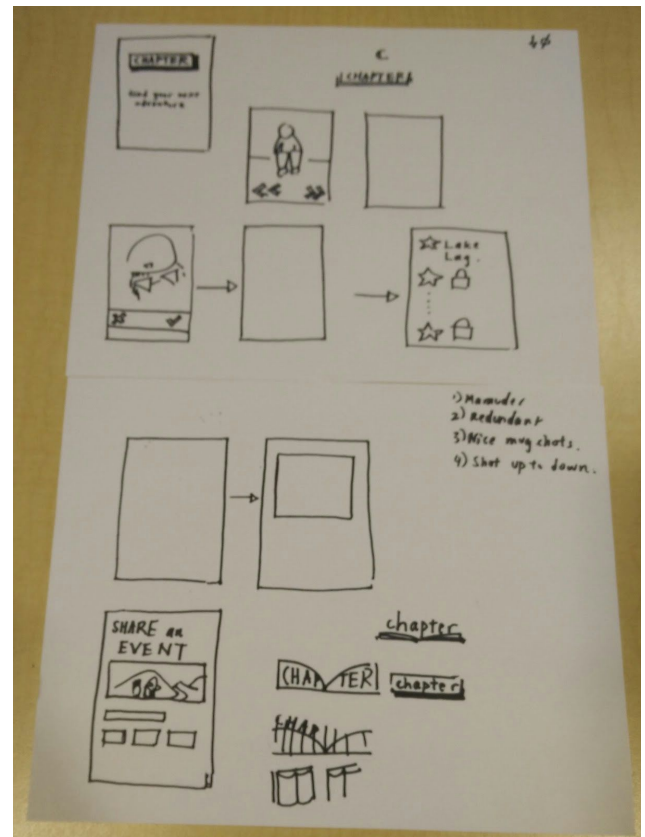
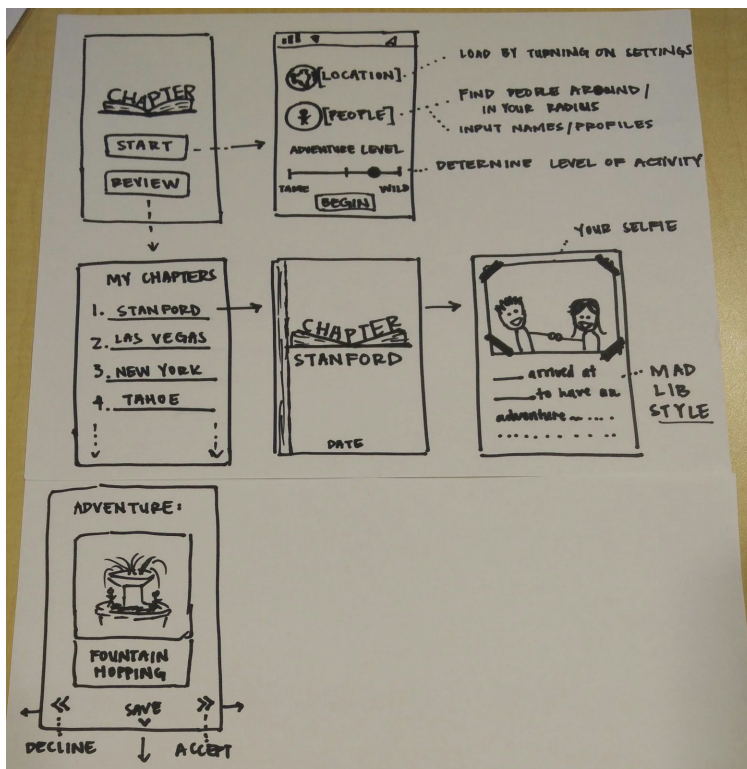
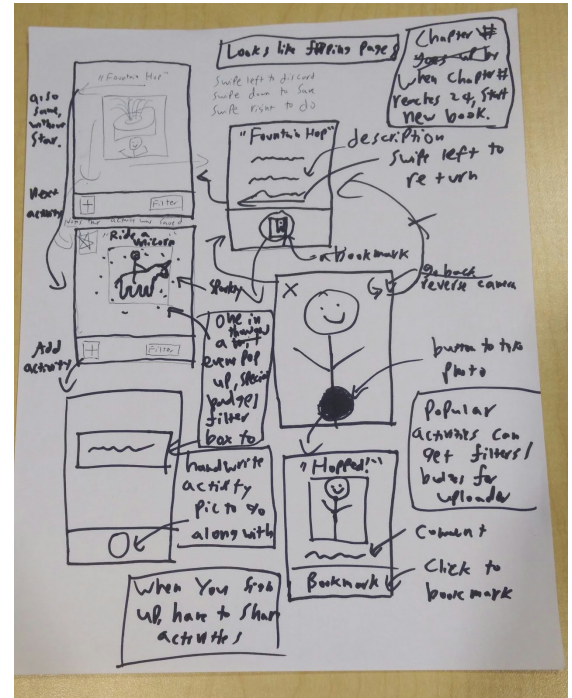
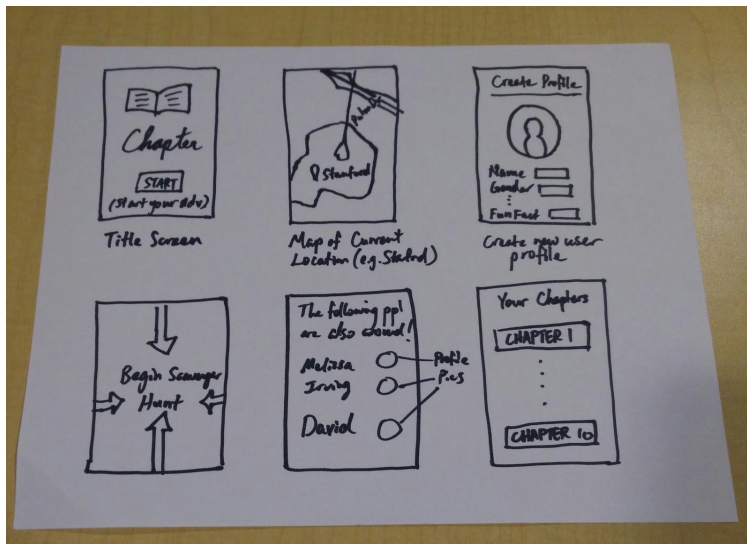


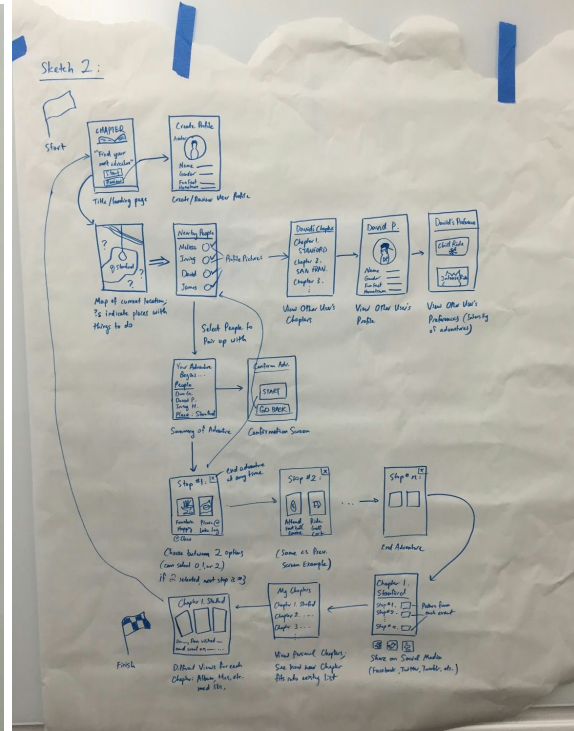
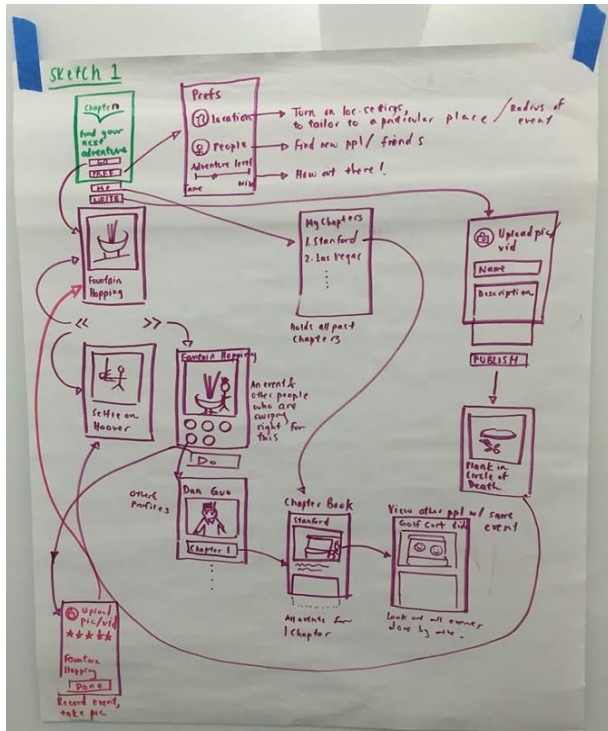
Tapping on the Review button on the navbar takes the user to a screen with “My Chapters” and “My Suggestions”. The “My Chapters” screen displays a list of chapters in the user’s storybook, with each chapter being associated with a location and the various activities the user has done at that location. Tapping on a specific chapter brings up a list of activities done at the location associated with that chapter. Each activity is labeled with a name, picture, and tagline that the user wrote while doing the activity.

