

Interaction Design - SyncUp

Final digital prototype: <http://ktsndl.axshare.com>

Digital prototype demo: <http://youtu.be/TtvID4Bubpc>

Problem statement

With the rapid development of technology, in the UM community, more and more people choose to stay at home in order to stick to computers and other electrical entertainments. Even people who play at the same time, they are most likely to play through the online gaming platforms from independent areas and keep in a small circle of friends. As a result, the face-to-face communications of people in the UM community with different backgrounds is reduced dramatically. An open platform is needed to let UM community people attend more offline activities in order to improve their chance of face-to-face communications and making new friends.

Although sometimes the number of friends matters, but most of the time people care more about the quality of the friends. Therefore, they also need this platform to be an effective way that help make high-quality friends, for example friends with same hobbies, similar academic interests and so on.

What's more, since the schedule openings are more flexible than what people plan ahead, everyone has many scattered free time slots. Most of these time slots have not been fully and meaningfully used. People's interests are different from individual to individual as well. So, the platform should also offer simple filters to the various activity options in order to let users fulfill their schedule openings more personalized and meaningful.

Last but not least, right now, events known by people in the UM community is limited and separate. For example, students tend to know more about events hold by their own schools from emails or newsletters. Most of them don't have broad view on what happen in the whole UM community. They need a comprehensive platform, which gathers all kinds of events from the emails, organization websites and newsletters.

From all above, there is a need to have a comprehensive platform, by which all people in the UM community can find interesting and suitable events to attend. And then they can have more face-to-face communication, make more high-quality new friends and make full use of their schedule openings.

Solution overview

I created a prototype for a mobile application that enable users, who have UM account, to improve community communications, to make high-quality new friends, and to make full use of their schedule openings by finding and attending all kinds of interesting offline events.

Final design description

Functionality

Log in with UMich account:

This is the requirement to use SyncUp.

Connect to Facebook account:

This can give SyncUp users' friends information like their location information.

Search keywords:

Users can drag down the screen to have searching box appeared.

Choose different categories:

Four categories are catered to people as super scholar, recreation mania, networking master and sweet volunteer.

See list view of events ordered by time:

Expired events disappear from the list but they remain in users' own history, so users can still click them to see details.

See map view of events displayed by location:

Users can choose event pins based on the distance from their locations.

See independent event page:

Each event has its own page indicating more details about the event itself. Users can see the location of the event on map and can add the event to their calendar on their phone. Users can also see who else registered to go to this event.

Post tweets on posts deck:

Users can post tweets, reply tweets on the open deck. Contents can be but not limit to event notes, questions, and answers. Users can communicate through this deck before, during and after event. Each event has its own post deck.

Provide or find Carpool:

SyncUp provides carpool option for each event in order to satisfy the carpool need for some events and save the earth. Users can offer carpool for others or join carpool provided by others.

Invite nearby friend:

This allows a user to invite nearby friends to the event he or she feel interested.

Refer friends to come to events makes improving on communications and letting more people join more interesting activities. Inviting friends can activate the whole community.

See my list:

It shows today and future events the user registered, like a reminder. It also shows past events the user attended, like a history archive.

Edit my account:

This allows users to edit their avatar, username and contact information, to connect or disconnect to their Facebook account.

