



Friends living in different worlds? Just plan(et).

Final Report
CS 147 Fall 2024

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1. Project name & value proposition

Project name: Planet

Value proposition: Friends living in different worlds? Just plan(et).

2. Team members & roles



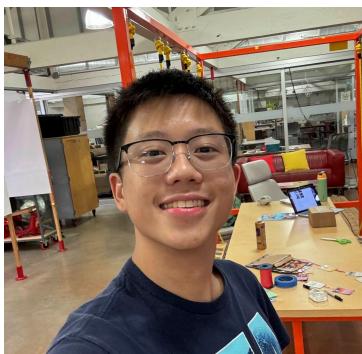
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3. Problem & Solution Overview

Feeling alone in a room full of people, or simply being lost in your schedule, the thought of dinner plans slipping your mind again. The world can sometimes feel isolating, especially for college students, many of whom are in a fast-paced, transitional period of their lives. Even if we have friends, it can be difficult to reach out to them, especially when we might be feeling negatively. Planet is a mobile application that streamlines emotion-sharing and activity-planning. We aim to reduce the discomfort of reaching out to people in a world where sharing emotions is sometimes stigmatized and contacting a friend is often avoided due to a fear of bothering them.

4. Needfinding Interviews

First Round

In order to choose our participants for our first round of needfinding, we had three main criteria. First, they had to be current university students, or had just recently graduated, to fit our demographic. Secondly, for our first round, we wanted to look for people with non-overlapping backgrounds, and each of our interviewees came from different universities. Finally, to explore our domain of interest, we chose interviewees who have had some history with mental health, or are dealing with ongoing struggles. We asked questions like, “How has the transition between your college years been? Can you summarize how each year felt in a phrase, a sentence, or a few sentences?” and “Can you describe a time when you felt overwhelmed by the demands of college life? What contributed to that experience?”

(Please note that the following names of interviewees were changed for anonymity.)

For our first round of needfinding interviews, we conducted a total of four interviews—three in person, and one over Zoom. Our first interviewee, Carl S., was a FLI student at a community college who generally expressed frustrations with his college and academic life. Since he couldn’t go to his family for academic help, he went to his college counselors, but they were difficult to get a hold of and unhelpful. However, despite his college situation, this interviewee still said that being alone is the “one major dip” for him, and notes that friends play a large role in his mental health. Carl also mentioned that he doesn’t use mental health resources because they seem “too good to be true” and a “waste of time.”

Another one of our interviewees, Grace J., was an international student at UPenn, who generally expressed how difficult it was as an international student to adjust to college life in

America. For example, it was difficult for her to make friends because of the culture difference. She said freshman year was “a blur” for her and it felt like she had no direction. However, she now reports that her mental health is “great.” Interestingly, though, although she says that she has made friends since freshman year, she still wishes she had more.

Our third interviewee, Will H., generally expressed that he struggled with lack of motivation, and that his “mental health is closely linked to how physically active” he is. As a graduate and an extreme user (having undergone mandated therapy in the Singapore army), this interviewee interestingly distrusts mental health apps and resources, preferring to talk to friends or family about problems instead. He also notes that his required therapy wasn’t the most helpful considering he had no choice in it, and that university resources for mental health are “vague.”

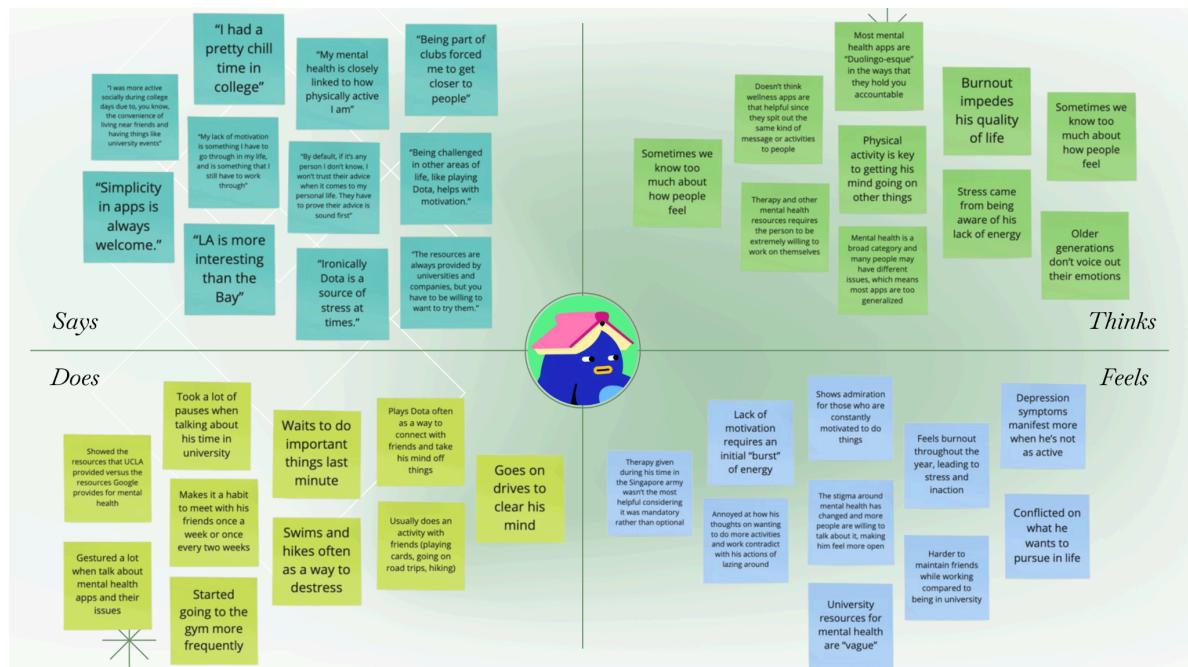


Figure 1: Empathy map for Will H.

Our last interviewee, Alex C., had a complex relationship with mental health, also struggling with motivation and burnout. He referenced his friends as his main support system throughout the interview. However, when asked about mental health or more personal questions, he would hesitate and give vague answers. For example, he said in the interview, “That’s a tough question. It’s all, like, internal. Mental health is tough. It’s not like, I have school, so I’m sad,” and also said, “I’ll probably struggle to answer anything mental health related.” When asked about mental health resources, Alex didn’t know that his university even offered them, but similar to Will, he also expressed aversion, saying that it would feel weird to talk about “those kinds of things with a stranger.”

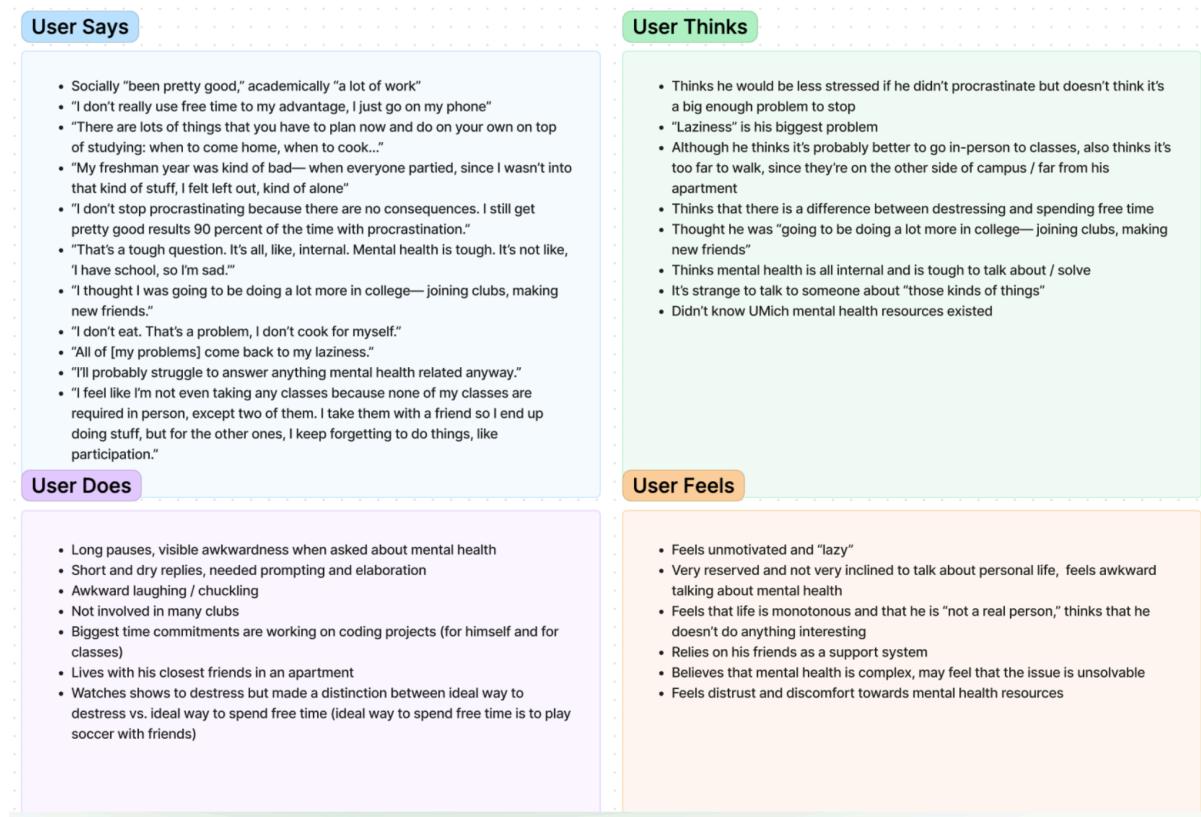


Figure 2: Empathy map for Alex C.

