Activity 2: Need Finding

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Introduction

DormConnect

"Where Dorm Life Comes Together."

DormConnect is a community app designed to make dorm life easier by helping students borrow items, sell or give away belongings, stay updated on events, and communicate with neighbors in order to make living in a dorm easier.

Understanding the actual difficulties students encounter in these areas is the aim of this need-finding phase. We can determine precise needs for creating a practical and significant system by learning about their routines, annoyances, and expectations.

Need finding methods overview

Survey

- We distributed a Google Forms survey to dorm residents to gather broad insights into borrowing behaviors, selling experiences, event participation, and communication habits.

Interviews

- We conducted short, informal interviews with selected dorm residents to understand deeper motivations, frustrations, and personal experiences that the survey could not capture.

Why These Two Methods

- Surveys helped us identify common patterns across many users, while interviews gave us deeper context behind those patterns. Together, they provided a complete picture of student needs.

02

Need-Finding Methods

Method 1: Survey

1.Introduction

"Surveys are a valuable research tool for studying the knowledge, attitudes, and behavior of a study population. Obtaining accurate and precise information from a survey requires minimizing the possibility of bias from inappropriate sampling or a flawed survey instrument. It is crucial that the survey instrument be valid, meaning that it actually measures what the investigator intends it to measure."**(Rubenfeld, 2004)**

2.Criteria for Method Selection

Why a survey?

- Survey efficiently captures broad patterns (e.g., "no responses in group chat").
- Allows ranking desired features (search, filters, chat, event posts).
- Reveals emotional factors (feeling uncomfortable, privacy concerns).

How it supports needfinding?

- **dentifies workflow problems:** Shows where borrowing and selling processes break (slow replies, unclear availability).
- **Highlights communication breakdowns:** Reveals why WhatsApp dorm groups fail (no responses, delays).
- **Shows motivations and barriers:** Explains why students avoid events, borrowing, or using current tools.
- **Captures unmet needs:** Users express which features would solve their problems (filters, notifications, chat).
- **Supports valid requirement extraction:** According to Rubenfeld (2004), a well-designed survey produces accurate insights that reflect what users truly need.

3.Study Planning

- To understand the needs, problems, and behaviors of dorm students when borrowing items, selling items, communicating with neighbors, and joining events.

Expected Insights:

- Why borrowing is difficult
- Why selling items in the dorm is ineffective
- Why students rarely attend events
- What features would solve these problems
- How students prefer to communicate
- What makes students stop using an app

Expected outcomes:

- Requirements list (functional + non-functional + UX)
- Personas based on the responders behavior
- Scenarios
- Task flows & diagrams

4.Participant Selection

User Groups Targeted

- The survey targeted **current student dorm residents**, as they are the primary users of DormConnect.
- Included residents who **borrow items**, **sell or give away items**, and those who **attend or choose not to attend events**.
- Also included students with **different levels of interaction** with neighbors to capture a full range of behaviors.

Number of Participants

- A total of **approximately 40 students** completed the survey.
- This provided a strong sample size to identify consistent patterns and common pain points.

Demographics & Selection Criteria

- All participants have lived in the dorms for **one year or more**, giving them meaningful experience with dorm life.
- Borrowing behavior varied: many students **rarely or occasionally** borrow items, giving insight into why borrowing is difficult.
- Several participants had **experience selling or giving away items**, often facing issues with low responses.
- Interaction levels with neighbors ranged from **rare to frequent**, helping represent both socially active and less active residents.
- Event participation also varied, with many students attending **rarely or only sometimes**, which helped identify barriers.

Recruitment Method

- The survey was shared through **dorm WhatsApp groups**, where most residents are active.
- Additional participants were gathered through **peer-to-peer sharing**, allowing the survey to reach a broader group.
- This method ensured that responses came from actual residents familiar with everyday dorm challenges.

5.Survey Study Preparation

Consent & Ethics

- We added a short consent note so participants knew the purpose of the survey.
- Responses were anonymous, and everyone participated voluntarily.
- No personal or sensitive information was collected to keep students comfortable.

Tools Setup

- The survey was built in Google Forms and organized into clear sections.
- The survey was tested by all group members to make sure the questions were easy to understand and quick to answer.