The “My Suggestions” screen displays a list of activities the user has suggested. Each activity has an associated name and picture, and tapping on an activity brings the user to the activity’s details page.

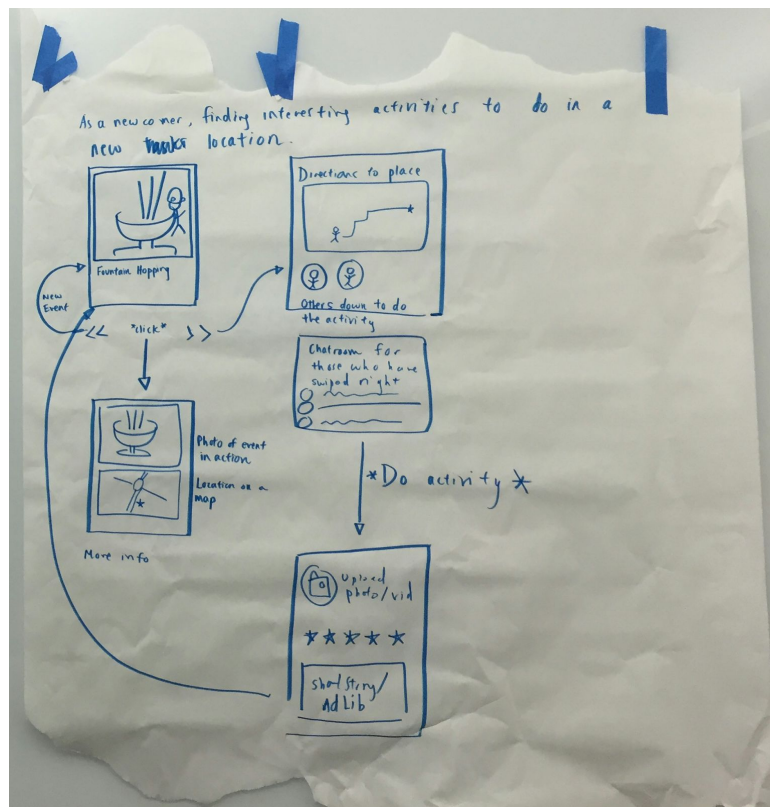
## IV. Design Evolution

## Initial Sketches

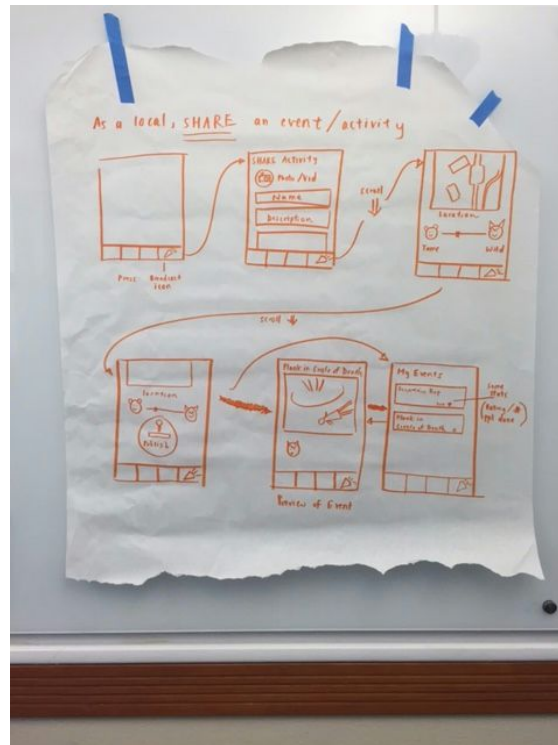




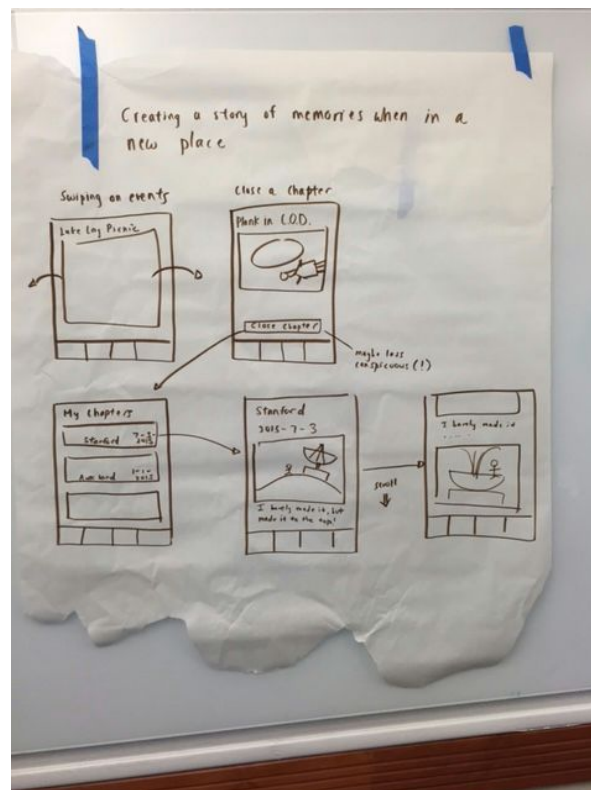
**Task #1 Storyboard:** As a newcomer, finding interesting activities to do at a location (i.e., Stanford)



