

Living Together: User Research for a Roommate Management App

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Our Team

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Introduction

Roommates often face challenges when it comes to managing shared spaces, dividing chores, and handling financial responsibilities such as rent and utilities. These issues lead to tension, miscommunication, and frustration. Currently there are apps for budgeting or task management individually, there is no app solution that addresses both household responsibilities and shared expenses in one place. Our project proposes a one stop solution that combines task distribution, expense tracking, and communication features to help roommates solve conflicts diplomatically. This design is most impactful for students and young adults with roommates who are balancing academics, work, and social lives, who need a structured system while also being flexible in order to create a balanced and equal shared living environment.





Target Users



Primary Users: College students/ University Roommates

- Living in off campus apartments or in shared dorms
- Typically aged 18-25
- Still inexperienced when it comes to leaving with peers

Secondary Users: Young Professionals sharing apartments

- Living in the city or anywhere, with roommates
- Typically aged 22-35
- Prefer digital solutions that save time and reduce conflict

Indirect Stakeholders:

- Landlords or property managers
 - Benefits from fewer disputes between tenants
 - Helps keep payments on time
- Parents/Guardians of college students
 - If they are paying for the place it helps give the peace of mind
 - Gives clear reminders to pay and tells you in real time who has paid so keeps it more organized.

Methodology



Contextual inquiry process:

Rather than testing a prototype or predefined task, our goal is to observe participants in their natural environments and learn from their authentic routines. We invite them to demonstrate how they normally handle key tasks, for example, “Can you show me how you usually split shared bills?” or “Walk me through how you and your roommate divide chores.” During the observation, we are careful not to interrupt their natural flow, stepping in only when clarification is needed. When appropriate, we use open-ended probing questions such as, “Why do you prefer using this method or device?” to prompt deeper explanations. This approach allows us to see real actions and decision-making patterns, providing rich contextual data about their challenges and strategies.

Master-Apprentice model:

Our role as researchers is to act as apprentices, and our selected participants become the experts in their everyday routines. We position ourselves as learners, asking participants to teach us how they live and collaborate with their roommates. Ideally, participants will feel respected, which encourages them to reveal more informal and nuanced ways they manage shared living tasks. We gain deep contextual insights into their motivations, frustrations, and decision-making processes, which helps us create user-centered designs.

