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DECO2850 – Assignment 2 (Report)

HomeSquare's Development Process

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Abstract

The purpose of this report is to document the design and development process of a smartphone application called HomeSquare, which is a technological solution to the problem statement of: “How can we increase cohesion between individuals who live in large, shared accommodation buildings?”. User-research in the form of literature reviews, an online survey and user-interviews were first conducted to understand users’ needs and gain insights into the “Home & Domestic” domain. From there, the aforementioned problem statement was derived, and the application’s core features were deduced, which were (1) a lending and borrowing system, (2) an event creation and RSVP system, and (3) a gamified “Plant” growth system. In order of production, user personas, storyboards, design guidelines, mock-ups, interaction-flow diagrams and low to high fidelity interactable prototypes were created to inform the software development of the application. JavaScript’s React Native framework was used to program the application and its proof-of-concept build was subjected to user-testing and evaluation. User testing and evaluation methods included blind-testing, coupled with the Think-Aloud protocol, and Wizard of Oz simulation, after which testers were interviewed to gain feedback and insights. User evaluations revealed that the application required navigation, information categorisation, and on-boarding improvements. Furthermore, evaluation insights indicated that the “Plant” feature would likely be detrimental to the application’s success, due to its gamification aspects. The evaluation also supported the alternative system called “Nodes/Connections” as it would enable synergies between the other existing core features. As such, “Nodes/Connections” was adopted, over the “Plant” system, into the final build of the application, along with other improvements. HomeSquare, as at the reports end, is a mostly functional application that meets its design goals. However, as it still requires the implementation of back-end server support, further development would be required to make HomeSquare a viable product.

Table of Contents

Abstract.....	1
1.0 Introduction	4
1.1 Problem Domain	4
1.2 Aims & Objectives.....	4
1.2 Methodology & Findings	4
2.0 Design Process	6
2.1 User Research & Analysis	6
2.1.1 Research Process Overview.....	6
2.1.2 Initial Research Process Outcomes.....	6
2.1.3 Research Analysis	6
2.2 Product Design & Prototyping (Before User Testing & Evaluations).....	8
2.2.1 Ideating the Problem Solution.....	8
2.2.2 User Persona.....	8
2.2.3 Storyboard.....	9
2.2.4 Cosmetic Design Guidelines for Mock-ups and Prototypes.....	9
2.2.5 Original Low-Fidelity Prototype with Interaction Flow.....	10
2.2.6 Unfinished and Unimplemented Concept Features and Mock-Ups	11
2.3 Initial Programming Development (Before User Testing & Evaluation).....	12
2.3.1 Initial Development Goals	12
2.3.2 Coding Process	12
2.4 User Evaluations	14
2.4.1 Justifying the Testing and Evaluation Methods Used	14
2.4.2 User Testing Interview Conduct & the Introduction to “Nodes/Connections”	15
2.4.3 Evaluation Summary & Insights	15
2.4.4 Improvements and Changes to Make.....	16
2.5 Post User Testing and Developing the Final Product	17
3.0 Discussion & Conclusion	18
3.1 The Nodes/Connections System Introduces Synergies	18
3.2 Gamification Features Oppose HomeSquare’s Stated Goals	18
3.3 Conclusion	19
4.0 References	20
Appendix A: User Research.....	22
A.1 Literature Review Summaries.....	22
A.1.1 Blog: How to Set Boundaries... (Kepler, D. 2023)	22
A.1.2 Article: 12 Share House Rules Every Roommate... (Soho Real Estate, 2022)	22
A.1.3 Blog: What House Sharing Can Show Us About... (Houghton, M. 2021).....	23
A.1.4 Article: How to Navigate Sharing a Home with... (Venter, T. 2020)	23

A.1.5 Article: Common Roommate Housemate... (RoomMates.com.au, 2022).....	24
A.1.6 Research Paper: Managing Conflict in... (Clark, V., Tiffin, K., & Bowker, N. 2020).....	24
A.2 Online Survey	25
A.2.1 Survey Questions Formulation.....	25
A.2.2 Survey Data	26
A.3 User Interviews	30
A.3.1 The User-Research Interview Template	30
A.3.2 User-Research Interview Transcripts.....	31
A.3.3 Ethics Consent Forms (User-Research Interviews).....	45
A.4 Research Analysis – Affinity Diagram	49
Appendix B: Before User Testing & Evaluation	50
B.1 User Persona Poster	50
B.2 Proof-of-Concept Development	51
B.2.1 Whiteboard (Brainstorming) Photos	51
B.2.2 HomeSquare's Proof-of-Concept Build's Screenshots	52
Appendix C: User Testing & Evaluation	53
C.1 User Testing & Evaluation Audio Transcripts	53
C.1.1 User Testing & Evaluation Tester 01 (T01)	53
C.1.2 User Testing & Evaluation Tester 02 (T02)	55
C.1.3 User Testing & Evaluation Tester 03 (T03)	57
C.1.4 User Testing & Evaluation Tester 04 (T04)	59
C.1.5 User Testing & Evaluation Tester 05 (T05)	61
C.1.6 User Testing & Evaluation Tester 06 (T06)	63
C.2 Ethics Consent Forms (User Testing & Evaluations).....	64
C.3 User Testing Insights from Each Tester	67
C.3.1 Insights from Tester 01	67
C.3.2 Insights from Tester 02	68
C.3.3 Insights from Tester 03	68
C.3.4 Insights from Tester 04	68
C.3.5 Insights from Tester 05	69
C.3.6 Insights from Tester 06	70
Appendix D: After User Testing & Evaluation.....	71
D.1 High-fidelity Prototype (After User Testing)	71
D.2 Exhibit 2 Poster.....	72
D.3 Exhibit 2 Flyers	73
D.4 Final Product	74

1.0 Introduction

Team Orange Crocodile have produced a phone application called “HomeSquare”, using a ground-up approach that included a comprehensive and multi-stage process of research, ideation, design, prototyping, and user testing over a ten-week timeframe seen below.

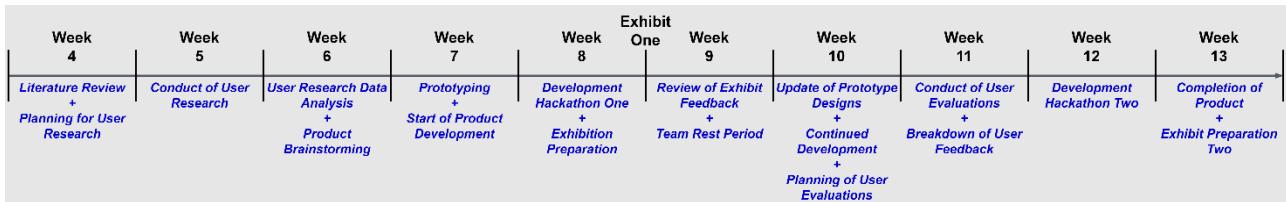


Figure 1: HomeSquare’s Design and Development Timeline.

1.1 Problem Domain

The team chose the problem domain of “**Home & Domestic**”, and a **target audience** of users who live in, specifically: large, shared accommodation buildings and communities. For example, residents of student colleges and worker dormitories.

1.2 Aims & Objectives

The following **problem statement** was developed from insights gained throughout user research:

“How can we increase cohesion between individuals who live in large, shared accommodation buildings?”

The problem statement then informed the core aims and objectives of the final product including developing functionality that (1) reduces cost of living for the individual user by leveraging community resources and inter-user cooperation, (2) enables and encourages users to build cohesive social relationships and (3) provides a method of visualisation for users to understand the growth of relationships within their community and their personal contributions to the community – together these three overarching objectives aim to create positive user experience and a desire to use the application.

1.2 Methodology & Findings

The project contained several stages, (seen in Figure 1) each with its own findings.

Initial research methods included a review of existing literature in the problem space, online survey about users’ living experiences, and in-person interviews with target users. Insights gained from this stage, informed the problem statement, and aims and objectives outlined above. They included the following primary insights:

1. A desire for cohesion amongst users and an opportunity to increase cohesion through cooperation.
2. A duplicity regarding the desire for social relationships, versus the need for personal space.
3. Concerns regarding cost-of-living.

The initial development included an ideation stage and creation of both low and high-fidelity prototypes in Adobe XD. The application was then programmed with JavaScript, using the React-Native framework.

The initial planned Core features were:

1. An item lending/borrowing system (addressing cost-of-living concerns through cooperation).
2. A social event listing and RSVP system (allowing users to create social bonds).
3. A gamified, point based, “Plant” growing system that symbolised the community’s growing cohesion (creating positive sentiments for users).

Features 1 and 2 were successfully achieved and presented at Exhibit 1 (Week 8).

After the first development iteration, user evaluations were conducted with members of the target audience. Evaluation methods included blind-testing of the product, where testers interacted with the

product without any guidance whilst instructed to “think-aloud” their actions. Observation notes were taken, and a post-testing interview was conducted to gain feedback on the then-current state of the application and the yet-to-be implemented features.

Key findings included:

- Items listed in the application needed to be more organised.
- Better navigation within the application was needed.
- Interaction instructions would be appreciated for new users.
- The proposed gamification feature needed revision.

Although limited development time prevented the team from addressing all feedback, the user evaluations of this stage led to the following changes and **outcomes** for the final product:

- Adding the ability to filter items based on category.
- Implementation of a back button for navigation on some pages.
- Implementation of the “Nodes/Connections” relationship visualisation system, instead of the gamified “Plant” growth system.

The final product can be accessed and downloaded on GitHub via the following URL:

https://github.com/justgenetic/DECO2850_Protoype/tree/main/Prototyp2

2.0 Design Process

Team Orange Crocodile's overall design process was adapted from Stanford's Five-Stage design thinking process as described by Rikke Friis Dam [1] to consist of the following 5 stages:

1. **Empathize:** Researching and identifying the target users' needs (report Section 2.1).
2. **Define:** Deducing a problem statement from research analysis insights (report Section 2.1.3).
3. **Ideate:** Brainstorming a solution (report Section 2.2.1).
4. **Prototype:** Prototyping and concurrent product development (report Section 2.2 and 2.3).
5. **Test:** Conduct of user evaluations (report Section 2.4).

Stage 3 and 4 were iterated over, after the conduct of user evaluations.

2.1 User Research & Analysis

2.1.1 Research Process Overview

The team utilised a series of research methods during the user research stage. The approach, illustrated in Figure 2, included a literature review of six primary sources, an online survey (41 respondents) and six interviews of target users.

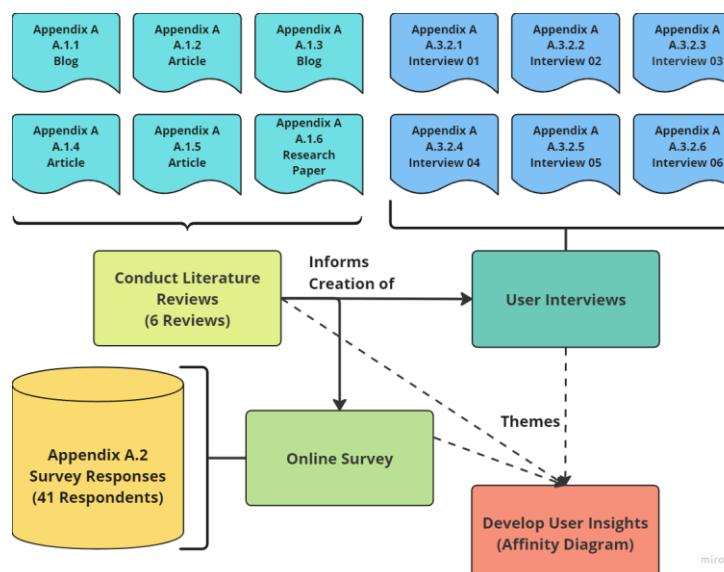


Figure 2: Research Process Flow Chart

2.1.2 Initial Research Process Outcomes

The literature reviews identified key themes and user values, later informing the format of the survey and interviews. Appendices A.1.1 to A.1.6 contain a breakdown of each literature review.

The online survey gathered quantitative data on user needs and preferences and helped confirm themes found in the literature reviews. Appendix A.2.1 details development considerations for each survey item and A.2.2 the survey results.

Lastly, in-person interviews provided qualitative and in-depth insights into the target-users' thoughts, experiences, and opinions about the problem space. Details on interview questions can be found in Appendix A.3.1, with transcripts in A.3.2 and ethics consent forms in A.3.3.

2.1.3 Research Analysis

An Affinity Diagram was used to determine commonalities of all the gathered data (Figure 2.5 – a larger version for readability can be found in Appendix A.4). This method of research analysis produced the following key emergent themes:

1. Users Desire Communication.

2. Users have **Cost of Living Concerns**.
3. To achieve cohesion, there is a **Need for Organisation or Cooperation**.
4. Users have a **Need to Develop Social Relationships**.
5. Users also have a **Need for Personal Space**.
6. Lastly, users have a **Need for Respect/Consideration** from their fellow community residents.



Figure 3.5: Affinity Diagram

Three core research insights were found from the evidence presented by the themes identified in the affinity diagram. A description of each, including how they were derived is as follows:

1. **A desire for cohesion amongst users and an opportunity to increase cohesion through cooperation.** Survey data (Appendix A.2.2, Question 3) shows respondents rate their relationships with cohabitants at 6.24 out of 10. However, in Question 4, the average rating for how close they'd like to be increased to 6.98. This suggests a desire for closer relationships among respondents.

This desire for cohesion, coupled with the third emergent theme of "Need for Organization and Cooperation" (From Affinity Diagram), presents an opportunity to develop technology that increases cohesion between communal living members through incentivised cooperation.

2. **A duplicity regarding the desire for social relationships, versus the need for personal space.**

The affinity diagram reveals a dual need among users: a desire for privacy and personal space, along with a wish for communication and social relationships. Interviewee 03 exemplifies this balance:

"... I would have preferred to be a bit closer, but like for someone who's introverted, like me, I don't feel like I want to force that kind of thing." (Appendix A.3.2.3, quote 22).

Survey data supports this duality, with 43.9% of respondents prioritizing privacy (Appendix A.2.2, Question 12), despite 82.9% believing that social events can enhance cohesion (Appendix A.2.2, Question 9). Ultimately, there is a balance that must be struck when trying to incentivise social interaction between those living in communal settings. Forcing interaction might segregate unwilling participants, as noted by Interviewee 05:

"Roommates are not your best friends... it helps to keep these relationships at a good level."
 (Appendix A.3.2.5, quote 26)

This suggests a software-based solution, serving as an intermediary platform, encouraging interaction while allowing users to maintain their desired level of distance, aligns better with user preferences than a hardware-based solution.

3. Concerns regarding cost-of-living.

As per the Affinity Diagram, many interview participants expressed cost-of-living concerns, with some stating they often share expenses, such Interviewee 06 (Appendix A.3.2.6, quote 30), who has shared the cost of cleaning supplies. Interviewee 03 also mentioned sharing excess resources:

"... I literally had ... three cartons of eggs. I was ... asking my roommates to please take the eggs."
 (Appendix A.3.2.3, quote 18).

This sharing of spare resources offers a way to address cost-of-living concerns, aligning with the emergent theme of "Need for Organization and Cooperation." Interviewee 03's willingness to share their vacuum cleaner (Appendix A.3.2.3, quote 56) demonstrates the potential for cost-saving through cooperative means and how it could extend beyond consumable resources.

These three research insights imply that there is an overall desire amongst people living in the same community to cooperate and form social relationships in a mutually respectable manner. This in turn implies that the users desire cohesive living, which informed the definition of the **problem statement** to be:

"How can we increase cohesion between individuals who live in large, shared accommodation buildings?"