**Task #2 Storyboard:** As a local, suggesting interesting activities to do or places to go at a location

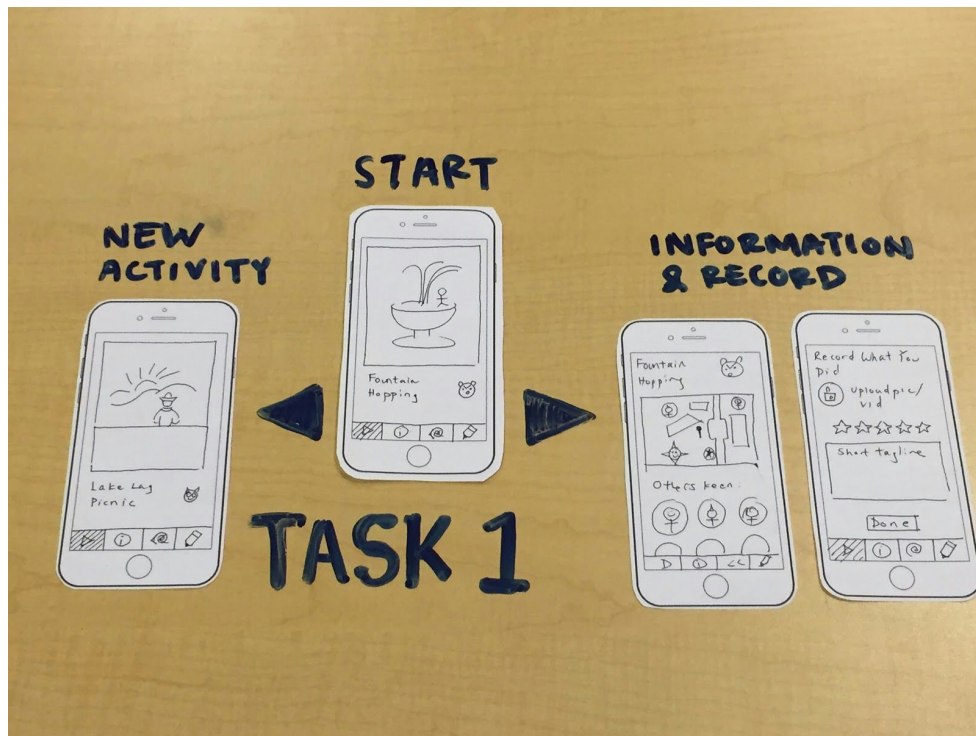


**Task #3 Storyboard:** Creating a story of memories when in a new place.

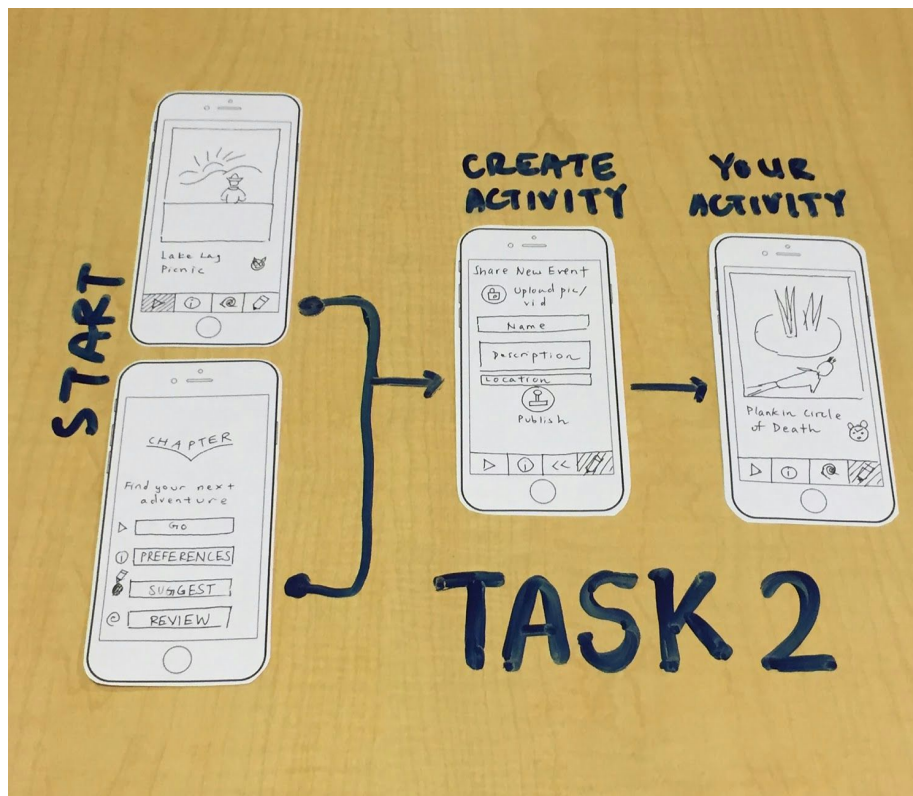




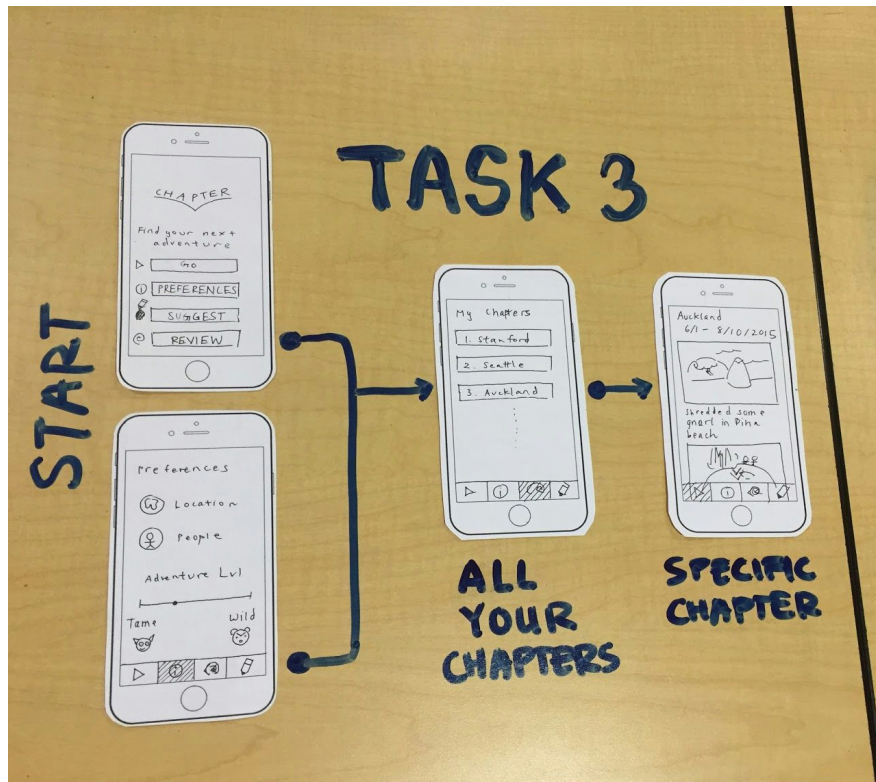
## Low-Fi Tasks:



Low-Fi Task 1



Low-Fi Task 2



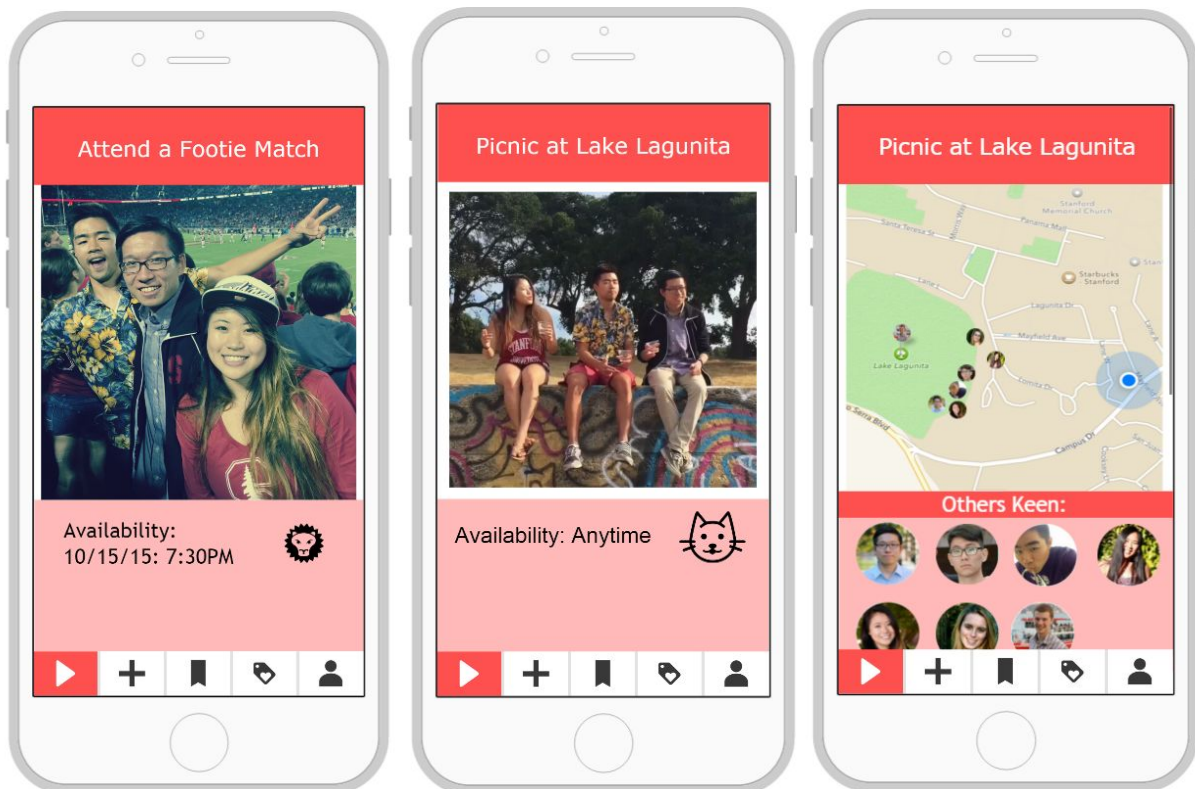
Low-Fi Task 3

Changes made from **Low-Fi** to **Medium-Fi**:

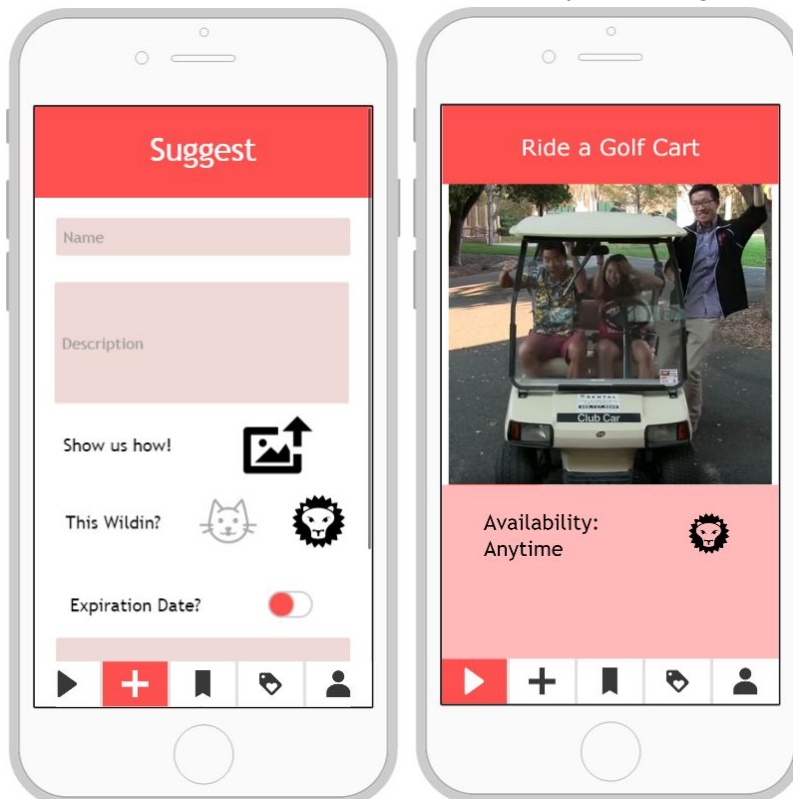
- Made the icons more intuitive. Changed the “Chevrons” to a “Luggage Tag” for reviewing past activities, the “Pencil” to a “Plus” for suggesting your own activities, and the “Info icon” to “Person” for profile information.
- Changed the idea of a “Bucket List” and created a bookmarked section. Added an additional icon for bookmarked activities. This was created so that people who were interested in an activity, but didn’t have time to do them could save them for later.
- Added a social media aspect - allowed users to share their own “Chapters” with friends and also see what their friends have been doing. This made it so that people could feel connected with others who may be doing the same things as them, and also foster a sense of community for people who’ve done similar activities.



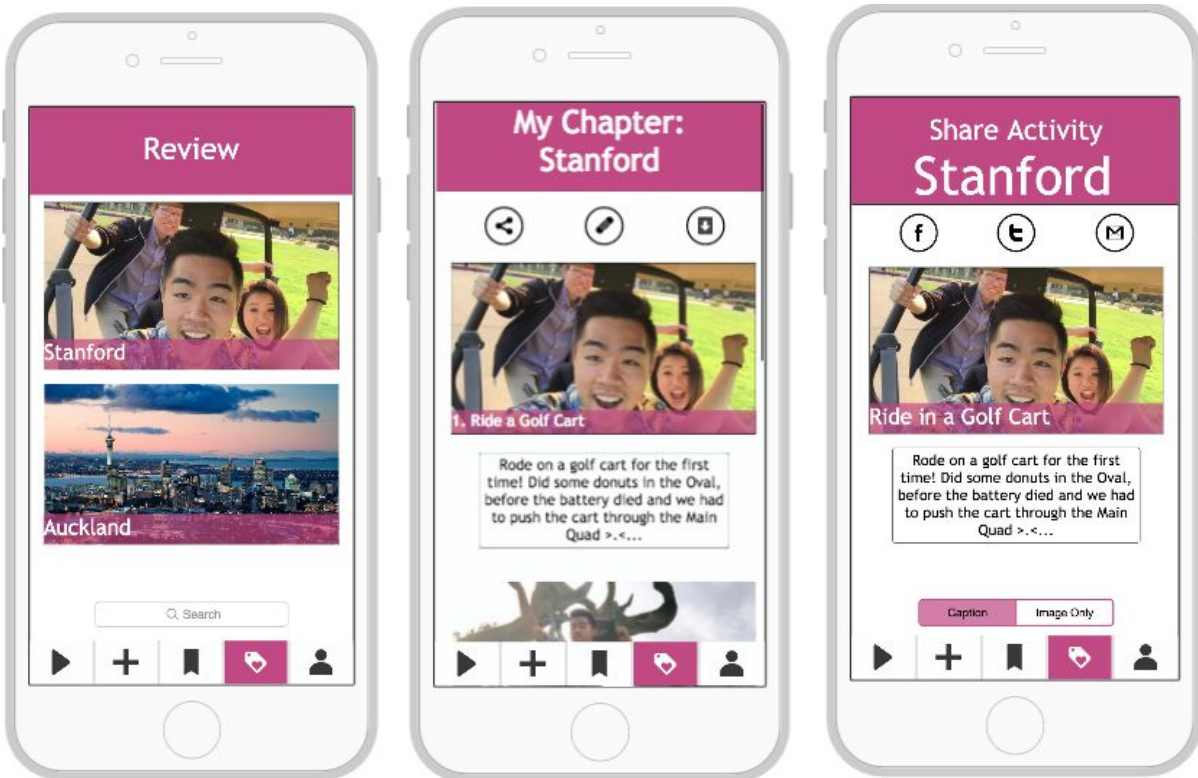
## Medium-Fi Tasks:



Medium-Fi Task 1: Swipe left to move to next activity, swipe right to do activity




Medium-Fi Task 2: Press "Plus" to suggest your own activity



Medium-Fi Task 3: Go back and review your previous Chapters

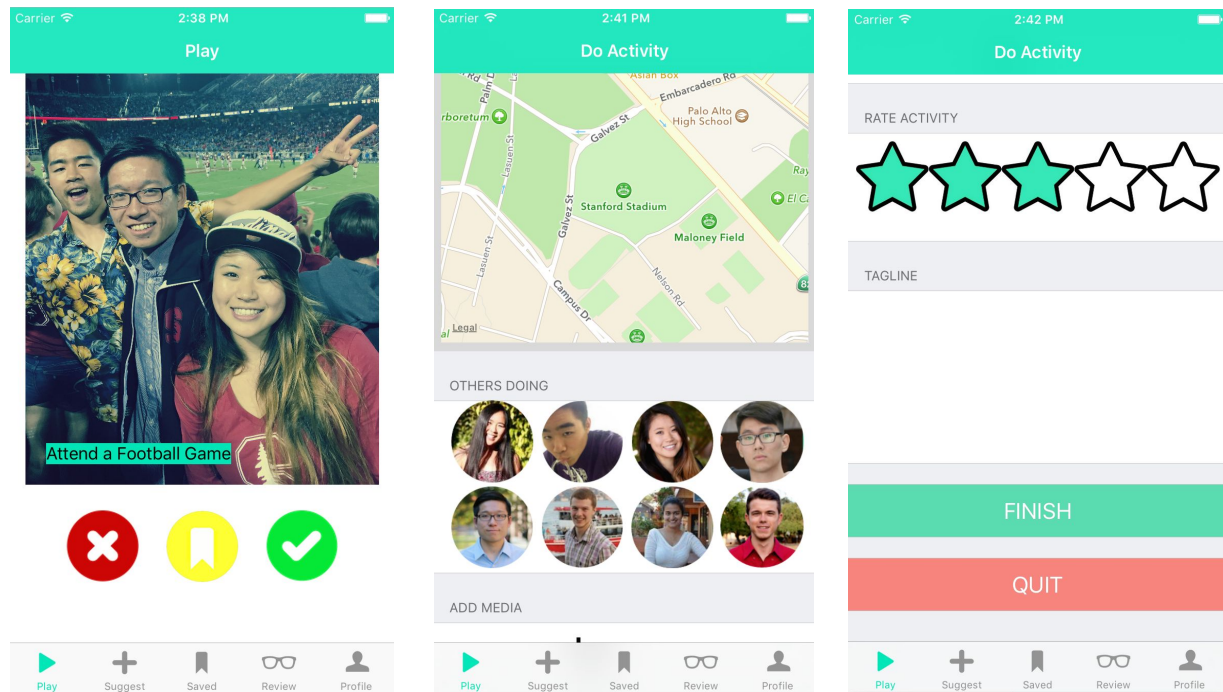
#### Changes made from **Medium-Fi** to **Hi-Fi**:

- Entirely changed the color scheme so that the flow of tasks was more visually intuitive and not as jarring as the Red/Purple color scheme we had before.
- Changed the icons for “Review” to glasses  so that it aligned with our book metaphor that Chapter has.
- We got rid of the Tinder UI of swiping left and right in favor of a simple 3 button layout.