6.Survey Data Collection Approach

- Responses were collected through Google Forms, allowing quick and accessible participation.
- The survey used multiple-choice questions.
- Most dorm students completed it within 2–3 minutes for 20 questions.
- No personal data was collected to respect the student's privacy.

7.Survey Study Execution

- The survey was shared for three days.
- We received around 40 complete responses.
- Most responses were submitted through the dorm whatsapp group and Peer to Peer Connection.

8.Task Planning

List of Participant Tasks

The Survey was created to gather the following information:

- How often do students borrow, lend, or sell items in the dorm.
- What struggles do they face with group chats or finding items daily.
- Why don't they join the events as often.
- To be able to gather the features that would make their life easier so we can implement it in DormConnect.

Rationale for Task Choice

- These tasks reflect everyday situations students actually deal with.
- They help us understand where things go wrong — slow replies, missing items, unclear event info
- Each task was selected to uncover real needs that could guide our app design

Question 1: "How often do you borrow items from other residents in the dorm?"

Why we chose this question:

This question helps us understand how common borrowing actually is and whether students struggle with accessing items they need. If borrowing is rare, it may indicate barriers such as discomfort asking, lack of visibility, or unreliable group chats. This directly informs functional requirements like searchable item listings and borrowing requests.

Question 2: "Have you ever tried selling or giving away an item in the dorm? If yes, what challenges did you face?"

Why we chose this question:

Selling and giving away items is a major part of dorm life, especially at the end of the semester. We needed to discover what makes this process difficult—such as low visibility, poor communication, or lack of organization. This question helped uncover user frustrations that translated directly into features like item posting, categories, chat, and notifications.

Question 3: "How do you usually find out about dorm events, and how often do you attend them?"

Why we chose this question:

Event participation shows how connected students feel to their community. If students rarely attend because they don't hear about events or forget them, the app needs event listings, reminders, and visibility features. This question reveals gaps in communication and supports requirements for event posts and RSVP features.

Method 2: Interview

1.Introduction

"The interview is the most honest medium… It's the only way you can get into somebody's head and heart, and know what they're really thinking and feeling." (Lawrence Grobel, 2004)

2.Criteria for Selecting Interviews

Why Interviews?

- Suitable for early-needfinding, where understanding people's behaviors and pain points is essential.
- Allows for probing questions to uncover frustrations hidden beneath surface level answers.
- Ideal for understanding motivations and emotions, including loneliness, cultural barriers, trust concerns and communication challenges.

How it supports needfinding?

- Provides rich, detailed insights into peoples real dorm-life behaviors.
- Shows why current communication methods fail such as WhatsApp groups.
- Helps identify what features residents want in an app and why.
- Uncovers emotional needs such as loneliness and cultural divides

3.Study Planning

- The aim of the study is to understand how dorm students communicate, borrow items, sell belongings and join events.
- To uncover pain points, motivations, and unmet needs that DormConnect should address.

Research Questions:

- How do students currently borrow, lend and sell items within their dorms
- What challenges do students face when using WhatsApp or other platforms to communicate?
- What factors contribute to the feelings of community, isolation, or cultural separation in dorm life?

Expected outcomes:

- Requirements list (functional, non-functional, UX)
- Personas based on different student behaviors
- Usage scenarios based on real interview stories
- Task flows and HTA diagrams informed by actual needs

4.Participant Selection

User Target Groups

- University students currently living in student dormitories
- They are selected because they represent the primary user audience for DormConnect.

Number of Participants

- 8 participants aged between 18-24.
- Mix of First year and Final year students.

Demographics and Selection Criteria

- All participants have or currently lived in dorms for at least one academic year, giving them strong insights into day-to-day life in dorms.
- All eight students regularly borrow items such as chargers, vacuums and even food ingredients occasionally.
- Interaction levels with neighbours varied for some students who frequently meet others in common areas, while others mostly stay in their rooms, providing perspectives from both socially active and isolated residents.

4.Participant Selection

Demographics and Selection Criteria

- All participants have or currently lived in dorms for at least one academic year, giving them strong insights into day-to-day life in dorms.
- All eight students regularly borrow items such as chargers, vacuums and even food ingredients occasionally.
- Interaction levels with neighbours varied for some students who frequently meet others in common areas, while others mostly stay in their rooms, providing perspectives from both socially active and isolated residents.

