University of Southern California
CSCI 588
Specifications and Design of User Interface Software

USCLife

~ A mobile app for USC students to discover, join, and track local events ~

Team Members

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Project Status Change

1) Is there anything changed from your original proposal and /or analysis report?

Yes.

2) If answer "Yes", clearly state what has been changed.

Approach: We changed our approach from making the 2D geospatial map the main focal point In our original proposal, our application's main focal point was a 2D spatial map that displayed all the events occurring at or around USC. Because this could easily clutter a small screen, we changed our approach to display events in a list and give users the option to view the events on the map. We have also added an additional search functionality to our application to make it easier for users to search through friends, locations, and events. This will help users to filter events they are interested by simply entering the keywords for that particular event, or pressing a button to change a category.

Prototype platform: We are no longer using PhoneGap to code the app, but are instead using a combination of jQuery Mobile, HTML, & CSS.

3) Have you finished all the tasks that you targeted in your original proposal and/or progress report?

No.

4) If answer "No", clearly state what has been changed.

Implementation: In our original target, we aimed to create an actual implementation of our application using PhoneGap. However, at this point, we have a fully fleshed out design idea, and a decent implementation close to what we imagined.

1. Project Objectives

- Create a mobile application that allows USC students to quickly and easily see and join events going on around the campus
- Increase student awareness of local events and foster friendships in the USC community
- Have a list displaying event locations to provide users with an overview of what is happening around campus
- Learn the Eight Golden Rules for good UI design by using them in our project

2. Problem Statement

It is very difficult to keep up with all the events, career fairs, tech talks, organization events etc. occurring every day throughout USC. Current ways to receive details regarding campus events include Facebook, emails, and word-of-mouth. However, the information presented in these forms still remains vague and cannot be found in a single, cohesive, and comprehensive location. USCLife attempts to rectify this by providing users with a sole source that allows them to easily view all events occurring around the university. Users can sort events by type (sporting, academic, dining, etc.) and time (today, tomorrow, one month from now, etc.). Clicking on a event will provide users with further information about it, including its participants and a discussion forum where users can make comments or direct questions.

Additionally, USCLife provides a platform for students to create their own events without any restriction. For example, if you would like to find someone to play basketball with in the afternoon, you may need to be an administrator of a student basketball club to be able to launch this event. Moreover, your members may not be free the same afternoon you are available. With USCLife you can create a new sports event, add the number of people you want to come join, and meet new friends who like to play basketball just like you. Vise versa, if you randomly decide you would like to play basketball, USCLife presents an ideal solution for you to check if there is a basketball game occurring around you.

3. System Analysis, Design, & Development

Task Analysis

Our target users are new students who have just arrived at USC. These students are fresh; they may not have many friends yet and may be willing to explore new events and meet new people around them. Additionally, users who would like to have an organized view of all USC events are also a target demographic. These are the reasons why we strived to make every task in USCLife quickly and easily performable. Tasks such as creating an event have a clear path from the beginning to the end that the user is made aware of. We want users to be able to be able to

acclimate to the system very easily, so that they may quickly begin joining events around campus.

Usability & Design

We made USCLife while keeping all Eight Golden Rules of UI Design in mind. Below is an overview of how our design followed each rule:

1. **Strive for consistency**
   We kept all fonts and colors consistent amongst every screen, and our Profile and Event creation screens have a similar feeling to a finished Profile and Event screen. Additionally, any tasks common to many applications, such as creating a profile and adding friends, we followed the same ideal so as not to confuse the user with any sort of unpredictability.

2. **Cater to universal usability**
   Instead of just providing text buttons, almost all of our buttons are icons with small images on them metaphorically representing the task that button performs (**Figure 1**). This helps our application's usability, as pictures may be easier to understand than words. It also accentuates the look and feel of each page by providing a better visual design.
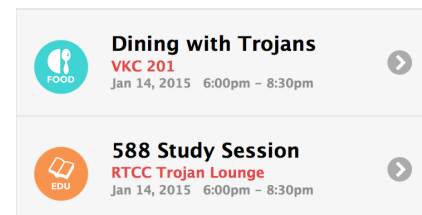

Figure 1: Two event icons

3. **Offer informative feedback**
   The Create Events page is divided into a number of steps and the progress bar (**Figure 2**) provides the user with informative feedback regarding where they are in the process. This helps user to focus on the current page which they are filling out and less about how long it will take. Additionally, we provide a thank you screen at the end of our create event page to let the user know their event was correctly created and submitted.