First Round Synthesis

After conducting our interviews, we realized that all of our interviews mentioned friends as a support system, and many interviewees also expressed a desire to either make more friends or spend more time with them. Secondly, there was a general distrust of mental health resources, mostly expressing concerns with getting such personal help from a stranger. Lastly, we found that although our interviewees had different backgrounds, there were still common stressors. For example, lack of motivation was common ground for Will and Alex, whereas it seems that educational systems themselves were a stressor for Grace and Carl. Wanting to explore the common themes—burnout, educational systems, and friendships—we decided to make our second round interview questions tailored to these three categories.

Second Round

For our second round of interviews, we decided to explore the areas of interest. We conducted two interviews for our second round, asking questions like, "How many "close friends" would you say you have? What makes them your close friends?" "Can you recall a moment when your planning fell short and caused a significant issue or source of stress?" and "What are the biggest problems you face in college?"

We came out of our second round of interviews with many similar findings regarding distrust of mental health apps, lack of motivation, and a desire for friendships and connection. For example, our first interviewee, Daniel D., expressed negative feelings towards mental health apps, viewing them as childish and ineffective. Additionally, he reported he felt overwhelmed with current commitments and often turns to time-consuming distractions, but feels guilty about wasting time. Overall, Daniel expressed that his lecture-based classes made it difficult to make friends, he struggles with time management, and he reaches out to people to form study groups, but they often don't respond to him.

Our second interviewee, Sofia M., underlined the friendship and alienation issue: she expressed that she has moments where she feels like she neglects either her social or academic life, and that it's difficult to balance the two. She reported that she is currently struggling with her housing situation (living in a three-room quad this year on a different side of campus), but because of this, she is putting more effort into reaching out to friends even though they live farther away. Sofia also mentioned that social events and hangouts tend to be more spontaneous, so it's hard to both plan and follow through. In the interview, she said, "I think a lot of people, including myself, feel guilt over not being productive and having social moments."

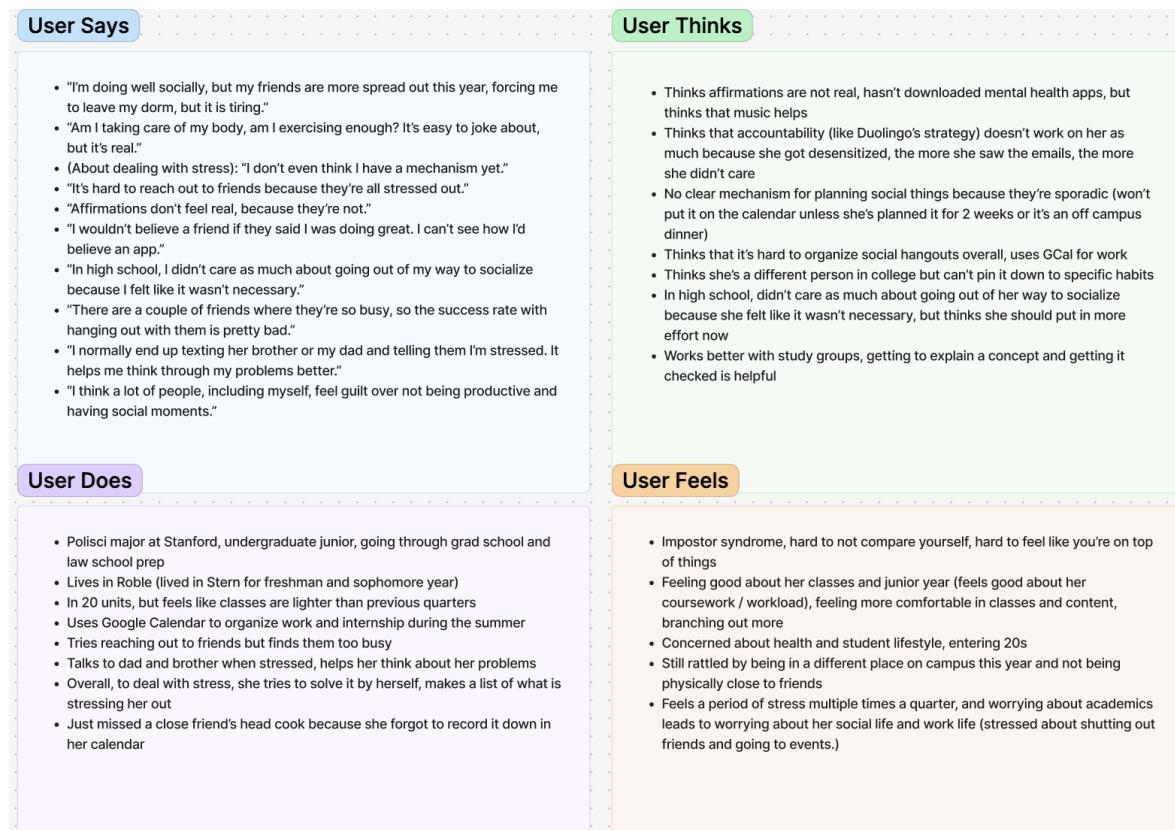


Figure 3: Empathy map for Sofia M.

Second Round Synthesis

Originally, we wanted to explore burnout and lack of motivation in college students. However, we were able to see that friendships and social connections appeared as a prominent subject across all of our interviews, and we began to gain interest in this problem space.

5. POVs & Experience Prototypes

After our needfinding process, we analyzed our empathy maps and selected the most relevant and engaging interviews. We selected three interviewees (Daniel D., Sofia M., and Grace J.) to generate POVs (points of view) and HMWs ("how might we's) for.

Daniel D.'s POV

- **We met** Daniel, an undeclared student at the University of Chicago who wants to find more external motivation to be productive.
- **We were surprised to notice** that he prefers working in groups, but often ends up working on his own.
- **We wonder if this means** he is anxious to create / join study groups to meet up and complete work together.
- **It would be game-changing** if he could reduce anxiety in forming or finding these groups.

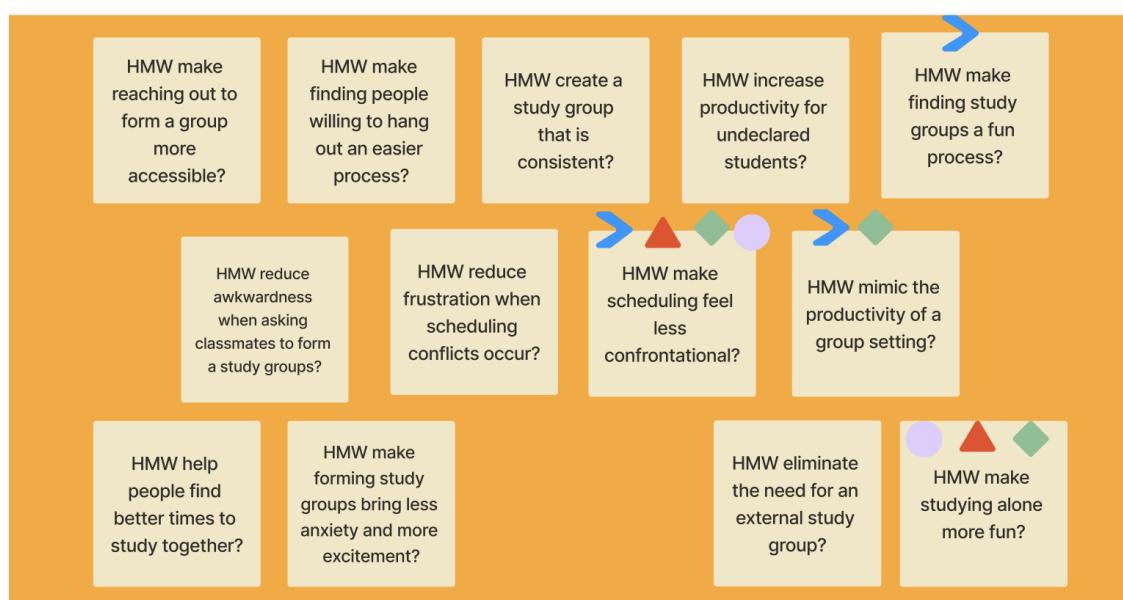


Figure 4: HMW generation and voting for Daniel D.

Sofia M.'s POV

- **We met** Sofia, a junior majoring in political science at Stanford University who occasionally struggles with planning academics and social events.
- **We were surprised to notice** that she feels guilt and the need to punish herself for prioritizing social life over academics
- **We wonder if this means** that she feels like she should choose between her social life and academics
- **It would be game-changing** if she could eliminate the guilt she feels after a social hangout.

