

Motify

Ideate, Low-Fi Prototype and Usability Testing

CS67/267: Human Computer Interaction

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Table of Contents

1. Introduction	3
2. Brainstorming Session	4
3. Affinity diagram	6
4. Two most promising ideas	7
4.1 Gamification	7
4.2 Feed-based activity finder	8
5. Task Storyboard	10
6. Lo-Fi Prototypes	13
6.1 Lo-Fi Screens	13
6.2 Key interaction elements and functionality	14
7. Usability Testing Method	15
7.1 Description of Testing Tethod	15
7.2 User Descriptions and Results	15
8. Market Research	17
9. Discussion	19
Appendix	21
Appendix A: Discussion on Alternative Prototype (Feed-based theme)	21
A.1: Introduction	21
A.2: Task Storyboard	22
A.3: Lo-Fi Prototypes	25
A.3.1 Lo-Fi Screens	25
A.3.2 Key interaction elements and functionality	26
A.4: Usability Testing Method	27
A.4.1: User Descriptions and Results	27
A.5 Market Research	29

1. Introduction

Mission Statement

We aim to inspire personal growth, social connections, and spark a sense of adventure by seamlessly integrating diverse activities into a gamified platform, while fostering a supportive community of like-minded individuals.

Value Proposition

We offer a fresh and captivating platform that introduces users to a variety of new activities, creating opportunities for personal growth, social connection, and the excitement of exploring new interests.

Problem Statement

Our need-finding results demonstrated that many people avoid participating in new activities due to lack of companionship or motivation, resulting in missed opportunities for personal growth, social interaction, and a sense of adventure.

Solution Overview

Our app addresses this problem by offering weekly activities for users to complete, with the ability to upload pictures as proof of completion. Users can also send personalized tasks to friends, fostering a fun and engaging experience. By gamifying activities and fostering a community of support, our app encourages users to step out of their comfort zones and embrace new experiences.

2. Brainstorming Session

Brainstorming Session

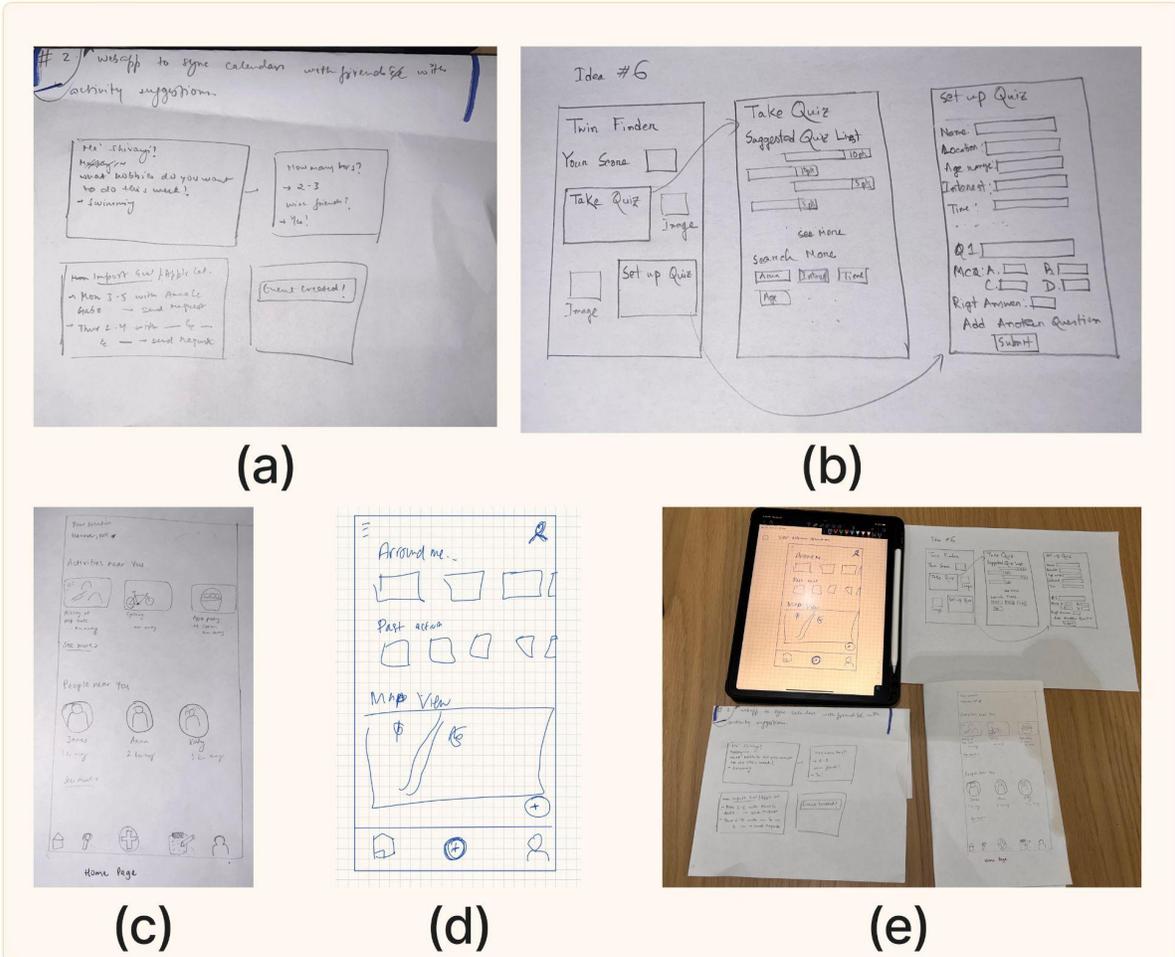


Figure 2.1: (a)-(d): Top idea from each of the group members, (e): The combined image of the top ideas ([Zoomable version](#))

Overall, our brainstorming session progressed smoothly and effectively. We followed the structure provided in the class and assignment description, ensuring an organized and fruitful discussion. Each team member arrived at the session with approximately seven ideas to contribute, some of which are illustrated in the Figure 2.1 above.

Throughout the session, we actively encouraged open-mindedness and refrained from criticism initially. This approach fostered a positive environment where everyone felt comfortable sharing

their thoughts. We then took turns presenting our ideas, without any negative feedback or criticism. After presenting, we identified similarities and differences among our concepts and engaged in constructive questioning to better understand each other's ideas before moving on to affinity mapping.

This structure proved to be quite successful for our team, as it facilitated an inclusive and supportive atmosphere. One aspect we particularly appreciated was the designated time slots for critiques and questions, ensuring that everyone felt at ease during the process.