Recruitment Methods

- Participants were recruited individually through direct messages to students living in dorm and inviting them to take part in a short interview about DormConnect

5.Interview Preparation

Consent & Ethics

- A consent form was created highlighting the purpose of the study and how the data would be used
- Verbal consent was taken prior to each interview
- Participation was voluntary and participants were informed that their responses and identities would remain anonymous

Tools Setup

- The consent form was made using Google Forms
- Prior to sending the consent form, the form underwent a four-eye review by group members to ensure accuracy
- A phone was used to record the audio from the interviews with the participants permission

Pilot Testing Interview Questions

- The interview questions were pilot tested on members of the group to test the clarity of questions and ensure appropriate timing

6.Interview Data Collection Approach

- All interviews were conducted face-to-face
- The interview consisted of semi-structured questions
- The interviews were audio recorded (with participants permission)
- No personal details were collected, participants remained anonymous
- All interviews lasted between 5-8 minutes per participant

7.Interview Study Execution

- Eight participants were interviewed individually in person
- Each interview followed the same procedure
- Interviews were conducted in quiet and comfortable environments to make participants feel comfortable and confident in their answers

8.Task Planning

List of Participant Tasks

The Interview was created to gather the following information:

- How students felt about the current WhatsApp arrangement and everyday communication struggles
- How connected or disconnected they feel in their dorm communities
- Which features they would like to see in an app such as DormConect
- How and whether or not if students have ever borrowed, sold or lended items in their dorms

Rationale for Task Choice

- These areas reflect real situations students encounter daily in their dorm communities
- Each topic was selected for understanding the needs of students to help guide us building DormConnect

Question 1: "Can you recall a time when you needed to borrow something from a fellow student in your dorm?"

Why we chose this question:

This question forces the participant to give a real example rather than hypothetical scenarios. By asking them to recall a scenario the interview aimed to understand how real borrowing works in dorms and the challenges they face.

Question 2: "What's your recommendation for making borrowing and selling in your dorm easier, comfortable, and more secure?"

Why we chose this question:

This question allowed participants to move away from discussing their issues to how they would like to see their expectations and desired solutions in an app like DormConnect as it directly revealed what students believe would improve their daily interactions.

Question 3: "Do you ever feel disconnected or alone in your dorm?"

Why we chose this question:

This question explored the emotional and social side of students living in dorms, allowing participants to express their experiences. The Participants responses shed light on feelings of isolation, cultural divides, and how difficult it is to form connections. This was important to ensure that DormConnect supports social and meaningful interactions.

03

Requirements List

1. Functional Requirements

The functional requirements define what the DormConnect system shall accomplish to fulfill user and stakeholder needs.

1.1 Password & Authentication of User Accounts

- The system shall allow users to register using a valid email address or university credentials and verify that the account belongs to a current dorm resident.

- The system shall provide secure authentication and password recovery options.

- Users shall be able to update their profile information.

- Users shall be able to delete their account and all associated data at any time.

1.2 Posting & Browsing System

- The system shall allow users to create posts under borrow, sell, and event categories.

- Each post shall include a title, description, image, location, and timestamp.

- Users shall be able to search for posts using keywords and apply filters by category or time.

- The system shall provide structured feeds to avoid the chaotic flow of typical WhatsApp groups.

1.3 Item & Event Management

Borrowing & Lending

- Users who post items shall be able to edit or delete their posts.
- The system shall maintain and display item status.

Selling / Free Items

- Sellers shall be able to specify price, condition, preferred payment method, and pickup location.

Events

- Event posts shall include scheduled date, start time, end time, and location.
- Users shall be able to RSVP as "Going" or "Not Going."

1.4 Chat & Communication

- The system shall allow users to initiate and maintain private chats for specific posts.
- The system shall notify users when a new message or request is received.
- The chat system shall support sharing of images.

1.5 Room Booking System

- Users shall be able to view available facilities such as study rooms, cinema rooms, and gaming rooms.
- Users shall be able to book rooms by selecting a date and time interval.
- The system shall prevent double bookings for the same room and time.
- Users shall be able to cancel reservations and view booking history.
- The system shall automatically update room availability after bookings or cancellations.

1.6 Notifications

- The system shall send notifications for new messages, post updates, and room bookings.
- Users shall be able to customize notification settings.

1.7 Administrative Features

- The system shall allow administrators to filter inappropriate posts.