   We also added a pop-up to display messages to user when they perform a critical task in our application. This gives the user confidence in the task they are completing, and lets them know they can confidently proceed to the next event. In addition, it provides them with a sense of satisfaction and content at each stage of application.
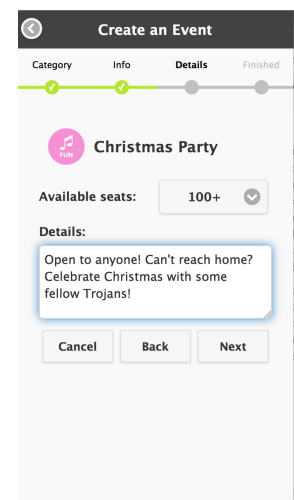

Figure 2: Progress meter on top of the page

4. Design dialogs to yield closure

To give the users closure, there will be a notification system that will notify users when they create an event, join an event, update their profile, and add or remove friends (**Figure 3**). We have also added pop-up alerts to give users positive and negative feedbacks.

Figure 3: Alert to make sure user wants to delete friend

5. Prevent Errors

We limited the number of text fields in the create event and create profile pages to prevent users from making typing errors. For example, choosing the date of an event brings up a calendar selector (**Figure 4**), and choosing the time brings up a combobox time widget. Additionally, we provided the user with dropdown lists instead input boxes, where we could, to prevent differences amongst the same input, e.g. one user types CS as their major, a second types Comp Sci, and a third types Computer Science. Lastly, to avoid mistakes when a user enters text into a field, we added validation rules, such as rules checking e-mail, password, and telephone number formats.

Figure 4: Calendar to correctly input dates

6. Permit easy reversal of actions

Users have the option to return to the previous page by clicking on the back icon that is present on every page. Clicking on the back button during the event creation pages will take the user back to the previous page with all of their information still in the correct fields, and the progress meter is updated accordingly.

7. Support internal locus of control

By providing an easily accessible menu, frequent back buttons, and the ability to search events by category, date, time, and content, we give users the control they need to fully tailor the app to their preferences.

8. Reduce short-term memory load

The sequence of steps involved for the users to view, create and join events in any specific category are all the same, short and simple. Additionally, before submission, we also present the user with an
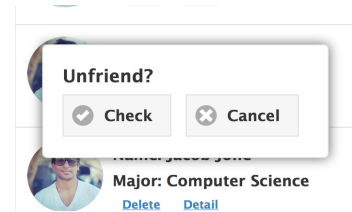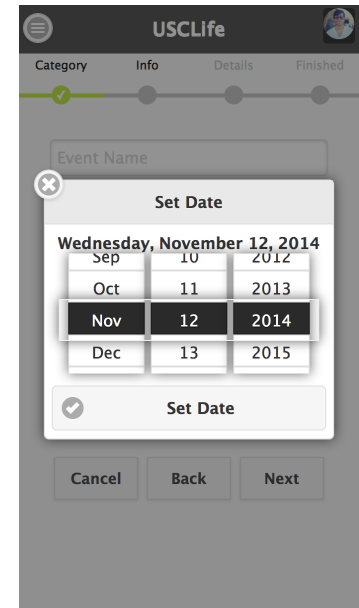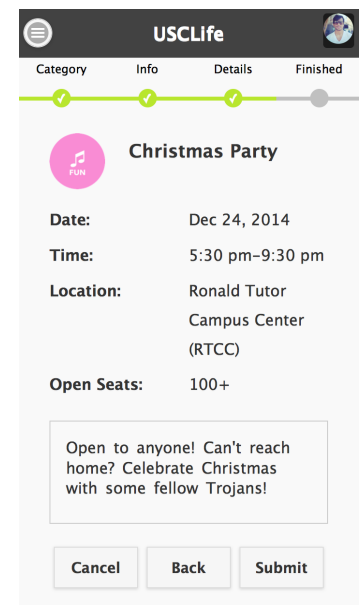

Figure 5: Event details are summarized before submission

overview of the information they just inserted so that they do not have to remember all the text they imputed (**Figure 5**).