2.2 Product Design & Prototyping (Before User Testing & Evaluations)

2.2.1 Ideating the Problem Solution

Team Orange Crocodile decided to address the identified problem by developing a smartphone application. This choice aligns with the research findings, as it offers a safe platform for users to connect and build social bonds without compromising personal space. Informed by the research analysis, the following core product features were decided upon:

1. Resource sharing through item lending/booking to reduce living expenses in a cooperative and organized way.
2. Social event creation and RSVP for users to form social bonds, addressing the need for social relationships.
3. A visualization feature to track community growth through user interactions, whether it be lending, borrowing, or event participation.

The team chose the name "**HomeSquare**" for the application, reflecting its domestic and social nature as described.

2.2.2 User Persona

A complete user persona for "Ellen Wakes" can be found in Appendix B.1. It reflects themes and user values discovered during the research process, such as the motivation to save money, the need for organization, and frustrations with communication misunderstandings. The scenario closely resembles a situation described by

Interviewee 03 (Appendix A.3.2.3, quote 52) where they faced difficulties cooking due to others using the common kitchen. In Ellen's case, she successfully booked the kitchen through the HomeSquare application to prepare a time-sensitive meal, highlighting the application's utility.

A valuable insight from this scenario is that users may use HomeSquare spontaneously. Therefore, the application should indicate the availability of items for immediate booking and display timestamps for item bookings.

2.2.3 Storyboard

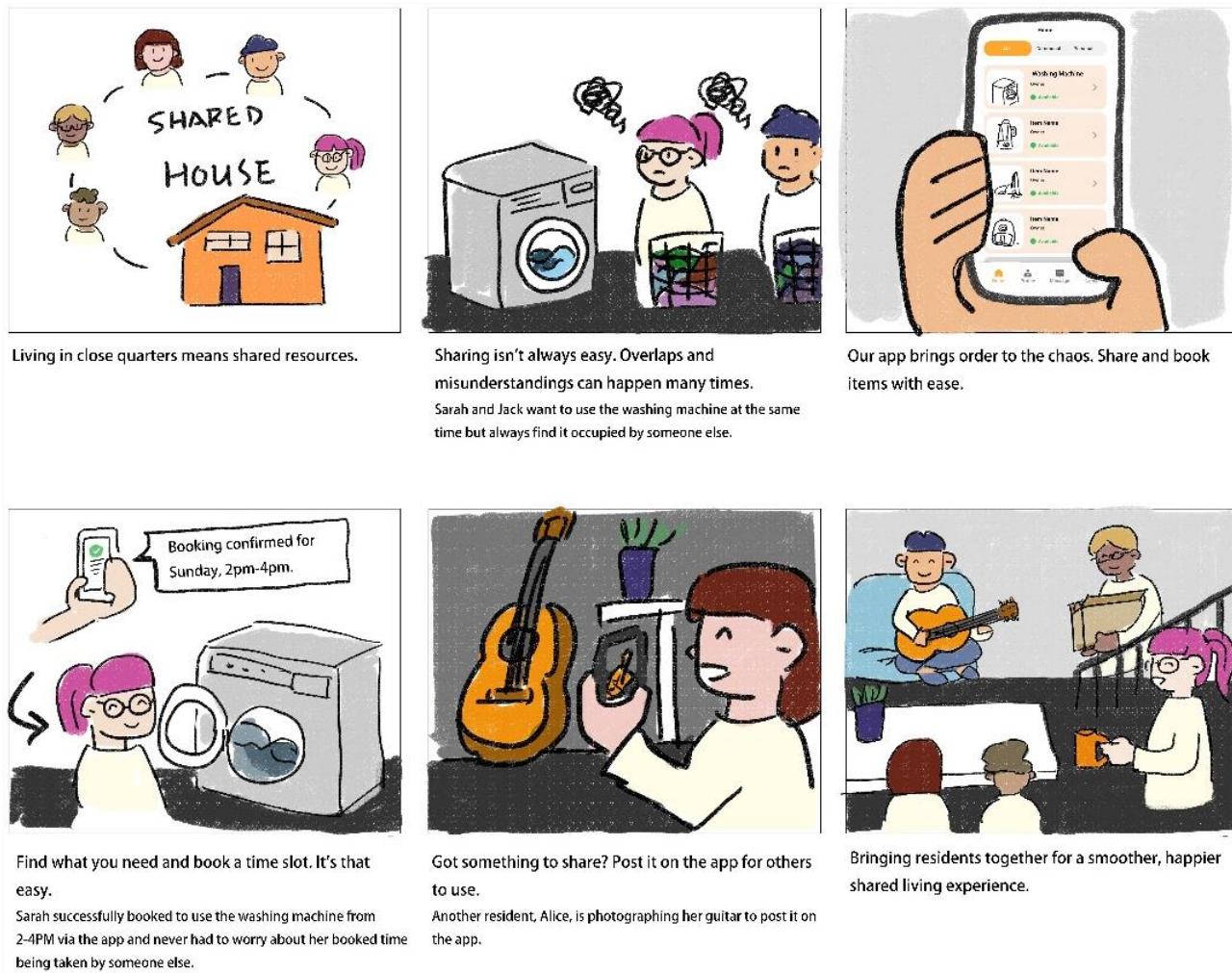


Figure 4: Storyboard for the Initial Concept

Seen in Figure 3 is a storyboard describing another scenario which reveals a positive unintended side-effect of using the lending/borrowing feature in HomeSquare. The lending/borrowing feature was initially intended to address cost-of-living concerns though cooperative means. However, the fifth and sixth image on the storyboard shows that users could also create social bonding events using the borrowed items as a catalyst, with a user listing a guitar for sharing, and another user borrowing the guitar to play music for others, fostering social connections among users.

2.2.4 Cosmetic Design Guidelines for Mock-ups and Prototypes

The visual design of HomeSquare adheres to self-imposed rules that prioritise Nielsen's 4th Heuristic Principle: Consistency [2], aiming to reduce cognitive load. Key consistency rules include:

- Roboto as the default font, in line with the Android platform.
- A main thematic colour of Energy Orange, complemented by low-saturation accents for visual harmony and clarity (see Figure 5 for hexadecimal colour codes).
- Visual components, including cards, buttons, images, etc., all feature rounded corners.
- Uniformity of alignment and positioning throughout the interface is maintained whenever possible.



Figure 5: Application interface theme colours

2.2.5 Original Low-Fidelity Prototype with Interaction Flow

The initial low-fidelity prototype, used prior to user evaluations, was designed in Adobe XD with the aforementioned Cosmetic Design Guideline in mind. The prototype can be accessed and interacted with using this URL: <https://xd.adobe.com/view/84916828-528f-4ba0-acd3-e7af4c32c346-d1c2/>, and its interaction flow can be seen in Figure 5 below:

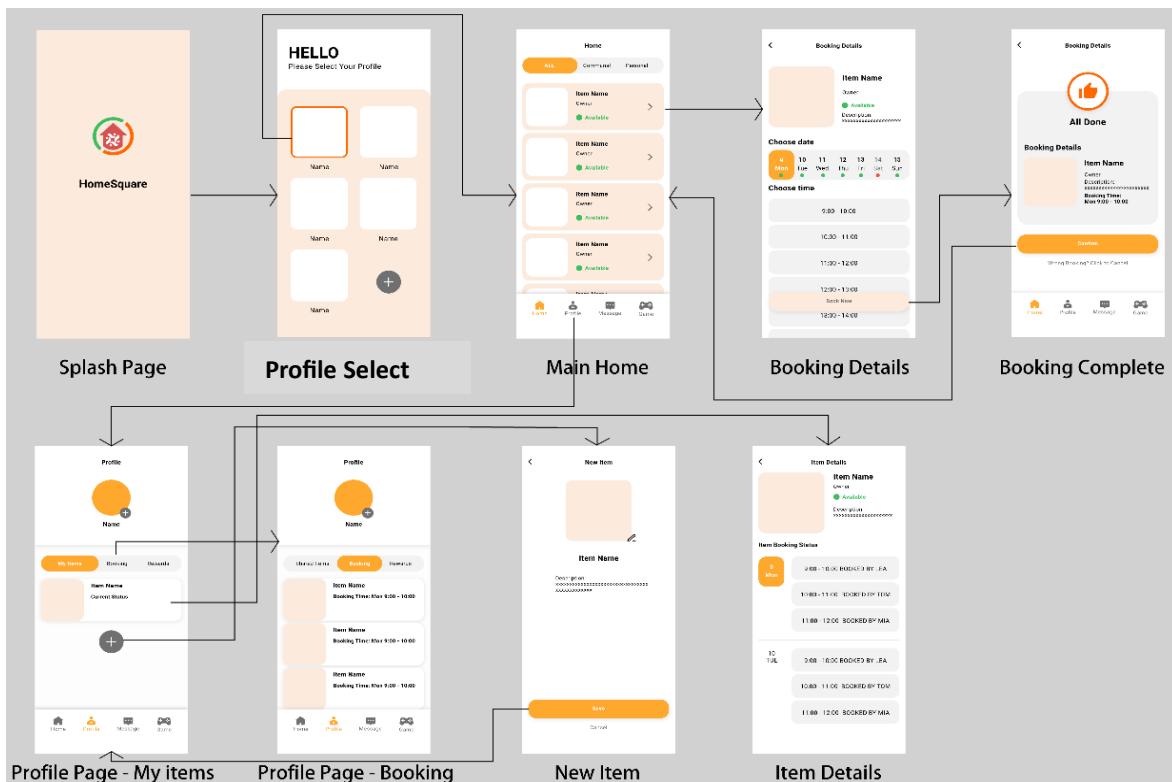


Figure 6: Low-Fidelity Prototype with Interaction Flow

Page Descriptions:

- **Profile Select:** Users can choose an existing profile, or add a new one, upon opening the app. A future update would integrate a sign-in/login feature.
- **Main/Home:** The main/home page displays all bookable items with filters for “all”, “shared”, or “private” items. Users can click on these items to proceed to the Booking Details page.

- **Booking Details:** This page enables users to see details of the item they have selected and to pick a booking timeslot, which transports users to the Booking Complete page.
- **Booking Complete:** This page informs users that their booking is complete and can transport users to their Profile Page.
- **Profile Page:** The Profile Page allows users to view and manage their personal information, shared, and booked items, and check their booking schedules.
- **New Item:** Users can use this page to “create” new items to list and share.
- **Item Details:** Full details regarding all bookings made on a particular item can be seen here.

Note that, except for the Profile related pages, all pages as described above represents HomeSquare’s MVP (Minimal Viable Product) features.

2.2.6 Unfinished and Unimplemented Concept Features and Mock-Ups

Prior to user testing, certain higher-level features were yet to be designed and developed. This was due to both time constraints and conceptual uncertainty regarding the viability of these features. The mock-ups of these can be seen in Figure 7, 8 and 9.

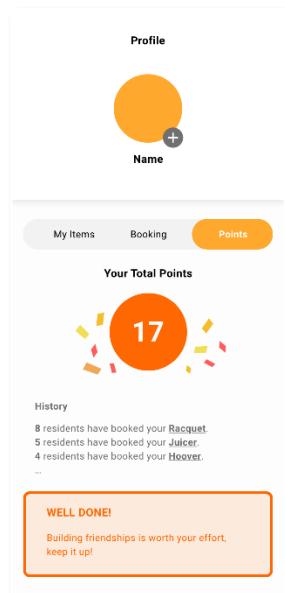


Figure 7: Rewards Mock-up

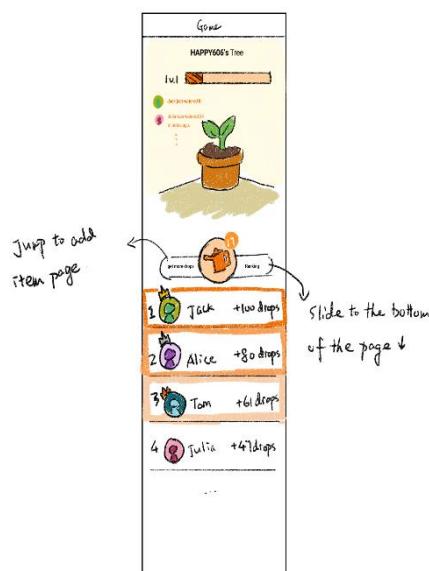


Figure 8: "Plant" Concept Mock-up

Rewards and Plans Game: Originally, user interaction was to be encouraged through the gamified rewarding of points, earnt from item lending, and borrowing. These points were used to “water” a “plant” to promote its growth, symbolising the growth in the community’s cohesion. Different growth stages and a leader board for top contributors would promote community engagement and sharing. This concept was later replaced by the “Nodes/Connections” feature as mentioned in Section 2.4.2.

Events Page: The visual design of the Events Page was not finalized when user testing began. However, the mock-up can be viewed in Figure 8. This page's purpose is to enable users to add and RSVP to events, aligning with the user-insight of fostering social bonds and relationships, as identified in Emergent Theme 4 (Section 2.1.3).

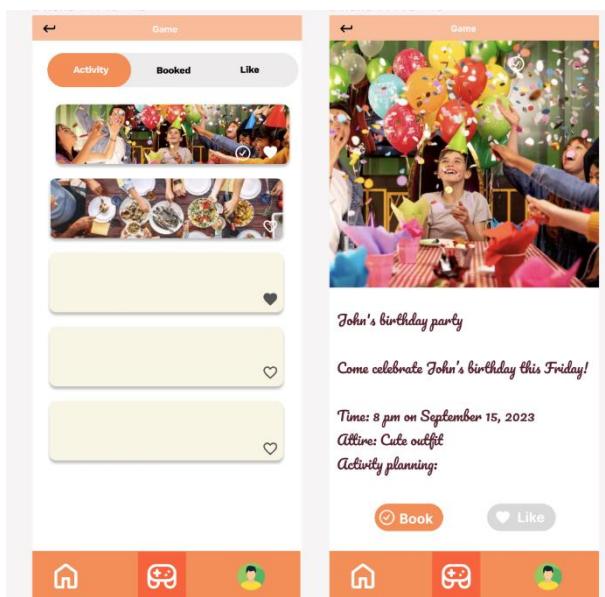


Figure 9: Event Page Mock-up

2.3 Initial Programming Development (Before User Testing & Evaluation)

2.3.1 Initial Development Goals

Concurrent to the visual design of the HomeSquare's low-fidelity prototypes, the app's working proof-of-concept was being developed by a sub-group of Team Orange Crocodile. The objective was to have a proof-of-concept product ready by user testing deadlines.

The core proof-of-concept goals required the following features to work successfully:

1. To create and draw data from a pre-built database of users, items, and bookings.
2. To have all item lending and booking related pages implemented in some capacity.
3. To have working navigation between the pages and the bottom navigation bar.

2.3.2 Coding Process

Given the team's limited programming experience, HomeSquare was developed using the JavaScript React-Native framework, targeting Android devices. JavaScript was chosen for its user-friendly nature and extensive third-party libraries for GUI rendering.

For the proof-of-concept, data handling was local, without a server backend due to cost and expertise limitations. Data structure brainstorming is illustrated in Figure 10, with actual JavaScript data objects implemented in the code (see adjacent code snippets). These objects provide data for graphical components rendering user profiles, item cards, and booking schedules during runtime (see Figure 11).

All booking-related pages were implemented on time, though the visual accuracy fell short of the prototype. Navigation was successfully incorporated using pre-built components and functions from the "@react-navigation/" libraries.