Design flow

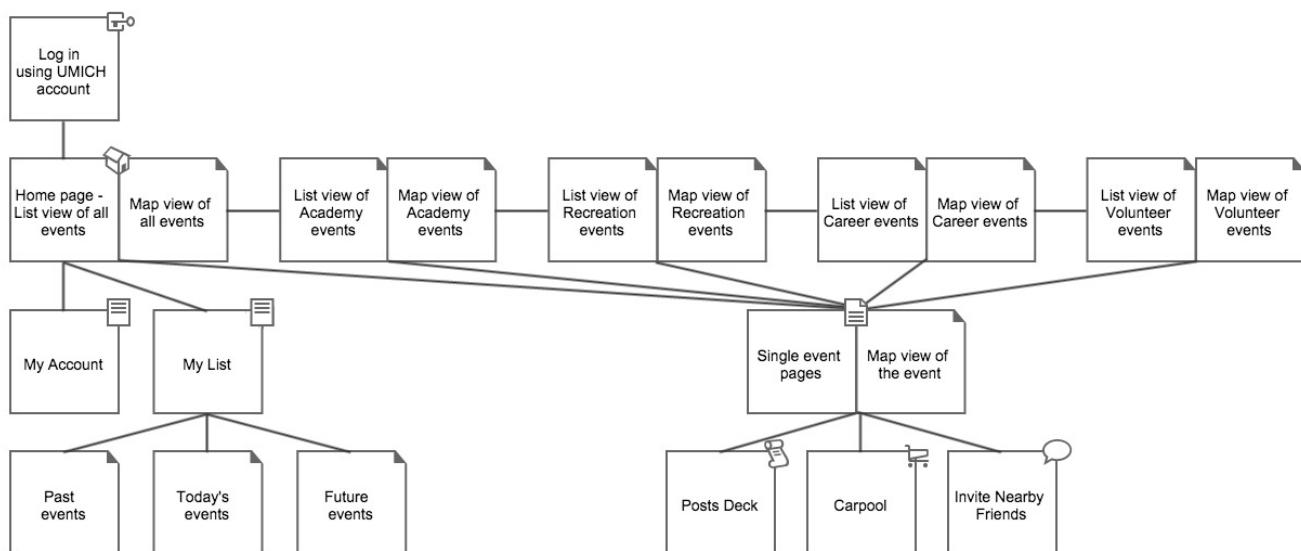


Figure 1 – Design Flow

Main parts of the design flow are list view of events, map view of events, event pages, event function pages and user's pages. (Figure 1)

After logging in, the home page is the list view of all events ordered by time. Users can go to map view of these events and go back to list view. Users can filter these events by clicking category tabs as academy, recreation, career or volunteer. They can see the map view of events under any category independently too. After going into each event page, users can choose to go to posts deck, carpool or inviting friend pages in order to finish their task. Users can go to home page, my list and my account pages on every page whenever they want. Under my list page, users can filter the events by past, today and future tabs.

These main parts were created, evaluated and finalized through a complete and valid design process shown in Figure 2.

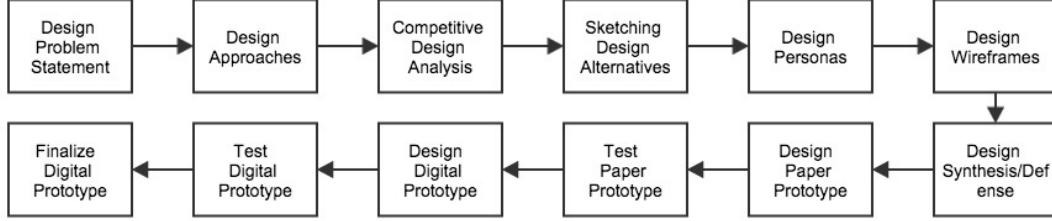


Figure 2 – Design Flow

Unimplemented functions

I have not implemented an instant message system inside the application. I don't see the strong private messaging need in this application, since I would like people to have more open communication publicly in order to increase users' possibility to know new friends and gather more people together. So I implemented a public post deck instead.

Since there is no messaging system, many functions rely on other platforms. For example, after someone joining a provider's carpool, the provider will receive confirmation information by email and text message. Also, if one invited by friend to an interesting event, the person also receives invitation by email and text message. SyncUp can send emails to users because they use UMich account to log in.

Sketching techniques and approaches

Sketch storyboard – I sketched storyboard for the initial sketch. It well answered where does the interaction takes place, who are the people, what is the problem, what is the task, what kind of devices do they use, how do the actions solve the problem. (Appendix 1)

Pros: easy to understand and demonstrate; quick and easy to change; unlimited camera shots, actions and motions; a whole process of beginning, developing, climax and ending.

Cons: low-fidelity; not aesthetical; may need captions or narrators; limited display on interactions.

Scenario-based design - I sketched storyboard based on four scenarios.

Pros: vivid descriptions of end-user experiences evoke reflection about design issues; open-ended and easily to revise; multiple levels; support participation among stakeholders.

Cons: risk of wrong scenarios; based on the limited knowledge of the designer; mind external factors constrains.

Personas – I did personas for my application stakeholders. (Appendix 2)

Pros: humanize the target users; better address the needs of all segments.

Cons: risk of being wrong; not quantitative.

I also did *wireframes* (Appendix 3) to better defining the design terms and *mockups* to better experience the interactions.

Tools used to develop the design

Main tools:

Pencil and paper – I used for sketch, lo-fi prototype.

Pros: fast, easy to change.

Cons: time consuming if duplicate.

POP – I used for mockup, interactive paper prototype. (Appendix 4)

Pros: easy to start; enough transitions and gestures choices; rapid duplication; sync with Dropbox.

Cons: need to sketch on papers first then take photos of them; unstable.

Photoshop – I used for picture and icon revising.