Common Themes & Insights

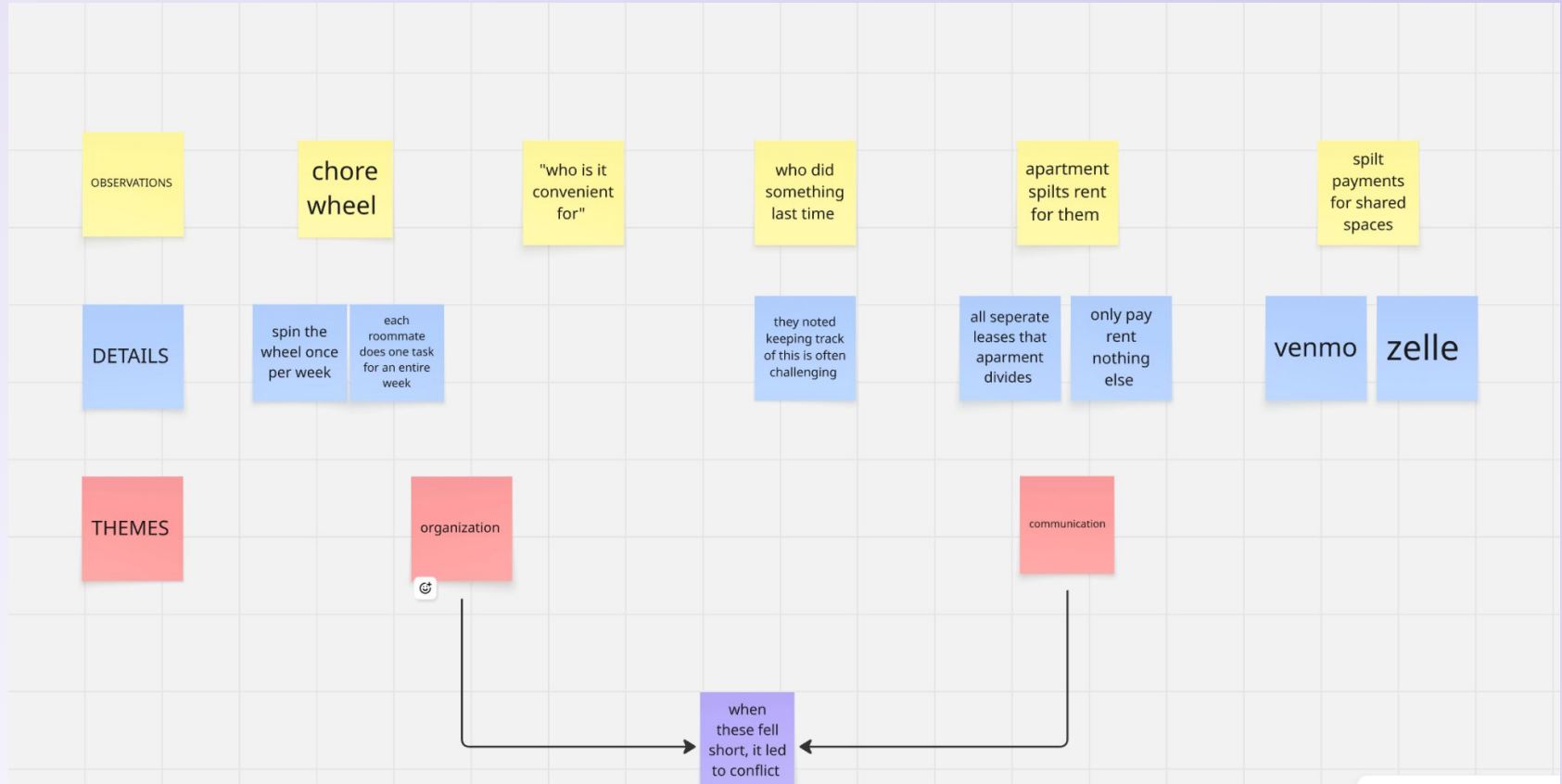
Shared challenges (difficulty tracking chores, trouble with splitting shared expenses fairly, frequent miscommunication between roommates, general lack of organization for shared responsibilities)

Activities identified (chore wheel to divide tasks, shared calendar whiteboard, group chat to communicate roommates)

Insights from participants (organization and communication are critical for shared spaces, yet participants mentioned these can be the most challenging things to establish in a shared space)



Affinity Diagram



Task Analysis: Who and What?

1. Who is going to use the design?

Our design will be used by roommates to help them live more amicably in shared spaces, as well as deal with shared payments in a more seamless way. We plan to gear our solution most towards college students or post grads as we know these groups of people tend to be very busy while also dealing with shared living spaces.

2. What tasks do they now perform?

The tasks our users perform are divide and assign chores (dishes, trash, common area cleaning), track and split rent/utilities/bills, coordinate groceries and household supplies, and to remind roommates about missed chores.

3. What tasks are desired?

The tasks that are desired are fair, low drama chore rotation and completion tracking, also making payment as transparent as possible showing receipts and payment records. Leaving reminders that are timely and non confrontational. Putting all of this into one centralized place for schedules, rules, and payment.

4. How are the tasks learned?

Currently tasks are learned through mostly trial and error, from parents or previous roommates/friends. They are also learned informally like setting up a google sheet or a venmo request.

Task Analysis: **Where and How?**

5. Where are the tasks performed?

The tasks are performed in a setting where the discussions and arrangements revolve around chores and payments naturally happen

- Shared living room
- Common lounge
- Shared kitchen
- Shared bathrooms

6. Relationship between user & data

The relationship between user and data is how the roommates are interaction with each other in their shared space.

7. What other tools does the user have?

- Spreadsheets (Excel, Google sheet, etc.)
- Cash Flow or task management apps (e.g., Venmo, Splitwise, Zelle, notion, etc.)
- Physical tools (Calendar, whiteboard, notebook, etc.)

8. How do users communicate?

Users will communicate with each other either face to face or through direct messages via apps.

Task Analysis: Frequency, Timing, and Errors

9. How often are tasks performed?

Tasks are performed at different intervals as some chores are performed daily like dishes, weekly like trash or vacuum, and monthly like deep cleaning a bathroom. While bills are monthly while groceries are weekly.