However, there is room for improvement. In future sessions, it would be beneficial to allocate more time to the brainstorming process. During this session, we were constrained by the demands of the assignment and A2, which prevented us from extending our previously agreed-upon time slots for each step. With more time, we could facilitate an even more thorough and insightful discussion.

3. Affinity diagram

For the affinity diagram, we grouped our ideas from brainstorming session into four broad categories - 1) Social Media Based, 2) Gamification, 3) Coordination/Scheduling, and 4) Community Groups. We also voted for the ideas using different types of stickers as shown in Figure 3.1.

Social Media Based	Gamification	Coordination/ scheduling	Community Groups
Feed showing what's happening around 	Set up a profile based on your interests	Link your calendar	App to find groups based on interests
Create an activity and post it publicly/ privately for others to join 	Get a weekly challenge of an activity to do 	Add hobbies/activity you want to do this week	Join a group of your liking to find people who have similar interests in activities
Add friends on the app	Get points for completing a task (post a picture of posting it) 	Define how much time to dedicate to the activity	Create your own group and post it in the community for others to join
Create private groups for doing specific activities together	Twin finder : Find like-minded friends through quizzes 	Add friends on the webapp	Groups provide a space for people to plan activities together
Search for activities happening around you	Set up a quiz and publish it to the community	Get recommendations on when friends are available for an activity based on calendar syncing 	Asking for any help in the group
See which of your friends is already signed up for an activity	Take a quiz to find your mind-set twin	One click to send requests to friends to join the activity	
Posting pictures of different events/ group activities happening around. 	Find/Get Help : Earn points by helping someone, spend points to seek help		

Figure 3.1: Affinity diagram ([Zoomable version](#))

4. Two most promising ideas

Following are the two most promising ideas.

4.1 Gamification

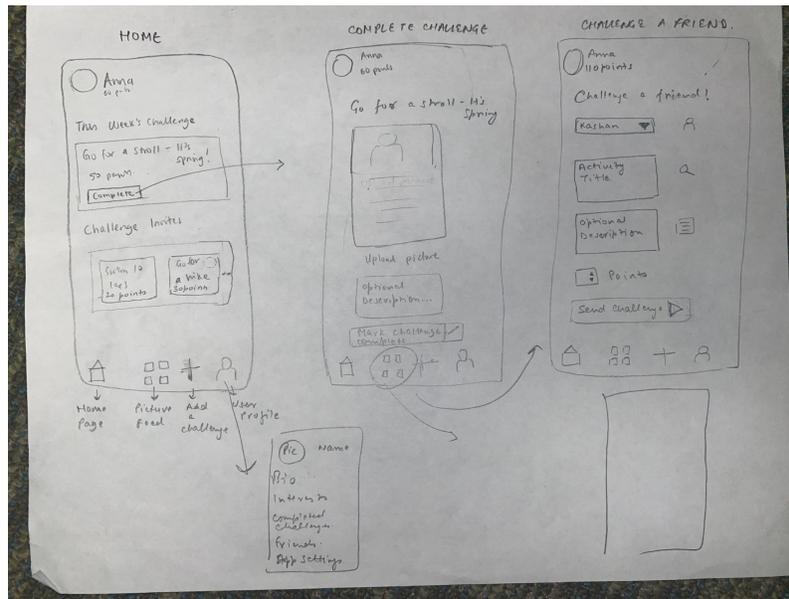


Figure 4.1: Sketches of the gamification theme

Main Features:

1. Get a weekly challenge from the app
2. Get points for completing a task after posting a picture of completing said task
3. Ability to send friends tasks to complete
4. Ability to view friends' completed challenges and interact with their pictures

Pros and Cons:

Pros	Cons
Gives people incentive to participate in new activities	Might not be able to help those that want someone to do things with.
Promotes engagement with friends outside academics	Overdone

Pros	Cons
Can be a way for people to try new things that they wouldn't otherwise	
People can do things on their own time	

Table 4.1: Pros and cons of the gamification theme

4.2 Feed-based activity finder

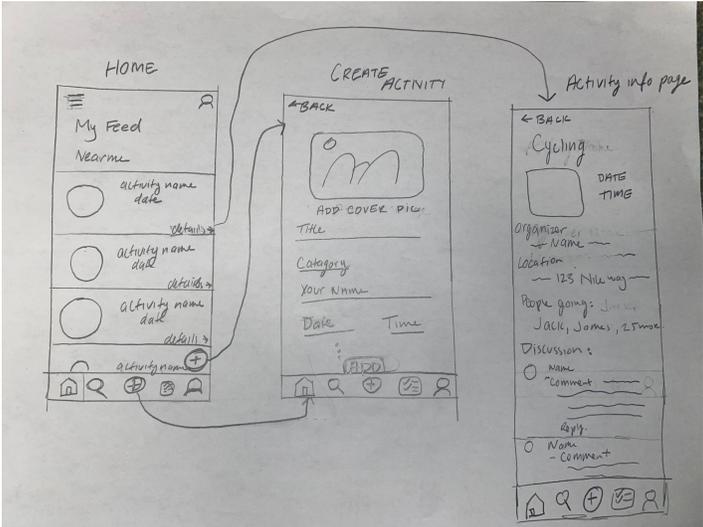


Figure 4.2: Sketches of the feed-based activity finder

Main Features:

1. Create an activity and post it publicly/privately for others to join
2. Feed showing what's happening around
3. Get recommendations on when friends are available for an activity based on calendar syncing

Pros and Cons:

Pros	Cons
Dedicated place for finding things happening nearby	New users may not have idea about the existing users of the group

Pros	Cons
Easy way of hopping on activities with friends	People may not be willing to share their calendars publicly
Takes away some of the pain of scheduling activities with friends through calendar recommendations	Can inherit negative aspects of social media - be distracting/overwhelming for users
Users can join activities with new people or start activities they haven't tried before.	
Allows users to find new people to enjoy an activity with by posting a plan publicly within the app community	

Table 4.2: Pros and cons of the feed-based activity finder

Due to the two prototypes being quite different, we are presenting the details of task storyboard, lo-fi prototypes, usability testing method and market research in the following sections only for the first prototype. The details of the corresponding sections for the second prototype are included in Appendix A.

5. Task Storyboard

After selecting our most promising ideas, we came up with three different tasks for each one of them and created a storyboard.

Easy Task: Mark a Challenge complete

For the Easy task, the user has to mark their weekly challenge as complete. There is also an optional picture upload of them doing the challenge and a description that they can choose to provide. Since this is the core functionality of the app, we wanted to keep this workflow as simple as possible.