1.8 Community & Inclusion Features

- The system shall allow posts and events to be tagged with interests (e.g., gaming, sports, study), languages, and cultural themes.
- The system shall highlight inclusive events (e.g., "open to everyone," cultural exchange events).

2. Non-Functional Requirements

These requirements define the general system qualities and performance standards.

2.1 Performance

- Primary pages shall load within two seconds under normal conditions.
- Messages shall be delivered with a delay of less than one second.
- The system shall support at least 1000 concurrent users.

2.2 Reliability

- The system shall maintain an uptime of at least 99%.
- The system shall automatically back up user data daily.

2.3 Security

- All communication shall be encrypted using HTTPS.
- Passwords shall be stored in hashed format.
- Authentication shall prevent unauthorized access to personal information.

2.4 Scalability

- The system shall accommodate growth in users and data volume without major redesign.
- The system shall support future feature extensions such as in-app payments.

2.5 Maintainability

- The system shall follow modular design principles.
- Updates and bug fixes shall be deployable without downtime.
- The system shall generate error logs automatically.

2.6 Compatibility

- The system shall be compatible with Chrome, Firefox, Safari, and Edge.

The interface shall adapt to desktops, tablets, and mobile devices.

2.7 Accessibility

- Color contrast shall meet accessibility guidelines for readability.

2.8 Data Privacy & Integrity

- The system shall comply with GDPR.
- Users shall be able to export or permanently delete their personal data.

3. Usability & User Experience Requirements

These requirements ensure the system is efficient, easy to use, and comfortable.

3.1 Interface Design

- The interface shall maintain a consistent and minimalist design.
- Colors shall be warm and friendly.
- Typography shall be readable with appropriate spacing.
- Screens shall be divided into clear sections to reduce confusion.

3.2 Navigation

- A navigation bar shall be present on every screen.
- Navigation shall separate functional areas to avoid mixing content.

3.3 Feedback & Visibility

- The system shall provide confirmation messages for all actions (e.g., "Post created," "Booking confirmed").

3.4 Error Prevention & Recovery

- Undo or cancel options shall be available.
- Error messages shall use clear, helpful language.

3.5 Consistency

- Layout, colors, and patterns shall remain uniform.
- Similar actions shall produce consistent responses.
- Labels shall be consistent across all screens.

3.6 Social Presence & Engagement

- Profiles shall display name, dorm number, and photo.
- Chats and events shall display relevant participant information.
- Events shall show RSVP counts.
- Inclusive events shall be highlighted.

3.7 Minimization of Cognitive Load

- Each screen shall focus on no more than four main actions.
- Common features (chat, post creation, booking) shall be accessible from the home page.
- Search and filtering tools shall be provided.
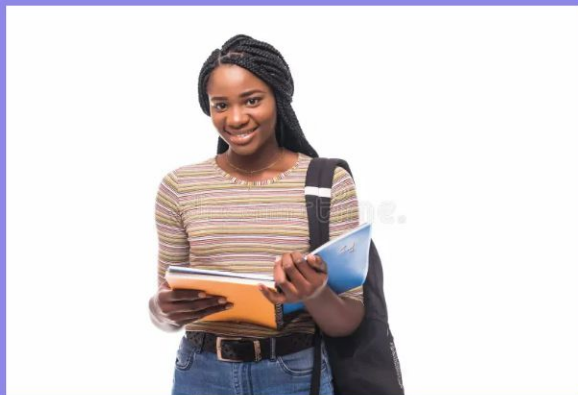
3.8 Trust, Safety & Transparency

- Verification status shall be clearly displayed.
- Reporting options for inappropriate content shall be easy to access.
- The system shall clearly show who is involved in interactions.

Personas and Scenarios

Core Profile

Name: Ama

Age and gender: 19**,** Female

Job: First-year university student

Income range: Low / student budget

Location: Student dormitory on campus

Background

Short bio:
Ama is a first-year international student living in the dormitory. She is still adjusting to university life and wants to make her room comfortable without spending much.

Lifestyle and values:
- Budget-conscious
- Values sustainability and sharing
- Uses social media daily
- Shy at first but wants to meet new people

Professional context:
Full-time student; no stable income, relies on family support and scholarships.