10. Time constraints

Time constraints are important in a roommate environment. High urgency time constraints is paying rent and utilities before the due date as there is a hard cut off date. Medium urgency time constraints consists of weekly chores and grocery shopping as it is flexible but accumulate if delayed. Finally the low urgency time constraints like non-urgent rule discussions and updating shared inventory.

11. What happens when things go wrong?

The 3 main things that can go wrong in a roommate environment is bills being unpaid which causes late fees or eviction, chore neglect leaving to a messy common area, and communication breakdown and that leaves roommates avoiding each other or a heated confrontation.

Hierarchical Task Analysis

- **Splitting rent and utilities**
 - a. Collect amounts
 - b. Send reminders
 - c. Transfer payments
 - d. Confirm completion
- **Splitting chores**
 - a. Define chores
 - b. Set deadlines
 - c. Track updates
 - d. Confirm completion



3 Key Tasks Identified

Tasks	Description of the Task	Current Difficulty level	Projected difficulty with proposed app	Difficulty rating
1.) Payment for rent/utilities	Roommates must track and split shared costs like rent, utility, and internet. They have to do this manually like spreadsheets, text messages, or payment apps.	High It currently requires coordination,, and trust among roommates. Failing to do this causes late payment and conflict.	Low The app will automate reminders, divide payments evenly, and lets you know who paid in real time.	Moderate to Easy
2.) Assign, execute, and verify chores	Roommates divide chores like cleaning, taking out trash, and doing dishes. This is currently accomplish through verbal agreements or paper lists, which leads to uneven workloads.	High Hard to maintain fairness and accountability without a system to track it.	Low The app will provide a chore schedule based on each users needs/wants.	Difficult to Easy
3.) Sort out problems in a roommate environment	Roommates who have conflict need to sort it out as they live together. Currently they often avoid this by dropping it, going through a third person, or confronting them in a hostile manner.	High Confrontation is very hard for a large percentage of our target group, so being able to work out problems is very challenging.	Moderate Users can talk to a chatbot with knowledge of their circumstances by giving access to their setup and the chatbot helps the user work out the problem and how to discuss it with the other party in the constructive way	Moderate to Easy

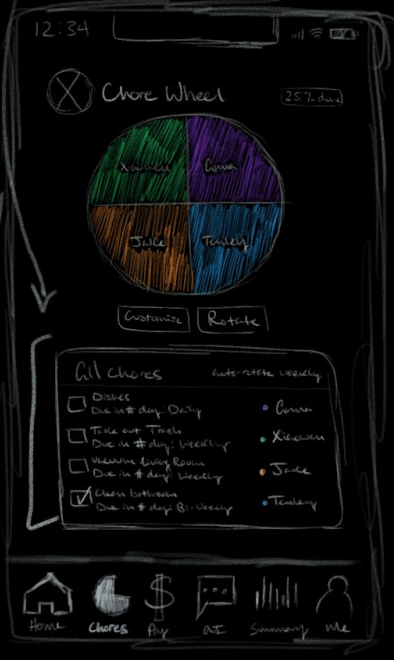
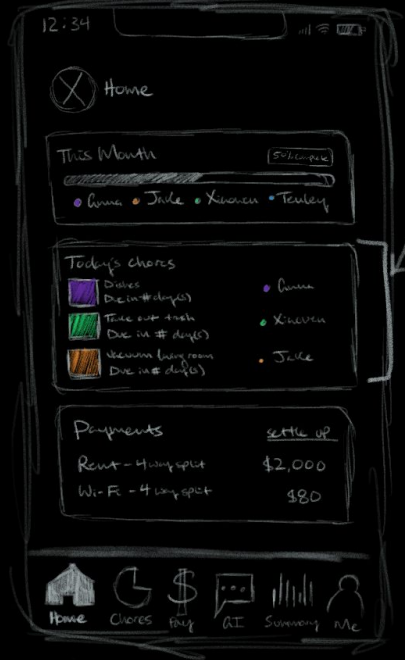
Design Sketches: Home, Chores, Pay