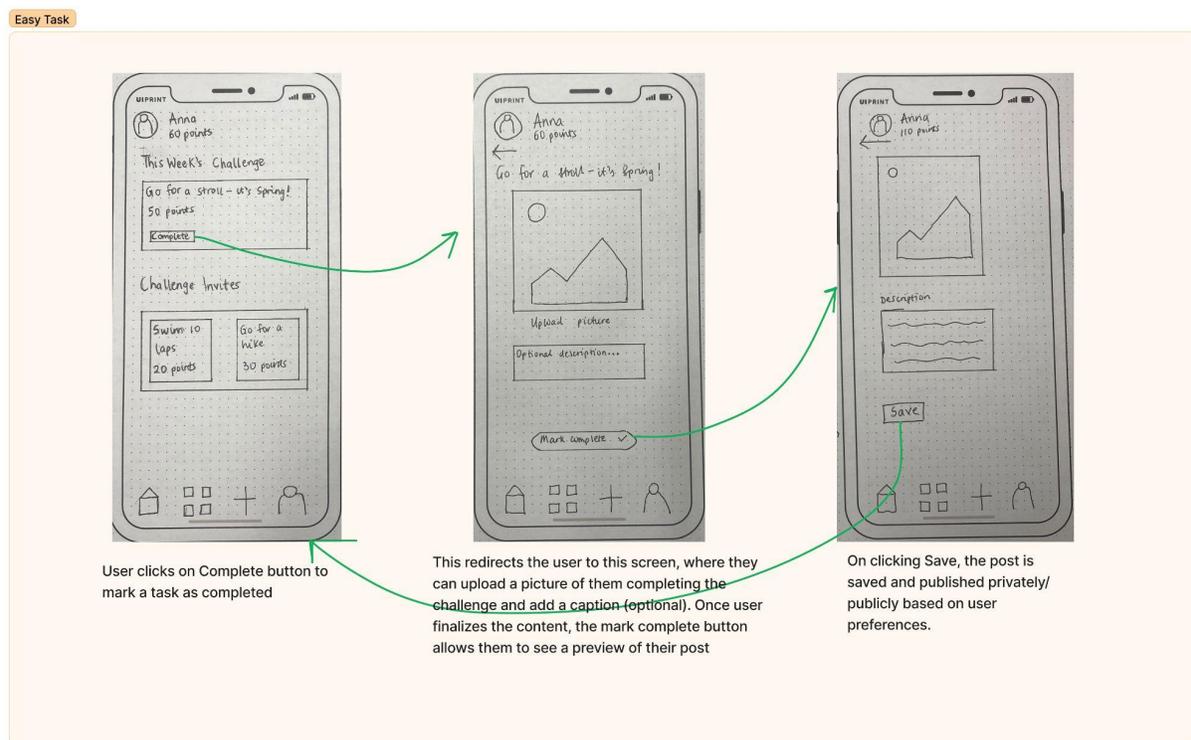


Figure 5.1: Easy Task - Mark a Challenge complete ([Zoomable version](#))

Medium Task: Commenting on a friend's completed challenge picture

The medium task requires the user to go to the picture feed where they can scroll through the posts of their friend's completed challenges. They can then go on and comment on a picture as well.

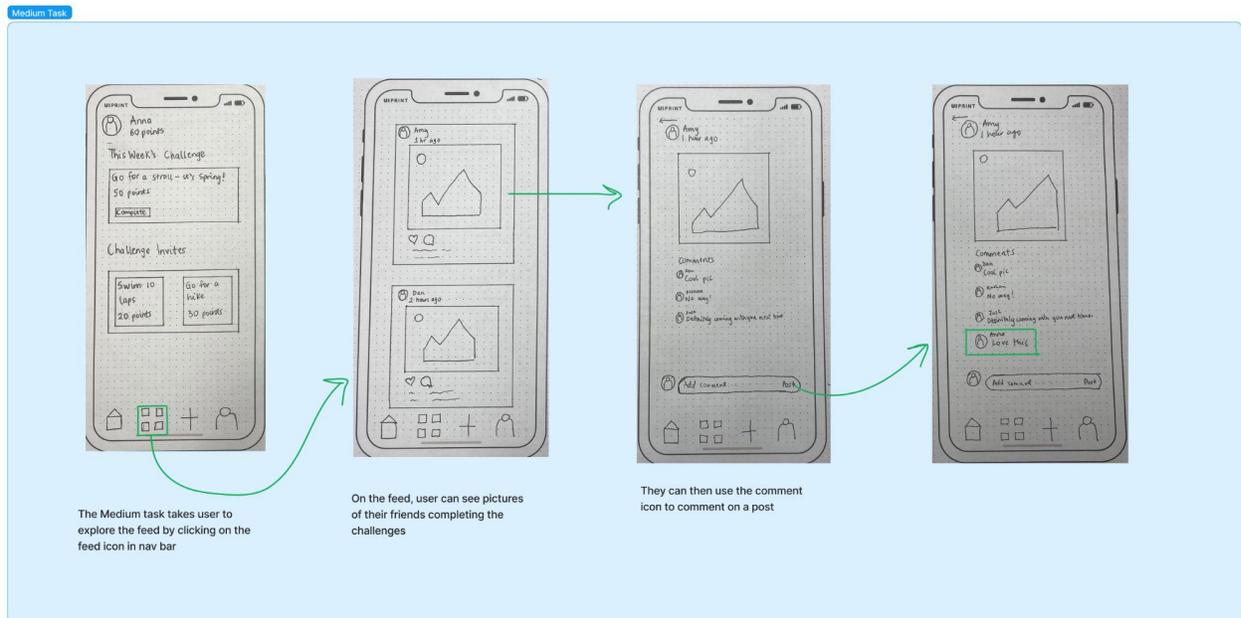


Figure 5.2: Medium Task - Commenting on a friend’s completed challenge picture ([Zoomable version](#))

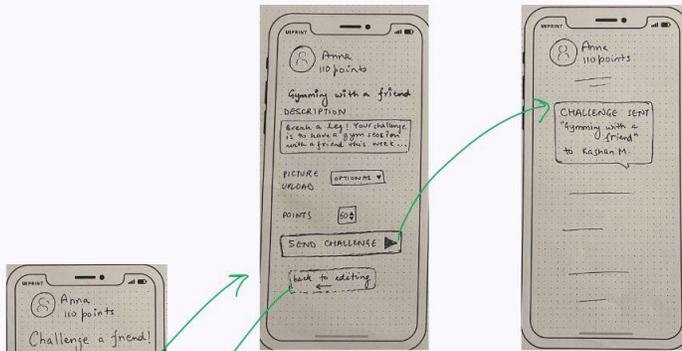
Hard Task: Create a new challenge and send it to a friend

As part of the hard task we use the app’s extended features which allow friends to send challenges to each other. They can use pre-made challenges provided by the app based on their friend’s interests or they can craft a new one.