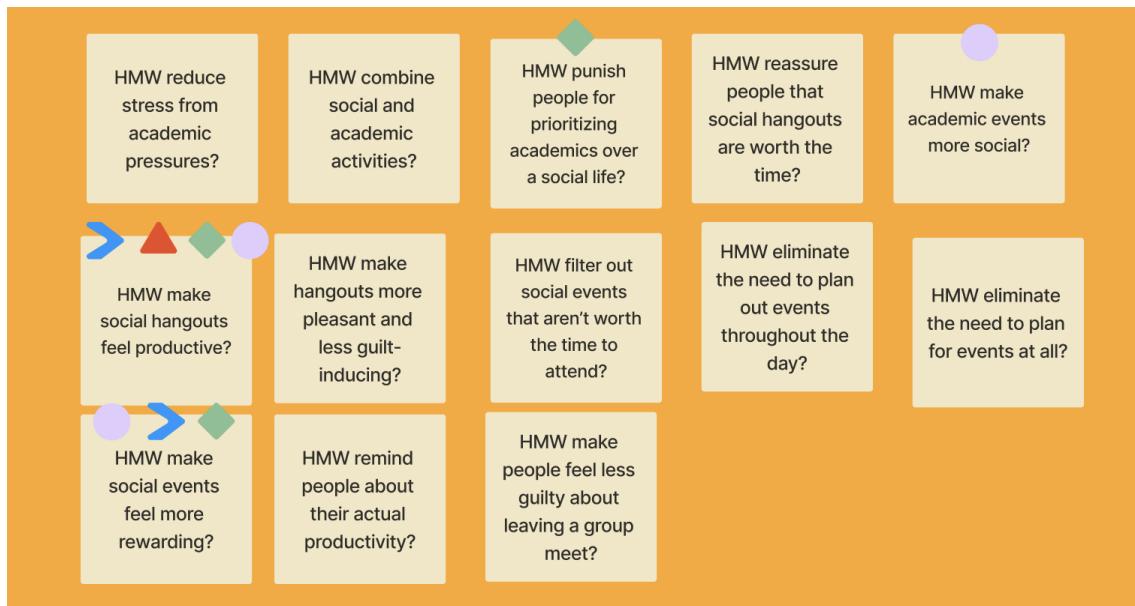


Figure 5: HMW generation and voting for Sofia M.

Grace J.'s POV

- **We met** Grace, an ambitious international junior at UPenn studying engineering and business.
- **We were surprised to notice** that despite her willingness to attend social events offered by the school, Grace doesn't feel like she has a close group of friends, and that most friends disappear after a while.
- **We wonder if this means** that she needs more support to maintain her friend groups.
- **It would be game-changing** if she could make more friends while maintaining good connections with her existing friends.

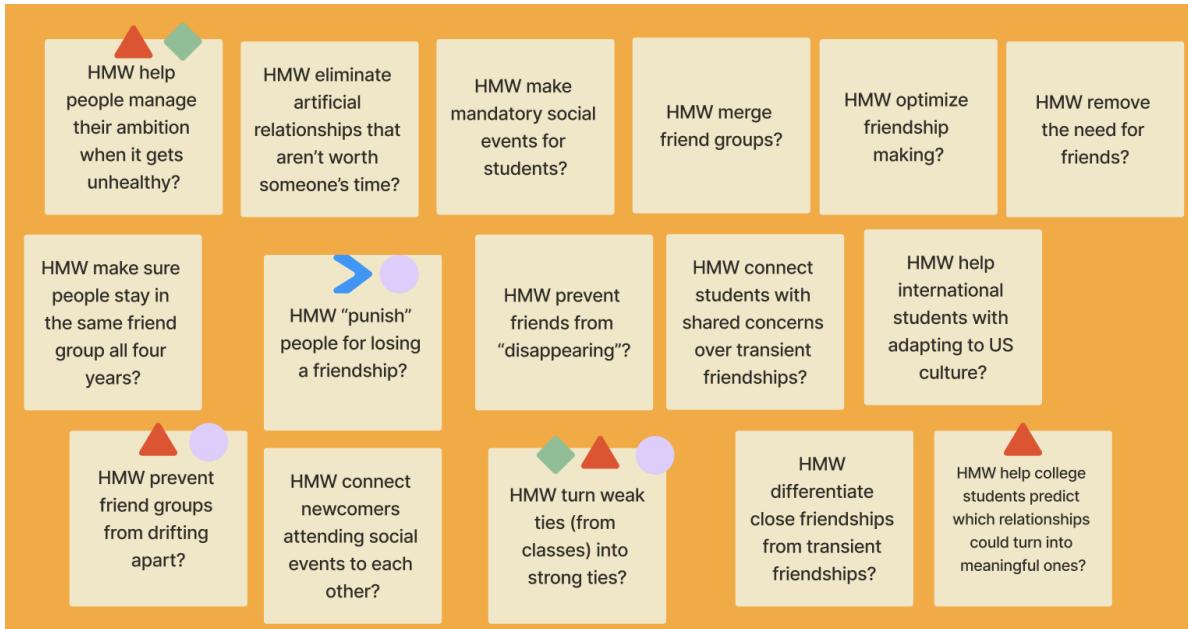


Figure 6: HMW generation and voting for Grace J.

Top 3 HMW Statements

- How might we make social hangouts feel productive?
- How might we make scheduling feel less confrontational?
- How might we turn weak ties (from classes) into strong ties?

Top 3 Solutions

1. Create a platform that allows people to alert / notify each other by setting statuses about their emotions and updates (when they are free, lonely, etc.)
2. A platform where friends in a group get responsibility to plan an event (the responsibility rotates per week / biweekly.)
3. A Tinder-style app where you can swipe right on people you want to be better friends with (match people with mutual interest.)

Experience Prototypes

Prototype 1: Create a platform that allows people to alert/notify each other by setting statuses when they are free, lonely, etc.

With this solution, we made the core assumption that people are willing to share and update their emotional status or what they're currently doing at the moment.

In order to test this assumption, we created a group chat of people in an existing friend group and asked them to text their emotional status and any activities they were willing to share

throughout the day. At the end of the day, we asked participants to reflect on the experience to gauge their comfort levels and enthusiasm for continuing this type of experience. We did this for two groups—the first group was a group of three friends from UMich, and the second was a junior from Northwestern.

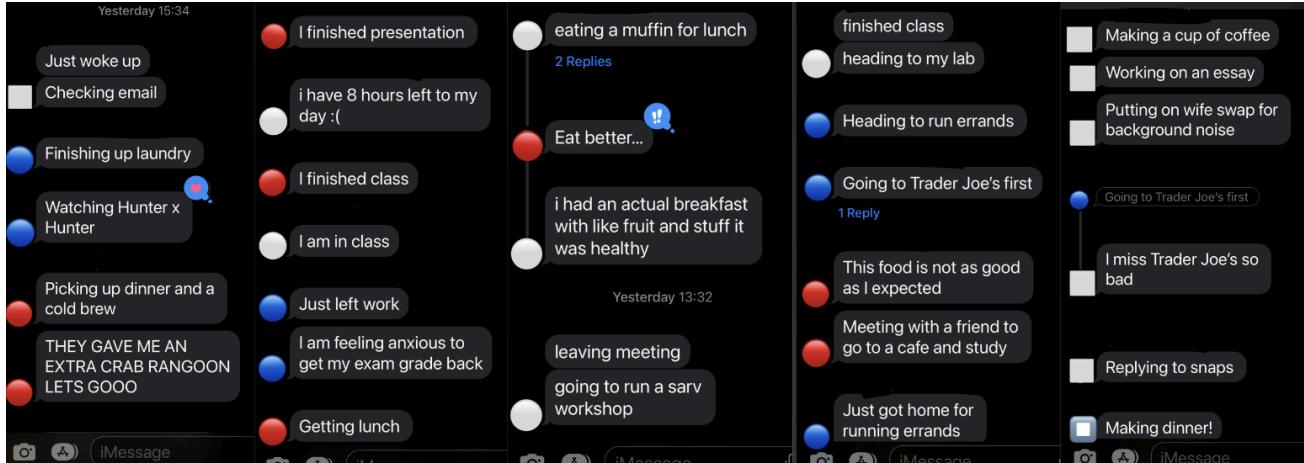


Figure 7: Experience prototype with UMich friends for Prototype 1

We found that our assumption was largely solid: users were consistently updating on emotions and activities, no matter how mundane. Generally, users reported that they felt comfortable in updating their life, and there were a variety of things shared throughout the updates. Additionally, it brought friends together, as it allowed for them to update each other on things that they wouldn't normally have mentioned. However, there were drawbacks: for example, some users felt that it was interesting but not necessarily beneficial. Users also didn't like having to remember sending updates throughout the day. Additionally, not many "strong emotions" were shared, and one reported that they felt awkward sharing trivial things.

Prototype 2: Rotating roles for social planning in friend groups

With this proposed solution, we made the core assumption that people see scheduling as something they have to go out of their way for.