By Anna Presutti

overview of pages; not all info

organized by date due

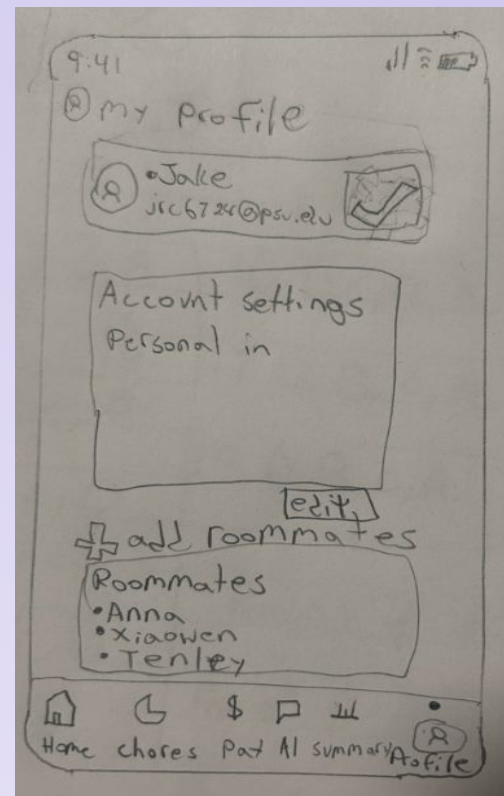
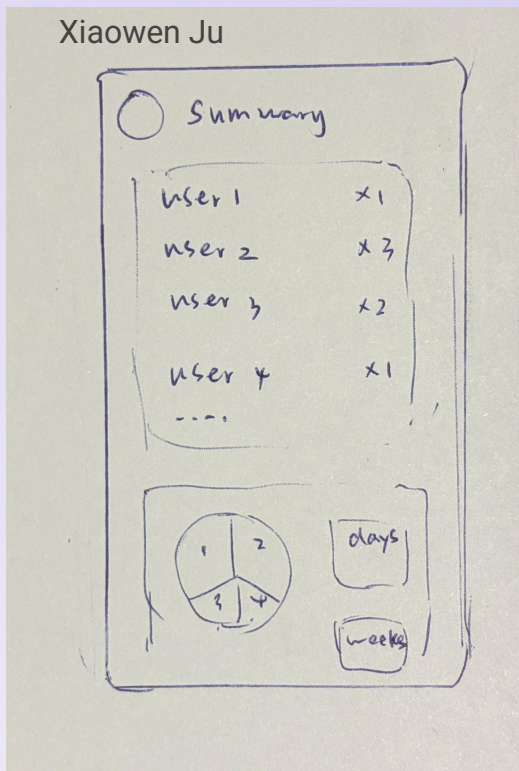
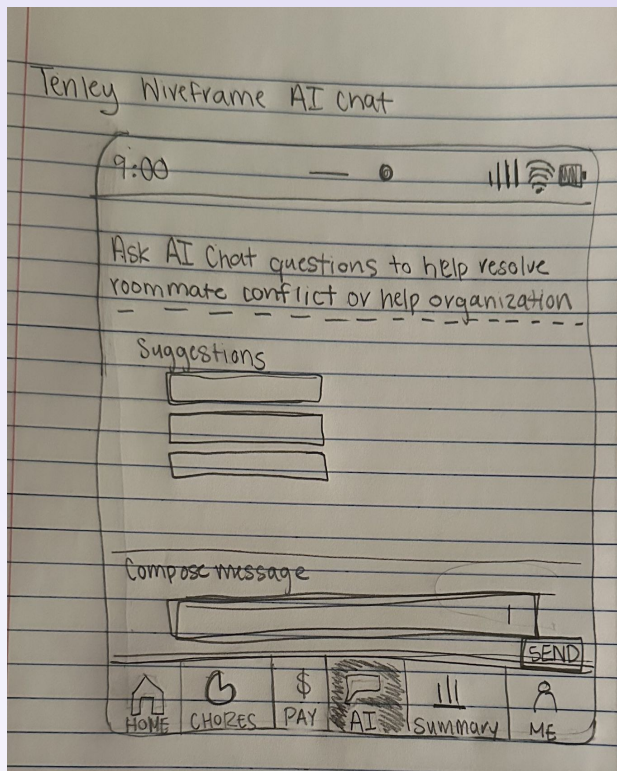
Anna Xieaven Julie Tenley



Check out this hi-fi prototype I made here:
<https://annapresutti.github.io/Romeo/>



Design Sketches: AI, Summary, Profile



Next Steps

First, we'll gather user feedback on our current wireframe to test the flow and identify any missing features.

If users suggest additional features or experience navigation issues, we'll use their feedback to refine the design.

Since we already have the foundation for a prototype, we'll continue building it based on these insights.

Users will then interact with the prototype to test usability and provide feedback.