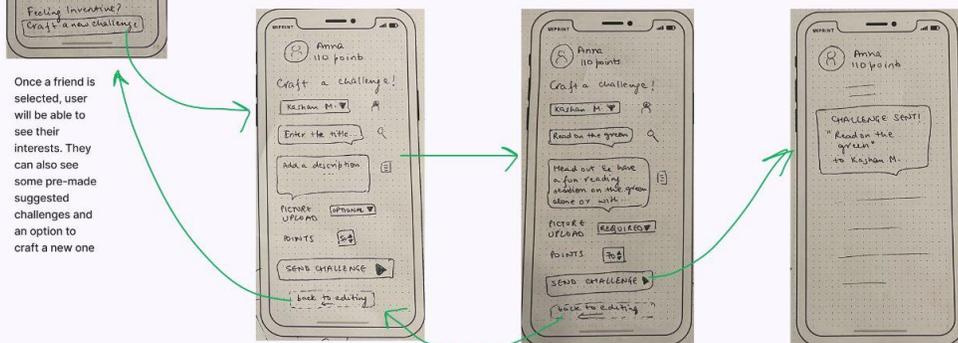


The hard task requires the user to send a challenge to a friend by clicking the + icon in nav bar

Using the drop down functionality, user can select one of their friends



By clicking on an existing challenge, user can review the challenge and then send it to a friend



Once a friend is selected, user will be able to see their interests. They can also see some pre-made suggested challenges and an option to craft a new one

Using the craft a new challenge feature, user can create a custom challenge and send it to a friend

Figure 5.3: Hard Task - Create a new challenge and send it to a friend ([Zoomable version](#))

6. Lo-Fi Prototypes

6.1 Lo-Fi Screens

Gamification



Figure 6.1: Lo-fi prototype for gamification theme ([Zoomable version](#))

6.2 Key interaction elements and functionality

Key Interaction elements	Functionality
Home button (bottom bar)	To bring back the user to home screen
Feed button (bottom bar)	To navigate to the feed section where user can see their friends' completed challenges
Add button (bottom bar)	To challenge a friend by adding a new challenge or using an existing challenge created by the app
Profile button (bottom bar)	To navigate to user's own profile
Challenge display section	Displays user's current week's challenge
Complete button (inside Challenge display section)	Allows user to mark that challenge complete
Drop down (choose a friend)	While sending challenge to a friend, the drop down allows user to choose the friend they want to send the challenge to
Horizontal scroll sections for interests and suggested challenges	When sending challenge to a friend, the user can horizontally scroll through their interests and suggested challenges
Points selector (up and down buttons)	When crafting a new challenge the user can use the up and down buttons in the points selector to decide the points for that challenge
Picture upload section	Picture upload section allows user to upload their picture and see a preview on the screen
Callout sections for entering text in profile	To edit their profile, user can use the callout sections to add a bio and interests

Table 6.2: Key Interaction elements for gamification theme

7. Usability Testing Method

7.1 Description of Testing Method

All the interviews were conducted in person. First, we explained the premise of the application and the reason for conducting the usability test. Since we had hand-sketched lo-fi prototypes, we created an interactive version using Marvel. So once the participants had been briefed about the purpose of the interview, they were allowed to use the marvel prototype on a laptop/mobile device. We asked the participants to think out loud during the process and raise any concerns that they had.

While one person interacted with the participant, the other took notes of their actions, facial expressions, and any other verbal or non-verbal cues.

Test Measures:

During the user testing phase, we observed and recorded various aspects of participants' engagement with the prototype. This included their verbal feedback, facial expressions, body language, and interactions with the interface, such as any difficulty they had finding buttons. We also monitored the time it took for each user to complete tasks and noted any significant errors they encountered while navigating the prototype. These metrics were used to evaluate the effectiveness of our user flow.

7.2 User Descriptions and Results

User 1: Zack, 22 male, Dartmouth student. Canadian-American.

Test Results:

- Zack was able to quickly learn how to navigate the applications. It took him a little longer than expected to do the easy tasks, which was likely due to him getting used to the interface.
- He was able to successfully navigate through the prototype and complete all tasks.
- During testing, we found the importance of a back button and having the bottom navigation visible on all pages. One of the pages lacked both and, in return, left Zack with no way of getting back or accessing other parts of the application.

- In his post-testing survey, Zack mentioned that he thought the app layout was easy to use and quite intuitive. He also suggested that we keep the design style consistent throughout the app- as for this prototype, it was not since four people hand-drew the screens.

User 2: Supritha, 24, Female, Dartmouth Graduate Student, Indian

Supritha is a Master in Engineering Management student at Dartmouth. Being part of a fast paced program, she admitted to have felt overwhelmed many times.

Test Results:

- Supritha didn't have a lot of issue in navigating the application. She completed all the tasks on her own without any additional instruction. She was able to understand the main purpose behind the application through use.
- She used the navigation bar at the bottom multiple times to navigate back and forth between screens. A few pages of our application lacked the nav bar, which left her confused.
- It took her some time to understand the comment functionality, which she later expressed was because of the low-fidelity of the prototype.
- She appreciated the minimalist look and feel of the application, and even gave a suggestion to add a group challenge feature in the app.

User 3: Josh, 21, Male, International Dartmouth undergraduate

Test Results:

- Josh was able to navigate through the applications easily. Similar to other respondents, he had difficulty navigating out of certain pages that lacked back buttons as well as the bottom navigation bar.
- He was able to complete all tasks easily but mentioned that the final screen of the hard task for the gamification app, would do better as a modal/popup screen.
- In the post-testing survey, Josh stated that the design of both applications was easy to understand.