Pros: enough functions; good for aesthetical design.

Cons: expensive; relatively long learning curve.

Axure – I used for wireframe and digital prototype.

Pros: relatively short learning curve; outputs in both HTML and Word; easy to create interactions.

Cons: slow; limited elements choices.

Other tools:

QuickTime – I used for video recording for the interaction demo.

DigitalColor Meter – I used for color picking.

iMovie – I used for demo video clipping and managing.

Design Evolution

Some parts of my design has been added, removed or edited through the whole process from initial sketches, brainstorming, low-fidelity prototype, to final design. Here are descriptions of some main changes.

Menu page:

In the initial sketches and low-fidelity prototype, the default home page was a menu, where user could choose which category of events they want to see. After thinking twice, I decided to strip away everything and add back only the pieces that users needed [1]. The first thing users using SyncUp want to see is the events list, so why didn't I give them the event list immediately after they opening SyncUp application? In the final design, I changed the home page from category menu to list of all events. Users can still filter these events by clicking category tabs whenever they want.

Map view:

In the initial sketches, there was only list view of all events ordered by time. After brainstorming with my group mates and getting feedbacks from them, I believed users need a map view of events showing the event location from their current locations. Since schedule openings are always short, users cannot pay much time on transporting from A to B and even come back to A again later on. They need to save their time while attending interesting activities. Map view can solve their location concerns effectively. The map is a "User-Centered Design" focusing on user needs and goals [2]. In the final design, there are not only an all-event map view, but also a map view under each category. Also, even every event can be marked independently on the map. It's good for user experience.

Message system:

In the low-fidelity prototype, there was still a message system, which I finally removed from my final design. The rationale behind this change was that since

SyncUp is an open platform that helps improving communication in the UM community, I sincerely hope more individuals could join public communication rather than private person-to-person chatting. If they want to chat privately, then do it offline, which is good for making high-quality friends. So I finally removed the private messaging function but keep a public posts deck.

Event creation priority:

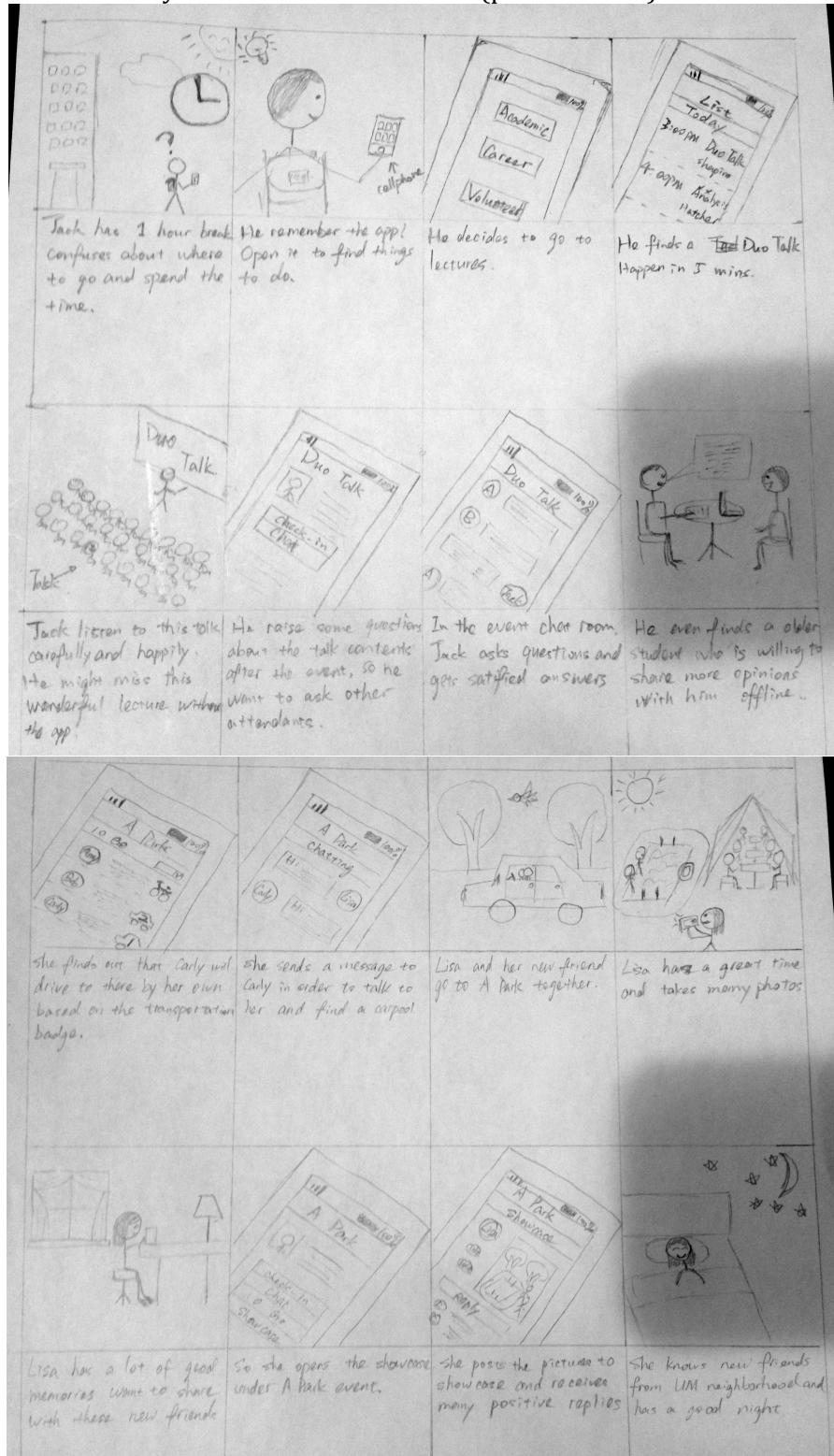
The event information is gathered by SyncUp team from emails, website, posters and other resources related to UM community. The reason why SyncUp does not allow users to create events themselves is because I want the platform be clean, the events be valid and not overwhelming. However, before my high-fidelity prototype, in order to encourage volunteer activities, I allow users to create events under volunteer category. During the prototype testing, testees seemed confused about the creation priority. Also, new question came out. What is a volunteer activity? How about helping someone do housework or homework? Real volunteer organization will always post information on websites or send out emails, so SyncUp can find this information anyway. In order to keep the logic and synthesis consistent across the application, I finally forbidden users create event under every category.