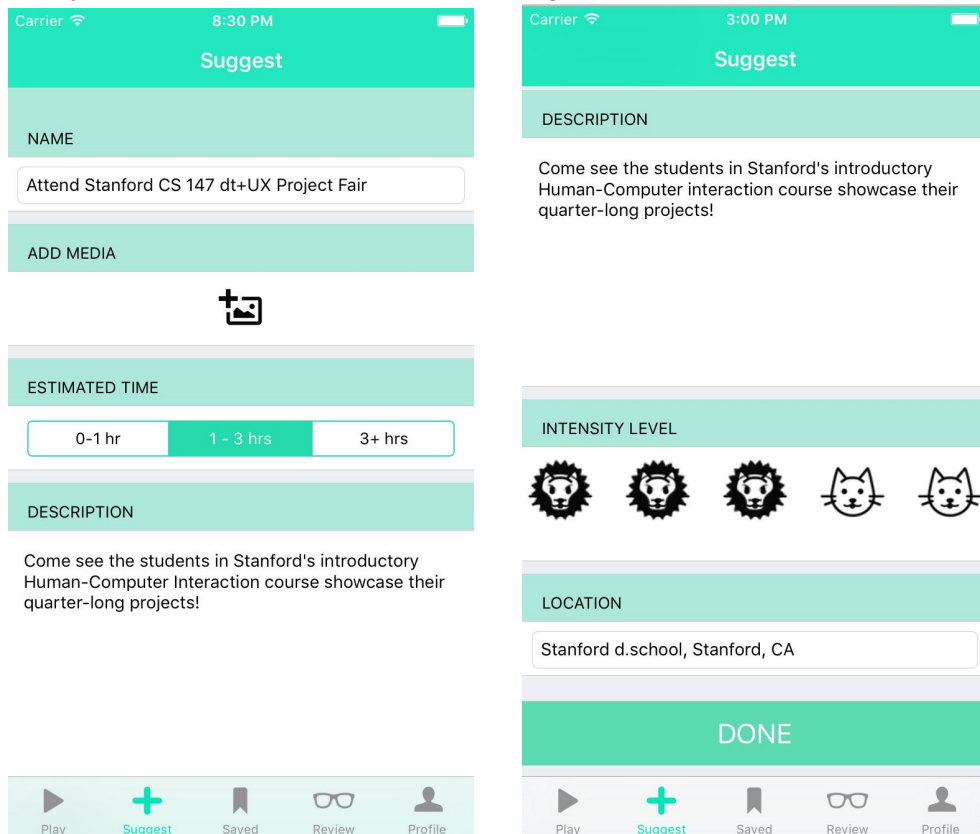


- We also added the ability to get to know more about the activity by tapping on the image itself, and you could also return back to the activity selection screen by tapping on the back icon. This made navigation simple and clean.
- Created a “My Suggestions” pages so that you can see which activities you’ve shared with others. This pages included all the data such as the reviews and images associated with the activities.

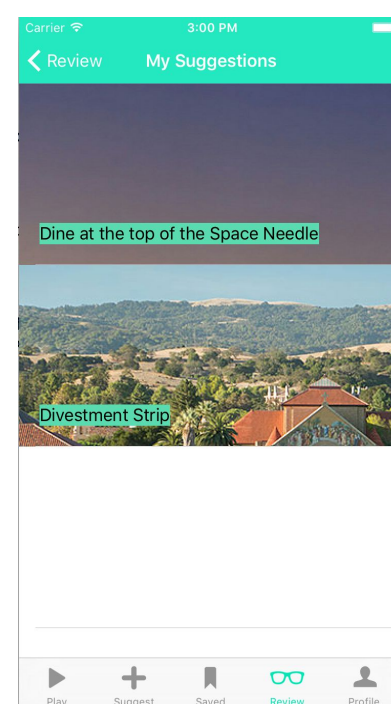
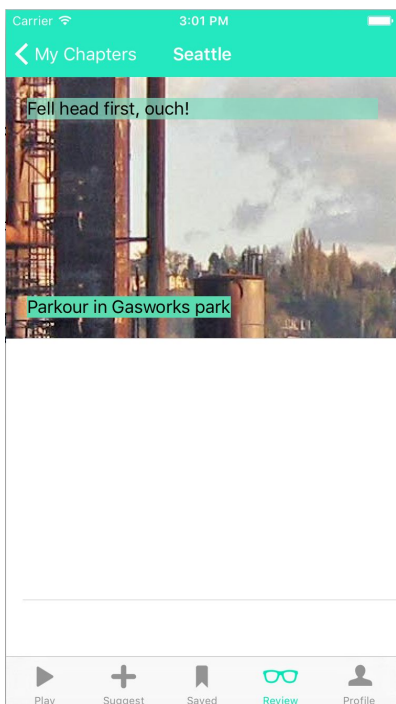
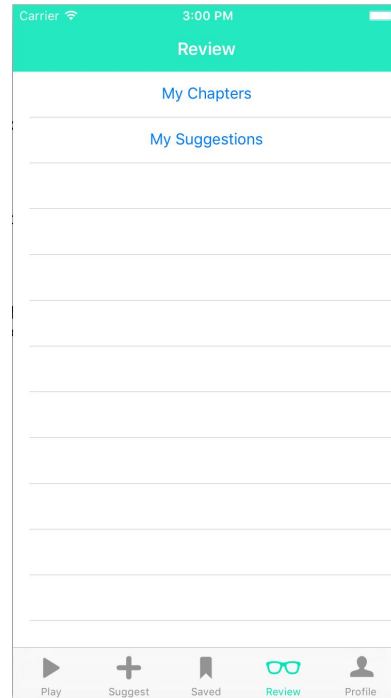
## Hi-Fi Tasks:



High-Fi Task 1: Press “X” to move to next activity, “Bookmark” to save for later, or “Check” to do the activity. You can also tap on the picture to get more information about the activity.



High-Fi Task 2: Press the “+ Suggest” button to share your own activities with others



High-Fi Task 3: Review “My Chapters” as well as “My Suggestions”



## V. Major Usability Problems Addressed

### For reference: Severity 3

2, 18, 19, 20, 25, 34, 36, 38, 39, 43

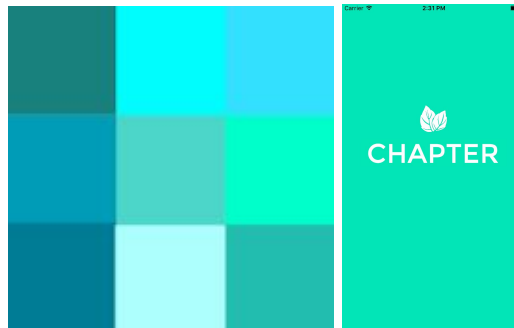
\*There were no level 4 heuristic violations that need to be addressed.

### 2. Violation: [H2-8: Aesthetic & Minimalist Design]

The “Review” section is purple, while the rest of the app is red themed. The purple and red clash, would rather see a complementary color scheme or just one main color. Use both colors in each screen.

#### Action:

Go back to the color wheel and reimagine the emotion & mood that the app aimed to convey. Realizing that not only were red and purple too close on the color wheel to be able to be effective, but perhaps another color would be able to completely embody the product better. Looking into the complementary colors, we considered red and cyan to be potential colors, and in the end decided to have one unifying color closer to the cyan ( #00e6b8) color. The cyan color combines green and blue, which is able to visually show the balance of adventurous and “down to earth”.



*Left: The cyan gradient we looked at, and ended up moving forward with the shade similar to the one on in the middle right.*

*Right: Final color we decided to go with for the app.*

### 18. Violation: [H2-3: User Control & Freedom]

There should be a way to set my status as “doing the activity” and committing me to it. The way it’s currently set up, I can noncommittally look at “Others keen” and then just go to the next activity. At the very least there should be some kind of “Accept this activity” option, which locks their discovery capabilities until they say “Completed activity” or “Trying a new activity.”

Otherwise, I don’t feel committed to doing anything, or even trying to do anything.

#### Action:

The aspect of “committing” to an event was an important violation to consider. By allowing the user to view the information relevant to the activity (by clicking the picture), the user is able to make an informed decision. By scraping the Tinder-esque swiping UI and adding an actual “✓”

button (for more detailed explanation and visual representation, see #20), the user is able to make the more straightforward action to start the activity.