8. Market Research

Challenge Accepted App

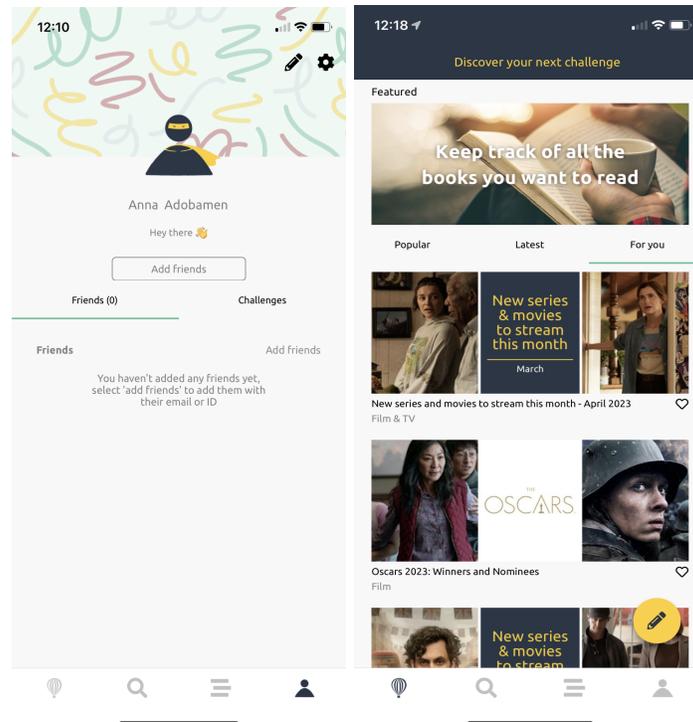


Figure 8.1: Screens of the challenge Accepted App

This app is very similar to our gamification app idea. The homepage has a recommendation of challenges for each user based on their already selected preferences. Users have the ability to add friends and send them challenges.

However, our app is different in several ways. Firstly, we have the option of posting a picture to show a completed challenge. This makes for more socialization capability as users can see their friends' pictures and like and comment on them. Also we use a points system, where users gain points after completing an activity and we have a set weekly challenge for all users.

Daily Challenges

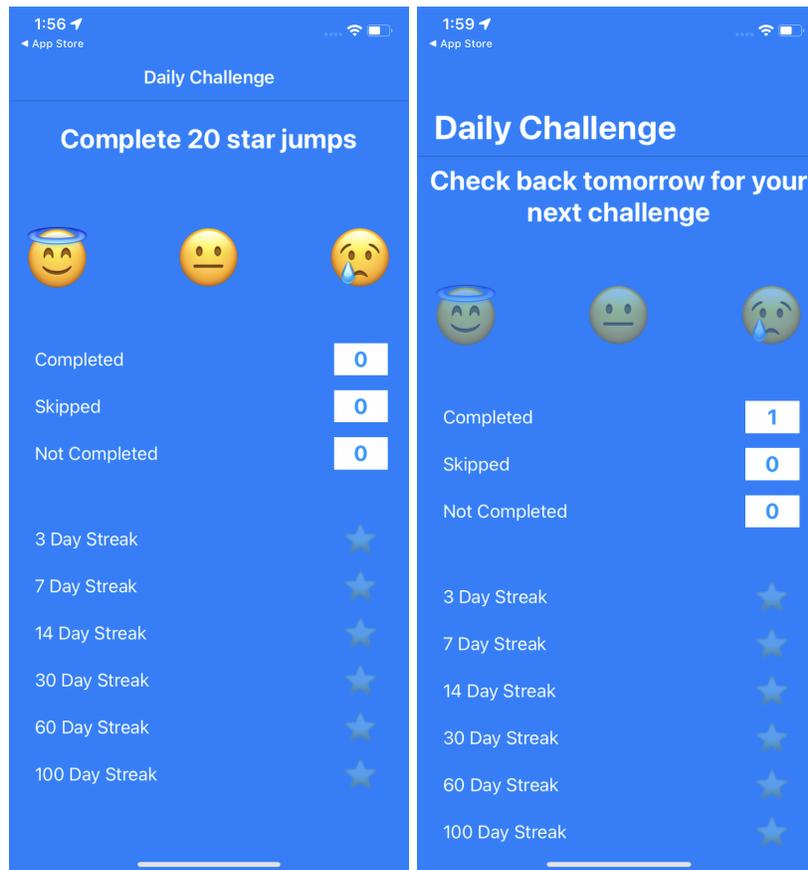


Figure 8.2: Screens of the Daily Challenges App

This is a very barebones app where users get daily challenges and are able to build up a streak based on how many days in a row they do the challenges. Our app has more features with weekly challenges and socialization capability.

9. Discussion

Throughout each step of this process, we gained valuable insights and learned essential lessons. During the brainstorming stage, we realized the need to narrow down the scope of our project, as our problem space was initially quite broad. When creating our affinity map, it became clear that our brainstorming generated a diverse array of ideas and solutions, each addressing different aspects of the problem space. For instance, one idea focused on encouraging users to engage in activities even if it involves doing them alone, while another aimed to help users find companions for shared experiences. These distinct ideas led us towards two very different solutions, focusing on separate issues, which is why one of them is included in the appendix. We chose to proceed with both solutions for two primary reasons: 1) we were unsure which aspect of the problem to prioritize, and 2) we were genuinely excited about both ideas. As evident in our affinity map, despite their differences, these two concepts immediately captured our interest. Recognizing this divergence was a crucial part of the process, as it prompted us to contemplate our project's direction and compelled us to refine the scope of our problem space.

Additionally, the task of creating the storyboard and Lo-Fi prototype offered further valuable insights. During this phase, we had to carefully consider the flow of our design, determining the optimal placement of buttons and features, the “in-between” pages, and the app's overall content. We relied on design principles learned in class and our own insights as potential users to answer these questions. This led us to the most illuminating aspect of the process: usability testing.

Usability testing has proven invaluable in guiding us toward necessary modifications and enhancements to our design as we advance in the project. As previously noted, we discovered the significance of having clearly visible back buttons and bottom navigation on all pages. Even when bottom navigation was present, users attempted to click in the area where a back button typically resides to return to the previous page. We also received feedback emphasizing the need for a consistent app design across the platform to ensure a seamless and enjoyable user experience.

Users appreciated the minimalist design approach, which facilitated quick learning and intuitive use of the platform. We also garnered positive feedback on the app's concept and features. One user particularly enjoyed the functionality that allowed them to upload a photo of themselves completing tasks. Another user comment gave us insight on how the app can be expanded to accommodate group challenges, which would allow a group of friends to do an activity together.

Following user testing, it is evident that we need to implement some design adjustments to optimize the user experience. Moreover, user testing has also reaffirmed the appeal and potential utility of our app, as users found it enjoyable and worthwhile.

Appendix

Appendix A: Discussion on Alternative Prototype (Feed-based theme)

After our discussion with the professor, we realized that the two proposed solutions were significantly different from each other. To maintain the report's coherence and prevent potential confusion for the reader, we chose to include the second proposal in the appendix. Please note that we did obtain the professor's approval before proceeding with this decision. Below you will find the assignment requirements that we omitted from the main report.