Information window on the map:

This part was the trickiest part for me during the design process. The problem was how to show short info of user-chose event on the map? There were three solutions. The first one was to set up a fixed rectangle area on the top of the screen to show the short info. Information in this area will change correspondingly to user's pin choice. The second one was to create a sidebar on the left of the screen to show a longer info. Every time user clicks a pin on the map, the left information sidebar swipes out. User can swipe it back to see the original map view. The third solution was to create a pop-up window right next to each pin to show the short info. User can click the "x" button to go back to the original map view. Each option had its advantages and disadvantages, so tradeoffs seemed important. I listed relevant questions, options and criteria to support analyzing design rationale. (Appendix 5) My final decision was a permanent info window on the top of the screen. "An artifact needs to be understood by a wide variety of people who have to deal with it" [3]. The permanent window gives continuous feedbacks to users. Users know well about where to see all the time. After using scenarios anchoring to support participation among users and appropriate design outcomes [4], I found out that there is no need for users to know many details about the event right after clicking the pin on the map. The title and time are first of thumb information they need. They can then decide whether to see the details further. Thus the info window can be relatively small. Also, appearing options take users more effort to see info if they change pins. What's more, permanent option wins on the speed criteria. Last but not least, it's easier for programming when finally implementing the application based on "Operational strategy" [5]. Overall, although choosing permanent option could have negative assessment on screen compactness criteria, its advantages outweighed disadvantages.

Appendices

Appendix 1: Sketch storyboard based on scenarios (parts of them)



Appendix 2: Personas (parts of them)

Super Scholar

Details		Goal	Product Details
Persona	Super scholar		
Photo		Why would the persona want to use the product? What problem should the product solve? What benefits does the persona want to achieve?	An independent academic category, which includes all kinds of academic-relevant lecture, speeches, workshops and panels. A effective filter, which can filter out events based on different academic field, for instance Biology, Math, Public policy, Health informatics and so on.
Fictional name	Matt Johnson	The persona wants to use this product to check what academic lectures he can attend during his spare time at school. Although he is busy, he still has many timepieces. He wants to make full use of these timepieces on meaningful and educational guest speaker speeches.	A clear list of events based on time order. A map shows the locations of each event based on distance to the user's location.
Demographics	23 years old 1st year graduate student majors in Health Informatics	The product must provide him specific time slot for each academic event, so he can know whether he is available to attend at that time. Also, the location for each event is important, so he can know whether he can make there on time and come back on time. What's more, details for each academic event should be provided ahead of time, for example the speaker's bio, the lecture intro, the target audience and so on. Through these detailed contents, the persona can tell whether the event is interesting or worth to go.	A private agenda, which saves all the future, and history events the persona saved.
Goals and tasks	He is focused, goal-oriented within a strong student role. One of his concerns is attending high-quality speeches across the field of Informatics and Public Health. Spends his school time Taking courses Doing research in the lab under a professor as a RA	Achievements include but not limit to Full use of free time at school on educational events; learn the newest information from different aspects; improve the persona's overall broadness and depthness of academic issues.	A chatting room under the event, so people can exchange ideas for each topic after the speech or even during and before the speech.
Environment	He is comfortable using a smartphone. He is connected via a 4G connection outside buildings and WiFi at classroom and home. He uses email extensively and uses the mobile application about 2 hours during his study day.		
Quote	"What are the latest trends and popular topics in health informatics?"		