The code produced by the team, for pre-user evaluations proof-of-concept build of HomeSquare can be accessed via this GitHub URL: https://github.com/justgenetic/DECO2850_Protoype/tree/Milestone-Exhibit-1/Prototyp2

Item (Object)

- ↳ name
- ↳ description (100 character)
- ↳ owner
 - ↳ Household of Personal
 - ↳ Identifier (ID)
 - ↳ Pictures

User (Object)

- ↳ ID
- ↳ Name
- ↳ Photo

Booking (Object)

- ↳ Object ID
- ↳ Start Time / Epoch UNIX
- ↳ End Time / Epoch UNIX
- ↳ User ID

DB.js X

```
JS ItemsDB.js > [ ] Items > ⚡ image
const Items = [
  {
    itemID: '4067UQIH7167',
    userID: 'nvasey2',
    itemName: 'Vaccum clea',
    description: 'Dyson va',
    imageURL: require('../a')
  },
  {
    itemID: '4067UQIH5265',
    userID: 'mandriveau3',
    itemName: 'Speaker',
    description: 'Marshall',
    imageURL: require('../a')
  },
  {
    itemID: '4067UQIH8622',
    userID: 'rcortes4',
    ...
  }
]
```

Users.js X

```
const Users = [
  {
    userID: 'yocooney0',
    name: "Yuma O'Cooney",
    imageURL: require('../a')
  },
  {
    userID: 'smcindoe1',
    name: 'Shari McIndoe',
    imageURL: require('../a')
  },
  {
    userID: 'nvasey2',
    name: 'Niko Vasey',
    imageURL: require('../a')
  },
  {
    userID: 'mandriveau3',
    name: 'Magdalena Andriv',
    imageURL: require('../a')
  }
]
```

BookingsDB.js X

```
JS BookingsDB.js > [ ] Bookings
const Bookings = [
  {
    itemID: '4067UQIH5457',
    userID: 'mandriveau3',
    startTime: '1694120400',
    endTime: '1694124000',
  },
  {
    itemID: '4067UQIH2828',
    userID: 'rcortes4',
    startTime: '1694124000',
    endTime: '1694127600',
  },
  {
    itemID: '4067UQIH9283',
    userID: 'cbonwick5',
    startTime: '1694127600',
    endTime: '1694131200'
  }
]
```

Figure 10: Data structure brainstorming and its implementation as JavaScript data objects.

DB.js X

```
JS ItemsDB.js > [ ] Items > ⚡ image
const Items = [
  {
    itemID: '4067UQIH7167',
    userID: 'nvasey2',
    itemName: 'Vaccum clea',
    description: 'Dyson va',
    imageURL: require('../a')
  },
  {
    itemID: '4067UQIH5265',
    userID: 'mandriveau3',
    itemName: 'Speaker',
    description: 'Marshall',
    imageURL: require('../a')
  },
  {
    itemID: '4067UQIH8622',
    userID: 'rcortes4',
    ...
  }
]
```

function HomePage()

```
function HomePage() {
  return (
    <View>
      <View style={Homestyle.TagLineBox}>
        <Text style={Homestyle.tag}>Welcome to HomeSqua</Text>
        <Text style={Homestyle.tagline}>Borrow, Trade &</Text>
        <Text style={Homestyle.tagline}> Encouraging Sustainable Community Living
      </Text>
    </View>
    <ScrollView>
      <View>
        {Items.map(item => (
          <ItemCard key={item.itemID} item={item} />
        ))}
      </View>
    </ScrollView>
  </View>
}
```

HomeSquare Screenshot

Welcome to HomeSquare Yuma!
Borrow, Trade & Earn Points
Encouraging Sustainable Community Living

- Vaccum Cleaner (Available)
- Speaker (Not Available)
- Tool Set (Available)
- Powerbank (Available)
- Travel Adapter (Available)

Figure 11: Dynamically rendering item card components via the data object.

Note: Additional screenshots of the proof-of-concept build of HomeSquare can be found in Appendix B.2.2, also refer to Appendix D.4 for a comparison to the finished product.

2.4 User Evaluations

Figure 12 below eloquently illustrates the plan that was formulated and utilised by Team Orange Crocodile when conducting user testing and evaluations:

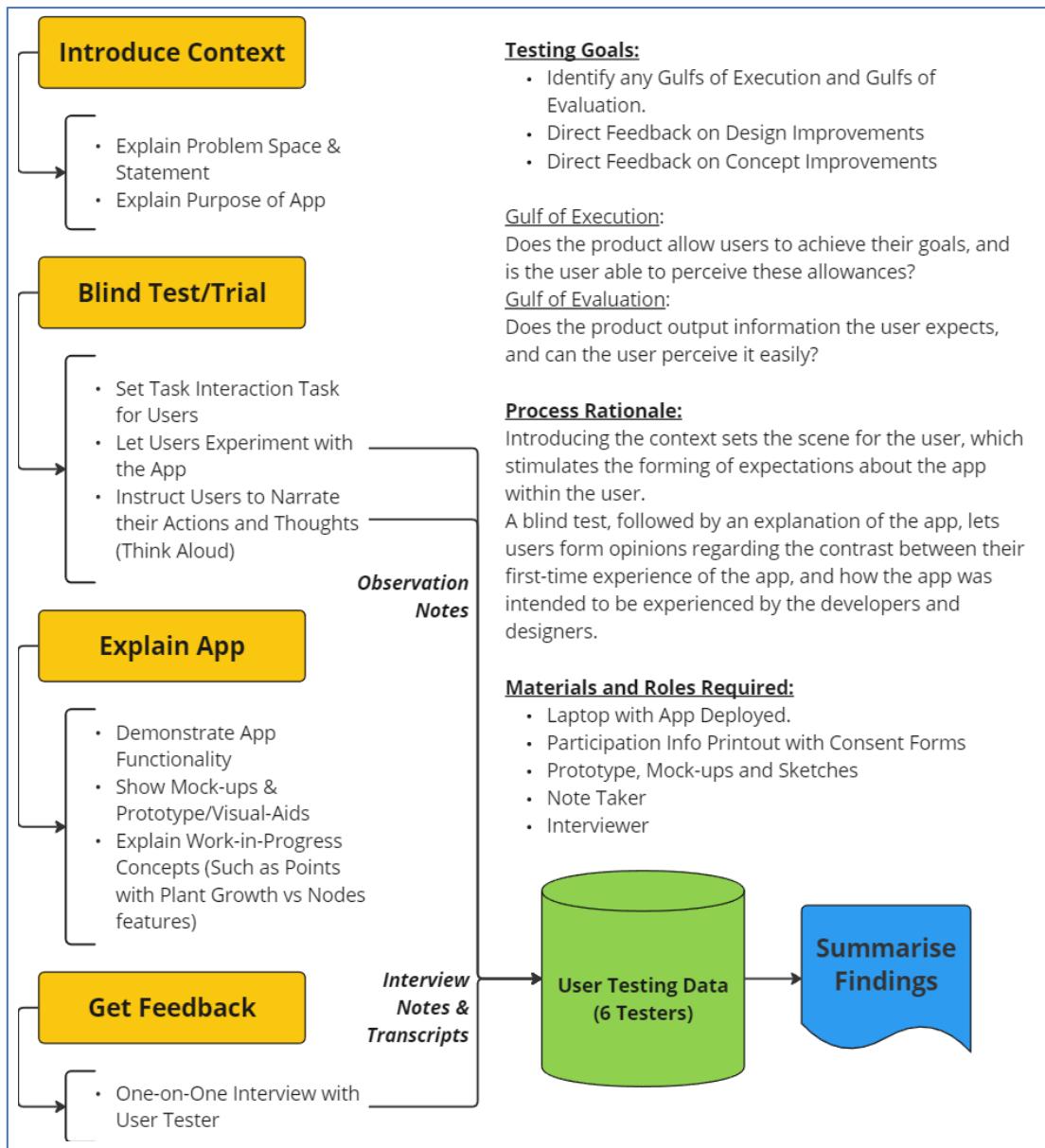


Figure 12: User Evaluation Process Overview.

2.4.1 Justifying the Testing and Evaluation Methods Used

The team incorporated the **Think Aloud** protocol into the evaluation, requiring users to vocalize their thoughts as they navigate through a given task [4]. Given that the user testers are engaging with the application without any guidance (as per the “blind test”), Thinking Aloud allows the team to gain insights into the testers’ thought processes when encountering a situation whereby the application’s actions or output misaligns with the tester’s expectations – leading to the identification of Gulfs of Execution or Evaluation [3], as per the stated evaluation goals.

Although it was not mentioned in Figure 12, a modified version of the **Wizard-of-Oz** [5] testing method was used to simulate the backend processes of the application. This was required as a back-end server was deemed unfeasible to incorporate at the time. In this modified Wizard-of-Oz method, the back-end server was simulated by a local-server. All program logic would generally be the same, however, users technically could not store data online and changes to the application would be lost after reinstallation of the application.

Using the Wizard-of-Oz approach allowed users to focus their attention and feedback on the application's design and concept, as per the stated evaluation goals, rather than on known bugs encountered due to incomplete features.

The last evaluation method was to conduct **Interviews** with each user tester. This would be done after the tester had completed the blind test and had been shown a proper demonstration on how the application is meant to be used. Conducting the interview in this order ensures that the user has a reference point to gauge their own experience (be it positive or negative) against a base-line perfect case.

2.4.2 User Testing Interview Conduct & the Introduction to "Nodes/Connections"

Questions asked during the interview pertained to the testers' general experience with the application, if they had any suggestions for improvements, as well as with their preferences with regards to the HomeSquare's current and potentially alternate concepts.

Regarding alternate concepts, a different relationship visualization system was proposed as a replacement to the gamified "Plant" growth system. This alternative, dubbed "Nodes" or "Connections", would be a dynamic web-diagram that provided a direct visualization of users' interaction with the application, showcasing "connections" made between users through the lending and borrowing of items, as well as the joint attendance of events. Users, items and events would be presented as "nodes" on the diagram, with lines joining these nodes representing the "connections" made by users interacting with the application, symbolizing the growing cohesive relationship between users (refer to Figure 13).

2.4.3 Evaluation Summary & Insights

Transcripts of every user testing evaluation session can be found in Appendix C.1, with their relevant **consent forms** found in Appendix C.2. **Note:** except for Tester 06 (T06), these transcripts record the entire testing sessions as part, from the blind test to the interviews.

Audio transcripts of the user testing and evaluation process for each tester, of which there were 6, were broken down and analyzed for insights. These insights were then tabulated, per each tester, and can be found in Appendix C.3. Subsequently, the following table was made to condense those findings into themes based on keywords:

Themes	Keywords	Insights
User Experience & Functionality	Simplicity & Ease of Use	Participants generally found the application straightforward and uncomplicated, which is a positive sign for user adoption.
	Accessibility	The application's accessibility and simplicity were highlighted, indicating its potential for a wide range of users.
	Navigation	Multiple participants highlighted the need for a back button to improve navigation.
Community & Relationship Building	Community Building	The emphasis on fostering a sense of community, whether through lending items or events, resonates with users. This highlights the importance of promoting shared experiences and interactions.
Utility & Practicality	Economical	The opportunity to lend items, especially for short-term residents or students, is seen as valuable. This speaks to the practical utility of the application.
	Systematic & Organized	Users appreciated the organisation within the app, emphasising the importance of intuitive categorisation and item discoverability.
	Relationship Representation	The "Nodes" concept, which visually represents relationships, was well-received. However, concerns were raised about its potential to become cluttered over time.

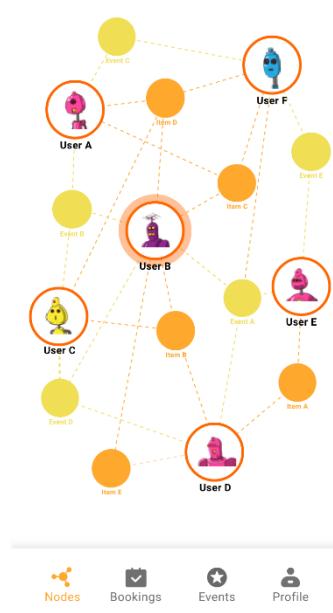


Figure 13: New "Nodes / Connections" Idea.

Utility & Practicality	Instruction	First-time users might benefit from instructions or onboarding to understand certain concepts better.
	Relationship Representation	The app's relevance, particularly in shared accommodations, was highlighted. However, feedback also pointed towards potential areas of improvement, like better resource categorization.

Table 1: User Testing and Evaluation Insights.

2.4.3.4 Insights Regarding the Replacement of “Plants” vs “Nodes/Connections” Concept

The following table highlights the pros and cons of the “Nodes/Connections” concept versus the “Plants” concept, based on user evaluations feedback, as mentioned in section 2.4.2.

Themes	Advantages		Disadvantages	
Nodes	Simplicity & Ease of Use	Ability to visually represent relationships, showing the network of connections within the community.	Potential Clutter	There's a concern that as more interactions and events are added, the nodes interface might become messy and cluttered, making it harder to discern relationships.
	Discovery of Common Interests	Allows users to identify others with similar interests, aiding in the discovery of potential friends or acquaintances.		
	Broad Overview	Provides a holistic view of who is connected to whom and by what means, showcasing both borrowing and lending relationships.	Initial Confusion	Some users found the “Nodes” concept confusing at first glance, indicating a potential need for onboarding or instructions.
	Fosters Community	The visual depiction of interconnectedness can promote a sense of unity and community among users.		
Plants	Gamification & Engagement	Growing a plant based on borrowing and lending can engage users and make the experience more interactive and fun.	Unhealthy Competition	Some users felt that the plant's growth could lead to an unhealthy form of competition between housemates, detracting from the community-centric focus.
	Shared Growth	The idea of nurturing a plant together promotes teamwork and a collective sense of achievement, fostering shared growth.	Misalignment with Core Values	The competitive nature might overshadow the primary objective of fostering genuine relationships and community building.
			Potential Misunderstanding	Using points (presumably associated with the plant's growth) might cause misunderstandings among residents, as seen from one participant's feedback about feeling low on points and being unable to contribute.

Table 2: “Nodes/Connections” vs “Plants”, Pros vs Cons.

2.4.4 Improvements and Changes to Make

Based on the insights gained from the user evaluations, the following is a list of practical and conceptual changes that could be made to HomeSquare:

- Adding visible “back” buttons, for improved navigation on some pages.
- Adding category filter options to item lists, for better user experience.
- Adding a dismissible tutorial overlay for new users, for a better on-boarding user experience.
- Replace the “Plants” system with the “Nodes/Connections” system, to better align the application to user values.

2.5 Post User Testing and Developing the Final Product

After user testing and evaluation, Team Orange Crocodile undertook an intensive re-iteration design and development process to implement any unfinished features of HomeSquare, and to incorporate several improvements, based on user feedback, as specified in Section 2.4.4.

From this process, a new high-fidelity prototype was created, the Interaction Flow Diagram of which can be seen in Appendix D.1, and the prototype itself is accessible from this link:

<https://xd.adobe.com/view/df2bd415-a19d-4719-a5cc-b2873de351f1-8a78/>

Development of the final working product resulted in the implementation of:

- A local storage function allowing changes to be saved, locally to the device, allowing data to persist even after the user closes the application or logs out.
- A fully functional item listing and bookings system, including a date/time picker, and the ability to delete listed items and active bookings.
- A fully functional events RSVP system.
- A functional user profile selection and logout system.
- A fully functional and interactive “Nodes/Connections” relationship-visualisation system.
- Additional back buttons on Booking Pages, allowing for more navigation options for users (as per section 2.4.4’s improvements list).
- A drop-down filter system that displays items based on category (as per section 2.4.4’s improvements list).

Features and changes that were NOT implemented, due to time constraints:

- An online back-end system that stored data online, allowing for multiple users of the application.
- The tutorial overlay (as per section 2.4.4’s improvements list).
- An event listing and deletion system.
- A username and password login system.