### 19. Violation: [H2-7: Flexibility & Efficiency of Use]

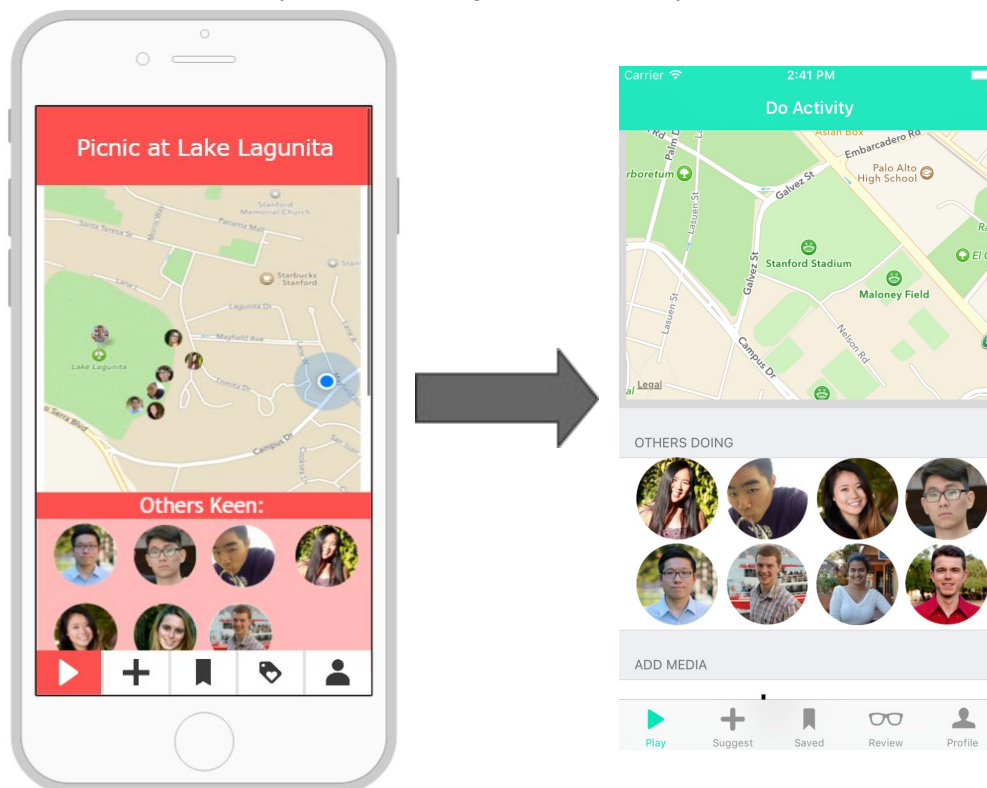
In the Play/Discover/Explore page, I expected the right/left swipes to get me through a list of activities or something. Instead, the right swipe dumps me into a map, which is disorienting. It's disorienting because the immediate thing that I want to see when "liking" an activity is not a map of where everybody else is, but rather a way to do the activity--like a chat for people to ask for help, or a list of crowdsourced directions on how to do it, or a map on how to get to xyz activity.

### 25. Violation: [H2-1: Visibility of Status]

Under the "play" tab, once a page is right-swiped, the user is shown people who have also swiped right as well as a way to post comments, reviews and pictures/videos. The user may be confused about whether he/she has already joined the activity or are just looking at a more detailed screen of the event. Move the "Others Keen" to the previous screen that is being swiped and add a screen, once the user has right swiped, that says that the activity has been added to his/her interested activities, the time and location of the event, and the option to record/review/comment on the experience afterwards. This is similar to Error 19 but a different recommendation.

#### Action:

We disagreed that the first option you should have after starting and activity should be a "chat for people to ask for help", instead we decided to go off of the idea that there should be a dynamic map that would inform you on how to get to the activity.





**No Action:**

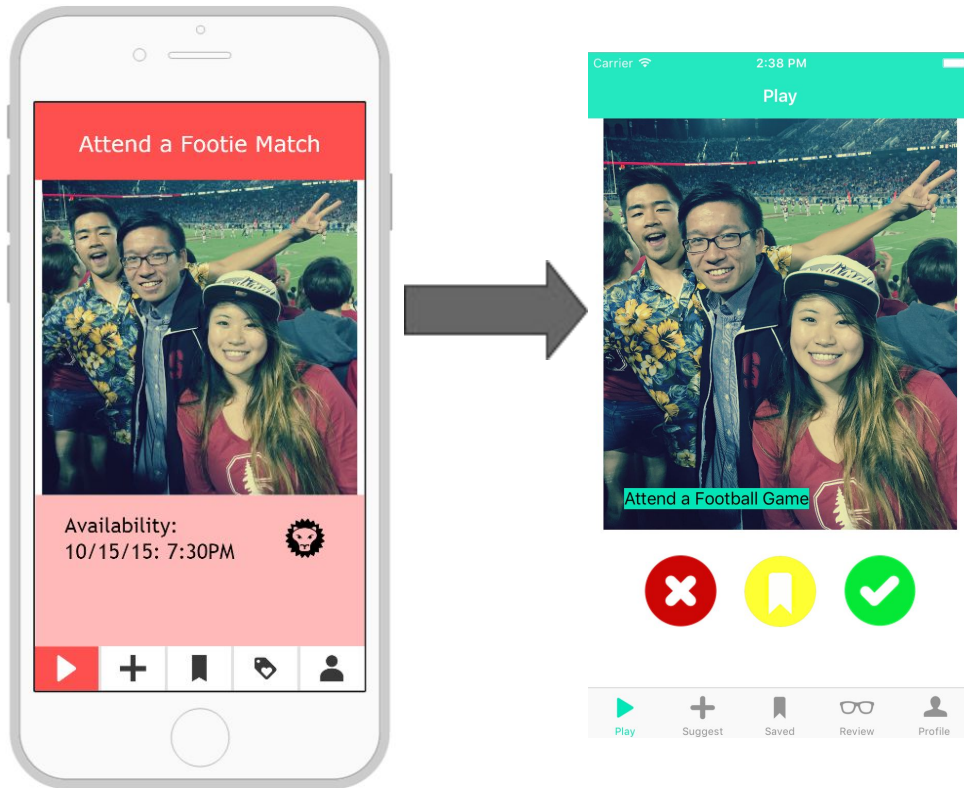
In regards to a chat option, that is something that we would implement if “Other’s Keen” was built out. At this point in time, we hard coded other users in, so the chat option is not included. As for “a list of crowdsourced directions on how to do it”, we saw that this would add a layer of complication and take more time if the user had to parse through a list of possible directions, and the best way to get directions was through the use of dynamic location based directions (Google maps).

**20. Violation: [H2-9: Help Users with Errors]**

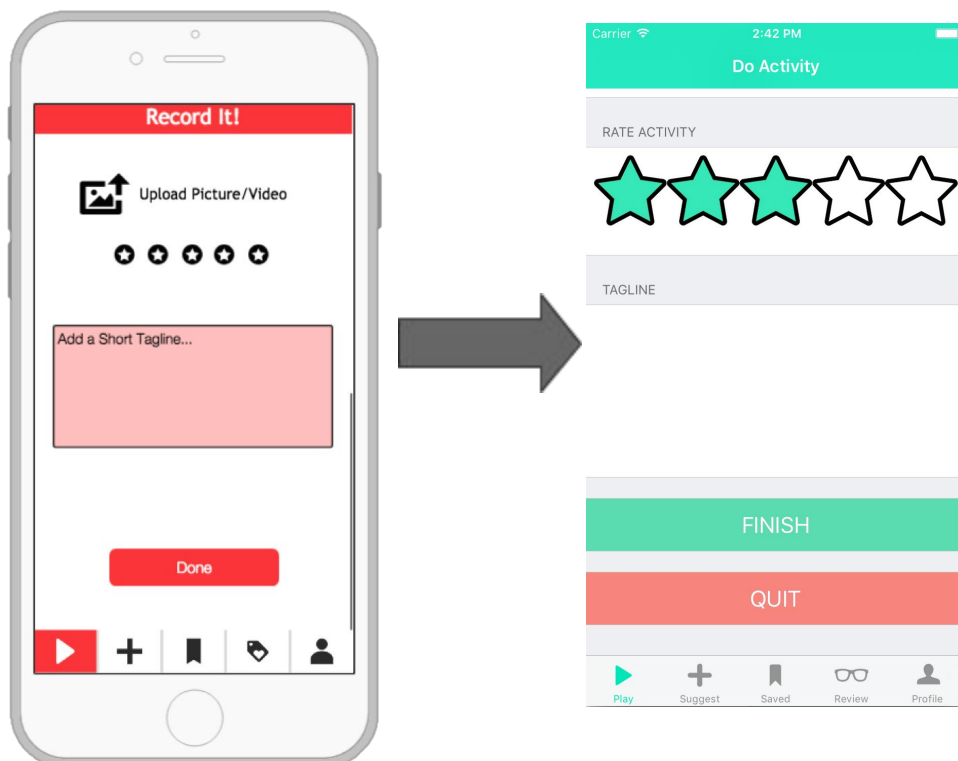
The swipe right design that shows more detail about the activity is non intuitive. I always try to click on the image to pull up more information, before just committing to an activity. It’s weird to swipe in order to see more info. This may be due to the fact that now I have to swipe twice left in order to reject it if I don’t like it, or also the fact that there’s no way for me to say I like this activity if I want to like it. Instead, the swipe right design has lumped together the discover/do function in a way that makes me feel like I have little say in “choosing” this activity. I just feel like I’m kind of stuck in an eternal “discovery” mode without any climactic moment of commitment (one parallel might be how Tinder makes a celebratory card for when you match with someone, thus notifying you of the status update, but here, I’m never really notified about how my actions are resulting in anything).