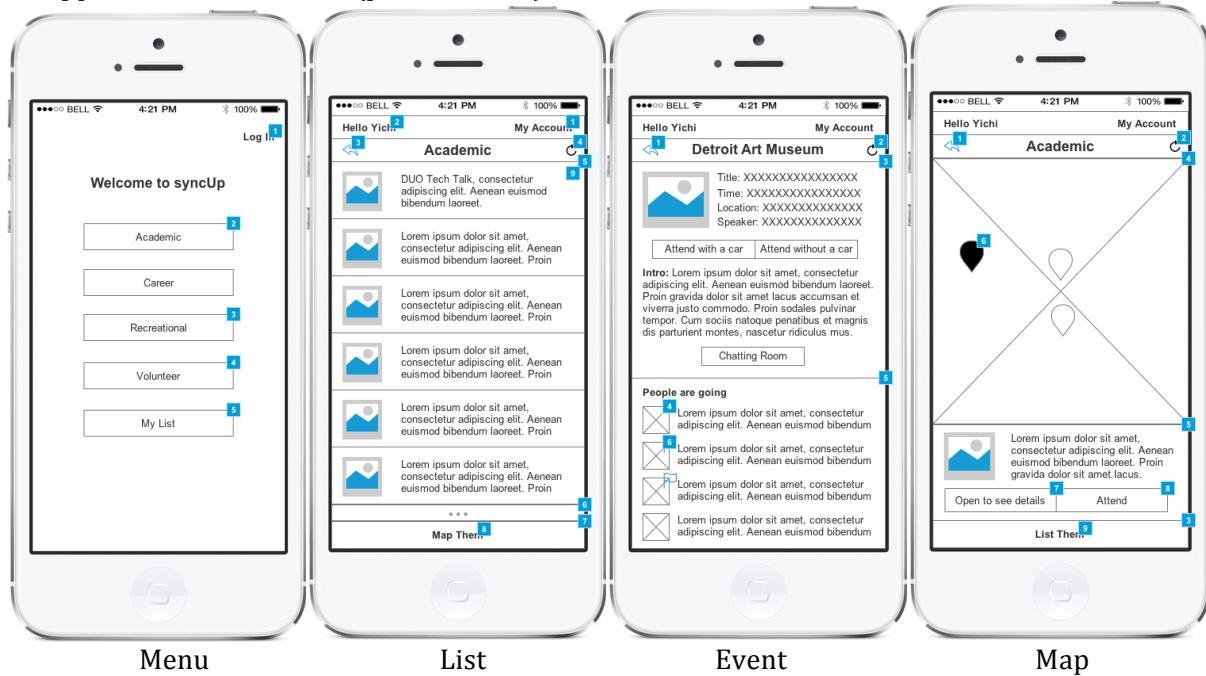
Sweet Volunteer

Details		Goal	Product Details
Persona	Volunteer activity organizer		
Photo		Why would the persona want to use the product? What problem should the product solve? What benefits does the persona want to achieve?	An independent volunteer category, which includes two main functions, normal event searching and a new function event posting. In the events list, there are all kinds of volunteer events, like library managing, dog sitting, children caring and shelter activities. Filter based on different organizers.
Fictional name	Sara Pichler	The persona wants to use the product to post volunteer activities. She feels like the platform can attract more kind people to join the volunteers group. She also aims to motivate people to help the community as much as possible. The persona hopes this application can let her know more people who are interested being volunteers and willing to contribute more.	Events descriptions. Under each information session, there will be a list of people who signed to go.
Demographics	42 years old Has bachelor degree majored in sociology	The product should have an event post system for these volunteer activities organizers. This event should be user friendly, which means it should contain easy steps and quick steps to create a event posting. So creating an event for attracting volunteers is no longer difficult for older people. The product also support organization-based filter, so users can search activities based on organizer.	A group message system to inform information to all attendees at one time. A clear list of events based on time order. A map shows the locations of each event based on distance to the user's location. A chatting room under the event, so attendees can exchange ideas for each event before, during and after the activity.
Goals and tasks	She is a head of a volunteer organization. The job of the organization is to help old people, young children and other general issues in the community. Spends her weekday time Finding out who, where and when needs help Organizing volunteers	The benefits are as follows the persona can know more people who are interested in being volunteers; she can gather more people in each event by posting; she can also keep touch with people who attended her events in the future. Overall, more people are helping improve the community harmony.	
Environment	She is comfortable using a smartphone. She is connected via a 4G connection outside buildings and WiFi at classroom and home. She uses mobile applications often about 4 hours during her weekdays.		