People in an existing group of friends were instructed to fill out a when2meet to find available times. Then, each participant was instructed to create an event idea, given the names of the other friends in the friend group and a weekday/time. Once all members had planned an event, they were given the event dates and times scheduled over the next three weeks, each being led by one host. We tested this prototype on a group of three Stanford students, recruited for a previously expressed need for better social planning methods.

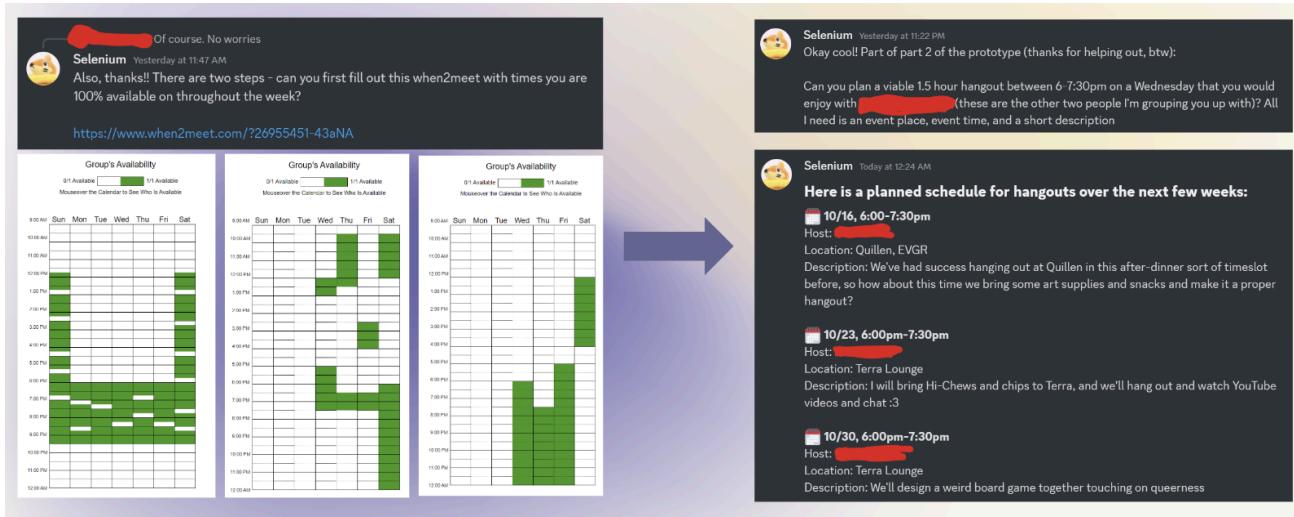


Figure 8: Experience prototype with friends for Prototype 2

Overall, we found that our assumption was partially invalid. Although the participants reported struggling with scheduling with friends before, they also felt that scheduling was rewarding when they were pushed to do so through the exercise. All of the social events planned fit perfectly into all participants schedules, and participants found that the activities planned were enjoyable. Participants also felt like it was a low-effort and rewarding exercise. However, there were flaws in the concept for our solution. For example, some participants were confused by the initial setup, and, and there was no second iteration to help participants plan if a certain person couldn't make it.

Prototype 3: Matching acquaintances to develop friendships through swiping mechanic

Our core assumption for our last solution was that people want to reconnect with former friends or acquaintances through a quick method. To test this assumption, we planned to recruit one person and have them go through a list of people from their freshman dorm. The list of people was uploaded to Quizlet to make use of the swipe left/right feature and simulate our solution idea. The participant should swipe right if they are interested in getting to know the person better. After the process, interview them to understand their experience.

We recruited a Stanford student who expressed interest in reconnecting with people, and found that our assumption was partially valid, since it seems that the idea behind it held. For example, he noted that he was able to remember many people from his freshman dorm through the experience prototype, which he appreciated. However, the participant found many flaws with the overall experience. He reported that he got bored by the tenth name and stopped thinking too much about the prompt. He also said, "I don't actually think I wanted to

reconnect with forty people, maybe only fifteen,” and said it seemed counterproductive to “automate” the process.

Implications

Overall, we realized that Solution 1 showed the most promise with the experience prototype results, with Solution 2 close behind it. We began to think that a combination of status updates and scheduling could alleviate the stress for students to plan events and allow for them to stay connected with their friends.

6. Design Evolution

Final Solution

After considering the various solutions proposed from the experience prototype testing, we chose to combine elements of Solutions 1 and 2 together, focusing on fostering closer connections among friends by integrating planning features and tools for sharing emotion-related updates.

Through our prototyping process, we explored various ways to help friends stay connected. Solution 1 revealed the value of emotional status updates, as users felt comfortable sharing their feelings and appreciated the opportunity to learn about aspects of their friends' lives that would otherwise go unnoticed. However, drawbacks like remembering to send updates and the occasional awkwardness of sharing mundane details highlighted areas for refinement.

Solution 2 emphasized the potential of scheduling as a rewarding, low-effort way to create meaningful interactions among friends. While the exercise helped participants find common times and plan enjoyable events, the setup process was occasionally confusing, and the lack of iteration for scheduling conflicts revealed limitations in its execution.

Ultimately, we realized that combining the emotional awareness of Solution 1 with the structured planning of Solution 2 could create a platform that not only fosters closer relationships but also reduces the barriers to staying connected. This insight became the foundation for Planet.

Task Selection

We chose our tasks based on their ability to address the key needs of our user base: fostering emotional connections, simplifying communication, and organizing social interactions. Each

task represents a different level of complexity, ensuring a balanced experience for users of all types.

Task 1 (Simple): Set your emotional status

Users can set their emotional status (e.g., happy, angry, sad) and caption it with a message. This feature serves as a way for users to share their current state without the pressure of crafting a long message to send to others. This task is important to our user base because it fosters emotional transparency and empathy. Additionally, it helps friends stay attuned to each other's moods and creates opportunities for connection, even in busy lives. This simple task aims to normalize sharing one's emotions and make the process less stressful.

For this task, we allow users to choose between setting a photo status and text status allowing for greater personalization and expression. A photo status lets users share a snapshot that reflects their current activities, while a text status provides a quick and concise way to update friends.

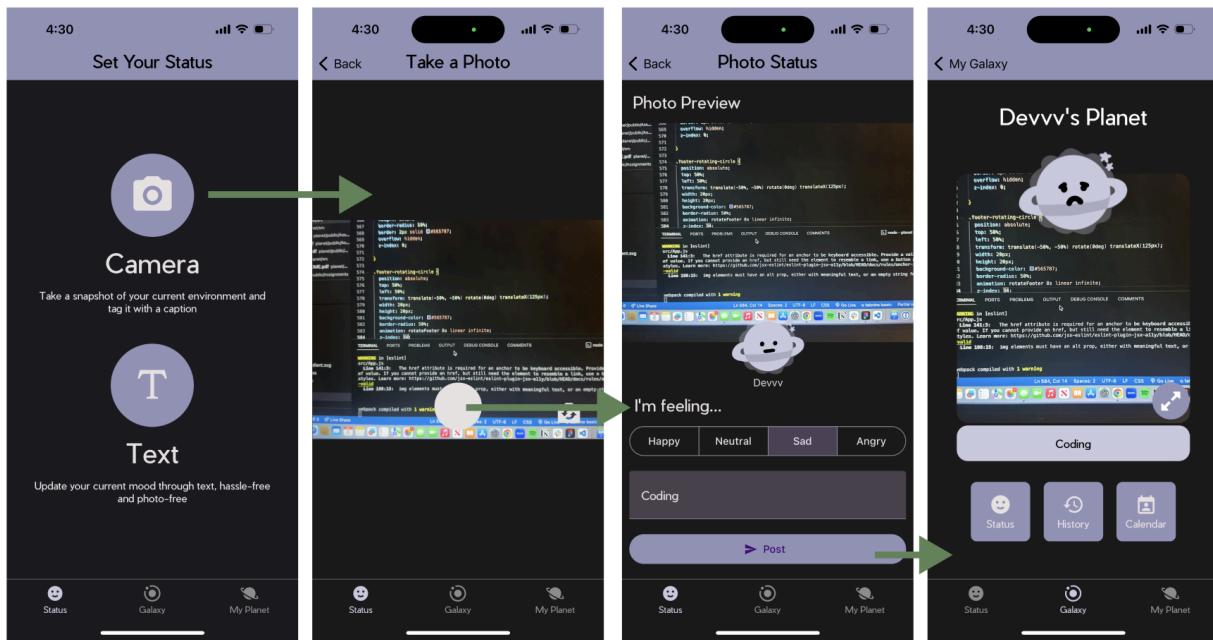


Figure 9: Task flow for setting your status. Users can take a photo of their surroundings and set their current emotional state.

Task 2 (Moderate): Schedule a hangout with a friend

Users can click into their friends' profiles and see their weekly calendar, along with the times their friend is busy. From there, they can pick a time and schedule a hangout. Once sent, their friend will receive a notification. Our intention for Planet is not to reinvent the wheel—we understand that most users will already have a preferred form of communication (eg.

iMessage, WhatsApp, Discord, etc), so this scheduling task is meant to kickstart reaching out and make communication with friends less daunting.