A.1: Introduction

Mission Statement

We aim to empower users to explore new experiences, build meaningful connections, and enrich their lives by connecting them with local activities and a supportive community.

Value Proposition

Our app connects users with local activities and like-minded individuals, creating opportunities for personal growth, social engagement, and fostering a sense of community and belonging.

Problem Statement

Our need-finding results demonstrated that people often struggle to find new activities to try or face challenges in finding friends to join them, leading to missed opportunities for personal growth, social interaction, and community-building.

Solution Overview

Our app addresses this issue by creating a social media platform where users can discover and join activities happening around them, either public or private. Users can also share pictures of their experiences and search for specific activities in their area. By syncing their calendars to the app, users can seamlessly plan and participate in events. This platform not only encourages users to try new activities and meet new people but also fosters a sense of community and belonging.

A.2: Task Storyboard

Easy Task: Add comment on an activity

The Easy task requires the user to scroll through the feed of activities present on the home page, select one and add a comment to the discussion thread.

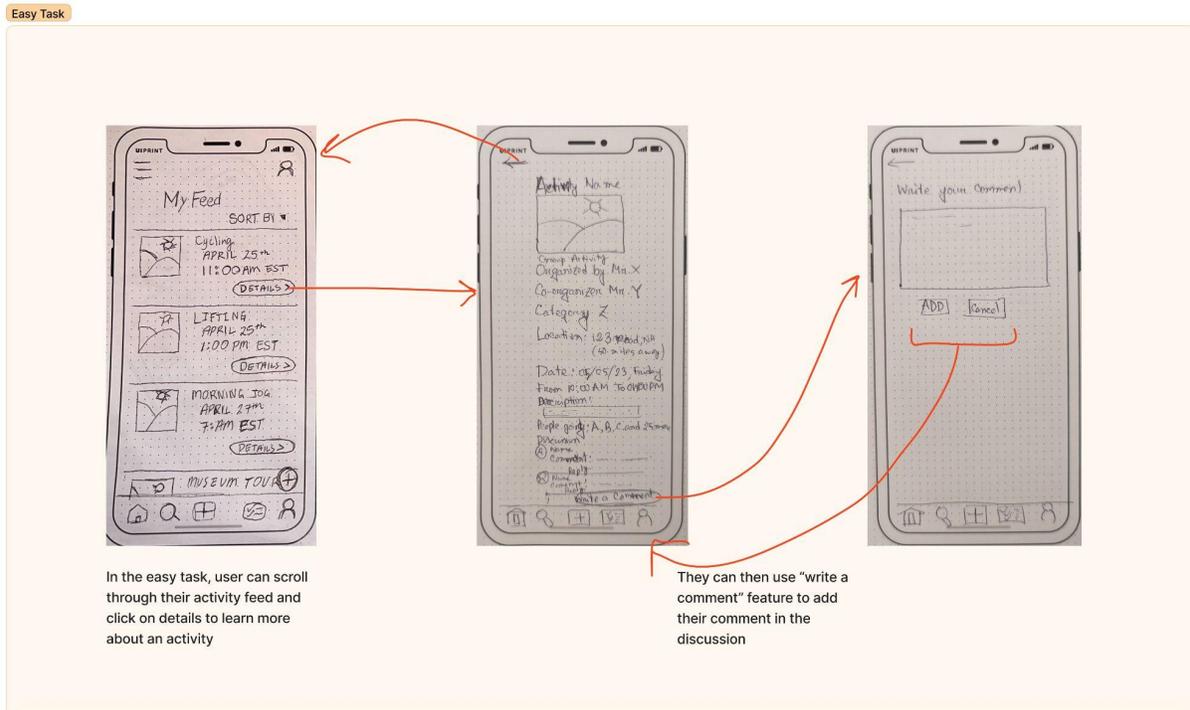


Figure A.2.1: Easy Task: Add a comment on an activity ([Zoomable version](#))

Medium Task: Create a post about an activity

For the medium task, user is required to create a new post about an activity that they are planning to do.

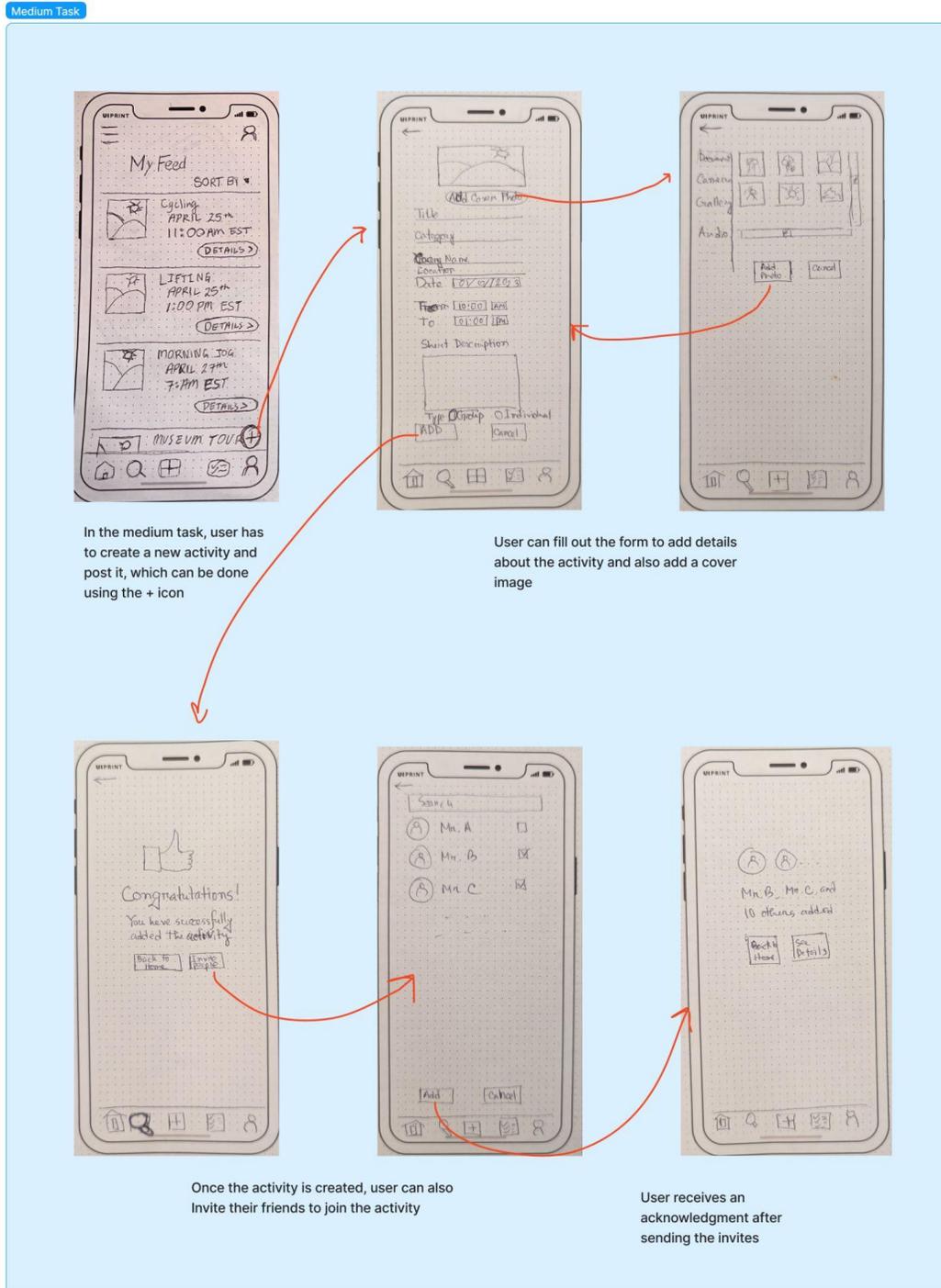
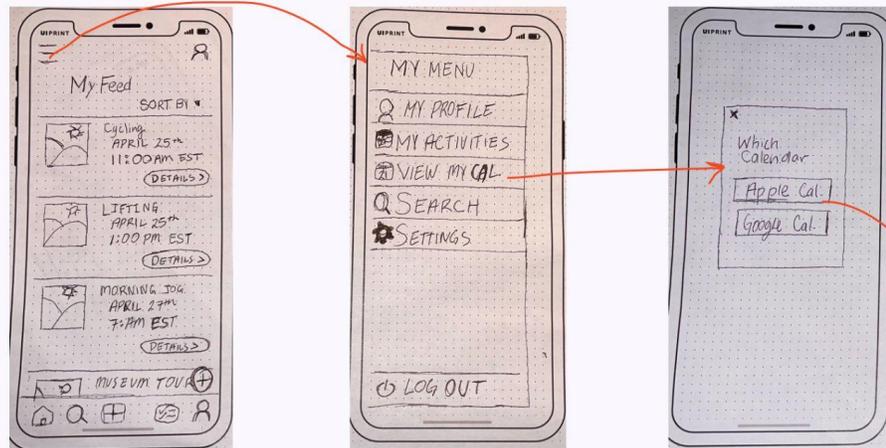