Screenshots of HomeSquare’s final working state can be found in Appendix D.4, and the final working code can be accessed from the following GitHub link:

https://github.com/justgenetic/DECO2850_Protoype/tree/main/Prototyp2

3.0 Discussion & Conclusion

3.1 The Nodes/Connections System Introduces Synergies

During the initial of HomeSquare's design process, Team Orange Crocodile had settled on three core features:

1. item lending and booking system,
2. the social events creation and RSVP system, and
3. the point-based "Plant" growth feature.

The first two features were initially anticipated to work independently from each other, with no considerations given towards their ability to support or direct user traffic to one another. This stale dynamic, between the two features, would change dramatically when the "Nodes/Connections" concept was conceived, through the iterative design process, to replace the "Plant" system.

With the Nodes system, users could see and infer one another's social preferences through their borrowing and participation habits on HomeSquare. Although somewhat concerning with regards to privacy, this generated opportunities for users to create and attend social events revolving around the use of a particular shared item.

For example, a user who enjoys basketball could observe that someone else, within their accommodation complex, frequently borrows the only basketball around. The user could infer that the borrower also enjoys basketball, and for both users to appreciate the use of the same ball, they would have to play together, the occurrence of which could easily transform into a social event. Now, suddenly, all three features of the application are synergistically and implicitly encouraging the development of a new social relationship, the result of which is one of HomeSquares stated goals.

Due to Nodes feature not being implemented at the time of user-testing, the synergist effect of nodes was not tested. However, users were introduced to the idea during user evaluation interviews, and responses were very positive, as seen in Table 2, Section 2.4.3.4.

The key learning points here are twofold:

1. An interactive design process does potentially generate new and better ideas, and
2. Mundane features could conceal hidden synergies, and designers should always consider that.

3.2 Gamification Features Oppose HomeSquare's Stated Goals

The initial ideation of the point-based "Plant" growth system was originally looked upon positively by the team as a driver of user engagement through the novelty of gamification. However, feedback from tutors during Week 8's exhibition, highlighting the potential ethical concerns of such a system, led to the reconsideration of the idea.

The main ethical concern regarding gamification, in HomeSquare's case, is that the application would award points to users who lent out items to share. But not all users have the same financial standing, and some may have more to share than others. This potentially creates discrimination amongst users, which counters the team's efforts to increase cohesion amongst users, as per the problem statement.

Furthermore, when the "Plants" and "Nodes/Connections" systems were both proposed to testers during user evaluation interviews. Responses indicated that users had negative sentiments towards the "Plant" idea as it could potentially introduce unhealthy competition amongst users or create misunderstandings between users (as mentioned in Section 2.4.3.4, Table 2).

The lesson learnt, through the rejection of the "Plants" idea, is that seemingly positive systems could actually be harmful to users, when not explored or researched in depth, prior to implementation.

3.3 Conclusion

User research within the domain of “Home & Domestic” led to the discovery of the problem statement:

“How can we increase cohesion between individuals who
live in large, shared accommodation buildings?”

for which a software-based solution, in the form of a phone application called “HomeSquare”, was designed and developed by Team Orange Crocodile. Insights gained, from the initial research, resulted in the formulation of three core features: (1) an item lending and booking system, (2) a social events creation and RSVP system, and (3) a gamified point-based “Plant” growth system. However, feedback from user-based evaluations identified that the “Plant” system opposed HomeSquare’s goals, due to its gamification features. This led to the replacement of the “Plant” system, in favour of the “Nodes/Connections” system, which directly visualises connections made between users who share and borrow the same items or attend social events together. This visualisation of relationship connections revealed beneficial synergies between the other two core features which would enable the creation of more social relationships between users. Continued development of HomeSquare led to the application having all core features successfully implemented, however other features that are yet to be implemented, includes access to a working backend server, and a secure login system. As such, while HomeSquare’s current design would very likely solve the problem statement, it is still some ways away from being a distributable product.

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Appendix A: User Research

A.1 Literature Review Summaries

A breakdown of each literature review can be seen in Appendix A.1's subsections (A.1.1 to A.1.6), however some of the initial themes from the reviews are highlighted below:

- **Communication** and **Respect** between residents of a shared household is key to cohesive living.
- The implementation of systems of **Organisation**, especially when it comes to chores, are important to users in this domain.
- Users desire a sense of **Self-Agency** and **Personal Space** when it comes to living with others.
- Forming **Friendships** could possibly help create a cohesive environment.
- Users may have concerns regarding the **Cost-of-Living**.

A.1.1 Blog: How to Set Boundaries... (Kepler, D. 2023)

The following is a summary of a blog by Danielle Kepler (2023):

- “When we set boundaries, we discuss our personal needs with others to make them clear.” (Kepler, D. 2023)
 - (In the context of housemate cohesion) Setting boundaries [Control/Agency] is important as it helps:
 - avoid miscommunication. [Communication]
 - improves relationship with others.
- Setting boundaries step by step:
 - Listing your needs. [Communication]
 - Set aside time to talk. [Communication]
 - Take turns talking.
 - Use “I” statements.
 - Use the LARA method: [Communication]
 - Listen
 - Acknowledge
 - Respond
 - Add
- Tips to keep communal living smooth:
 - Clean up after self. [Organisation/Responsibility]
 - Ask permission before using their stuff. [Control/Agency] [Respect]
 - Assign chores. [Organisation/Responsibility]
 - Don’t force friendships. [Control/Agency]

Researcher’s concluding thoughts about Danielle’s blog:

Better living experiences can be had, when living with a roommate, when there is consideration given to the following values/themes: Communication, Control/Agency, and Organisation. Communication and Organisation/Responsibility is self-explanatory. However, Control/Agency likely implies that each member of the household feels like they have some control or ownership over some aspects of the environment, and/or the objects within it.

A.1.2 Article: 12 Share House Rules Every Roommate... (Soho Real Estate, 2022)

As per the article by Soho Real Estate (2022), the following are some key points to a cohesive household:

- Cohesion is gained when everyone is treated with equal respect. [Respect]
- A clean house is vital. [Organisation]
- Respecting each other’s property. [Control/Agency] [Respect]

- Guests are a point of contention. [Organisation]
- Cooking and sharing meals – let roommates know your meal plans. [Organisation]
- Be mindful of noise. [Respect]
- Communication is good. [Communication]
- Create house traditions, example: “pup” or “movie” nights. [Organisation] [Friendship]

Researcher's concluding thoughts about the article written by Soho Real Estate:

This blogpost has a lot of points but doesn't explore them in detail. Some themes and values can be extracted though, some of which relate to the other blogposts.

A.1.3 Blog: What House Sharing Can Show Us About... (Houghton, M. 2021)

The following is a summary of a blog by Marie Houghton (2021):

- Problems regarding what defines a “home” and “sharing a home”:
 - Home is a place you can feel relaxed in and have some privacy. This is limited when you share a house. [Control/Agency]
 - Control is needed to feel at home, which is hard when sharing a home. [Control/Agency]
 - Home implies stability and permanence, share homes are seen as temporary.
 - Safety can be affected in share homes with strangers. [Respect]
- Marie finds that some people she interviewed had successful share home experiences by closing the gap between “strangers sharing homes” and “family”. [Friendship]
 - “I’ve ended up in a place that’s good, that is a home and is friendly and I am happy here. And, you know, if I get down, my flatmates will come and knock on the door and ask if I’m alright. (...) I have a community here.” (Bob, Anonymised participant in Marie’s interview) [Friendship]
 - “They are my family and they’ve become really important people to me. I see them every day and we eat together; we cook meals together, we shop together.” (Hannah, Anonymised participant in Marie’s interview) [Organisation] [Friendship]

Researcher's concluding thoughts about the Marie's blog:

Strong cohesion is likely to occur when occupants become familiar enough with their housemates and treat them like family. This might be difficult to achieve and probably only happens in a minority of cases. The tone of this blog contradicts the tone of the first blog in that it implies that breaking barriers and boundaries could lead to better cohesion. Friendship is likely the biggest theme/value in this post.

A.1.4 Article: How to Navigate Sharing a Home with... (Venter, T. 2020)

To avoid conflicts in a shared household, the author, Taylor Venter (2020) advocates to:

- Prioritise mental health
 - Maintaining mental health is crucial to dealing with people for long periods of time. [Health]
 - Ways to maintain mental health: [Mental Health]
 - Create a daily routine. [Organisation]
 - Limit social media usage. [Communication]
 - Spend time on personal growth. [Self-Improvement]
- Maintain open, honest communication. [Communication]
 - Be honest about your feelings. [Communication]
 - Respect each other’s emotions. [Respect]
 - Have a daily check-in and chat with others. [Communication]
- Avoid blame.
 - Take responsibility for your own emotions. [Self-Improvement]

- Establish personal space. [Agency/Control]
 - Respect other's need for privacy. [Respect]
 - Divide chores fairly. [Organisation]
 - Discuss acceptable noise limits. [Communication]

Researcher's concluding thoughts about Taylor's article:

Similarly, to the other literature pieces, Taylor advocates for some level of open communication and organisation amongst housemates. That said, there are two new concepts introduced to help boost cohesion in the household. These are Individual Mental Health and Self-Improvement. In these areas, the author advises that good mental health, emotional self-control, and personal growth/development, as an individual, would help establish better cohesion amongst housemates.

A.1.5 Article: Common Roommate Housemate... (RoomMates.com.au, 2022)

The following is a summary of common problems in a shared house, according to an article by RoomMates.com.au (2022):

- Borrowing (Clothes, Food, General Items) Without Permission [Respect]
- Splitting Costs (Utilities, Groceries, Cleaning Products) [Cost of Living]
- Guests/Visitors [Respect]
- Noise [Respect]
- Mess in Shared Spaces [Respect]
- Privacy [Respect]
- Leaving Lights/Appliances On [Cost of Living]
- Not Locking (Front) Door After Leaving [Safety]

Researcher's concluding thoughts about RoomMates.com.au's article:

This article highlights common household problems using specific examples that are more relatable to readers and their immediate concerns, rather than general or abstract conceptual issues as explored in previous blogs or articles. Primarily, the article advocates respectful behaviour and consideration of others. It also introduces cost of living as a factor that could affect cohesion in the households.

A.1.6 Research Paper: Managing Conflict in... (Clark, V., Tuffin, K., & Bowker, N. 2020)

The following is quick summary of a research paper by Clark, Tuffin and Bowker (2022), which investigated the management of conflicts within a shared house of young adults:

- Research Demographics:
 - Age: 20 – 35.
 - Currently flatting.
 - Fluent in English.
 - Recruited by word of mouth.
 - 14 individual interviews.
 - 23 interviewed in seven flat groups.
 - 15 Male, 22 Female.
 - Interviews were audio recorded, and group interviews were videoed.
- Source of Conflicts:
 - Divergent expectations of cleanliness and tidiness. [Organisation]
 - Freeloading and miserliness. [Cost of Living]
 - Freeloading – paying bills or food. [Cost of Living]
- Ways Conflicts were Managed:
 - Openness (No secrets). [Communication]
 - Communication. [Communication]

- Forgiveness.
- Being aware of what disgruntles others. [Respect]
- Circumventing issues - not directly addressing problems.
- Tension dissipates with time.
- Consequences of not solving conflicts:
 - Frustration.
 - Negatively affecting mood and state of mind.
- Residents moving out.

Researcher's concluding thoughts about this research paper:

The paper contains many details about what Team Orange Crocodile is currently researching and uses responses from interview participants to gain insight into what causes conflicts in the household and how they might be resolved, but also what happens if conflicts aren't resolved. It seems that conflicts arise from divergence of expectations in regard to things like chores, cleanliness, and cost of living issues. With regards to unresolved conflicts, the paper's authors mention that ultimately some conflicts are only settled when an offended member of the household moves out.

A.2 Online Survey

A.2.1 Survey Questions Formulation

13 survey questions were formulated with the following focuses and rationales in mind:

- 2 Questions (Q1 and Q2) inquiring about the user's demographics.
 - Rationale: Verification that survey participants were indeed target users.
- 4 Questions (Q3, Q4, Q8 and Q9) regarding relationships between users and their social inclinations.
 - Rationale: Confirmation that social friendships are indeed a factor in cohesion, as per the literature reviews.
- 3 Questions (Q5, Q6 and Q7) regarding communication between users.
 - Rationale: Finding users' preferences when it comes to communication, along with reasons why communication might fail.
- 2 Questions (Q10 and Q11) on organisation, with regards to the conduct of domestic chores.
 - Rationale: Confirming organisation is an import value to users' as per the literature reviews.
- 1 Question (Q12) regarding users' concerns with shared accommodation.
 - Rationale: Understanding user frustrations, and if any differed from those identified from the literature reviews.
- 1 Question (Q13) regarding privacy preferences of the user.
 - Rationale: To inform the product's design when it comes to privacy considerations.

A.2.2 Survey Data

Question 1: Which of the following best describes your accommodation?

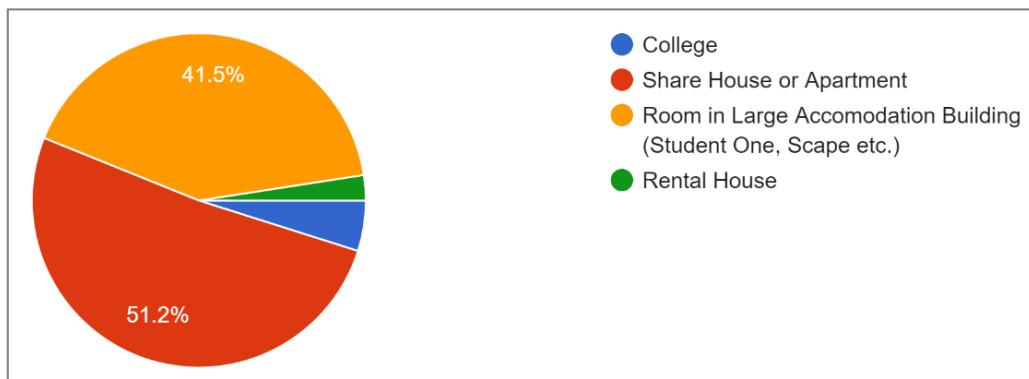


Chart 1: Responses to Q1 of Survey: Accommodation type distribution.

Question 2: How many people do you live with?

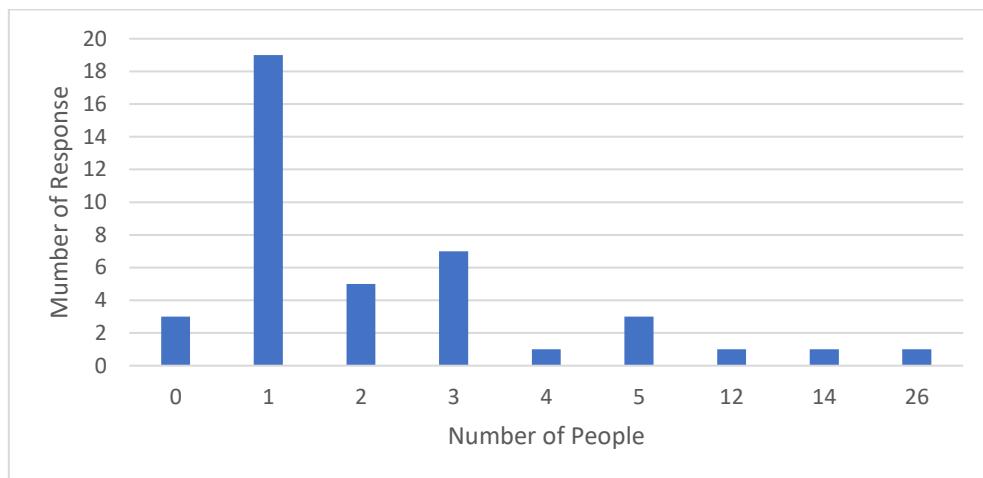


Chart 2: Responses to Q2 of Survey: Number of other people living with.