**Action:**

The original assumption that swiping would be more action-based and intuitive for the user is false. Seeing the strong feedback that swiping was a source of frustration made it clear that we needed to change the UI. We decided to completely eliminate all swiping action, and instead add three main action buttons: red “X”, yellow bookmark, and green “✓”. These buttons gave the user the power to make the decision to commit to a certain action, increased intuitive functions so there is no need for a demo, walkthrough, or learning by trial and error.



Additionally, we decided to add a “Finish” button at the bottom of the activity screen so that the “stuck in eternal ‘discovery’ mode” issue is addressed.



### 34. Violation: [H2-4: Consistency & Standards]

Under the “Play” tab, when recording an activity, the user is allowed to rate the experience. However, the user may want to look back at the rating he/she gave but currently there is no rating available to be seen in the “Review” tab. Add the rating given by the user in the “My Chapters” screen inside the “Review” tab.

#### No Action:

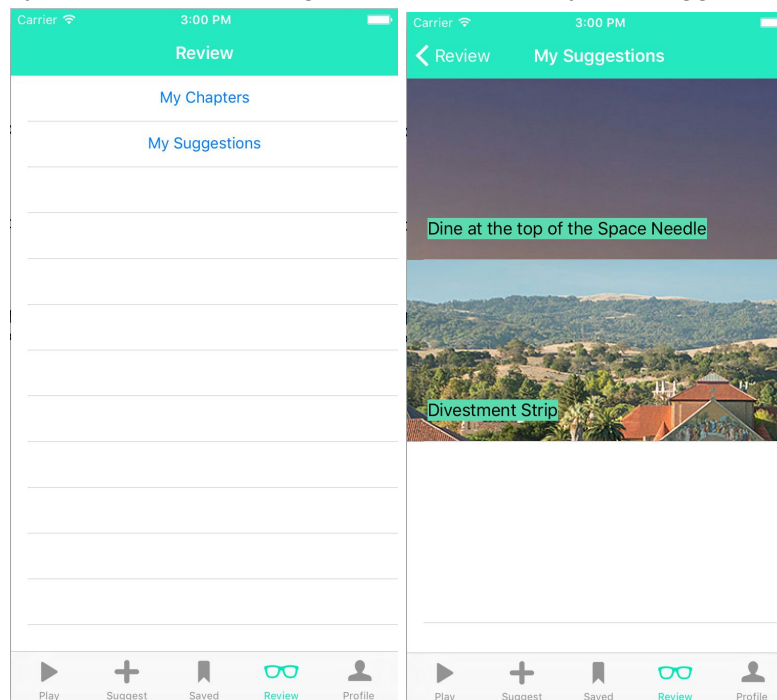
We allowed the user to rate the activity in order for the (would-be built out) system to be able to queue better rated activities, and delete activities that are consistently rated poorly, however we decided that we did not want to include a re-editing function for the activity. The “My Chapters” option in Review allows the user to go back and look through past memories, the point is that these activities are highly rated and would all be a positive (highly rated) activities. If the user did not enjoy the activity, we argue that the user would opt to not complete the activity, instead “Delete” and go back to “Play”.

### 36. Violation: [H2-5: Error Prevention]

After suggesting an activity, there is no way to see/edit parts of the activity if the time/location has changed. A user would be stuck with having suggested an activity that no longer exists or has its details changed. Include a “My Suggestions” screen that includes this functionality.

#### Action:

This was a major oversight by us, and we added the function for users to be able to view and edit their suggestions by going to “Review” -> “My Suggestions”. Allow the user to edit/change/delete this activity. Additionally, if we built out the app, if an activity had a pre-set expiration date OR if the activity had a certain number of <2 star ratings, it will be taken off the queue automatically in order to protect against, false or simply bad suggested activities.



### **38. Violation: [H2-5: Error Prevention]**

In the middle of an activity that the user has right swiped, the activity only appears in that screen but is not saved anywhere to allow the user to come back to the activity if he/she quits the app before doing the activity. The activity should automatically populate the bookmarks page and have an entirely new header just for current activities, to make it explicitly clear for the user.

#### **Action:**

Seeing how it is quite common for activities to be interrupted, we saw how important it was to built out this function in the Bookmark function. This conclusion is reflected in our decision to add a yellow bookmark button as one of the three options in the Play function (see violation #20 for more information). In order to be able to make saving and bookmarking activities more user-friendly, we decided that activities should be saved in the order that you saved them, allowing users to easily access their “unfinished” activities at the top of the page.

### **39. Violation: [H2-3: User Control & Freedom]**

When sharing a certain Chapter on social media or email, the user has no choice to decide which activities he/she wants to share and at the moment, must share everything. The user may only want to share a specific part of the Chapter and may feel less obliged to share because of this. Insert checkboxes beside each activity inside the Chapter Sharing page to allow for a user picked list of shared activities.

#### **No Action:**

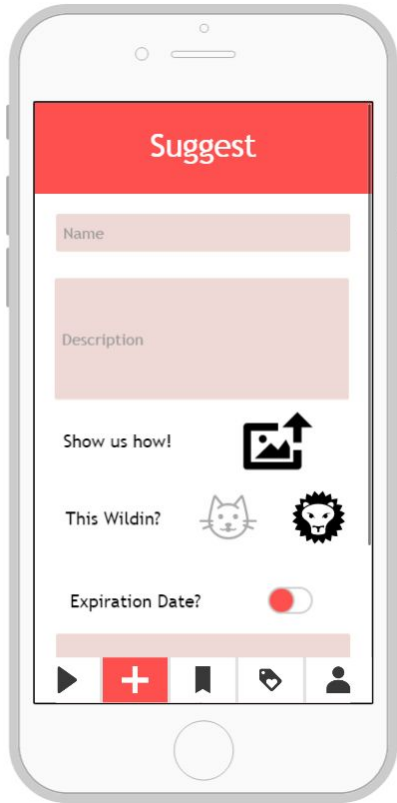
We saw this as an important point to consider, however, since we did not focus on “sharing” as one of our three main tasks, we did not implement any changes suggested. If this function were built out, we would have inserted checkboxes beside each activity inside the Sharing page to allow for a user picked list of shared activities, as well as have added a “Check All” box option at the top of the page to increase flexibility and efficiency of use.

### **43. Violation: [H2-1: Visibility of Status]**

When viewing activities, users have no way of knowing how long it will take. The system should present this information in some sort of natural order, because this is highly relevant to whether or not they will choose to partake in an activity or not. Suggest adding this at all points of the app (users will need to specify approximately how long this kind of activity will take when they create an activity, and so they can also see how long an activity will take when they are presented with suggested ideas).

#### **Action:**

We saw this as an important fix, and decided to add a “Time to Complete” approximation as a required part of when you “Suggest” (Figure 1) an activity and on the Info screen option before “Start Activity” (Figure 2).



Carrier
8:30 PM
Suggest

NAME
Attend Stanford CS 147 dt+UX Project Fair

ADD MEDIA

ESTIMATED TIME
0-1 hr 1 - 3 hrs 3+ hrs

DESCRIPTION
Come see the students in Stanford's introductory Human-Computer Interaction course showcase their quarter-long projects!