Figure A.2.2: Medium Task - Create a post about an activity ([Zoomable version](#))

Hard Task: Link calendar with the app

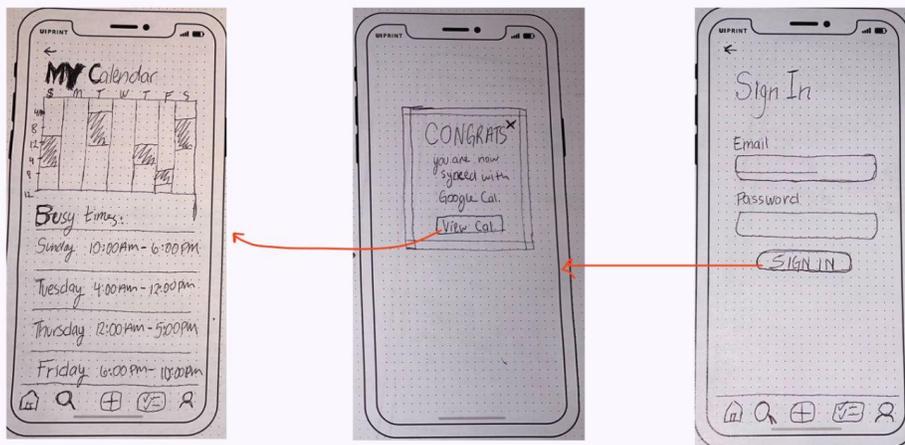
The hard task asks the user to link/sync their own calendar (gcal/ical) with the app to view all events at one place.

Hard Task



For the hard task, user has to link their external calendar with the app for improving suggestions. To do this, can click on the hamburger button to open the menu, and further choose "view my cal" option

Since user has never linked their calendar, they will be promoted to link their calendar by choosing the external calendar they use currently



Once the calendar is linked, user will be able to see times when they are free/busy to do activities and get recommendations as well.

This will then lead the user to sign in to their calendar of choice and grant access to the app

Figure A.2.3: Hard Task - Link calendar with the app ([Zoomable version](#))

A.3: Lo-Fi Prototypes

A.3.1 Lo-Fi Screens



Figure A.3.1: Lo-fi prototypes for feed-based theme ([Zoomable version](#))

A.3.2 Key interaction elements and functionality

Key Interaction elements	Functionality
Hamburger menu	Opens up a menu allowing user to navigate to important menus in the app such as calendar, settings etc
Home button (bottom bar)	Allows user to navigate back to home page
Search button (bottom bar)	Takes the user to search page where they can search posts related to a certain activity type and see suggestions
Add an activity button (bottom bar)	Navigates to add an activity screen where user can add details about a new activity to create a post
My Activities button (bottom bar)	Shows user a scrollable list of all past activities they participated in, sectioned into group and individual activities
Profile button (bottom bar)	Navigates user to the profile section where they can edit their details such as profile picture, bio etc
Back button (on all menu pages)	Most menu pages have a back button to take user back to the previous screen, creating ease of navigation in the app
Sort by drop down	The drop down allows user to decide the basis on which the activity feed is sorted, examples include location, post date etc

Key Interaction elements	Functionality
Scrollable feed	The home page has a scrollable feed of all activities posted by people that are happening around the user
Search bar	The search bar in the search page allows user to enter search terms related to activities they want to find

Figure A.3.2: Key Interaction elements for feed-based theme

A.4: Usability Testing Method

A.4.1: User Descriptions and Results

User 1: Zack, 22 male, Dartmouth student. Canadian-American.

Test Results:

- Just as for prototype 1, it took Zach a little longer than expected to do the easy task, which was, again, likely due to him getting used to the interface.
- He was able to successfully complete all task, though he had some trouble with the hard task, which required us to step in and guide him a little.
- During this test, we learned the importance of white space. Zach commented that one of the pages had too much content without much white space. This made him feel a bit overwhelmed at first.