Note: Weighted Average (Rounded to the nearest whole number): Respondents live on average with 3 other people.

Question 3: How would you rate your relationship with the people you live with?

Scale:

[Strangers (Very Distant)] 1 to 10 [Close Friends/Family (Very Close)]

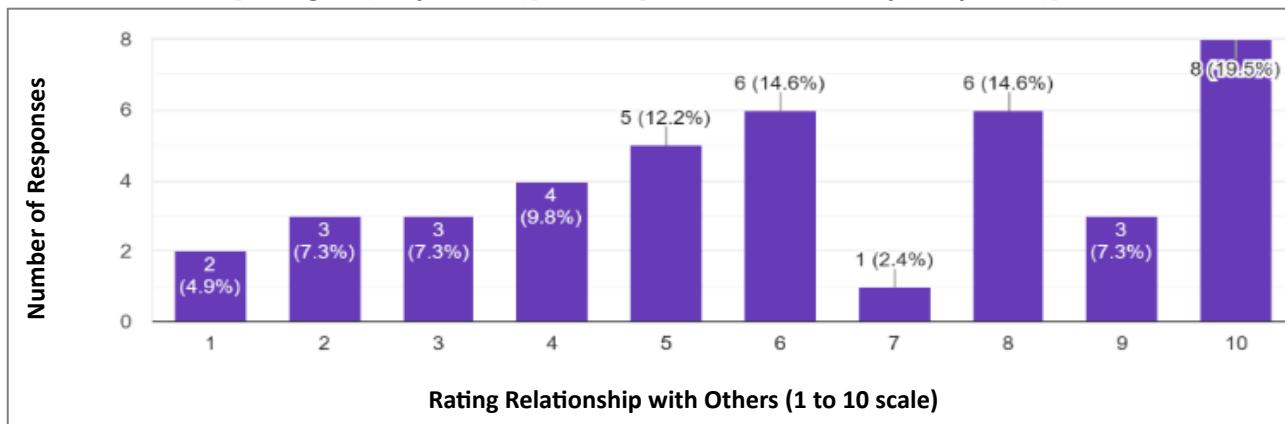


Chart 3: Responses to Q3 of Survey: Rating of living relationships.

Weighted Average Rating Score: 6.24

Question 4: Ideally, how close would you like to be with the people you live with?

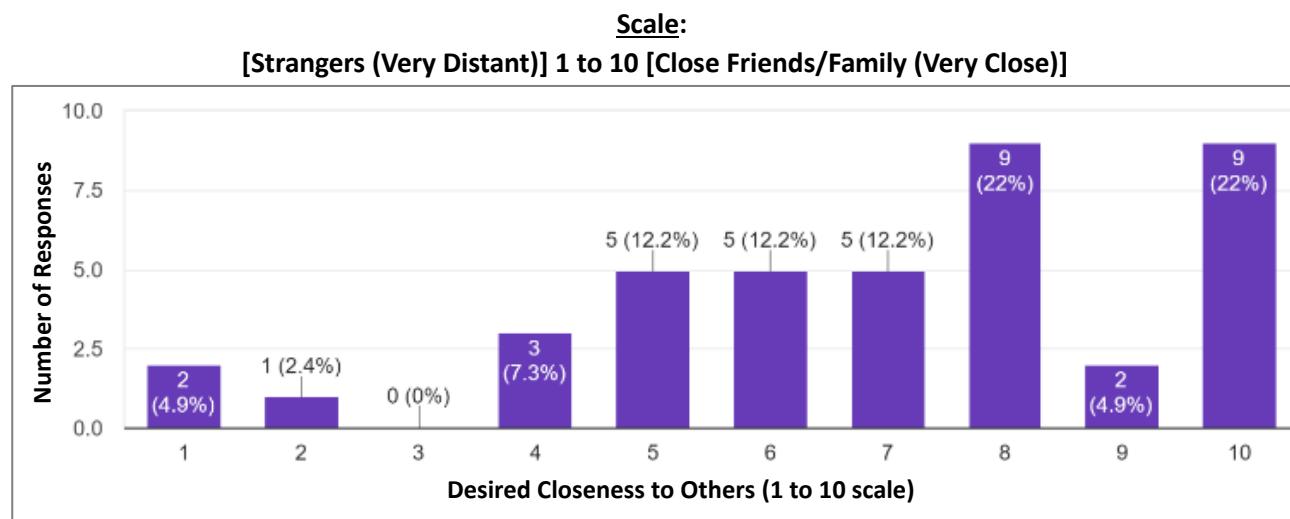


Chart 4: Responses to Q4 of Survey: Desired closeness to others.

Weighted Average Rating Score: **6.98**

Question 5: How often do you communicate with the people you live with?

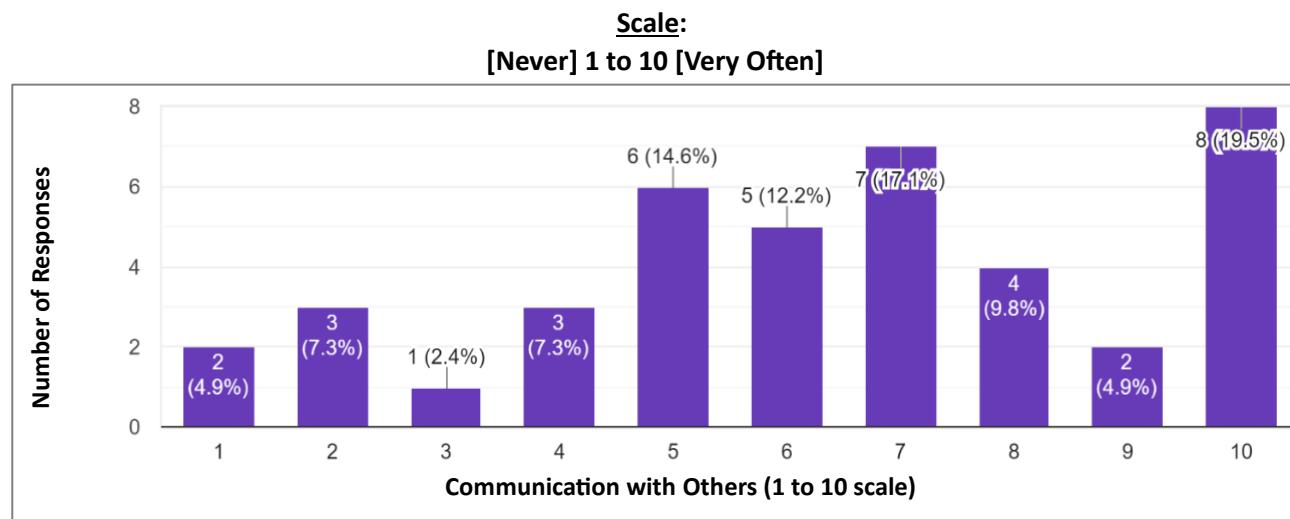


Chart 5: Responses to Q5 of Survey: Importance of communication rating.

Weighted Average Rating Score: **6.39**

Question 6: What mode of communication do you prefer?

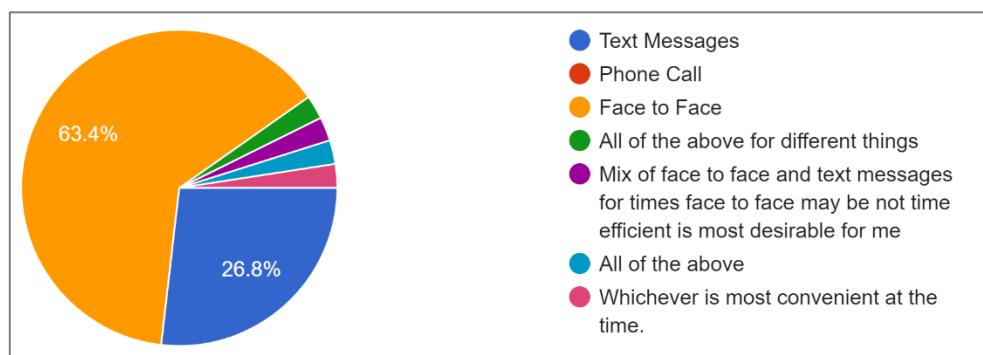


Chart 6: Responses to Q6 of Survey: Communication method preferences.

Question 7: What do you think might be the biggest obstacle to communication between you and your roommate/s?

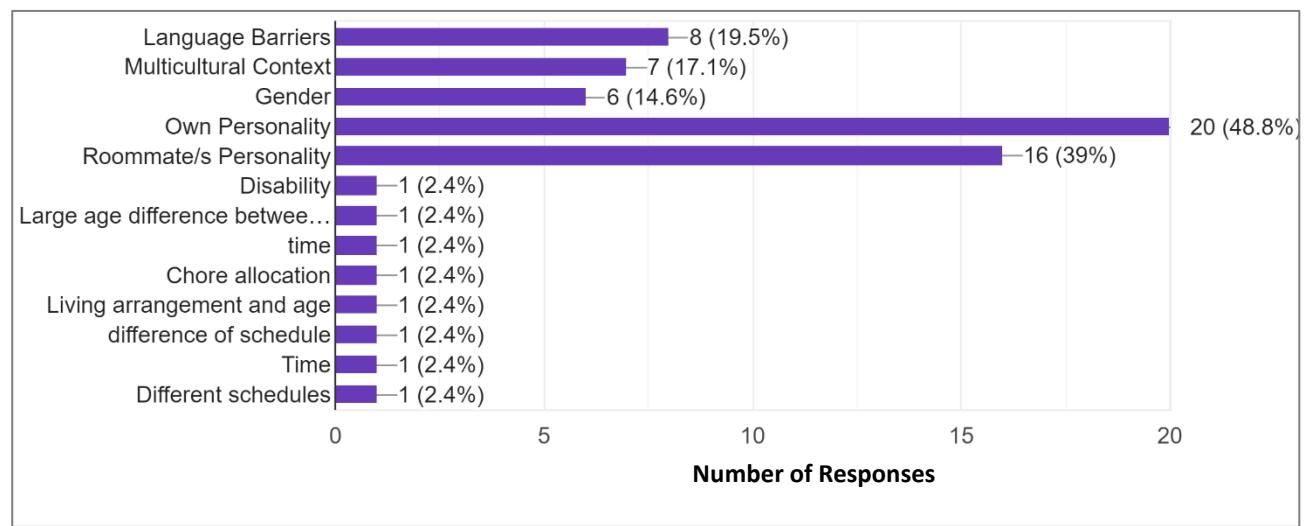


Chart 7: Responses to Q7 of Survey: Communication obstacles.

Question 8: Would you commit the time to engage in social activities with your housing community if it was available?

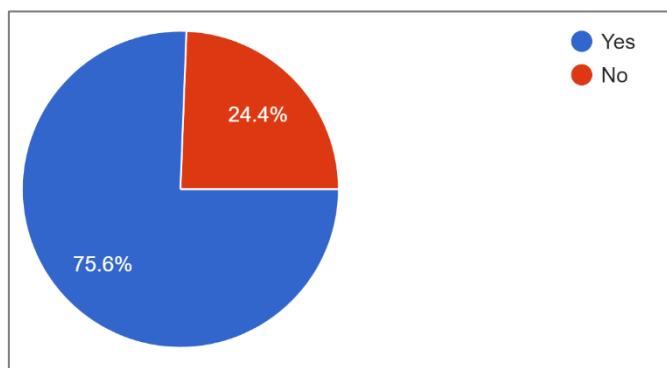


Chart 8: Responses to Q8 of Survey: Accommodation Type Distribution.

Question 9: Do you think attending these social events will improve cohesion in your community/household?

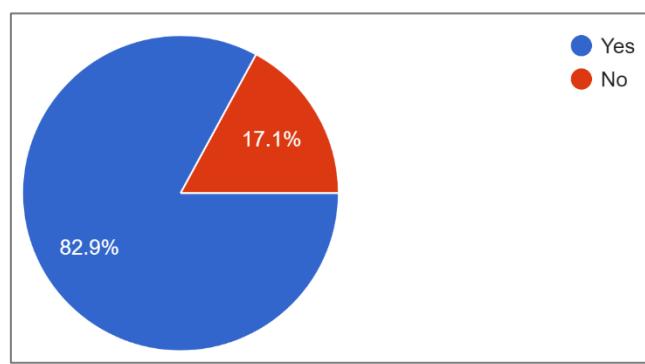


Chart 9: Responses to Q9 of Survey: Social events preference.

Question 10: Do you think organising to share chores amongst your roommate/s would improve cohesion in the household?

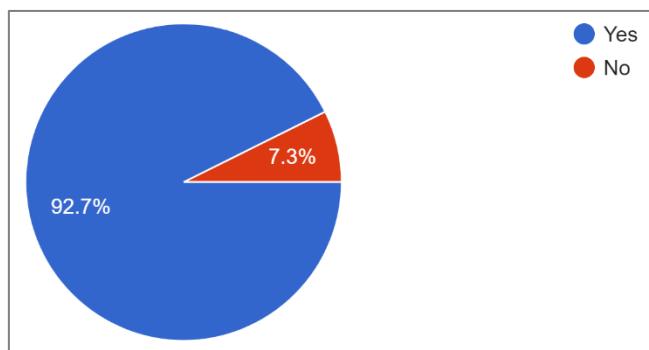


Chart 10: Responses to Q10 of Survey: Chore organisation.

Question 11: How important do you think it is to have clearly defined roles and responsibilities for household chores?

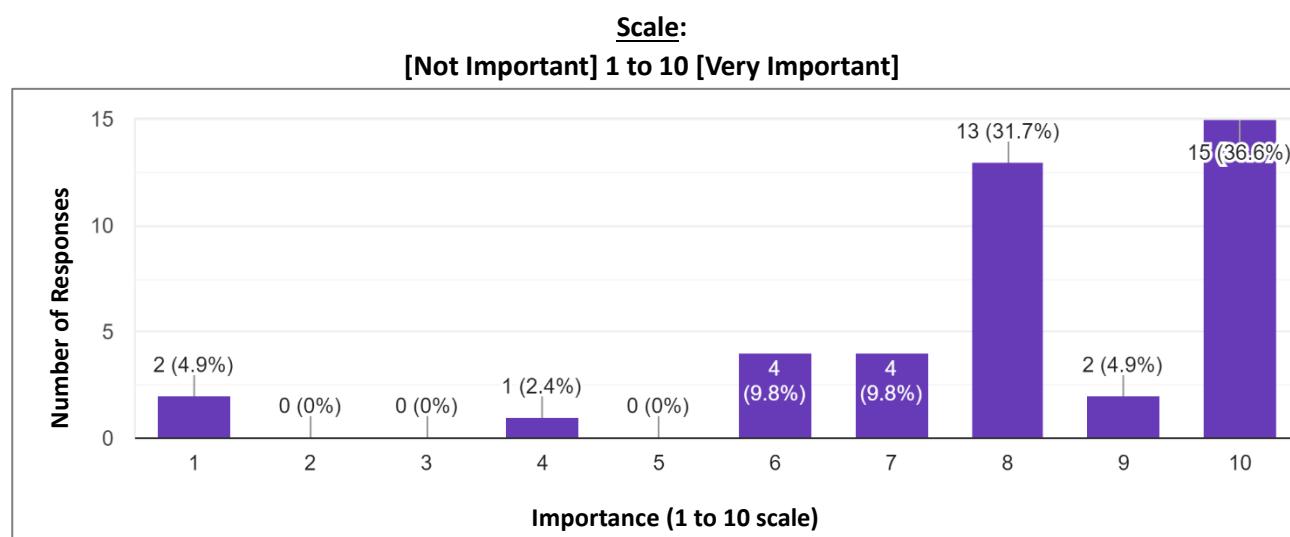


Chart 11: Responses to Q11 of Survey: Importance of defining household roles.