Quote	"How can we best serve the community?"		

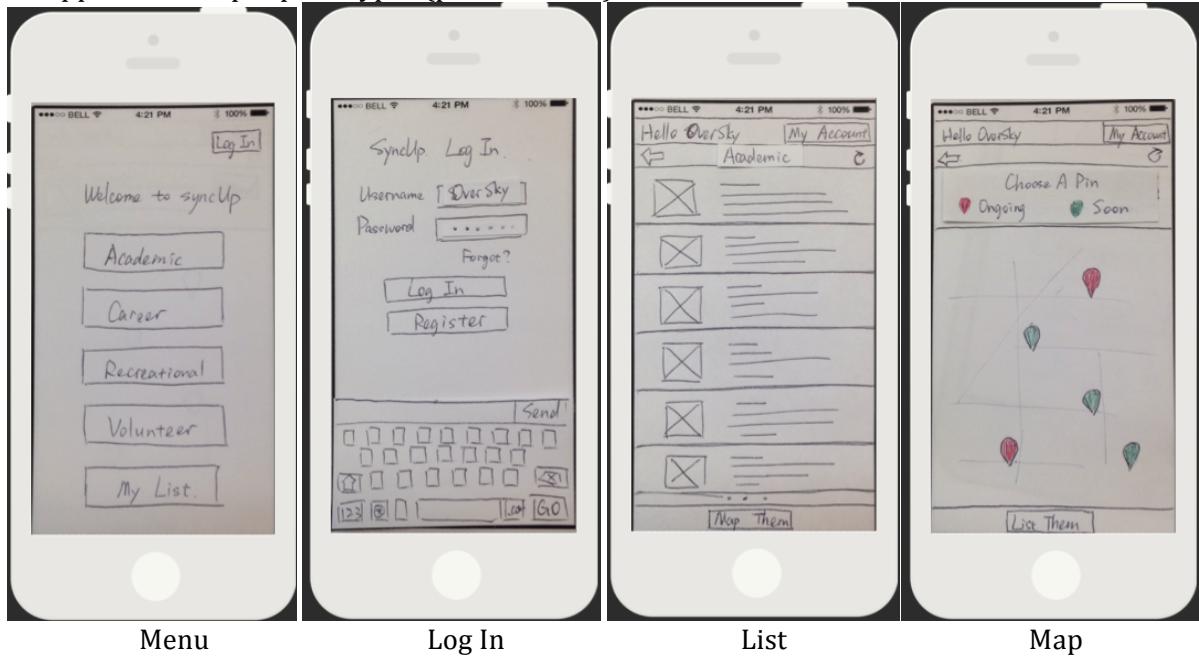
Recreation Mania

Details		Goal	Product Details
Persona	Outdoor activity mania		
Photo		Why would the persona want to use the product? What problem should the product solve? What benefits does the persona want to achieve?	An independent recreational category, which includes all kinds of recreational and relaxed events, for example outdoor BBQ, night parties and so on.
Fictional name	Lily Porter	The persona wants to use this product because she wants to know what activities have been organized for the following weekends. She'd like to see many outdoor sports or recreational events that can be joined in.	An event description, under which the number of people who sign up for the event will show up. By clicking the number, all the signed people profiles will show in a list. The people who signed with a car will have a special tag next to its name, which makes easy for carpool asking.
Demographics	19 years old Freshman majors in Economics	The product should give her clear lists of each outdoor event. So she can see what are their time periods, locations and themes. The product also has to provide the number of people who are going and their intros. Through this way, she can attend activities with people she likes to make friends. The product will also help the persona to find a carpool to a distant place since she does not have a car right now.	An instant person-to-person message sending and receiving system, so the persona can ask for a carpool to a target attendee.
Goals and tasks	She is interested in all kinds of outdoor activities, like hiking, picnic, biking, BBQ and so on. One of her concerns is making high-quality friends during these activities. Spends her weekend time Enjoying the nature Doing sports with friends in the fresh air	The persona can achieve many benefits, such as Opportunities to enjoy the nature with a group of people she likes, and then she can make new high-quality friends; find a carpool to go to a far outdoor place; fulfill the weekends by interesting outdoor events.	A clear list of events based on time order. A map shows the locations of each event based on distance to the user's location.
Environment	She is comfortable using a smartphone. She is connected via a LTE connection outside buildings and WiFi at classroom and home. She uses mobile applications extensively about 12 hours during her ordinary day.		
Quote	"Is there any new place to go?"		