Lo-fi & Hi-fi Prototyping

We first went through lo-fi prototyping with our design, using a whiteboard and paper drawings. This helped us understand the best way to implement the 2D geospatial map. For example, originally, the map was the app's primary feature and contained icons for every event at every location. We quickly saw that this would create problems on a mobile screen if too many events were clustered around the same location; users may accidentally tap multiple events on the screen when they were really trying to tap one. To rectify this, we made the map a secondary feature of our app and instead decided to take a list-based approach. Users will first be presented with a list of events that they can filter by category (academic, sports, dining, etc), date, and time if they choose. Once a user clicks on an event, they are brought to that event's Details page. It is on this details page that the user is presented with a map of the event's location. We found that doing it this way worked best on a mobile screen. Lo-fi prototyping allowed us to efficiently identify usability problems and find solutions.

The second stage was bringing our paper prototype to life in Balsamiq. We were able to get a much clearer idea of how the pages would fit together this way. The third stage was a picture design of a screen. This allowed us to see what color we wanted to use to offer the best user experience. Lastly, came our hi-fi prototype, our basic implementation.

Our hi-fi implementation provides the basis for USCLife's functionality. It uses HTML, CSS, & jQuery, and gives us a chance to pose usability questions and addressed how we can improve our final project. However, although it is a working implementation, it is still requires more design elements from our prototype to be a finished product. See **Figure 6** for our full process.

Figure 6: The creation process: 1. Paper 2. Balsamiq 3. Photoshop 4. Implementation (HTML, CSS, jQuery)

4. System Functionality

Functionalities - Screenshots of all the functionalities can be viewed in Appendix A

- **View events**: The system allows users to view events going on around USC. These events can be sorted by six categories: All, Academic, Sports, Dining, Fun, & Shopping and searched through using a textual search box
    - A user can also view: My Events, Recommended Events, and Event History
- **Create events**: Users can create new events by clicking on the "Create New Event" button. They will then be guided through four short screens allowing them to customize their event. Only users who have created a profile can create an event.
- **Create profile**: Users can create their profile by clicking on the profile icon at the top-right corner of the screen. Similarly to the create events page, the create profile page directs the user from the beginning of the process to the end. The user is not prompted to create a profile until they attempt to add, watch, or create an event, or add friends.
- **Add friends**: Users can add friends and view other user's profile. On other user's profiles, they will be able to view the events that person is attending and has attended in the past, as well as the profile settings that person made public
- **Notifications**: Phone alerts and notifications provide fast feedback if an event location or time changes

System Requirements

At its current stage, USCLife is a website designed for a mobile-sized screen. As such, users will need a working internet connect and an internet browser on their devices. In the future, we hope to make USCLife a downloadable mobile application available to run on iOS, Android, and Windows phone operating systems.

Limitations

Because we designed this app specifically for USC students, the lists are optimized to show events only occurring around the USC area. Therefore, when creating an event, users are limited to predefined areas on and around USC. Although this list is thorough, we would ideally like to allow users to create events at any location of their choosing. Perhaps if this app is taken further, we will expand upon this idea.

5. Results and User Evaluation

To improve our application's user experience, we took feedback about the prototype's UI from:

- Dr. Massoud Ghyam, the class professor
- Mahdi Azmandian, the class TA
- Friends who viewed the design on Balsamiq

Based on the results we created evolutionary prototypes for our system and came up with the final product.

Eg:

- The professor pointed out that the icons were small on our front page. We improved the designing by incorporating a scroll functionality in the user-interface and made the icons bigger.
- As per feedback given by the professor, we removed the search bar from pages where it was not needed and allowed users toggle its visibility on pages where it could be used.
- Initially for the create event page, the user had to fill out all the details in a single page, but this was troublesome for our friends to use. To improve the design, the create event pages were separated into a number of steps. This feature was appreciated by the users.

We also performed some unit testing for our system to check if our application manages all kind of input.