Finally, we'll analyze the results, make necessary adjustments, and repeat the process to improve the final design.



Survey used:

Anna's AEIOU Map

Activity Template

A.E.I.O.U. Map



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AJ0)

Research	Observation onsite and documentation	Findings
<p>Research on the user</p> <p>3 college students who live w/ roommates - all 3 users live in separate households</p> <p>1</p>	<p>Observe the user and use A.E.I.O.U. questions for documentation</p> <p>2</p>	<p>Gain new insights</p> <p>4</p> <ul style="list-style-type: none"> Most roommates operate on trust and informal communication, not structure There's a clear gap for lightweight digital correction, something simple, visual; your visual transparency (who did what, when) could prevent imbalance: resentment Participants reject complicated tools but would embrace a fun, simple app w/ shared calendars, chore visuals, integrated payments Emotional harmony (romantic relationships, mate, parents) influences satisfaction as much as task division
<p>Activities</p> <p>What activities do they carry out?</p> <ul style="list-style-type: none"> Dividing room, groceries, and bills (some equal, some until repayment) Cleaning chores are unstructured, done by whoever gets time or finishing Occasional coordination for inviting ppl over, buying groceries, or visiting Most coordination happens verbally or through group chats; no one w/ app Chorey happens weekly or when something needs doing 	<p>Environment</p> <p>What does the environment look like?</p> <ul style="list-style-type: none"> Shared environments include kitchens, living rooms, closets (for storage) Overall spaces are "clean" or "getting clean", though dishes & clutter in kitchen are occasionally left Bills are electronic; reminders: notes are kept on phone or pinned No central system/physical board; communication is digital/painters Busiest stressful periods are during weekdays or exam weeks <p>3</p>	
<p>Interaction</p> <p>How do the systems interact with one another?</p> <ul style="list-style-type: none"> Communication happens through group chats, texting, or in person Tasks are confirmed by visual inspection or verbal confirmation Conflicts are rare; minor - when they occur, they relate to chores or pets Current system relies on trust/intuitive understanding rather than rules Digital tools are viewed as potentially helpful in the interface is simple 		
<p>Objects</p> <p>What objects and devices are used?</p> <ul style="list-style-type: none"> Common tools: phone, phones, group chats, rent payment apps No one uses google sheets, calendars, or sticky notes Cleaning supplies are shared, stored in closets No comparison of current systems (but lack structure) Desired features include: shared calendar/planner, customization for chores: tasks, text-based notes/franchises 		
<p>User</p> <p>Who are the users?</p> <ul style="list-style-type: none"> Resonate from range from 2-5 ppl whose aged Most describe themselves as aviders of all roles depending on the week Tech comfort is 4/5 across participants; preferred ways: text or push Pain points: imbalance in responsibilities, noise, and uneven partial situations Value fairness, transparency; reject pay 		




Tenley's AEIOU Map

Activity Template

A.E.I.O.U. Map




Research Research on the user Looking at roommates and how they occupy a shared living space. I looked at 3, 20 year old girls all living in a shared space.	Observation onsite and documentation Observe the user and use A.E.I.O.U. questions for documentation	Findings Gain new insights
Activities What activities do they carry out? -Showed me their chore wheel and showed me how it worked -Sometimes wouldn't utilize the wheel if a task was just "convenient" for another person -One of the girls made dinner while I was there, I observed that she then cleaned up after herself and did all her dishes	3	4 <ul style="list-style-type: none">-They utilized many different systems to keep themselves organized (one spot for all these systems would likely be very helpful)-If communication falls short they expressed to me how much this affects their organization- One roommate expressed to me how sometimes she feels she is the only one who cleans but is not sure how to address the issue-They also noted that when they first started living together it was very challenging and daunting to figure out splitting expenses and dividing chores and they don't even see their current system as perfect
Environment What does the environment look like? -All single rooms (so mainly shared spaces are kitchen, living room, and bathrooms) -All the shared spaces were very clean - Under the impression they had a pretty good system in place	3	
Interaction How do the systems interact with one another? -All interact with each other very well mainly in person communication -Have been living together for 2 years now so they know what to expect -Informed me when they first started living together communication lacked and they were not as organized -Told me the organization systems they have in place are very useful, yet sometimes they do forget to utilize them since they are so busy	3	
Objects What objects and devices are used? -Chore wheel (to divide up tasks) - Shared calendar (so they know their schedules and can keep up with each other) - Venmo or Zelle for exchanging money when it comes to shared expenses -Group chat to text and communicate with one another when not together in person		
User Who are the users? -The users in this map were the 3 roommates I observed		