This feature is essential to our user base because it removes the hassle of coordinating plans and trying to sync up schedules, which can often deter people from meeting up. Moreover, we aim to ease the awkwardness of reaching out to schedule hangouts with friends you may not have contacted in a while, helping users reconnect despite busy schedules.

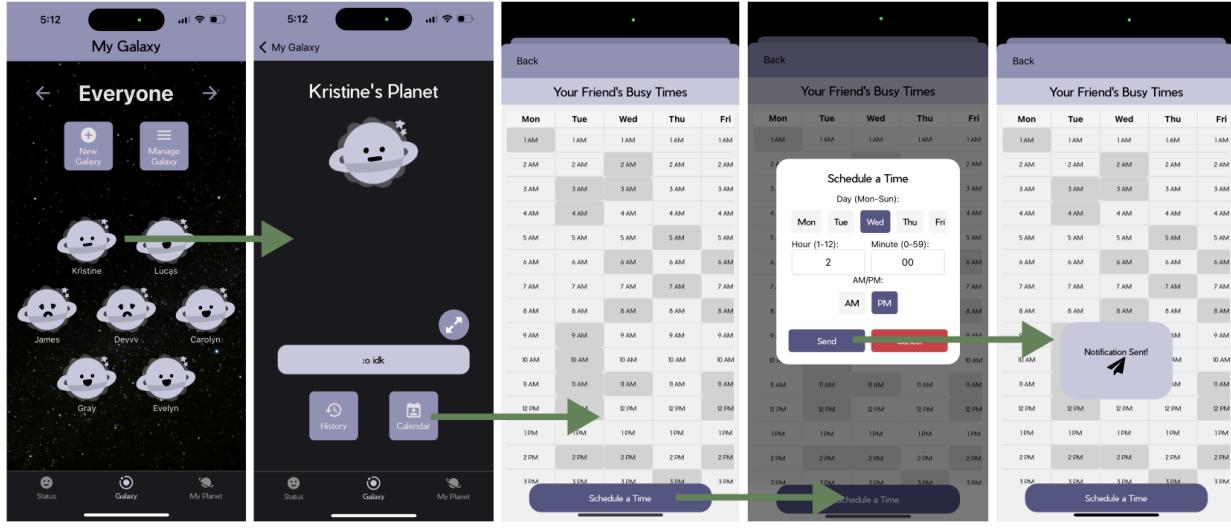


Figure 10: Task flow for scheduling a hangout. Users can click into a friend's planet and then schedule a time to hangout based on their friend's busy times.

Task 3 (Complex): Organize your friends into different galaxies

Users can organize their friends into "galaxies" to efficiently locate, categorize, and prioritize their friendships. This organization helps create a more streamlined and personalized interface, especially for users with diverse friend groups.

This task is critical for our user base because it acknowledges the complexity of modern relationships and social circles. It also helps users manage their social lives with greater intentionality. By creating galaxies, users can maintain stronger connections with the people who matter most while keeping their interface clean and intuitive, tailored to their unique social circles.



Figure 11: Task flow for creating a new galaxy to sort friends. Users can name their galaxies and add their current friends.

Design Evolution: Visualization and Rationale

Initial Sketches

In our earliest stage of designing, we first started with exploring various platforms to develop our solution for. Below shows our mobile, wearable, and VR sketches. After analyzing the feasibility, novelty, and efficiency of each design, we decided to focus on making a mobile application. We chose this since we wanted this app to be available to as many users as possible.

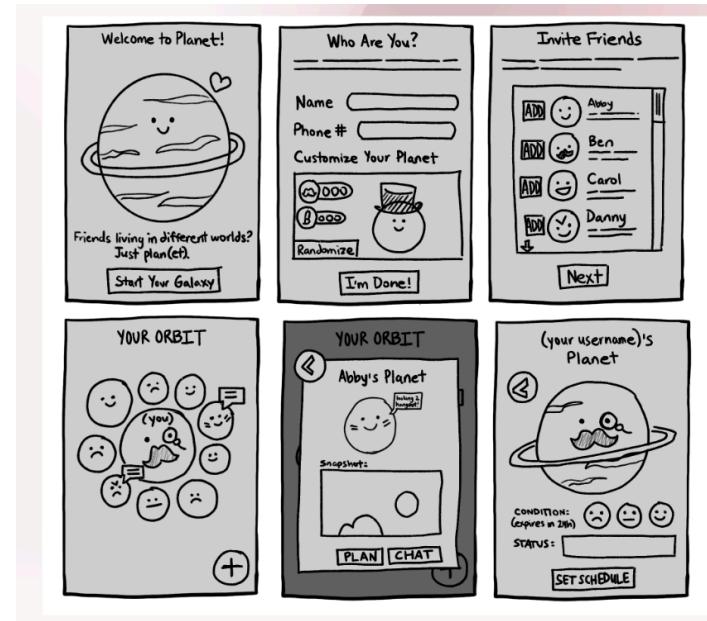


Figure 12: Mobile Realization Sketches

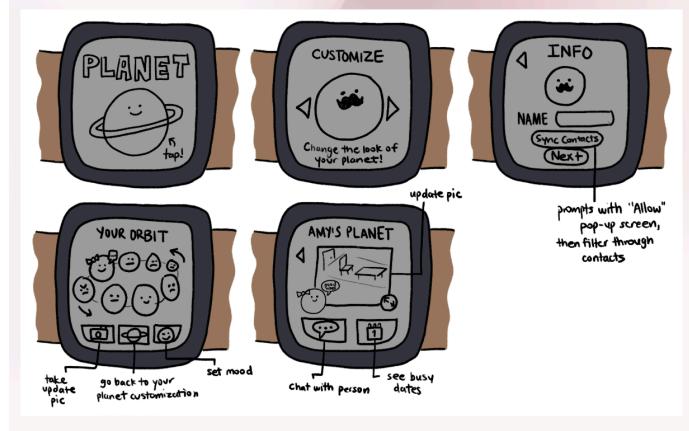


Figure 13: Wearable Realization

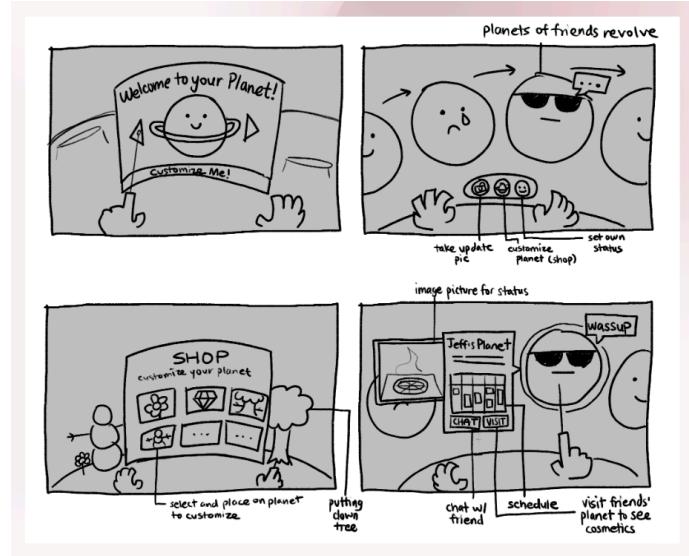


Figure 14: Virtual Reality Realization

Low-fi Prototype

Moving on from the initial sketches, we then made our low-fidelity prototype sketches, designing our simple, moderate, and complex tasks. After sketching out our designs, we then made a paper prototype for user testing to understand how users will interact with our initial solution. This was crucial for identifying pain points and seeing whether our solution was actually effective.