User 2: Supritha, 24, Female, Dartmouth Graduate Student, Indian

Supritha is a Master in Engineering Management student at Dartmouth. She had expressed prior interest in learning new skills as part of her Dartmouth experience

Test Results:

- It took her a bit longer to understand the second application. She expressed later that it was because some of the textual information was too close to each other.

- Once she understood the application though, she did not have much issues in completing the easy and medium tasks, and required some assistance with the hard task.
- She was quick to mention some design choices that were similar and different between the two apps and how that affected her user experience.
- We realized that it's important to create a cohesive and consistent experience for the user, which was not completely achieved in our lo-fi prototype since it was by different people on paper.

User 3: Josh, 21, Male, International Dartmouth undergraduate

Test Results:

- Josh was able to navigate through the application easily. He took slightly longer to get the flow of moving between applications than he did with the first one.
- He was able to complete all tasks although the hard task took some more time to figure out.
- In the post-testing survey, Josh stated that the design was easy to understand but stated the need for more spacing on certain pages. He stated that the app was something he could see himself using in real life, especially if integrated with the points system from the gamification idea.

A.5 Market Research

Eventbrite

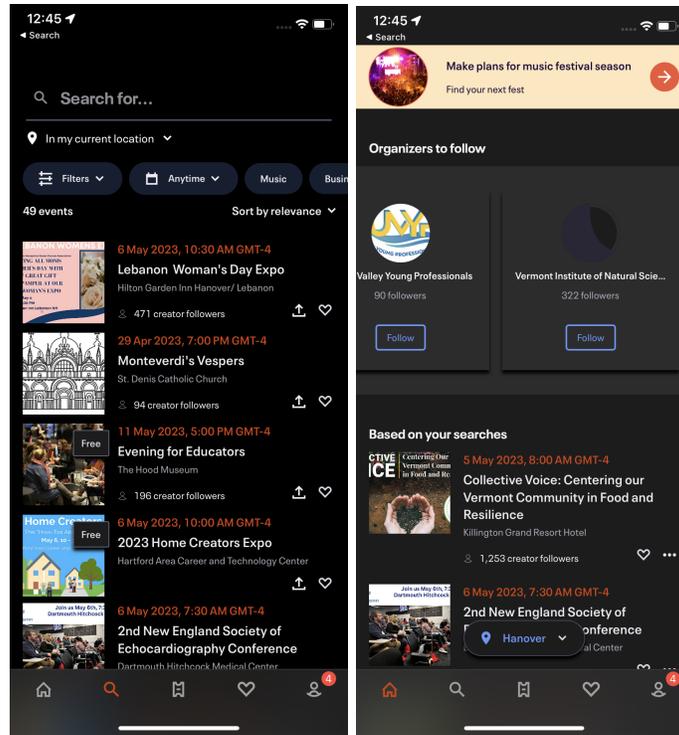


Figure A.5.1: Screens of the Eventbrite App

Eventbrite is an event management and ticketing website. It allows users to browse, create, and promote local events. Users can manage the events that they have signed up to in a separate tab. This application is similar to ours but we have more features for socialization like friend profiles and the presence of a feed.

Meetup

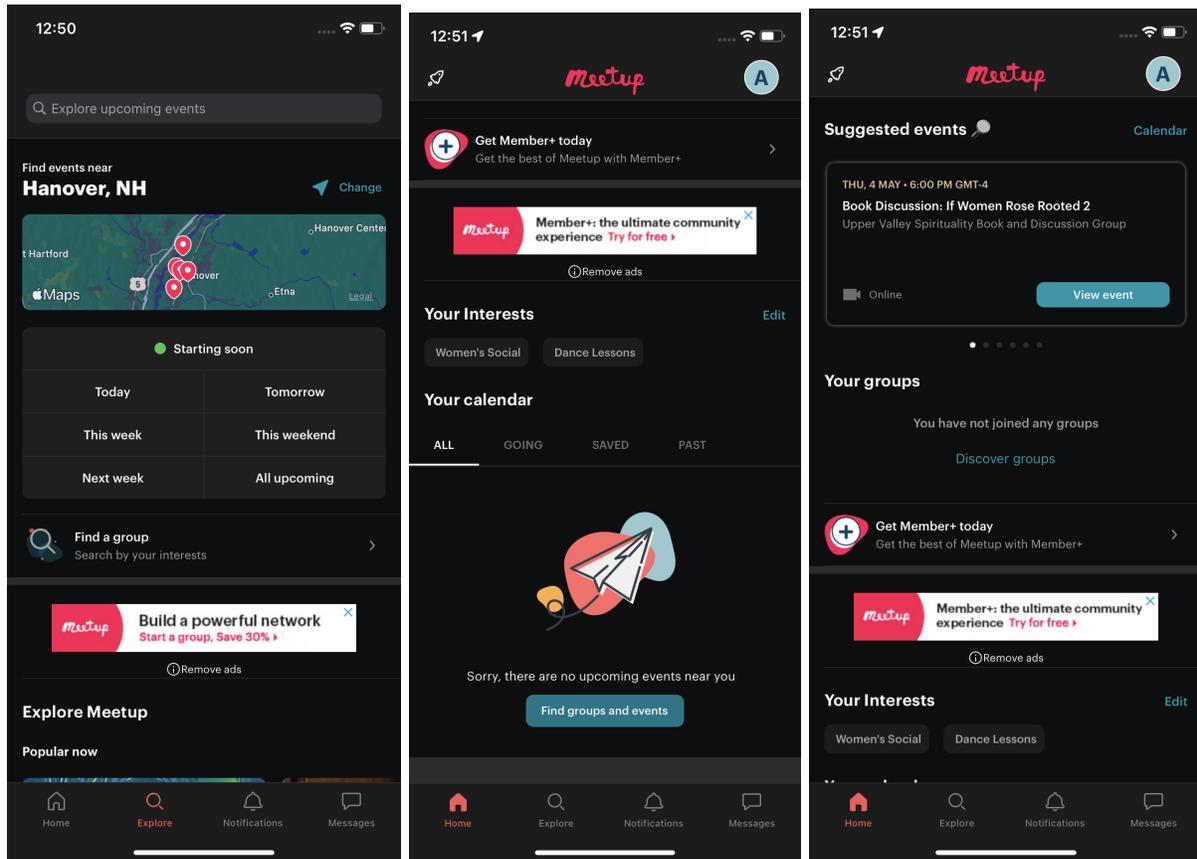


Figure A.5.2: Screens of the Meetup App

Meetup is an application that allows users to join a group related to a particular activity or create one themselves. Users can also find events happening around them that they might be interested in. Our solution extends these features with added socialization between users by the ability to have friends on the app.