Jake's AEIOU Map



Activity Template

A.E.I.O.U. Map

Research Research on the user Tommy, age 21, he is a junior at Penn State who lives in an apartment with 2 roommate. He also works part time at the hub. He is focused on keeping the common area clean. 1	Observation onsite and documentation Observe the user and use A.E.I.O.U. questions for documentation 2 I watched him on Sunday from 3-5 PM at his apartment. I shadowed him as he went about cleaning and organizing his shared space, and I kept asking questions.	Findings Gain new insights 4 -Roommates juggle multiple disconnected systems (Venmo, whiteboard, group chat, and google sheets) leading to a confusing and missed tasks. -Communication avoidance as these roommates prefer indirect communication to avoid tension, but they are just pushing off this problem. -There is an unclear accountability as Tommy feels like he does all the chores and I feel this is in large because they do -a task but forget to update the todo list. All these things can help be solved in one application that covers reminders, chore distribution, chat box, and payment.
Activities What activities do they carry out? Tommy took out the trash, sends a venmo to his roommates to pay his share of rent, on the apartments to do list he writes clean the fridge, Mentions that he's been using a shared google sheet to track utilities but says, "they never check it.", and finally he cleans out around the tv.		
Environment What does the environment look like? It is a small apartment with rooms for each person, but they share a common space of a bathroom, kitchen, and tv room. They have a to do list on the fridge where you put tasks that need to be accomplished. 3		
Interaction How do the systems interact with one another? Tommy interacts with her roommates primarily through text when discussing issues as they are not good with conflict. He interacts with the todo list adding and removing tasks when they are needed or accomplished. This shows he displays avoidance behavior as he prefers digital or todo list nudges to direct confrontation.		
Objects What objects and devices are used? Phone (for payment, and messaging), Whiteboard (is the todo list), laptop (for google sheets), and cleaning supplies		
User Who are the users? Tommy (primary user) Roommates (Secondary users)		

Xiaowen's AEIOU Map

Activity Template

A.E.I.O.U. Map



Research Research on the use Astoria, who currently live in the view apartment with another roommate, and has previously live in the north residence hall with other three roommates	Observation onsite and documentation Observe the user and use A.E.I.O.U. questions for documentation	Findings Gain new insights 4 • Users already perform these activities with some systems on paper or on their phone, which means our app should be all-in-one that centralize these functions. • For example, we can include features for reminders, task rotation, and payment tracking. • Design may fit digital contexts and first consider mobile interface. • Physical tools (sheets, stickers) emphasize visual organization, so the app could mirror this by using diagrams, color-coded chores, and progress bars. • App should reduce social friction — automate reminders to avoid awkwardness. • Allow transparent tracking so everyone is on the same page • App must be inclusive of diverse communication styles. • Clear design and minimal setup reduce cognitive load for busy students.
Activities What activities does she carry out? • Astoria and her roommate at The View pay rent and utility bills separately • She kept receipts of shared grocery costs and they transfer money through Venmo • They take weekly turns on household chores like cleaning the kitchen and taking out trash. The rotation is assigned and marked on a sheet attach to the fridge using a magnet.		
Environment What does the environment look like? • Current environment: a modern off-campus apartment (The View) with separate bedrooms but shared kitchen and living space. • Past environment: a university residence hall suite with shared bathrooms and communal spaces and private bedroom • Digital environments: Venmo and iMessage serve as digital coordination tools.	3	
Interaction How do the systems interact with one another? • Casual conversations • Text each other on iMessage • Leave a quick message on a sticker • Keep track of the rotation on a paper sheet • Understanding on delays, especially during midterms and final weeks Noted that Astoria prefers indirect, non-confrontational communication, often reminding others gently or just taking initiative herself.		
Objects What objects and devices are used? • Phones for messages and transfers (Venmo). • Paper sheets for assigning and marking down chores • Occasionally printed bills or receipts. • Occasionally colorful stickers attached to a fridge or table		
User Who are the users? Astoria and he roommates were undergraduates with international backgrounds, who are often busy with schooling and hence rely on reminders and convenience.		Picture from their living space 