Weighted Average Rating Score: **8.34**

Question 12: What are your largest concerns in regard to sharing accommodation with others? [Select up to 3]

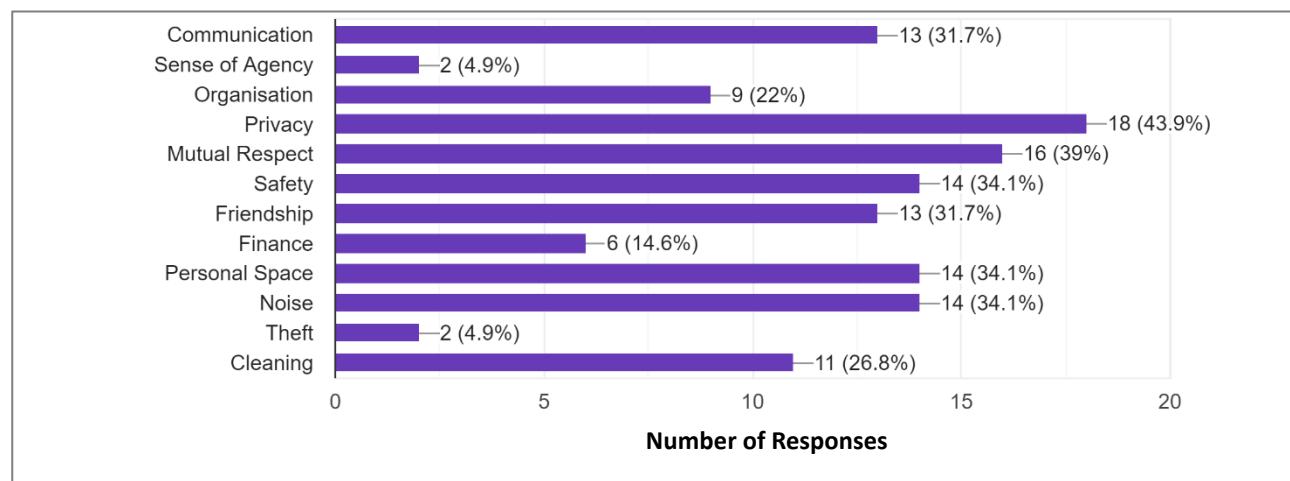


Chart 12: Responses to Q12 of Survey: Shared accommodation concerns.

Question 13: From the following, what kind of information would you expect to share with roommate/s, regardless of your relationship with them?

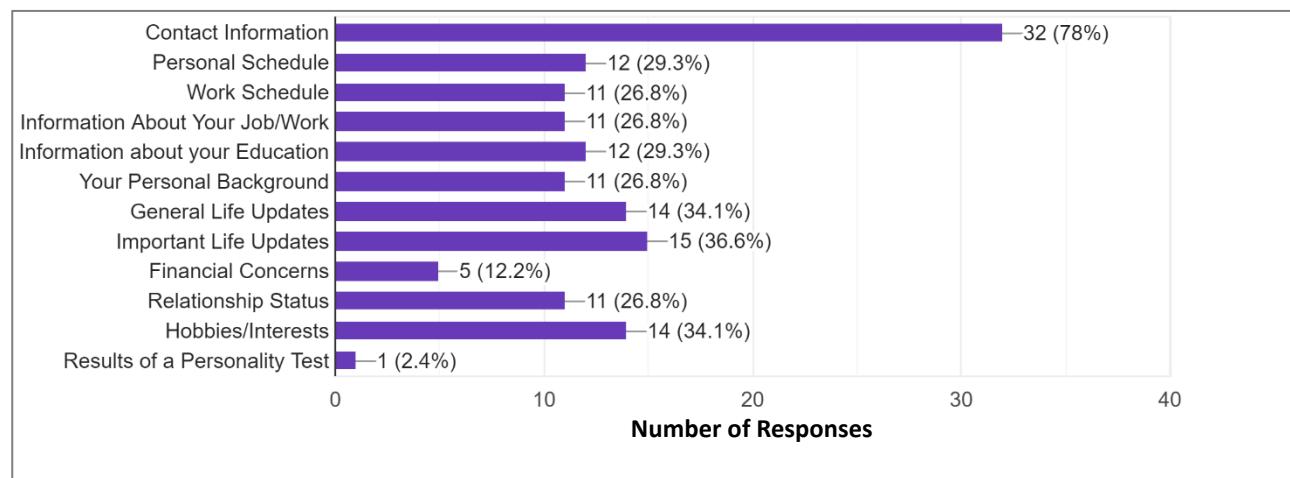


Chart 13: Responses to Q13 of Survey: Sharing information.

A.3 User Interviews

When formulating the interview questions, the following considerations were taken into account:

- Avoiding Interviewer Bias.
 - By keeping questions general and open, more integral and accurate opinions can be gained by the interviewees, instead of responses that the interviewer is specifically looking for.
 - For example, Questions 4, 7, and 8 asks "How do you...", instead of "Is this how you do...". Posing questions this way avoids pressuring interviewees into a limited number of pre-formulated responses.
- Gaining a general understanding of how users in the problem space live, and that they experience.
- Identifying potential concerns or frustrations such as:
 - Relationship with other users in the problem space.
 - Resource concerns.
 - In an ideal scenario, what is expected, and what occurs in reality and how it differs from the ideal scenario.
- Identifying user values for analysis.

Note: An accompanying brief, as seen below, was also made to introduce the problem space to the interviewees. Additionally, the formulated questions are a guide for the interviewers, who have discretion to deviate from, if necessary (as can be seen in some of the transcripts in Appendix A.3.2).

A.3.1 The User-Research Interview Template

Brief to Interviewees:

"Whether it's within the four walls of a dormitory room or the shared common spaces of a large accommodation building, individuals come together with their unique lifestyles, cultures, and habits. Just as people in the vast world have a curiosity to explore, to learn about their local surroundings or global phenomena, those in communal living spaces have a similar need - to understand and harmonize with their roommates and neighbours. Whether it's learning about each other's preferences, creating common house rules, ensuring privacy, building trust, or planning shared activities. This is the realm of "Cohesive Living" that we are delving into in this interview."

Template Questions:

1. Please share your experience living with others.
2. What is your relationship with the people you live with like?
3. How comfortable are you with sharing personal information with the people you live with?
4. What is your ideal relationship with your housemates?
5. How do you tend to resolve conflicts within your life?
6. What is your biggest frustration when it comes to living with other people? How could this frustration be solved?
7. How do you and your community share resources?
8. How did/do you utilize shared resources? (Laundry, cleaning supplies etc.)
9. Would you share your own resources with your community? How so?
10. How can technology help with increasing cohesion between housemates? How you define cohesion in this question is up to you.
11. What does your ideal shared living situation look like?

A.3.2 User-Research Interview Transcripts

Note: Concerning interviewee information, all interview transcripts have been anonymised, with their respective consent forms disassociated and jumbled in Appendix A.3.3. This was done to protect the privacy of interviewees.

A.3.2.1 Interview 01 (I01)

Quote Number	Speaker	Quote
1	Interviewer (Kevin):	Okay, so, I'll introduce you to the context of this interview first, okay? So, whether it's within four walls of a dormitory room or a shared common space of a large accommodation building; Individuals come together with their own unique lifestyles, cultures, and habits; And just as people in the vast have a curiosity to explore and learn about their local surroundings or global phenomena, those in communal living spaces have similar needs to understand and harmonise with those they live close to; Whether it's learning about each other's preferences, creating common house rules, ensuring privacy building, trust or planning, share activities: this is the realm of cohesive living that we are dwelling into in this interview. So, first question, could you share your own experiences with living with others? How did you live with others? What kind of accommodation was it? What were your dislikes or likes generally with this sort of environment?
2	Interviewee 01:	Generally, it's a positive experience living with others. Likes and dislike... What I like about living with others, is that you have a support network. Especially with your housemates. Um, being able to study together and have meals together. And what I dislike about living with others is that sometimes your privacy will be violated.
3	Interviewer (Kevin):	Who did you live with? So, it was a dormitory, was it?
4	Interviewee 01:	It was, yeah. Share house kind of Style. Thirteen rooms with boys, which is located downstairs and thirteen rooms for girls where we lived upstairs. They are all enrolled in the same university, but in different faculties.
5	Interviewer (Kevin):	So, what was your relationship, like, with the people that you live with. What did you guys normally, talk about? What kind of activities did you do together? Did you feel close to them?
6	Interviewee 01:	Only some of the student there. I'm not close to all of them because it's quite hard to form a relationship with every single one of them, considering the size of the entire group of students living there. So, I was only close to probably five of them, including guys and girls. I would say that I'm close with them as we always study together and have meals together.
7	Interviewer (Kevin):	Okay. Um, how comfortable are you with sharing personal information with the people you live with? So, what kinds of information would you share? What kinds of information do you think everyone should share generally?
8	Interviewee 01:	I generally will only be comfortable sharing information with the people that I'm close with, not strangers. For people that I'm close with, I would share whatever that's happening in my life, including my background; what faculty and enrol in, how's my study going, places that we should visit or things that we can do over the weekends. But for people that I don't really know; I choose not to share any sort of information at all.
9	Interviewer (Kevin):	You said that you only share things with people who you're close to... But in a general sense, like you were staying in the dormitory with 25 other people, would you prefer in such an environment to make as many friends as possible or to keep your distance?
10	Interviewee 01:	To keep my distance. Plus, studying in university requires a lot of your time to like do assignments and study for exams. So, I chose not to spend time with people so much and just focus on studying myself.
11	Interviewer (Kevin):	So, are boundaries important to you?
12	Interviewee 01:	Yes.
13	Interviewer (Kevin):	Do you think that kind of mentality would lead to, I guess, conflicts? Or do you feel that the boundaries help prevent conflicts?
14	Interviewee 01:	Um I think communication is key. So, if I just describe for explain that I have to fully focus on my studies; my friends who understand me would get it. It's just a simple gesture of like keeping your doors closed or not studying in a common room. They would get it, that I will need my space to focus on studying. I don't think that they will feel offended, as long as we communicate that things are serious right now and we need to focus on studying.
15	Interviewer (Kevin):	Okay. How do you tend to resolve conflicts? Specifically, if housemates have disagreements, and this does not necessarily mean conflicts that you're involved, with just conflicts in general. How, how do you tend to resolve those?

- 16 Interviewee 01: If the conflict is not happening within my circle, I'll just let it be. It doesn't matter to me, and I don't want to care so much about them. But if the conflict involve, my immediate network, then I would try to understand what happened and also listen to both sides of the story. But I wouldn't provide my judgement or opinion.
- 17 Interviewer (Kevin): Okay. Do you think because it's a communal living environment... Do you think there should be a structure to solving conflicts? Do you believe that democracy might help, or do you feel that maybe each dormitory might have like dormitory leader who will make a decisive decision? What kind of structure do you think will help resolve conflicts?
- 18 Interviewee 01: Maybe they just work it out themselves.
- 19 Interviewer (Kevin): So individual negotiation?
- 20 Interviewee 01: Because sometimes, if you have some structure, it might not fit to every single type of conflict. It depends on the context of like, how serious the conflict is.
- 21 Interviewer (Kevin): Okay. What is your biggest frustration when it comes to living with other people? How could that frustration be solved?
- 22 Interviewee 01: Invasion of privacy and theft. Uh, in terms of solving, what I did was just keeping my personal belongings to myself, confined in my room. Then, in terms of invasion of privacy, I would just voice out to the building owner and say that we need serious boundaries between the girls and the guys. That means to set boundaries, where guys can't go upstairs to the girl's area.
- 23 Interviewer (Kevin): Okay. Do you think then, seeing how you mentioned the building owner. Do you think then such an individual should be involved during conflicts between roommates or dormitory mates? Or is that a private matter?
- 24 Interviewee 01: Yeah, that's more of a private matter because we wouldn't bring up personal conflicts to the building owner, unless there's like service or maintenance required.
- 25 Interviewer (Kevin): Okay. How do you and your community or dormitory share resources? How is food shared? How are appliances shared, shared spaces, common areas? How do you guys share your resources?
- 26 Interviewee 01: In spaces. Um, there were common spaces built within the house itself. So, there was a study area. So, if people want to just do group discussions or group study we can use that space, there's no restriction. There are two kitchens, one upstairs, one downstairs. With basic equipment like pots and pans, provided with the basic refrigerator and shelves. In terms of food, we will just get our own.
- 27 Interviewer (Kevin): Do you guys' share?
- 28 Interviewee 01: No. That's where theft would happen.
- 29 Interviewer (Kevin): Did anyone else share?
- 30 Interviewee 01: I think some of them did share, like they do meal preps as a group and then they were just split the finances to purchase the groceries. We also bring our own resources. If you want to cook something fancy. We bring in, like, tools that could cook easier, like, pressure cookers and stuff. We will just get it ourselves, but we wouldn't display it out in the common space, because it would be abused.
- 31 Interviewer (Kevin): Would you want to share resources with the rest of roommates?
- 32 Interviewee 01: Depending, if I can trust them to use it. But back then, I did not share much. There's only one girl within that dorm I share my resources with, but that's it.
- 33 Interviewer (Kevin): Do you think that if everyone shared their resources. If trust wasn't a boundary or there weren't any social boundaries and everyone shared resources, would it be easier for communal living?
- 34 Interviewee 01: No because everyone's different. And what we want is also different. I would rather seek out what I need at that point of time than being restrained to sharing whatever is available.
- 35 Interviewer (Kevin): Okay, this is just a very general. A question: How do you think technology could help increase cohesion between housemates? How you define cohesion in the question is up to you.
- 36 Interviewee 01: I would define it as people coming together to support one another. So, what kind of technology would be beneficial I guess... Um, a tool where everyone could be kept updated with whatever that needs attention within that household. And be able to connect with one another better. Because back then, we lacked, FaceTime. And if there's was a digital platform where we can just check and like, have a virtual call, I think that will also justify us being able to study together while being able to focus at the same time, we don't have to like physically be in the same space. You still have that cohesion. Like a group discussion kind of thing. Like a Facebook Group.
- 37 Interviewer (Kevin): But just for your, for your building?
- 38 Interviewee 01: Yeah. Where the building owner would also be in it to, you know, post stuff, or send out like, notices.
- 39 Interviewer (Kevin): Okay. now, this is another general question: What is your ideal shed, living situation? What kind of living environment or living cultures make you feel most comfortable?
- 40 Interviewee 01: Um, the environment where we would understand boundaries. Um, we don't have to communicate much to be understood. Respect of privacy.
- 41 Interviewer (Kevin): Anything else?
- 42 Interviewee 01: No.
- 43 Interviewer (Kevin): Okay, so just quickly before you said that communication is important, but then you also mention your ideal situation is that you don't have to communicate too much for people to understand you. So, do you think then that, that technology thing that you mentioned earlier like a Facebook for shared accommodation, will that help you communicate less but also have people understand you more. So that maybe you can put in some information there about yourself, your preferences. So, people will know your likes and dislikes?
- 44 Interviewee 01: Yeah. that will be helpful.
- 45 Interviewer (Kevin): Okay. Uh, I'm just going to go back to a previous question that I skipped. We were talking earlier about how people shared resources in your dormitory that you experienced. How do you personally utilise the shared resources? Did you use any of the like the cooking or the laundry facilities?
- 46 Interviewee 01: Yeah
- 47 Interviewer (Kevin): So, the access to these kinds of amenities is important to you?
- 48 Interviewee 01: Partially. Because there are 13 people on the same floor and sometimes if you want to cook you have to look for odd hours or just wait for other people to cook. So, most time I just cook in my own room.
- 49 Interviewer (Kevin): So that sounds like a potentially, um negative thing. Do you think that? Do you think that there should be some kind of organisation or system that could help resolve that? Maybe like a booking system?
- 50 Interviewee 01: That would be quite good but might also be a hassle because like imagine you just want to cook three meals a day and then you have to keep booking the same, like doing the same action. I would rather like wait for my turn, or...