Play Suggest Saved Review Profile

Carrier
3:00 PM
Suggest

DESCRIPTION
Come see the students in Stanford's introductory Human-Computer interaction course showcase their quarter-long projects!

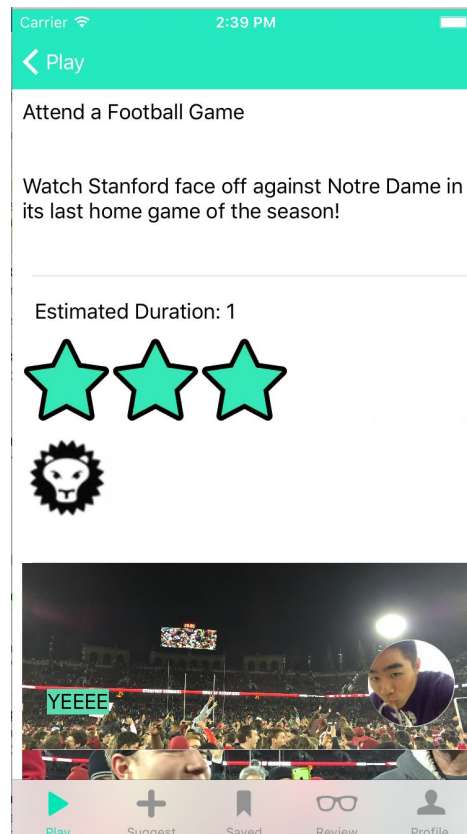
INTENSITY LEVEL

LOCATION
Stanford d.school, Stanford, CA

DONE

Play Suggest Saved Review Profile

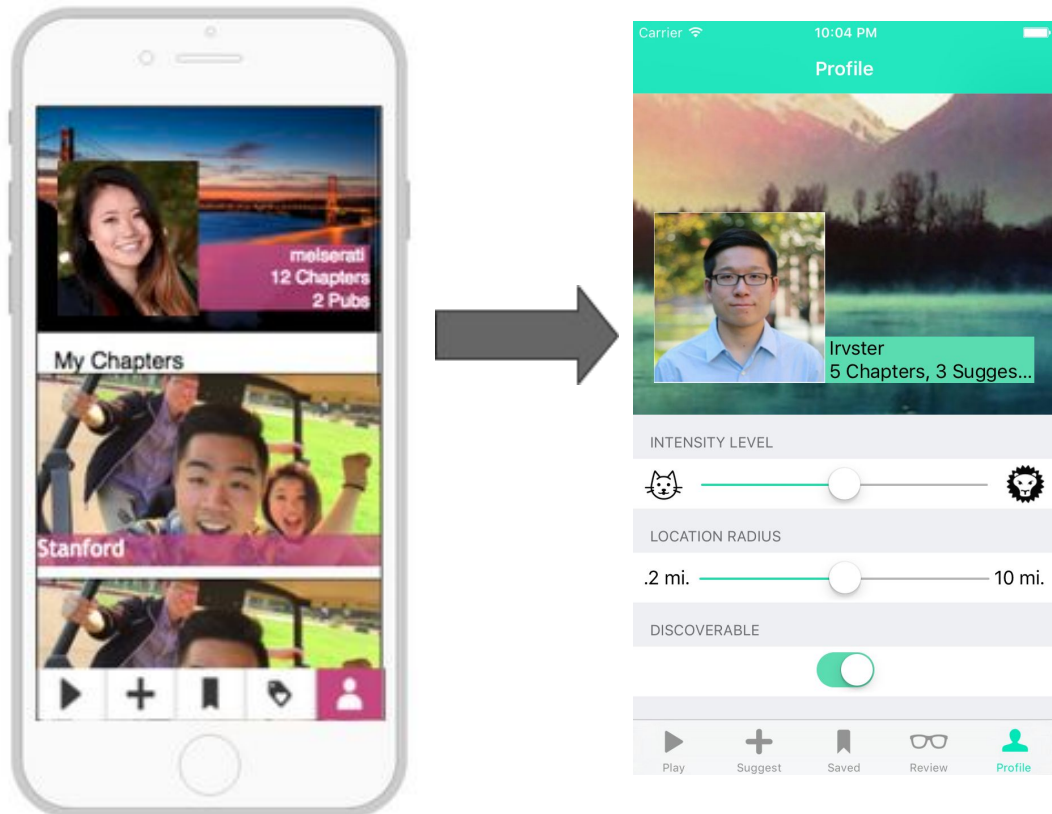
Above: Figure 1  
Below: Figure 2



## Additional Change:

### Profile Page:

Additional heuristic violations noted that Profile page could be changed to be more intuitive. This ranged from language to content, and we redesigned the page so that it was more of a personal preference page, and moved the “My Chapters” content to the Review page since that made more sense. Changing the language from “Pubs” (short for Publications) to “Suggestions” was to make it more straightforward for users, and relatable to the rest of the app.





## VI. Prototype Implementation

For our hi-fidelity prototype implementation, we used Xcode, the standard integrated development environment used for creating native iOS applications. As of this writing, we used the latest version of Xcode (7.1.1) to date, and developed the application in Swift.

In Xcode, Storyboards allow developers to interactively and visually design user interfaces by creating independent screens and connecting them with *segues*, which are transitions from one screen to another. Storyboards greatly helped our development, since they allowed for us to intuitively design and create the user interface while keeping manual UI code to a minimum. The process of adding screens, buttons, and other UI elements was greatly simplified by the built-in Object, Media, Code Snippet, and File Template libraries. Furthermore, the Storyboard allowed for us to iterate quickly on the UI, since changes we made didn't require the app to be re-compiled and re-run.

However, Storyboards are limited because they do not require significant amounts of code. Certain aspects of our app, such as suggesting an activity, had to be done by manually creating a makeshift database and appending to it. We also had to define an Activity class to keep track of different properties of an activity, including name, description, image, intensity, time to complete, location, and rating. Perhaps the largest limitation of using the Storyboard is that it was extremely difficult to parallelize work. Xcode keeps track of the exact state of the Storyboard, so every action - scrolling, zooming in/out, clicking, etc. - gets recorded in the UserState and Storyboard files. Thus, at any given time, only one person was able to touch the Storyboard in order to prevent conflicts / race conditions on Git, which we used for version control. Lastly, the layout system on iOS (AutoLayout) was not immediately intuitive, and required very careful planning and consideration to ensure that UI constraints are set correctly. Otherwise, the UI of the application would look incorrect during runtime.

To simplify implementation, we employed some techniques to still showcase the app without a full backend. First of all, because we used only a few Play activities, when a user plays through these activities, he/she will then be brought to the same activities again. Ideally, the app would have many Play activities such that no user will actually finish playing through all of them. When the user accepts the activity (clicks the green check) in the Play screen, he/she is brought to the Doing Activity screen, which shows a map, Others Doing, etc. The map currently is set to an arbitrary location, and the profile pictures in Others Doing are all hard-coded. Ideally, a user could click on the profile icon and see a profile. The rating in the Doing Activity screen is also for show, while the rating displayed with an Activity is hard-coded.

With regards to Wizard of Oz techniques, we currently assume that the user is by default at Stanford. Ideally, the app would be location-sensitive and suggest activities for the user to do based on his or her present location. Furthermore, the profile page currently suggests Chapter will use those parameters to give better tailored events. That is the ideal case, and currently we simply use the same list of a few Activities for users to play through.

For future work, we identified a few major features that we would like to eventually support. In our current implementation, we do not support real-time messaging between different users. Thus, users who are considering an activity cannot chat with users currently doing the activity, and users doing an activity cannot chat with other users who are also doing it. Additionally, we have not yet implemented the ability for users to share selected activities within their Chapters to other users through social media (Facebook, Twitter, etc.). Although this was not one of our three tasks, this would be an interesting and important feature to implement in the future with a large user base. For social networking, we currently have a user profile proof-of-concept through the Profile button the navbar.

## VII. Summary

Throughout the quarter-long process of Ideating, Designing, and Prototyping, we learned that the best ideas for products/applications take a long time to actually come to fruition. The idea for Chapter had a very humble beginning - we wanted to find cool things we could do anywhere we go. Through various usability tests, heuristic evaluations, and gradually producing higher-quality prototypes, we were able to define and shape the User Interface and refine our product to what it is now. Some of the changes we made include changing our color scheme from Red/Purple to Light Green, completely overhauling our UI for selecting an activity, and introducing more intuitive icons and task flows. These are only a couple of the changes made to the app Chapter during each iteration of design, and we believe that the app can be further refined and improved with more time and experience.