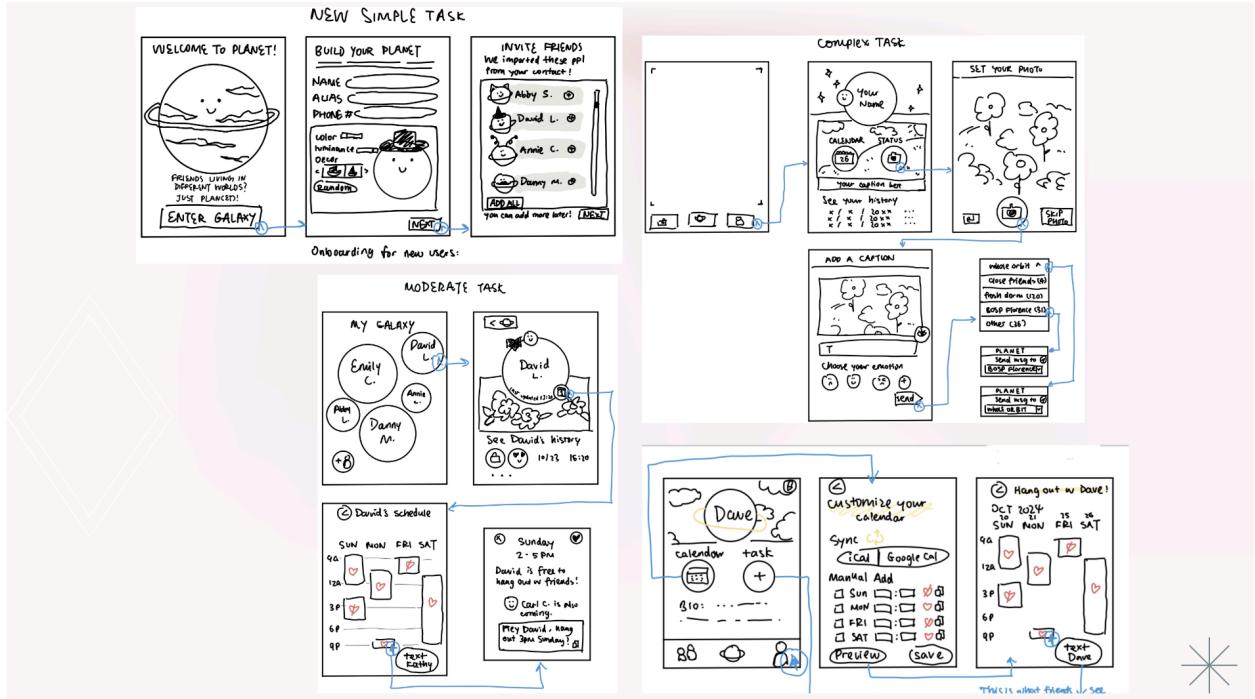


Figure 15: Initial Low-fi Prototype of simple, moderate, and complex tasks

To evaluate the usability and functionality of Planet, we conducted testing using our prototype. Participants were asked to complete a series of predefined tasks. These tasks were designed to align with Planet's core features and reflect varying levels of complexity.

Success was measured using three key metrics:

- Intuitive Navigation: Qualitative feedback on how easy it was to understand and use the interface.
- Reaction Speed: Time taken to complete each task.
- Likeability: Participants' overall impressions and satisfaction with the interface and features.

Through testing the low-fidelity prototype, we were able to come away with key insights for our design.

Positive feedback for our prototype included:

- Participants found the concept of Planet engaging and unique, particularly the "galaxy" grouping of friends.
- Google Calendar integration was highlighted as intuitive and satisfying.
- The ability to customize visibility for posts and statuses was well-received, as it offered flexibility not found in similar apps.

However, participants also identified multiple challenges:

- Several participants found buttons with only symbols confusing, leading to misinterpretations of their functions.
- Dropdown menus for selecting friend groups felt clunky and unintuitive.
- Icons were sometimes too small or lacked sufficient labeling, making navigation harder.
- There was a desire for better support for text-only statuses.

Finally, participants suggested that we:

- Pair vague icons with descriptive labels or replace them with more detailed imagery.
- Redesign user-specific pages, such as the “Kathy” page, for better usability.
- Simplify the process for setting text-only updates.

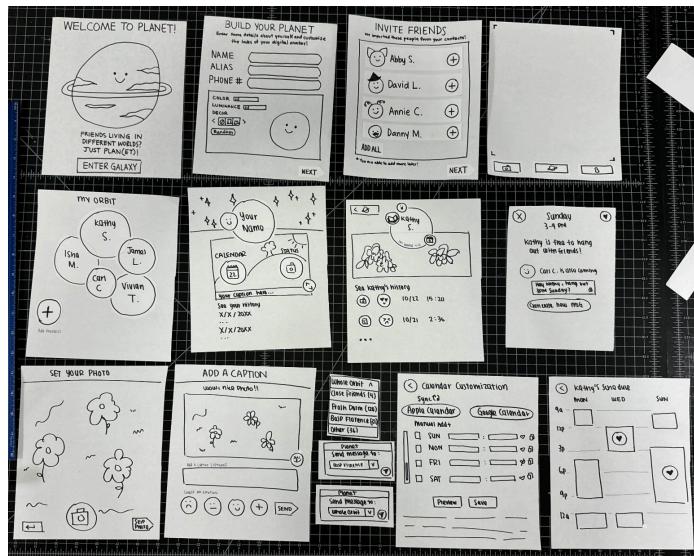


Figure 16: Paper Prototype

Low-fi to Med-fi Prototype

The core concept of Planet was well-received, particularly the emotional status updates. However, navigation challenges, such as unclear icons and clunky dropdowns, highlighted the need for improved usability. Simplifying workflows and addressing user concerns from low-fi testing was essential as we began developing our medium fidelity prototype.

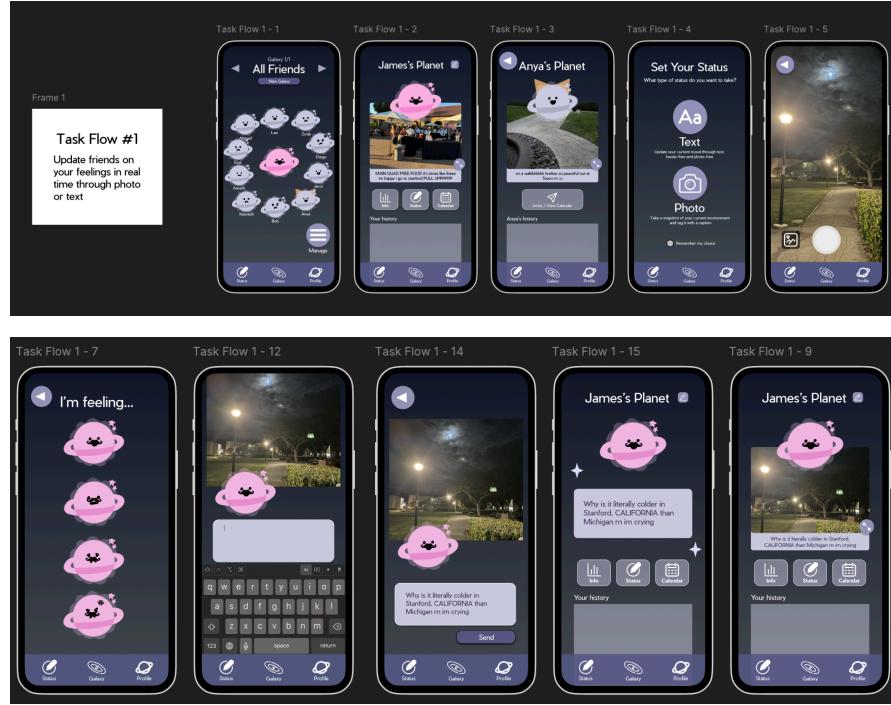


Figure 17: Task Flow 1 - Setting your emotional status

One of the major changes we implemented from our low-fi to med-fi prototypes was including color. We settled on a purple color scheme to give Planet a cohesive and visually appealing aesthetic that aligns with the app’s theme of connection and personalization, as well as the galaxy metaphor. The addition of color not only enhanced the interface’s visual hierarchy but also helped make key elements, such as buttons and icons, more distinguishable and intuitive for users, addressing the prior feedback.

Another major change we implemented in our medium-fidelity prototype was being more intentional with the iconography. Based on user feedback, we replaced vague or confusing icons with more descriptive and intuitive designs. Each icon was carefully chosen to clearly communicate its purpose, making navigation more seamless and reducing user frustration.

Additionally, we leaned into our Planet branding by incorporating friendly and playful design elements to create a welcoming atmosphere. This approach aimed to make users feel more comfortable sharing their emotions, fostering a sense of trust and connection.



Figure 18: Task Flow 2 - Schedule a hangout with friends

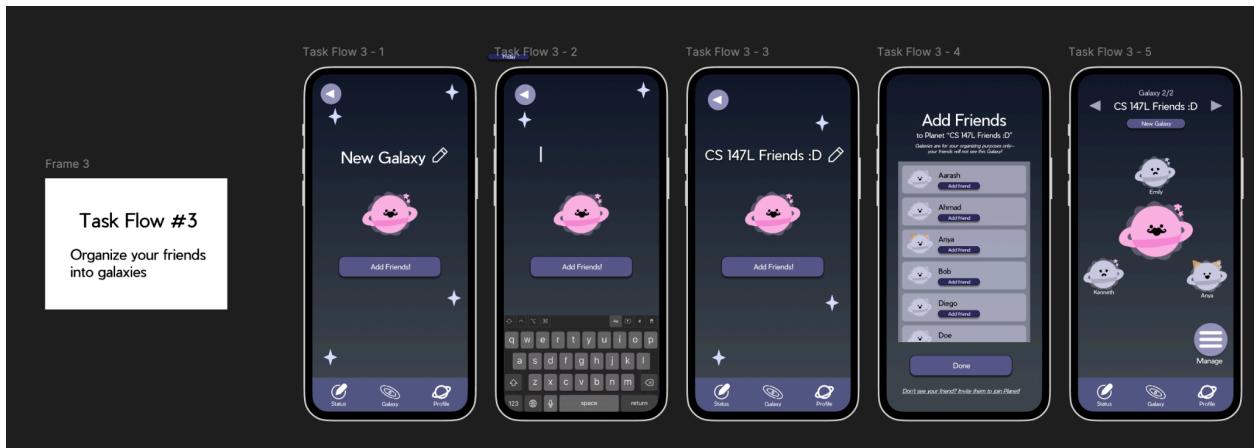


Figure 19: Task Flow 3 - Organize friends into galaxies

Heuristic Violations

To evaluate and test our medium fidelity prototype, we gave our Figma prototype to another team in our design studio. We received 42 total heuristic violations total, with 14 being severity 3-4. The heuristic violations with lower severity mainly focused on the visibility of the system status, which prompted us to focus on standardizing components across our app. The following are some of the more severe violations that we addressed before moving onto our high fidelity prototype:

* Violations are labelled as such: [Heuristic Violation Number] | [Task Type] | [Severity Level] *

H12: Value Alignment & Inclusion | Simple Task | 4

- Issue: The ability to make multiple statuses and have different post visibilities may complicate the app, by having users not only keep track of their statuses throughout galaxies, but also possibly view multiple statuses from one user (through overlapping

galaxies). This can not only result in technical complications, but also create tension or alienate users who end up excluded from certain status updates.