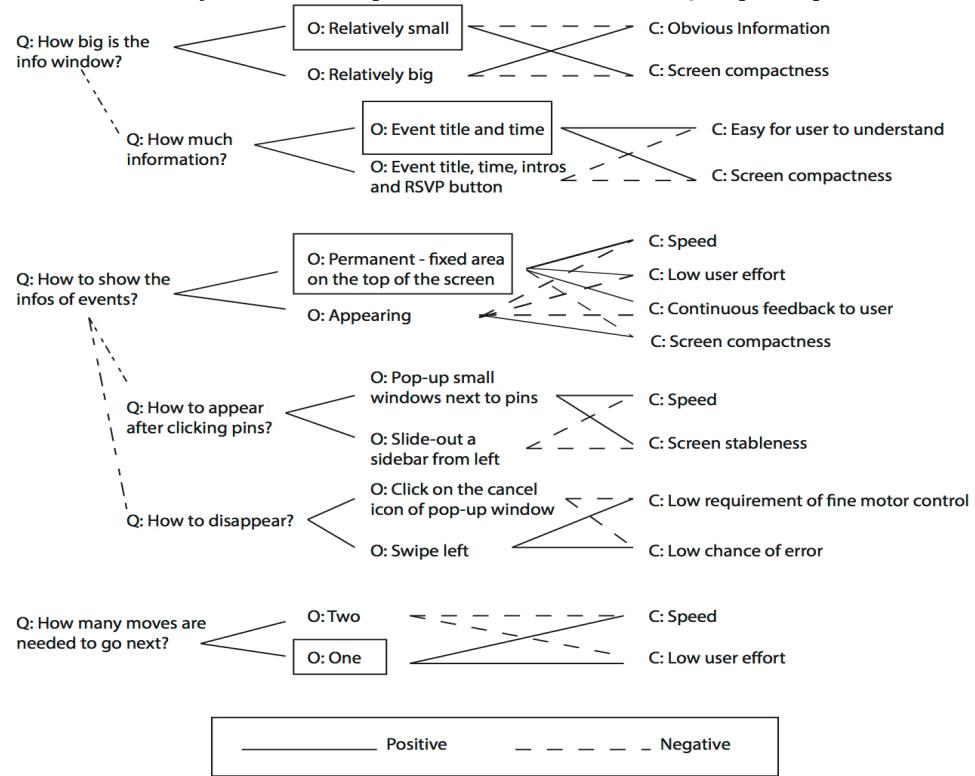
Appendix 3: Wireframes (parts of them)