Eg:

- We purposely left some fields in the create event page empty. When trying to submit the event, an error pop-up was displayed successfully.
- The app allows users to create events only on the present day or the days to follow, and we tested to check if the system would take an earlier date as input. The system correctly restricted the user from doing so.
- When logging in, the compulsory fields are clearly marked and the form is only submitted when these fields are filled.

6. Conclusion

USCLife will change the way USC students discover, join, and interact with events on campus. Using the app, students will be able to navigate through events, visually seeing where they are located in campus (which specific USC buildings) or where they are off-campus (grocery shopping areas, such as Ralphs). It would no longer be necessary for users to copy an address and paste it into Google Maps to see its exact location; they can now view an event and join it in one easy step. Additionally, push notifications will provide an easy way to notify all participants of an event of any changes, such as time or location changes. With USCLife's additional features, such as user profiles, friend lists, and event creation, we link students not only to academic, sporting, and musical events but to a host of new people and new friends.

7. Comments/Issues/Complaints/Suggestions

Learning Experience:

- Importance of lo-fi prototyping: Creating the user documentation and low-fi prototyping with our conceptual design helped us to cater a clear idea as how to proceed. It also helped us complete our work way ahead of time.
- Mastering the Eight Golden Rules for UI Design: All pages in the application were created following the Eight Golden Rules of UI design, a nd creating the application in this way helped us understand the importance of each rule and how to correctly incorporate it into every design.
- Importance of Requirement Analysis: The work we did to understand the intricacy of UI design made us understand that adding multiple features may make the program buggy, and the we should avoid it as much as possible. Instead, we should prioritize the feature and design our application.
- Feedback: To provide the best user experience, it is important to get regular user feedback for our user-interface prototypes. Regular feedback from the professor, the TA, and fellow Trojans helped us evolve our initial prototype. USCLife is now a functional implementation offering a well-designed UI for the best possible user-experience.
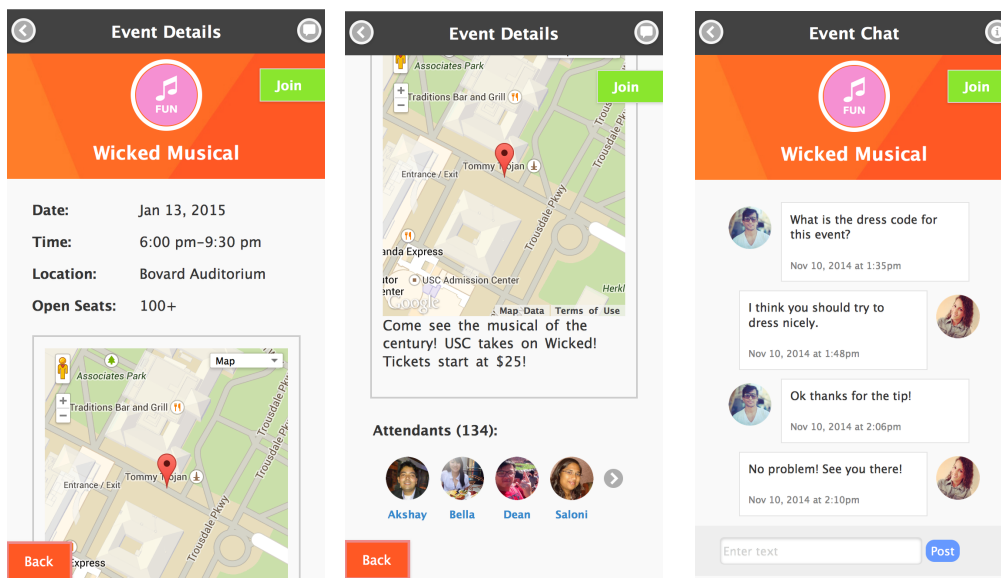
Appendix A: Screenshots of USCLife's Functionality