- Fix: We chose to remove the customization of the post visibility altogether to stick closely with our product's values of inclusion and maintaining closeness with your friends.

H6: Recognition not Recall | Complex Task | 3

- Issue: No names under planets could cause an issue if users cannot remember the appearance of a friend's planet or when a friend changes its design. This could lead to confusion or difficulty in quickly identifying and interacting with specific friends, especially in a system where visual recognition plays a key role in navigation and engagement.
- Fix: We chose to add names underneath all of the planets for greater clarity.

H12: Value Alignment & Inclusion | Complex Task | 3

- Issue: Some of the friend planets are smaller or bigger than others. This may lead users to question if certain friends are more important or active, potentially causing some friends to receive more attention or emotional help than others.
- Fix: We chose to standardize the sizes of all planets to avoid creating unintended social hierarchies or misunderstandings.

H10: Help & Documentation | Extra Violations | 3

- Issue: When creating an account and a name, the app states that you can change this at any time, but it is unclear where this can be done.
- Fix: Add a clear message like "You can change this at any time in Settings" to guide users (and implement this feature in the future for our high-fi prototype—this indeed was not included in the medium-fi prototype, either.)

H1: Visibility of System Status | Moderate Task | 3

- Issue: When clicking "invite" and then hitting the back button, users are taken to the "available times" page instead of the page they started from, leading to confusion.
- Fix: Ensure that the back button behavior aligns with user expectations and returns them to the correct previous page.

H10: Help & Documentation | Moderate Task | 3

- Issue: Users were unsure what to do on the scheduling page, as they didn't realize the time blocks were clickable buttons to proceed to the next step.

- Fix: The calendar feature was actually one of the biggest changes between our medium-fidelity and high-fidelity prototypes. We realized, after considering this feedback, that the design of the calendar was not very intuitive, and decided to forgo the design of clicking on a block of time to get a generated message and a button that opened iMessage. Instead, we decided to redesign the calendar feature to be able to show a friend's busy times. The user would then be able to, according to the calendar, input a time that would work for both of them. The app then sends a notification for the user to the friend, notifying them that the user wants to hang out or connect.

H2: Match Between System & World | All Tasks | 3

- Issue: The "Set Status" or "Your Status" page uses inconsistent naming compared to other navigation items like "My Planet" and "My Orbit," which may confuse users.
- Fix: We renamed the page to align with the existing terminology, such as "My Status," and "My Galaxy" for consistency.

H8: Aesthetic & Minimalist Design | All Tasks | 3

- Issue: The navigation bar includes redundant labels like "Set Status," "My Orbit," and "My Planet," which could be simplified for clarity and conciseness.
- Fix: We chose to keep these labels along with icons for clarity when navigating.

H9: Help Users with Errors | Simple Task | 3

- Issue: Users can send an emotional status without setting visibility, potentially sharing sensitive updates with unintended audiences, leading to embarrassment or discomfort.
- Fix: In our final prototype, we decided to get rid of the visibility option to promote more inclusivity.

H1: Visibility of System Status | Complex Task | 3

- Issue: Users are unable to edit the members of a galaxy after its creation, which may result in unintended or incorrect groupings.
- Fix: Allow users to edit galaxy members, enabling them to remove or add people as needed for better control.

H6: Recognition not Recall | All Tasks | 3

- Issue: The term "My Orbit" appears in the navigation bar but is inconsistent with the use of "galaxy" elsewhere, creating a disconnect and forcing users to infer the relation between these terms.

- Fix: Align the terminology across the app by using consistent terms like "Galaxy" instead of "My Orbit."

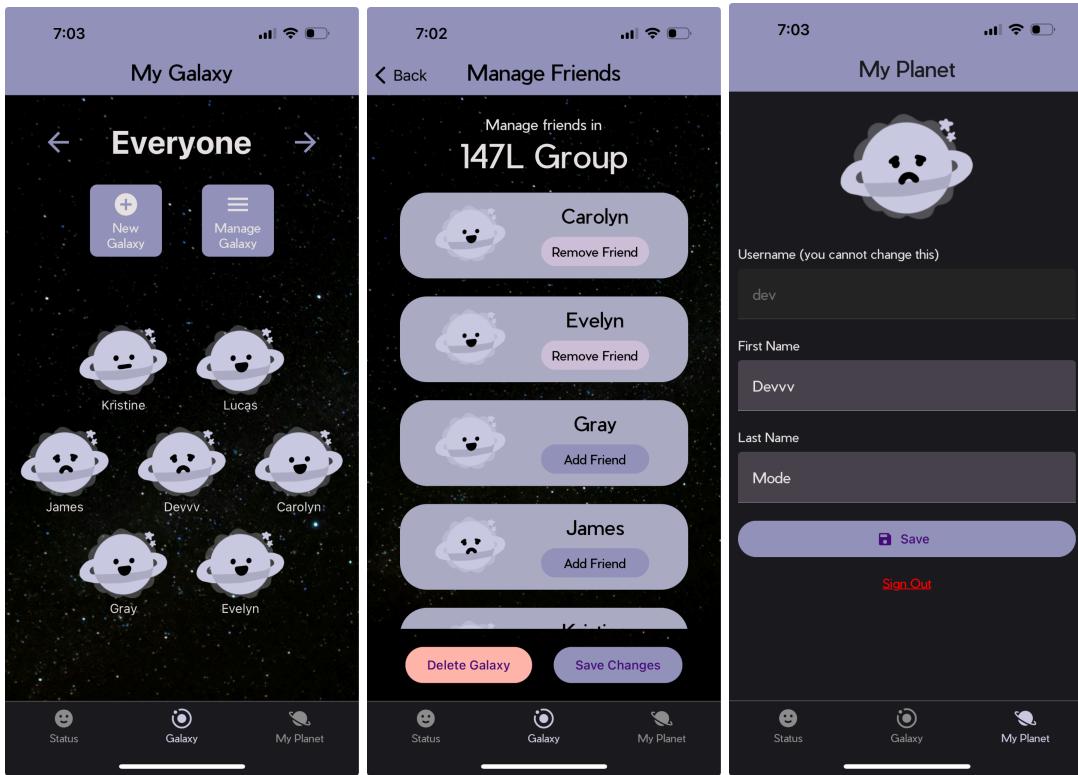


Figure 20: Revised designs for high fidelity prototype

Values in Design

We identified *connection*, *emotional awareness*, and *inclusivity* as the core values for Planet. These values aim to foster genuine relationships by making emotional states and social availability visible, emphasizing users' well-being, and creating a supportive community that combats feelings of alienation.

Connection:

Planet fosters meaningful relationships by enabling users to share their emotional states in real time, making it easy to check in and stay engaged with friends. Features like visual representations of friends' planets and simple scheduling tools encourage ongoing interaction and reduce the effort needed to stay connected. Unlike many competitors that provide a general overview of friends' updates, Planet emphasizes intentionality in reaching out and checking in on your friends, since it provides a view of your friends instead of a feed of their updates. By focusing on emotional states and personalized interactions, the app creates opportunities for shared experiences and deeper communication, ultimately strengthening the bonds between users.

Emotional Awareness:

The app emphasizes emotional transparency by allowing users to easily update their emotional statuses and view those of their friends. The friendly, playful design of planets makes sharing emotions with others less intimidating, encouraging users to express themselves openly and reducing the surrounding stigma. By making emotions visible, Planet helps users understand and empathize with one another, creating a supportive and emotionally-aware community.

Inclusivity:

Planet prioritizes inclusivity by ensuring all users feel equally valued and included. For example, we removed visibility customization for posts to prevent alienation or exclusivity among friends, fostering an environment where emotional updates are shared openly with everyone in a user's circle. By creating a welcoming user experience, Planet encourages users to connect with others without fear of exclusion. The app's friendly design and focus on openness ensure that every user feels like a vital part of their social network, promoting a sense of belonging and shared connection.

Values Tensions

While creating our values for Planet, we also came across tensions in values that we had to consider.