Audience Insights

Goals:
- Short-term goals:
  - Furnish her room cheaply
  - Find items she can borrow instead of buying
- Long-term goals:
  - Build a social network in the dorm
  - Learn to live independently

Barriers:
- Practical challenges:
  - Doesn't know many students yet
  - No idea who has items she can borrow
  - Doesn't have time to search many apps
- Obstacles to success:
  - Messy dorm group chats
  - Lack of centralized

Scenario

Ama

Ama is a new student in Leipzig. It has been two weeks since she moved in the dorm, and she is still settling into university life. The night before her big presentation, she realised that her blouse is... completely wrinkled!

Since she only brought essentials -she does not own an iron- and all shops are already closed!

She opens the dorm WhatsApp group, but does not have the guts to send a message. Her old messages were once ignored and she did not want to go through that again. She scrolls through the endless memes and debates, hoping to find someone she feels comfortable enough to text, but gives up in the end.

After stressing out in her room, walking back and forth, she remembers the new dorm app students have been talking about: DormConnect. She opens it, taps the "Borrow" category, and types "iron." To her surprise, three posts appear from students on nearby floors.

Ama requests to borrow it and receives a friendly reply within a minute. She picks it up, irons her blouse, and feels relieved. The app did not only solve her problem, but also made her feel more connected in her new community.

Persona 2

Core Profile

Name: Max

Age and gender: 22, Male

Job: Third-year university student

Background

Short bio:
Max is a third-year engineering student with a demanding class schedule. He owns several gadgets and textbooks but rarely has time to deal with selling or organizing his belongings.

Lifestyle and values:
- Highly organized but time-poor
- Tech-savvy
- Prioritizes efficiency and quick solutions
- Values productivity and convenience

Professional context:
Balancing heavy coursework, lab hours

Audience Insights

Goals:
- Short-term goals:
  - Sell unused electronics and textbooks quickly.
  - Borrow tools or equipment without hassle.
- Long-term goals:
  - Simplify daily tasks
  - Minimize wasted time

Barriers:
- Practical challenges:
  - Dorm WhatsApp groups are chaotic
  - Posts get buried instantly

Scenario

Max

Max is in the middle of a week full coursework submissions, deadlines, and a part-time shift at work. While he was finishing one of his coursework he got overwhelmed with how crowded his desk is so he decided to clear up his space , he noticed an old Bluetooth speaker gathering dust. He hasn't used it in months and wants to sell it, but he remembers how chaotic and sketchy it is to sell things on the dorm group chat. Last time his friend tried to sell something on the group he got scammed and didn't get any money in return.

Max opens the dorm app right away and, in less than a minute, makes a listing for the speaker. He resumes working on his assignment after the app automatically classifies it under the electronics category.

Before he even submits his coursework, his phone pings: a student from the same building and te same floor wants to buy his speakers. They chatted in the app and they decided they will meet in the common kitchen. In the spam of 5 minutes they complete the exchange, and Max returns to his work with one less distraction on his desk — and €15 in his wallet .

Without interfering with his busy schedule, the app allowed him to save time, clear up space, and avoid the chaos of group chats.

Persona 3

Core Profile

Name: Sara

Age and gender: 21, Female

Job: Student & Dorm Social Committee Member

Background

Short bio:
Sara is a friendly and active student who helps plan social events for the dorm. She wants to bring people together and improve student community life.

Lifestyle and values:
- Very social and outgoing
- Values community, participation, and student well-being
- Enjoys planning events
- Often active on social media

Professional context:
Works with the dorm social committee:

Audience Insights

Goals:
- Short-term goals:
  - Promote events easily
  - Communicate announcements to all students
- Long-term goals:
  - Increase participation in dorm activities
  - Build a stronger, engaged student community

Barriers:
- Practical challenges:
  - Posters in hallways often get ignored
  - WhatsApp groups are cluttered

Scenario

Sara

Sara is part of the dorm's social committee, and tonight she's hosting a Movie Night she spent the whole week planning. She booked the cinema room, bought the snacks, and even designed the posters.

She taped the posters in the elevators, on the board in the reception, and texted her friends to spread the word. But based on past events, she was worried that the posters will go unnoticed, and only her friends would show up. She even sent it on the WhatsApp group chat, but messages usually disappear in long, unrelated conversations.

A few hours before the event, her friend texted her about an application she can use to post events. She opens the dorm app and posts it under the "Events" section with a photo of the setup. Within minutes, she saw students marking themselves as "Interested" and asking questions in the private chat.