View Events:
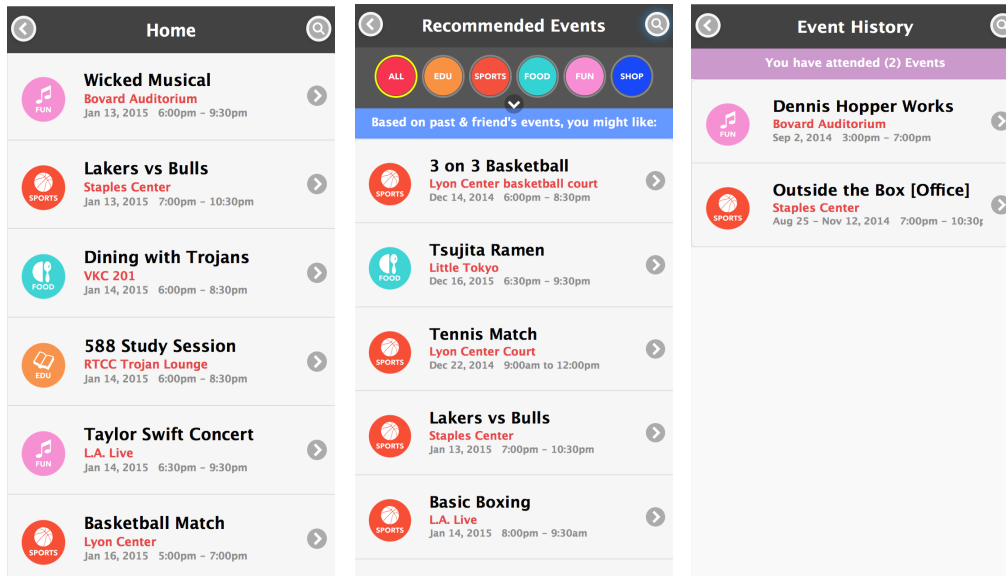
Home, Recommended (compiled based on past events the user attended and events his or her friends attended), Event History. Not pictured: My Events, Upcoming Events
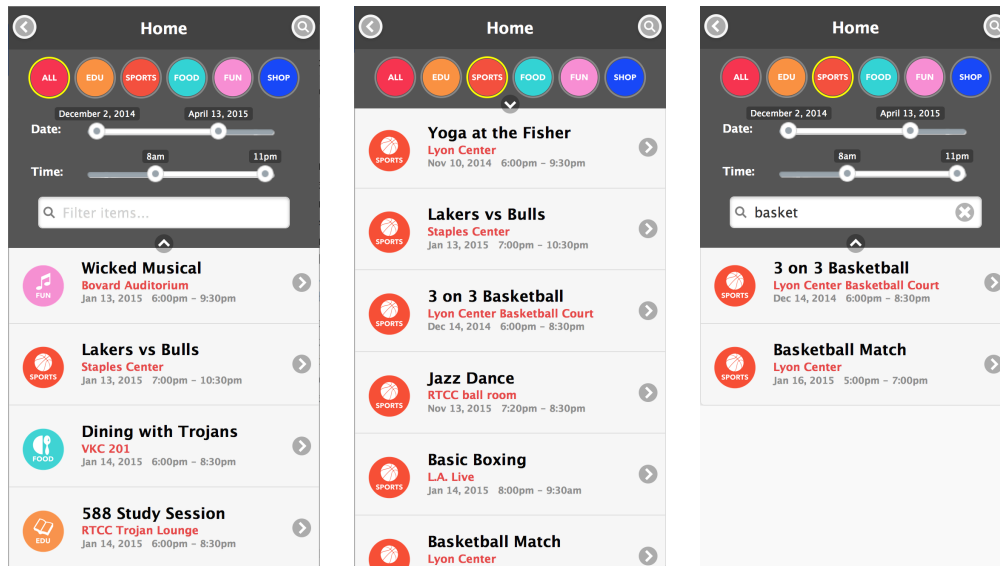
Event Details:

Event Details (includes a Google Map of the event's location & Attendants), Event Chat
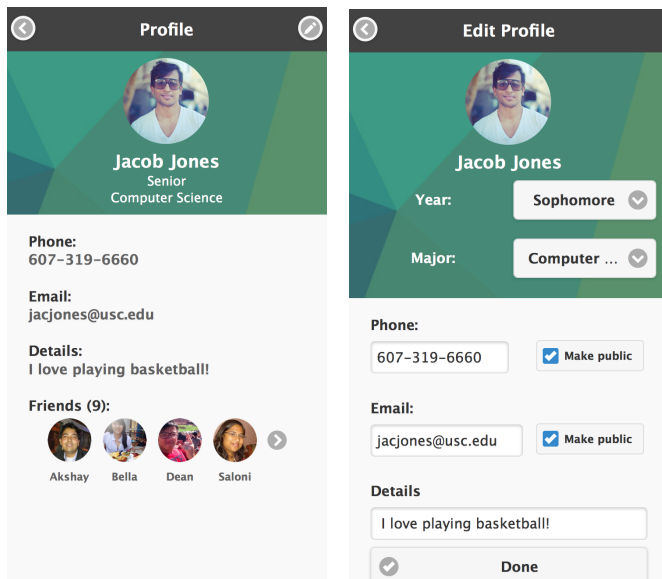
Appendix A (cont)