Privacy vs. Connection

Balancing privacy and connection was a key challenge for Planet. On one hand, we wanted to ensure that users could share deeper, more vulnerable updates with people they might be more comfortable with, acknowledging that relationships have varying degrees of closeness. On the other hand, introducing visibility customization could have created unintended exclusivity or alienation. To address this, we removed visibility customization entirely, promoting inclusivity by ensuring emotional updates are shared with all friends equally, and instead, give users the ability to block / remove friends that they might not feel comfortable with entirely (not implemented in the high-fi prototype.) While this decision reinforces close-knit connections, it limits user control over privacy, a tension we may explore further in future iterations.

Simplicity vs. Depth of Interaction

Planet aims to provide a user-friendly experience while encouraging meaningful engagement, but achieving this balance presents challenges. Simplifying features like emotional status

updates and scheduling tools made the app more accessible, but it also risked reducing the depth of interactions. For example, quick status updates and simple check-ins might feel less personal than more detailed or effortful communication. We prioritized simplicity to lower the barrier for users to engage, but we remain aware of the potential for interactions to feel superficial.

7. Final Prototype Implementation

Tools Used & Pros and Cons

- **Figma:** Used for UI/UX design and prototyping.
 - *Pros:* Intuitive interface, real-time collaboration, and extensive design resources.
 - *Cons:* Limited interactivity for testing beyond simple click-through prototypes.
- **React Native:** Framework for building the app.
 - *Pros:* Cross-platform compatibility, reusable components, and active community support.
 - *Cons:* Slower performance compared to native apps, occasional compatibility issues with third-party libraries.
- **Supabase:** Backend solution for database management.
 - *Pros:* Simple setup, real-time capabilities, and scalable database management.
 - *Cons:* Limited advanced customization and less security features. Most importantly, limited memory on the free plan (requires upgrade / paid subscription for more storage.)
- **Expo:** Software Development Kit (SDK) for rapid app development.
 - *Pros:* Easy integration with React Native, fast debugging.
 - *Cons:* Limited debugging tools and increases performance overhead.
- **VS Code:** Integrated Development Environment (IDE) for coding.
 - *Pros:* Lightweight, robust extensions, and great debugging tools.
 - *Cons:* Occasional lags with larger projects.
- **XCode Simulator:** App simulator on laptop for testing.
 - *Pros:* Accessible, allow simultaneous testing and development on computer.
 - *Cons:* Often buggy / laggy, sometimes requires frequent reloading.

Wizard of Oz Techniques

The current implementation of Planet relies on several Wizard of Oz techniques to simulate features that appear fully functional to users during testing but are not yet backed by real backend services. For example, all friends in the system—such as "Gray," "James," "Carolyn,"

"Evelyn," "Kristine," and "Lucas"— were manually set for a user in the Supabase. This design creates the illusion of a fully populated social network, streamlining the initial user experience and allowing testers to focus on interacting with the app's core features. In general, the Friends List is not implemented in this version of the high-fi prototype: users are unable to search for new friends, invite new friends, or remove friends. However, in a future iteration, we aim to incorporate actual friend addition workflows to make this feature more robust and personalized.

Additionally, the schedules of these friends also magically appear in the app, complete with pre-defined busy and free times. While this approach ensures a seamless scheduling experience during prototype testing, it currently bypasses any real data fetching or synchronization processes. By simulating this feature, we were able to observe how users interact with the scheduling interface and adjust its design accordingly. In future iterations, integrating dynamic schedule imports—such as syncing with Google Calendar, which was our original intention—would provide a more realistic and engaging experience for users.

Additionally, although we planned for statuses to expire after 24 hours in our original design, in our high-fi prototype, statuses don't expire, and are only updated when a user updates the status. Finally, notifications for hangout scheduling are simulated; the system appears to automatically process and deliver notifications, but this is also a scripted interaction, not yet reliant on server functionality.

Hard-Coded Techniques

Hard-coded elements were integral to the prototype's current design and functionality. These static features allowed us to rapidly iterate and test key app elements without building a complete backend system. For example, although accounts are fully functional (users can log in to their own accounts with their own information to manage their own galaxies), the account information itself is hard-coded (i.e. cannot change usernames, passwords, etc.), and there is no onboarding or sign-up process. A user cannot currently create their own account if they are not already in the Supabase. However, we hope to implement account creation in future iterations.

Another significant limitation is the fact that users are not able to search for galaxies or other users; galaxies are simply rendered in the order that they're created in, and friends are rendered in order of their place in a specific user's array in Supabase. However, we know that users may find it difficult to find specific users or galaxies, and would want to include more searchability in the future.

This reliance on hard-coded data and pre-loaded features allowed us to provide users a fully-developed experience without introducing time-intensive details. In future iterations, we hope to be able to address some of our current limitations. By combining these Wizard of Oz and hard-coded techniques, we were able to gather meaningful feedback while keeping the development process efficient and manageable.

8. Reflection & Next Steps

Main Takeaways

- **Team Collaboration**

Our team, united by a shared interest in social connection, leveraged our diverse skills and perspectives to create a meaningful and impactful app. Each member contributed uniquely, from UI design to user research, ensuring a well-rounded product.

- **Iterative Design Process**

The design thinking process was essential in shaping Planet. By constantly iterating based on user feedback, we were able to address key pain points, refine features, and align our app with user needs and behaviors.

- **Understanding Social Relationships**

The needfinding process revealed a number of surprising ideas. Although we knew that college students struggled with a large number of issues, we thought, coming in, that addressing burnout and lack of motivation would be the best way that we could help support college students in terms of mental health. However, after conducting our interviews, we realized instead that friendships and relationships were a common theme throughout all of our interviews, and we decided to pivot. Additionally, we were surprised by one particular interview in which the interviewee seemed uncomfortable when asked about mental health and said that they could not effectively communicate their thoughts about their mental health or emotions. As a result, going forward with our design, we also considered the idea of mental health and emotion sharing as a potential stigma, or something that can be seen as uncomfortable for some people. Designing for emotional transparency and inclusivity shaped Planet's core features and values.

Studio Theme

The "Technology for Mental Health" studio theme resonated deeply with our goal of fostering social connection and combating alienation. We explored how tools like emotional statuses and social scheduling can transform passive friendships into active, meaningful connections. This alignment with the studio theme allowed us to develop a product that not only addresses

social challenges but also offers solutions that encourage intentionality in maintaining relationships, bettering one's mental health.

Through the evolution of Planet, we learned that designing for connection means balancing simplicity and depth, ensuring inclusivity, and addressing privacy concerns. Our emphasis on emotional awareness helped us create a tool that encourages openness and trust among users, fostering deeper social bonds.

Takeaways from Our Project, Planet

- **Social Transparency and Ease of Use**

Planet makes sharing emotions simple and non-intrusive, reducing the discomfort of reaching out to friends. The Galaxy organization feature proved particularly effective for categorizing and managing relationships.

- **Balancing Privacy and Inclusivity**

Removing post visibility options enhanced inclusivity but created trade-offs in privacy. This tension highlighted the complexities of designing for deeply personal interactions in social apps.

- **Iterative Feedback Loops**

User insights drove every design decision, from standardizing planet sizes to reorganizing the navigation bar. These changes significantly improved usability and helped us align with user expectations.

Considerations for the Future

There are a variety of features and designs that we would have liked to implement if we had more time, including:

- **Address current limitations**

Connect the app to a fully functional backend—currently, the Supabase has a limit on memory. Additionally, if there was more time, we would have liked to fully implement Friends Lists for users (and support adding/removing friends), the calendar feature (allow users to set their availability / sync with a user's preferred calendar, as well as actually send a notification to the other user), as well as customization for a user's Planet (originally implemented in our med-fi, which allowed users to change the appearance of their Planet.) Similarly, we would have liked to allow for users to create accounts themselves. Finally, we would have liked to address smaller details and potential heuristic violations, such as the lack of search bars (knowing that users might want to be able to search for friends or Galaxies.)

- **Enhanced Emotion Updates**

Develop multi-emotion updates (currently, there is a limited range of emotions: sad, neutral, happy, angry), mood trends, and, on top of photo statuses, support for video statuses to expand how users express themselves.

- **Advanced Scheduling Features**

Incorporate tools for schedule conflict resolution, automated reminders, and iCal/Google Calendar integration to streamline planning.

- **Analytics for Users**

Introduce insights, such as friendship activity trends and connection metrics, to help users better understand their social habits.

Acknowledgement and Conclusion

We would like to extend our deepest gratitude to Professor Landay, Gray, Shardul, and the entire CS 147 teaching team for their unwavering support, guidance, and feedback throughout this project. Your insights and encouragement have been invaluable in helping us refine our ideas and bring Planet to life.

Through this journey, we not only learned about design thinking but also discovered how impactful thoughtful design can be in addressing real-world challenges. Creating Planet has been a meaningful and collaborative experience that has left us inspired to continue exploring how technology can foster connection and inclusivity.

Thank you for making this quarter such a rewarding experience. We are proud of what we've created and look forward to seeing how Planet can continue to grow in the future 🚀!