By the time the event started, the room filled up quickly. Students who rarely attend social activities showed up because they saw the post on the app. For the first time in a while, Sara felt like her effort paid off and that the dorm finally has a reliable way for everyone to discover what's happening.

Persona 4

Core Profile

Name: Daniel

Age and gender: 24, Male

Job: Master's student

Background

Short bio:
Daniel is an environmentally conscious master's student who hates waste. He prefers borrowing, donating, or reusing instead of buying new items.

Lifestyle and values:
- Strong focus on sustainability
- Minimizes consumption
- Values community sharing
- Prefers eco-friendly solutions

Professional context:
Advanced student with flexible schedule

Audience Insights

Goals:
- Short-term goals:
  - Give away items he doesn't need
  - Borrow items temporarily
  - Help reduce waste in the dorm
- Long-term goals:
  - Promote a culture of sharing and reuse
  - Build a sustainable student environment

Barriers:
- Practical challenges:
  - People leave usable items in garbage rooms
  - Hard to find who needs what

Scenario

Daniel

Daniel is preparing to move to a different floor in the dorm. While he is packing, he finds several items he no longer needs- a desk lamp, a kettle, and a desk organizer. All are in great condition, so he refuses to throw them out like most students do. It bothers him to see items perfectly usable end up as waste.

He thought about leaving them in the hallway or the reception with a note, but the cleaners would most probably remove them quickly. As he was moving to his new room, he overheard students discuss this new application DormConnect which allows them to burrow, sell, and chat.

This was perfect for Daniel. He downloads the application and posts all three items as Giveaways for free. Within minutes, a first-year student thanks him expressing that she really needed a new kettle.

The app made the process simple, direct, and environmentally friendly, exactly how he likes it. He did not only avoid creating waste, but he also helped his fellow students into settling in.

05

Task Analysis And Use Case Diagrams

1. Why Task Analysis?

- This task analysis will be about the key user workflows for the DormConnect system using both the interview findings and the system requirements. The main focus of this analysis is the transition from a chaotic WhatsApp group process to better structured user interactions using the DormConnect system
- Hierarchical Task Analysis (HTA) was used to break down complex tasks into clear steps
- Unified Modeling Language (UML) was used to draw diagrams representing survey and interview finding into an actual system

2. Task Analysis Method

- Hierarchical Task Analysis (HTA) was used to decompose key user goals into smaller, sequential steps.
- Tasks were derived from recurring problems identified during the interview study.
- Both the current communication method (WhatsApp) and the proposed solution (DormConnect) were analysed to compare workflows.

3. Key Task Analysis 1: Borrowing an Item

User Goals:

- To quickly and safely borrow an item from another resident within the dormitory without relying on chaotic and unreliable group chats.

Expected outcomes:

- The user can easily discover available items within the dorm
- The user can identify who owns the item and whether it is available
- The user can request the item and communicate directly with the owner
- The borrowing process is organised, timely, and easy to track
- The likelihood of missed messages, delays, or forgotten returns is reduced

4. Key Task Analysis 2: Sell Unwanted Items

Success:

- To quickly and successfully sell an item to another resident

Expected outcomes:

- The user can create a selling post
- The user can upload items details such as location and condition
- The user can select and view interested buyers
- The user can arrange a pick-up of an item via an in app chat

5. Key Task Analysis 3: Organize or Attend Events

User Goals:

- To create or join a social event in the dormitory
- To feel more socially connected to dorm life

Expected outcomes:

- The user can browse upcoming events
- The user can RSVP to events they wish to attend
- The user receives reminders to events they have accepted to join
- The users can create and publish new events

06

Conclusion

Conclusion

Our need-finding process gave us a real look into what dorm life is actually like for students what works, what doesn't, and what they wish they had. By combining surveys and interviews, we heard directly from residents about the everyday struggles they face when trying to borrow or sell items, join events, or simply communicate with the people around them.

These insights helped us shape clear and meaningful requirements for DormConnect. The personas, scenarios, and task analysis allowed us to turn those problems into practical solutions that are grounded in real experiences rather than assumptions.

Overall, this research stage has given us a strong understanding of what students need. With this foundation, we are ready to move into designing and prototyping a system that feels simple, supportive, and genuinely helpful in making dorm life easier and more connected.

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