Search Events:
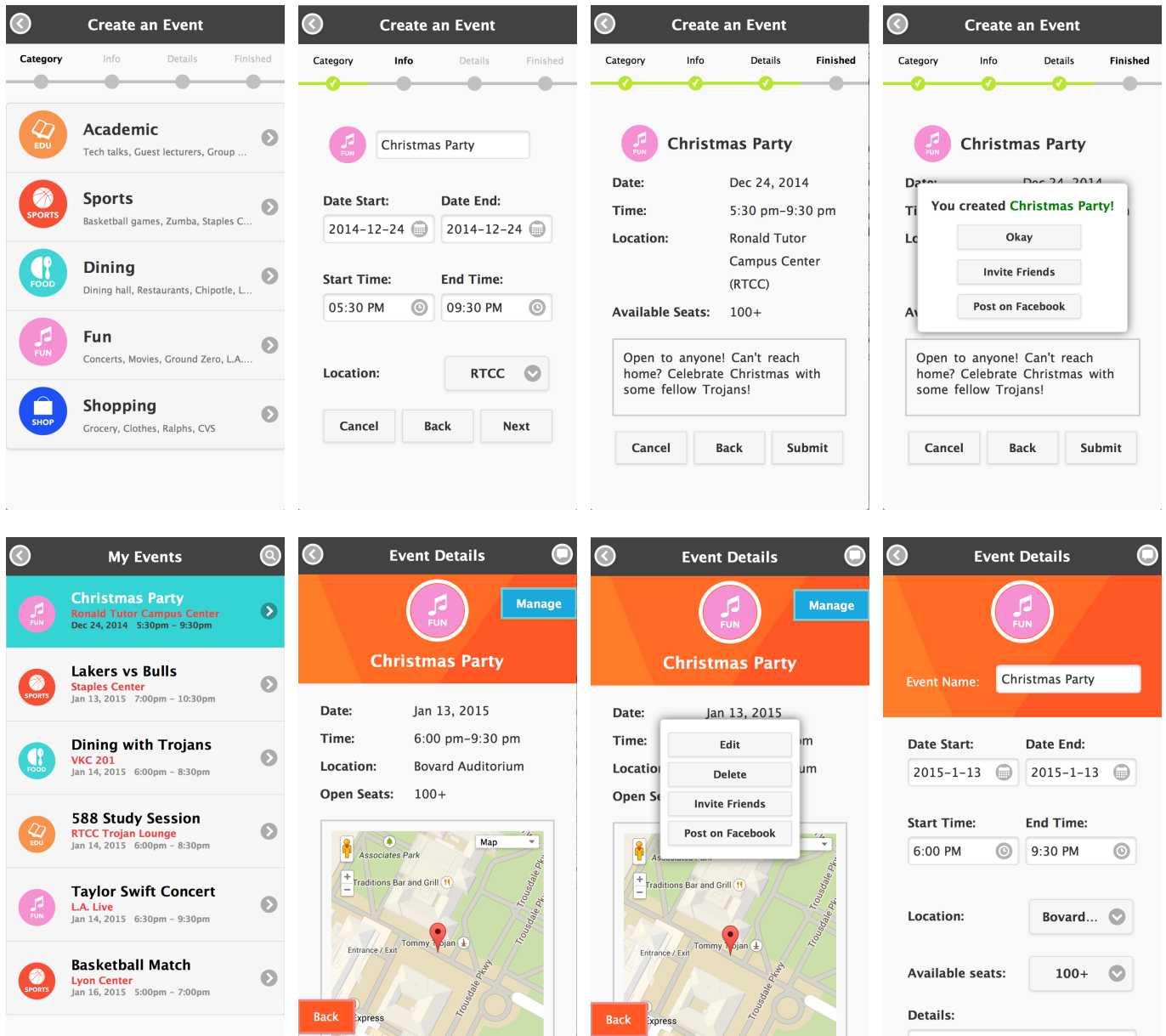

Users can search by Date & Time, Category, and Content

Profile:

Profile page (includes list of friends) and Edit Profile page with the ability to make your phone and email public
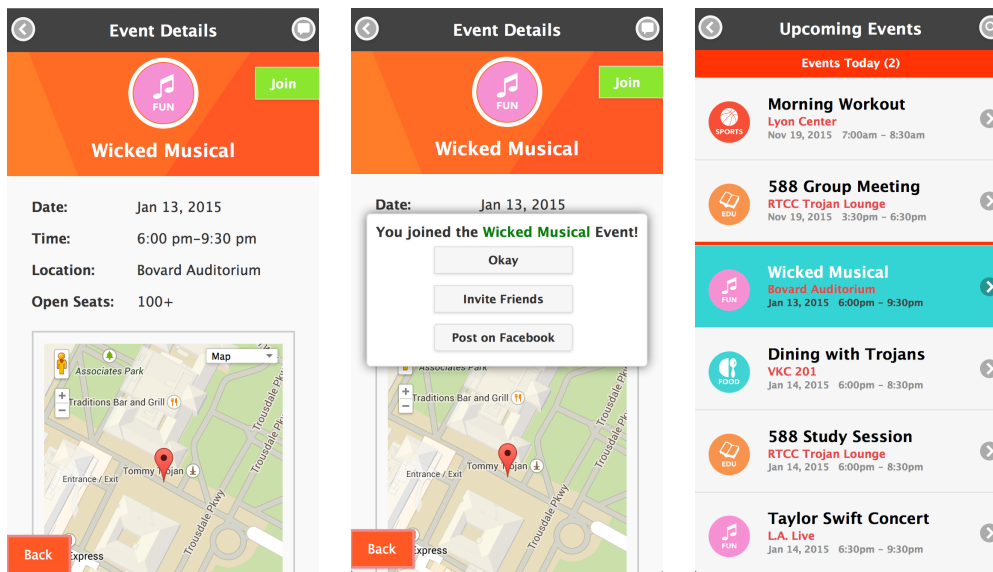
Appendix A (cont)

Create an Event:

Four-page create an event process with progress bar, confirmation page, and pop-up. After an event is created, it is added to the user's My Events page where they can then manage it.
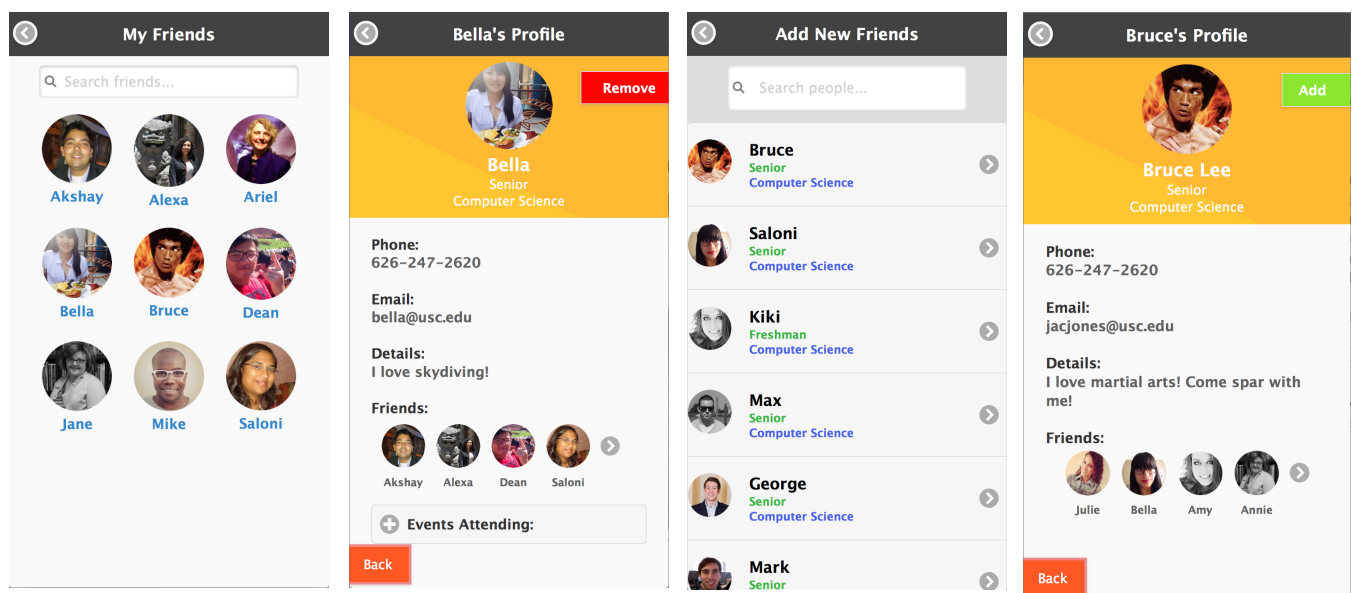
Appendix A (cont)