- 51 Interviewer (Kevin): How about like a scheduling system? Or a mixture of both. Maybe you can book like three sessions ahead.
 52 Interviewee 01: Yeah. Or the owner can just allocate more stations like probably three. Three cooking stations between rooms.
 53 Interviewer (Kevin): But scheduling and booking you're not opposed to that?
 54 Interviewee 01: No, I think it also depends on if the students would prefer cooking, because most of them just go dine now.
 55 Interviewer (Kevin): Okay. I think that's all the questions I have. Thankyou.

A.3.2.2 Interview 02 (I02)

Quote Number	Speaker	Quote
1	Interviewer (John):	I'll introduce you to the context of the interview first. So, whether it's within 4 walls of a dormitory room or a shared common space of a large accommodation building, individuals come together with needs to understand and harmonize with those they live close to; whether it's learning about each other's preferences, creating common house rules, ensuring privacy, or planning share activities. And that is the realm of cohesive living that we are dwelling into this interview.
2	Interviewee 02:	Okay? Oh, cool. So, the first question is...?
3	Interviewer (John):	Who do you live with, and what type of accommodation, is it?
4	Interviewee 02:	It's I suppose it's a UQ Approved sort of... I don't know if it's a student accommodation. I don't think so, but it's UQ approved, I think it's mostly students, I guess, mostly students. Yeah, that's who I live with, mostly UQ students.
5	Interviewer (John):	Hmm. And is there like any general likes or dislikes about who you live with or with your accommodation that you're living in now?
6	Interviewee 02:	No, I feel neutral about everyone, so there's no dislikes or anything.
7	Interviewer (John):	What is your relationship with the people you are living with?
8	Interviewee 02:	I'm closer to some of them. Some of them are just acquaintances, and that's about it. Some of them I barely ever see.
9	Interviewer (John):	So, what do you usually talk about with your housemates?
10	Interviewee 02:	Oh, well, depending on who, the conversation differs. But most of the time because we'll talk while we're cooking. It'll start off with "what are you making for dinner?". But I guess if the conversation goes further, then it could go as far as talking about constitutional racism. So, it really depends on who I'm talking to, I guess.
11	Interviewer (John):	I heard that you mentioned something about you not being close with someone in the house, and relatively, you're close to someone in the house. So how close do you feel about them?
12	Interviewee 02:	I guess we're just like normal friends, that's it. That's about it. The extent of the closeness.
13	Interviewer (John):	How comfortable are you with sharing personal information with the people you are living with?
14	Interviewee 02:	Well, I guess if it's not sensitive information. I am comfortable with sharing lots of things about myself, with the people that I'm closer to. Just for, like small talk and all that.
15	Interviewer (John):	And what kind of information do you think should be shared?
16	Interviewee 02:	"I don't know; it's just like, hmm... just normal conversation starters, such as "What's your favourite food?" or "Where are you from?" and "How many siblings do you have?" I might also mention, "I have a cat. Would you like to see it?" – stuff like that."
17	Interviewer (John):	So, they're more like the general stuff, instead of deep things?
18	Interviewee 02:	Yeah, deep things, deeper conversations are reserved for rare occasions.
19	Interviewer (John):	What is your ideal relationship with your housemates?
20	Interviewee 02:	I don't know, get dinner together, or something, that will be cool, too.
21	Interviewer (John):	I heard that someone in the house used to throw parties.
22	Interviewee 02:	I have had lots of hang outs with my ex-housemates. We'll just go out for grab a bite, or even like order. Like just order in, and everybody sit down in the dining room to have a bite or something, or if we felt like it. Well, this is with ex housemates. I think sometimes we go out to just like go bowling and stuff like that entertainment stuff very rarely.
23	Interviewer (John):	Oh, that's nice. So how do you tend to resolve conflicts within your life?
24	Interviewee 02:	Conflicts?
25	Interviewer (John):	Like, when you come to a disagreement with your housemate.
26	Interviewee 02:	The thing is my tolerance level is quite high. So usually, if there's something that I see that I don't particularly like I just suck it up. Yeah, but if it's something that I can't help with. I'll just try to talk to them face to face.
27	Interviewer (John):	Oh, so that's your way to resolve the contracts. Perfect. And what is your biggest frustration when it comes to living with other people? How could it be solved?
28	Interviewee 02:	Biggest frustration... Probably the trash bins, probably it's because I always have to take him out. But actually recently, that has changed a lot, and other people other than me have been taking out the trash. So, I think the conflict has been resolved without me bringing it up.
29	Interviewer (John):	How do you and your community share resources like food, electrical appliances, or maybe shared spaces?
30	Interviewee 02:	Well, all of the common areas are just shared spaces. We have our own designated fridge, space and cupboard space. But other than that, all the electrical appliances are that are in the common area are shared. and sometimes we share like food with each other sometimes rarely.
31	Interviewer (John):	And how do you utilize the shared resources? Like how often or like in what way?
32	Interviewee 02:	I mean. It's mostly the cooking appliances. So how often is, just how often do I cook? I don't know, like maybe... I don't know how to answer this question. I use the kitchen appliances at least once a day, I guess.
33	Interviewer (John):	So, during that time when you are utilizing the kitchen, is there any chance that you see your housemates?
34	Interviewee 02:	Well, yeah, if they come out to cook. then? Yeah.
35	Interviewer (John):	How can technology help with increasing cohesion between housemates? How you define cohesion is up to you.
36	Interviewee 02:	Hmm, technology. I mean, recently, our housemate has made a WhatsApp group and added in all the housemates inside. So that is like the first time. We've had a way to communicate between all the housemates, I suppose. So, that was nice. That's technology.
37	Interviewer (John):	And would you like to share your own resources with your community. It can also be a no, but if you would like to, how so?

- 38 Interviewee 02: I mean I sit in the living room all the time. So, anyone who just walks by, we could literally start chatting if they wanted to, and when I bake, I try to. I try to share with the whole house when I bake.
- 39 Interviewer (John): Okay, here's the last question. what does your ideal shared living situation look like?
- 40 Interviewee 02: The current situation is pretty good to me. We don't bother each other. And I get a kitchen. Well, it's not mine, but there's somewhere to cook. So, the current situation is pretty nice. The management's not great, but...
- 41 Interviewer (John): Which means that you enjoy having your own bathroom and your room also, but at the same time your do not mind sharing kitchen with others?
- 42 Interviewee 02: Yes, exactly. Yep, exactly that.
- 43 Interviewer (John): Cool. Thank you. I think that's the question I have. Thank you.
- 44 Interviewee 02: Thanks. You're welcome.

A.3.2.3 Interview 03 (103)

Quote Number	Speaker	Quote
1	Interviewer (Ella):	Just to confirm, all the questions I will be asking pertain to your time at Student One. Please keep that context in mind when providing your answers, focusing on your feelings and experiences while living in shared accommodation. To start with, I'd like to ask a broad question: could you please share your experience of living with others?
2	Interviewee 03:	Okay. So, I lived at student one in the middle of the city. It was how many bedrooms? I think it was five. One of them being an ensuite. I had one of the small bedrooms and we all shared a single kitchen and I guess a mini joined lounging area and there were two bathrooms available to the people who weren't in the ensuite and I shared one of the bathrooms with another girl and I think the other was split between the boys. I only had to share with one girl so it's not that bad. The boys, on the other hand, had to share it between the three of them.
3	Interviewee 03:	Like I think the main thing was, I didn't have to talk to my roommates. We all had different schedules, but at the same time that was probably one of the cons to living in Student Accommodation because it was kind of hard to connect with roommates unless you were like, really really into the same things or had the same schedule. Everyone had their own life really, kind of just use the facilities around you, but you didn't necessarily have to share with each other on this. I don't know. Unless you just happen to socially click with one another.
4	Interviewer (Ella):	Do you have any particular likes and dislikes that you remember about them?
5	Interviewee 03:	I did remember that I did like having my own room that felt very secure. All the rooms could only be accessible and could be locked via a card.
6	Interviewee 03:	I don't know how to describe it. So, the security in the student accommodation feels really great, but on the other hand, there was like... The cons were the fact that there wasn't really a set schedule of who would clean, and if even there were attempts to sort out who would do different chores around the place, it wasn't particularly abided by for a very long time.
7	Interviewee 03:	Yeah, that's all the ones I can particularly think of at the moment.
8	Interviewer (Ella):	What is your relationship with the people you live with like?
9	Interviewee 03:	I was really only close with the girl I shared the bathroom with. Like I mentioned, the primary reason one would engage in conversation with housemates is a natural affinity towards each other. In our case, she and I mainly interacted with each other, largely because we were the only girls living on our floor amidst many boys. It seemed to be a similar situation for the boys; they mainly conversed amongst themselves and rarely interacted with us. Unfortunately, it was kind of a mutual situation.
10	Interviewer (Ella):	So, you didn't feel close to them?
11	Interviewee 03:	Only at a surface level, really. Like, I knew what they were studying and what they wanted to do with their degree. But beyond that, it's not like I knew whether or not they had siblings or if they had family in the city. I didn't really delve deeper than just knowing what they studied and when they were using the kitchen or if they needed to use the bathroom, that sort of stuff.
12	Interviewer (Ella):	So, you didn't talk about anything that wasn't really pertaining to the apartment?
13	Interviewee 03:	We would only talk about things pertaining to the apartment, such as issues with the utilities or, for instance, the shared kitchen. The student accommodation did provide us with items like pots, pans, and utensils to use. However, sometimes they would go bad and one of us would have to go buy more resources.
14	Interviewee 03:	Some of us would pitch in to replace the broken amenities, while others would just pay out of pocket, which was really nice. But with issues like the stove not working, we would obviously leave notes for each other to communicate when things weren't functioning properly. And invariably, one of us would get it sorted.
15	Interviewee 03:	So simple communication strategies like that would work. Like I said, we didn't really have in-depth conversations in person, but when it came to important matters, such as issues with the apartment or utilities not functioning properly, we would inform each other, which was really nice. I guess that was the one thing that made it feel like a functioning shared space, allowing all of us to use the facilities harmoniously.
16	Interviewer (Ella):	How comfortable were you with sharing personal information with the people that you lived with? Like, what kind of information would you share with them? And what kind of information do you think they should have shared with you, like stuff like that?
17	Interviewee 03:	I would say, personally, if they had asked, I would be happy to share information if they needed it, like, obviously it depends. I would say, because you obviously wouldn't give people really personal, in-depth information unless they asked. In my opinion, some people are more comfortable sharing personal information than I am.
18	Interviewee 03:	So I would say, personally yes, but only if they initiated it. I wouldn't offer it on my own; so you maintain a certain level of privacy.
19	Interviewee 03:	I don't think I needed to know anything in particular.
20	Interviewee 03:	I think the way my roommates and I kind of functioned was just assuming, "Oh, someone will clean that," or "someone will do this," or "I'll do it now because no one else is doing it." Mmm, we didn't necessarily ask each other whether we were comfortable doing certain chores.
		Actually, I think — I don't know. It was really weird. It was really weird. You just kind of did it without asking. I think that's why it was like that. And then some people, for example, if someone left the kitchen unclean and stuff was everywhere, someone would leave a note. Including me; I've done the same thing where I would leave a note and

- be like, "Hey, don't leave your, for example, soup mess all over the counter. Remember to wipe it down for the next person." And then the next day someone would have cleaned it. So, that kind of stuff where we just leave a note. And then, whether or not it was the person who made the mess, someone would come and clean it. And that note would stay in the kitchen for like days until like someone threw it out. So, you know, I think we that's how we would communicate if we didn't see each other in person. A bit passive aggressive but it worked yeah.
- 21 Interviewer (Ella): What would you say is your ideal relationship with your housemates?
Would you prefer to be friends with them or keep your distance?
- 22 Interviewee 03: I think I would have preferred to be a bit closer, but like for someone who's introverted, like me, I don't feel like I want to force that kind of thing. Plus it's like, oh, you know, like, oh, they're a bit older than me. I don't really want to... I had like latch myself onto them if they're not reciprocating the same wanting of having like, a closer roommate relationship, you know what I mean? Yeah, and on the other side, a lot of these people are either about to graduate and they're already out the door by the time.
- 23 Interviewee 03: Like, when I first moved in, I had two people leave because they had already finished their degrees and they were moving back to their hometowns. So, it's a sense of like, "Oh, I don't really want to develop long-term relationships because I'm probably not going to see these people ever again," because we're all in different situations.
- 24 Interviewee 03: So, for me, it's like I didn't really feel like I wanted to because I might not see these people ever again. But I do see why some people would prefer that kind of relationship with their roommates; it could make you want to live in that living space more, if you knew the people around you.
- 25 Interviewer (Ella): Was this a contributing factor to you moving away?
26 Interviewee 03: Um, yeah, it is one of the contributing factors. I think if I did have a closer relationship with, like, say, the girl who I lived with, I would probably stay a little bit longer. But I think, in the end, the way we communicated and the fact that we weren't really that close meant that relationship obviously wouldn't last very long. It kind of varies, so you're like, 'Well, I have no attachment to these people. I don't really like sharing a space where we just send sticky notes to each other. I'm just gonna be more inclined to move out than to stay in this kind of situation.'
- 27 Interviewer (Ella): Yeah, but if you had had that relationship, it definitely would have been like something you valued.
28 Interviewee 03: Oh yeah, 100%. I would say so.
- 29 Interviewer (Ella): Okay, and did your housemates and you have any disagreements like with each other between yourselves? How did you like if you did like, how did you deal with that?
- 30 Interviewee 03: We had a few. I think there were two main conflicts when living in shared accommodation. One of them was definitely cleaning. Hmm, I think some people would leave areas like the bathroom or the kitchen in a mess, and then either forget or neglect to come back and clean it up. That meant the rest of us had to either deal with seeing that mess and then having to clean it up ourselves, or leaving it till the next day. I don't know.
- 31 Interviewee 03: Second, was the fact that some people would bring in... would bring their own friends into the shared accommodation. So, the thing with shared accommodation, at least at Student One on Elizabeth Street, was that the rule was a student resident was only allowed to bring one guest into their apartment.
- If there was more than one person, they would have to get... It was a rule that you had to ask all of your roommates if you could invite another person in because obviously, when you're sharing with like five to six people in one shared area, it just gets too crowded, and it's practically like a little house party that you've come into.
- 32 Interviewee 03: I had one guy, one guy who lived with us for, I think, only four months. Every week on a Friday night, he would bring all of his friends over who also lived in Student One. But they all came to our apartment to have a little mini party in the kitchen without telling anyone.
- So, all of my flatmates had to awkwardly come into the kitchen to cook their dinner while all these people were blasting music and having like, light strip parties, trying to act like it was a fun time while someone in their pyjamas was just trying to have their Friday night meal before retreating to their room to work on assignments, you know?
- 33 Interviewee 03: So, it was really an awkward situation with someone trying to have a frat party while everyone else just wanted to cook their dinner. You see, we didn't have shared meals or anything; everyone used the kitchen to cook individually. So, it made it even worse because everyone was waiting to use the kitchen.
- But then, at the same time, someone was having a party in the kitchen. It was just a really awkward situation. Situations like that, where people didn't understand how to share space with one another, were really way off. Only two of us who lived there confronted the party guy about the situation. It did help resolve the issue, but by that time the guy was already leaving.
- 34 Interviewee 03: So, there was nothing that really solved the issue, even though the issue was eventually going to resolve itself. But it was a problem where someone would just bring a bunch of people over, make a mess, and then show no consideration for everyone else. Yeah.
- 35 Interviewer (Ella): So, you yourself, how did you kind of deal with that conflict?
36 Interviewee 03: I think I didn't really do anything. I kind of just ordered food and stayed in my room. One time, I had my own guest over, and we were supposed to cook dinner, but then that guy started having a party. So my guest just decided, "Well, I'm going to cook anyway," and then my guest went ahead and cooked.
- I didn't personally confront the issue myself. Instead, I had someone else do it for me because I'm not very confrontational. Yeah. But, man, that's how I dealt with it. I just worked around it, which isn't great, but, you know, I knew the guy was leaving soon so I didn't really want to start a fight over it.
- 37 Interviewer (Ella): Would you have found it easier to deal with conflict if your relationship with your housemates was closer?
38 Interviewee 03: Yeah, 100%. I'd be more comfortable to confront this guy and be like, "Hey, man, it's not cool." But when it's a random person, I don't know how they're going to react, and it's him and his friends, too. So, I don't know how they're going to react, even though I think it's really stupid that they're there.
- Like, I think that kind of aspect is what makes me not want to confront the situation when I don't know what's going to happen. I sort of work around it.
- 39 Interviewer (Ella): what about it? Like, the cleaning stuff?
40 Interviewee 03: The cleaning stuff, I dealt with it very much by leaving sticky notes. Mmm, I think I was, I think I'm more... I think I did more confrontational stuff when it was about cleaning because it felt like, to me, that was serious. I was like, "Okay, yeah, you're not flushing the toilet. I need to tell you, not flushing the toilet is actually a problem," like, stuff like that. And I would actually tell people like, "Oh, it's not cool that you're not taking out the trash. Can you please, you know, when it's full, don't just stuff it in there and leave it there?" That kind of stuff because I think cleaning