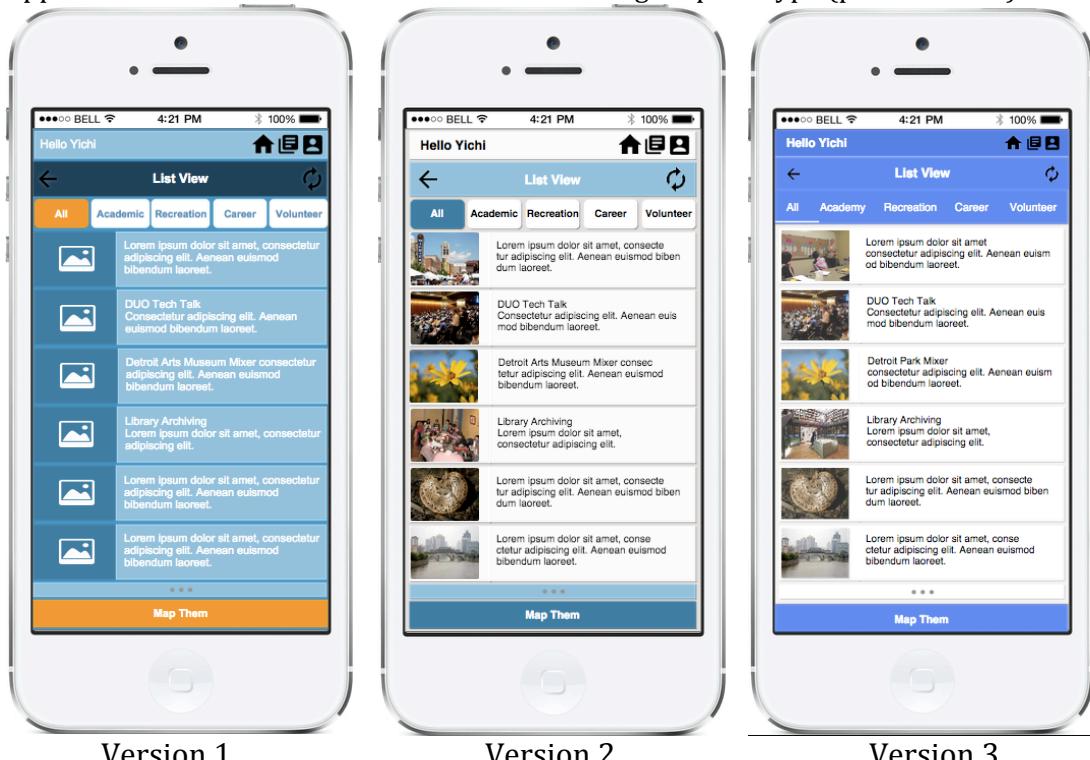
Appendix 4: Paper prototypes (parts of them)



Appendix 5: Decision Analysis about map info window based on QOC principles



Appendix 6: Screenshots of different versions of digital prototype (parts of them)



References:

- [1] Case Study: <http://vesperapp.co/blog/how-to-make-a-vesper/>
- [2] "Chapter 2: Starting Points" in Saffer, D. (2007). *Designing for interaction: Creating innovative applications and devices*. Berkeley, CA: New Riders.
- [3] MacLean, A., Young, R. M., Bellotti, V. M. E., & Moran, T. P. (1991). Questions, options, and criteria: Elements of design space analysis. *Human-Computer Interaction*, 6(3-4), 201-220.
- [4] Carroll, J. M. (1999). Five reasons for scenario-based design. In *Proceedings of the 32nd annual hawaii international conference on system sciences - 1999* (pp. 1-11).
- [5] "Chapter 3: Design Strategy" in Saffer, D. (2010). *Designing for interaction: Creating innovative applications and devices* (2nd ed.). Berkeley, CA: New Riders.

Credits:

Users' avatars credits

[http://www.proinspire.org/wp-content/uploads/Monisha%20Kapila%20profile%20photo-square\(4\).jpg](http://www.proinspire.org/wp-content/uploads/Monisha%20Kapila%20profile%20photo-square(4).jpg)

<http://www.carascravings.com/wp-content/uploads/2012/07/profile-photo.jpg>

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<http://www.helpinghomelesscats.com/images/cat.jpg>

<http://img2.timeinc.net/instyle/images/2010/transformation/2001-cat-deeley-2-400.jpg>

<http://coolspotters.com/files/photos/27575/dita-von-teese-and-louis-vuitton-desmayo-cat-eye-gallery.jpg?1357487522>

Event pictures credits

https://www.nationalgalleries.org/media/5/buildings_interior/keillerlibrary.jpg

<http://www.volunteerrutherford.com/uploads/images/VolunteersHuddle.jpg>

http://www.fuf.net/wp-content/uploads/2012/07/2217039949_6faa216c83_o.jpg

<https://d3n8a8pro7vhmx.cloudfront.net/cassiefelder/pages/2/attachments/original/1404189816/volunteer.jpeg?1404189816>

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<http://sf34no7ch4yu8bud.zippykid.netdna-cdn.com/wp-content/uploads/2012/06/Kids-at-Ta-Nop-1.jpg>

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http://the-underground.ca/wp-content/uploads/2011/03/TVOBestLecturer_KhushBhandari.jpg

<http://static.guim.co.uk/sys-images/education/Pix/pictures/2009/8/7/1249647567861/A-lecturer-teaches-a-modu-001.jpg>

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http://images.nationalgeographic.com/wpf/media-live/photos/000/707/overrides/alberta-canada-hiking-bugaboos_70729_600x450.jpg

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<http://santospartyhouse.com/images/photographs/SANTOS-Upstairs.jpg?width=820&height=450>

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