Join an Event:

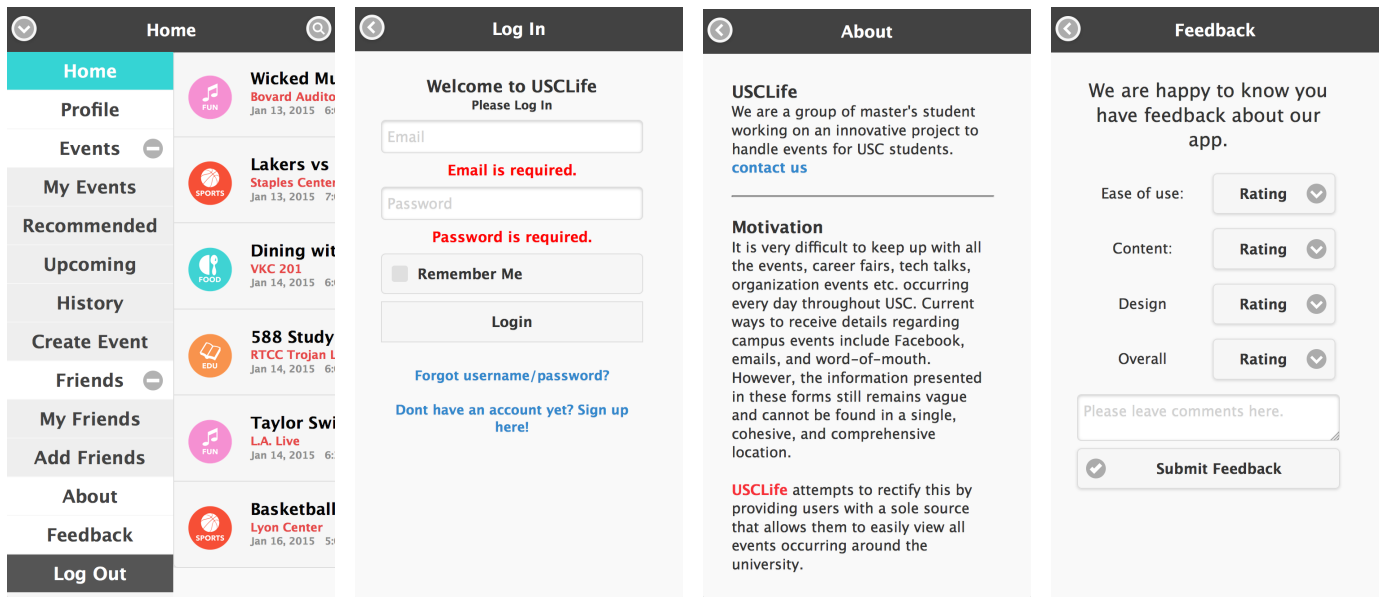Confirmation when joining an event. Once joined, event is added and highlighted in Upcoming Events page

Friends:

My Friends, Friend's profile (with Remove button), Add Friends, User profile (with Add button)

Appendix A (cont)

Miscellaneous:

Menu, Log In (with data validation), About, Feedback