- gets to me the most. Having uninvited guests, I'm like, whatever, you're having fun. Cleaning, though—oh my god, that's like directly affecting... Yeah.
- 41 Interviewee 03: Yeah, like when it's really unhygienic stuff, okay, then it is actually gross. I don't understand how you can function with dirty dishes just rotting in the sink; like, this is gross. Oh yeah, I think I dumped my roommate's dirty dishes on the counter and then washed my own dishes because I was like, "It's been here for like three weeks. I can't... I'm not doing it for you, fuck you." Yeah. So, I guess it was kind of passive, but like, I don't know. Yeah. Okay, cleaning really gets to me. Yeah. So, the next question is, "What was your biggest frustration when it comes to living with other people?" Which, yeah, I'm going to say, I feel like it's cleaning.
- 42 Interviewer (Ella): How do you think this frustration can be solved?
- 43 Interviewee 03: Actually, no, it's not just cleaning. It's also the issue with unannounced guests. Oh, because also the thing is in student accommodations, the walls are not soundproof so you can end up hearing things that you're not meant to hear or you don't want to hear. So that's like a major issue. But honestly, I don't think there could be any real solution because the rooms are just so closely packed together. Hmm. And considering the kind of style of room that I had, which was pretty much like two meters by one meter, you can't really do much other than just respect each other's privacy and hope for the best. That covers the first part of the question. As for how this frustration could be solved, well...
- 44 Interviewee 03: But with the cleaning stuff, I feel like it's a bit hard because, like, when you meet your roommates, you don't necessarily know them, you know? I was going to say, you don't necessarily ask each other like, "What's your standard of cleaning?" But for some people, I think I did touch on like, "Oh, I'll do my own dishes if that's okay with you guys," sort of thing. But I think the reason why I'm struggling to answer the question is because it feels like it's too much of an interpersonal thing. Yeah. If we could communicate with them, then it would be much easier. Yeah, communication is a big issue among a lot of roommates in shared accommodations, especially from my experience, because I think I communicated with one guy really well about cleaning and he, he and I saw eye to eye on wanting to have a clean space and everything.
- 45 Interviewee 03: We thought we had the same understanding with everyone else, but like I said, we didn't really talk to each other in depth or anything like that. So the issues like people randomly leaving the trash till the last minute and the dishes not being put away or food being left in random areas and stuff, it was kind of hard to handle because, I guess, I don't know, people would just treat areas like their own space instead of realizing they had to share the space with other people. And everyone trying to live individually in a shared accommodation, it's kind of hard to even communicate with them when they're just living in their own life, in their own bubble, being like, "Oh well, I'm having a friend over so I'm gonna use the kitchen right now," meanwhile someone else is waiting for the kitchen to be free so they can cook their dinner for themselves, you know?
- It's kind of hard because, I think, yeah, I think for me, even living in a student accommodation, even though it was shared, it really felt like I was by myself most of the time.
- 46 Interviewee 03: So I, yeah, I don't know, I think, 100%, communication would help solve these and maybe our expectations as well of living in a shared place – where we thought we weren't going to see each other but at the same time we're sharing the same spaces – would be more maintained, but yeah. I think that would resolve a lot of frustrations.
- If we realized we were sharing it with other people, like being considerate of one another... My answer's pretty much the long version of "if only people were more considerate."
- 47 Interviewer (Ella): Okay. The next like few questions are all about resources. So, like the first one is how do you and your community share resources? Like things like food. Did you share? Did you share groceries meals, leftovers? Do you share appliances?
- 48 Interviewee 03: So, the student accommodation provided a few pots and pans, a kettle, and a toaster. Basically, we had the necessary utilities and appliances. One time when one of the appliances broke, one of my roommates took it upon himself to buy us a new one. It was really nice of him, although it was somewhat voluntary because he didn't tell us. I think all of us just, um, picked it upon ourselves to give him a few dollars to say like, "okay, thanks for that." As for me, I threw out the rusty pans that the student accommodation had given us since they'd been used for like years but no one was chunking them. So I took it upon myself to throw it out and then bought a new one and then everyone else pitched in if they wanted to because we all understood that we were in different financial situations. It wasn't like a formal agreement; we didn't gather and agree on what we were doing.
- I think one of us just took the initiative to do something about it and then everyone else was like, "oh, okay, that's cool. I'm going to pitch in a few dollars if I want to." Yeah, it was relaxed. Um, we didn't really share any food; for me, it only happened if I had extra stuff, or I felt like it. Yeah, it was more just for goodwill.
- I think there was this one time I bought pastries and I got too many and didn't want to eat them all by myself. So I asked my roommates if they wanted any. But it wasn't like a planned thing, it wasn't like we got together and said "oh, I'm going to buy a treat for everyone today."
- 49 Interviewee 03: So, it was like, if it was going to be food waste, then you would share. Yeah. But yeah, it wasn't going to be us meal planning together. Yeah, we weren't meal planning whatsoever. I think on rare occasions, I bought food as an apology or something. Like, yeah, like I said, it wasn't like planned or anything. We didn't really come together and say, "oh, we're going to split groceries." We never did anything like that because, like I said, we didn't really talk to each other that much. I didn't have that close of a relationship with my roommates, unless it was extremely necessary.
- Yeah. And like the shared spaces you mentioned before, we just kind of used the kitchen one after the other.
- 50 Interviewee 03: How did you manage, you know, using the kitchen, using the lounge space?
- We didn't have a roster or a schedule. There was no method to the madness, really. Well, I think for me, like I said, the walls in the student accommodation were pretty thin. Like, you could hear someone down the hallway using the kitchen. So, I would just wait until it felt empty, or I knew, you get used to when people come in from class, when they get out or whatever.
- And I just made my dinner early, packed it away. And if I didn't want to eat, I would just heat it up, that sort of stuff. So, I would meal prep on my own and work around everyone else's schedule. But like I said, things that would throw me off would be people inviting others over and I'm like, well I can't cook now, so thanks guys.
- 51 Interviewer (Ella): And what about like things within the building like laundry cleaning supplies. How did you share like that kind of stuff? Or did you share the kind of stuff ever?

- 54 Interviewee 03: We didn't share laundry supplies at all, I think. Yeah. No, we didn't. We all did our own individual laundry with the laundry.
So yeah, it wasn't like the facilities. So the facility in the student accommodation has a whole, I'd say, floor, dedicated to laundry on the second floor. There's a laundry facility where there are like tons. There's rows and rows of dryers, rows and rows of washing machines.
- 55 Interviewee 03: There is an outdoor area where you can potentially air dry your clothes. But I think there's only like — it was really shoddy, like two strings attached to a wall — and I don't know how that's meant to work. I don't know how that's supposed to be a shared thing, seeing as basically only one person can use that to hang their sheets or whatever. But anyway, that was also a paid service. You had to pay, like, four dollars to use the washing machine and another four dollars to use the dryer. You'd have to pay at a little kiosk on the laundry floor.
So that was paid as well, which I don't really understand, but you know, whatever. So, I don't know, I personally never did anything shared with my roommates in regards to laundry. I saw other people do it where they'd be like, "Oh, you know, do you want to use this machine with me?" But I would not want to do that because it would just make it too chaotic and I didn't want to owe anyone money.
- 56 Interviewee 03: So yeah, we just did it our own way, to be honest. And the building had things like vacuums and such that you could borrow. You didn't have to buy them, yeah, you just borrowed them. Yeah. Oh well, I bought my own little one. I bought a little hoover because it was just more convenient to have something in the apartment. I think I did offer to share it, but eventually it felt like no one was using it. So, I just kept it in my room.
- 57 Interviewer (Ella): Would you share your own resources with your community if you had the option to and how would you do that?
58 Interviewee 03: I think I did for a little time. I'm trying to remember if I did.
59 Interviewer (Ella): Like if... would you share things like food or if you had extra eggs or something or you know or you had something that the whole house could use like you had with the vacuum?
- 60 Interviewee 03: One time, I literally had like, an excess of like, three cottons of eggs. I was like, literally asking my roommates to please take the eggs. But like again, it's like, it's just, it was a matter of chance because sometimes no one would use it.
...
61 Interviewer (Ella): How can technology help with increasing cohesion between housemates? How you define cohesion in this question is up to you.
- 62 Interviewee 03: How you define your vision is completely up to you? Okay. Um, technology That's such a good question. And yep, I don't know. The thing is, it's like I feel like the main reason why I'm so awkward from the get-go is because of certain student combinations.
It is literally, just you living with random people you've never met before. When I signed up and applied for residency in Student One. They didn't mention in the emails that they're trying to group people together with like, same like this and stuff like that. And funny enough it did work because I think one of my roommates who I first lived with who eventually did move out, he did live in the same hometown as I did, which was just like a weird coincidence.
It does feel like it's living with random people because everyone's circumstance changes, because they have different lives and people move to the sunshine coast. They move back to their hometown or stuff like that.
So, it's like, I think if there was a way that accommodations could allow students to kind of pick their roommates. Although I don't know how complex that is, or whether it goes against people's privacy, but I think it would be nice if new residents had some control over who their roommates are, and maybe even have a little introduction to them before moving in.
I think it would eliminate the initial walls people have when they first meet strangers, you know? Like having a mini icebreaker to be like, "Oh, okay, I'm living with these kinds of people, this is what they're studying, this is their vibe," I think it would make me feel a bit more comfortable in the shared areas. Because I think that's one of the main reasons why we cooked individually.
- 64 Interviewee 03: Obviously, there are some people who are domestic students and others from international areas where this is their first time in the country. They're living with random people. That would be such a culture shock, and it can add to a lot of miscommunication or lack of communication, because everyone's societal etiquettes are different.
So, I feel like just having that small introduction when you're looking for an apartment or student accommodation could really help students be more comfortable in the environment they're about to be thrust into. Yeah, it would help with cohesion immensely.
I think that's the main thing. Maybe having little profiles, or, although I don't know if letting the students already living in that apartment pick who the next roommate is going to be is a good idea because it seems kind of cruel and there might be some ethical issues there. But something along those lines to get to know whoever's moving in randomly could be beneficial.
- 65 Interviewee 03: Because once there's an available room in your apartment, for instance, I just got an email saying, "Oh, you're getting a new roommate on this date, prepare for their arrival." It wasn't exciting, it was more like, "Oh great, another stranger coming in." You know? There's no sense of, "Oh my God, this is exciting."
It's just "Oh my god, there's gonna be another random guy who can potentially be bringing parties into the apartment, right?" Yeah. There's just stuff like that.
- 66 Interviewer (Ella): Okay, the last question is, what is your ideal shared living situation? What does it look like? What kind of living environment or culture would make you feel the most comfortable?
- 67 Interviewee 03: Um, the bedrooms were too close together. The wall-to-wall was just disgusting; you could hear what the other person was doing in their room half of the time, which was terrible.
Um, better storage in the kitchens would be great because we only had one fridge. We had to divide that one fridge into five sections for five roommates. But since it was just a normal fridge, someone would get a little shelf, another person would get a different shelf, and another person would get the vegetable drawer of the fridge, which was just weird.
Like, why would you put your milk in there? Oh my god. And then the door of the fridge, how are you going to divide that into five sections when there are only three shelves? It was a big chaos sometimes because people would be like, "Oh, is this my milk? Whatever, I'm using it." It was tragic, terrible, and gross with the shelves as well.
- 68 Interviewee 03: They were— oh my god— some of the stuff was labelled according to the room number of some residents. So like, room A's cupboard is this one, room B's is this one, but even then, some roommates would have bigger spaces than others. Some roommates would have more food than others, and you'd have to negotiate: "Hey, can I use your

- shelf?" But it's not our fault that the kitchen wasn't actually built to accommodate the groceries of five different people. I think there's an expectation in student accommodations that everyone will just share groceries, right? But that's not the reality.
- When you have like five introverted people living in the same space, we don't talk to each other. So better storage solutions, properly allocated to different roommates, would help immensely to prevent food being stolen and such issues. I've had my milk drunk and even had alcohol stolen at one point. And then one of my other roommates had food stolen and kept asking me if I had taken it, and I was like, "No, I don't eat that. You know I'm lactose intolerant, dude. I'm not going to have that."
- So yeah, addressing little issues like that would help with the infighting and confusion because we all just had to sort it out ourselves.
- 69 Interviewee 03: That's all I can think of right now. What was the question again? Oh, what an ideal living situation would look like in terms of environmental culture? Yeah, just more thinking. But you can't help that people are shy, mmm. So I'm not going to be like, "I wish people were more outgoing," when you can't control that. But I wish there were things in place to make people more comfortable living in shared accommodation.
- And maybe have orientations where they teach the etiquette and the expectations of living in a dorm room in Australia, or you know, stuff like that. Yeah, I think that would help a lot of people, but it's just not there. People have their own expectations and it's all just going to clash together. Yeah, you know."
- 70 Interviewer (Ella): Yeah, awesome. That's great. Thank you so much for participating.

A.3.2.4 Interview 04 (I04)

Quote Number	Speaker	Quote
1	Interviewer (Daniel):	Hi, my name is Daniel. The purpose of the interview today is to gather data for a project that I'm currently working on. For my project, I need to conduct research for technological solutions within a domestic setting. The goal we have chosen is to improve cohesion between members of a shared living space such as dormitories and residential colleges. So, to be clear, this interview is being recorded for research purposes. Your personal information will remain confidential no matter what. To ensure that your identity remains hidden, any information related to you will be assigned to a code. So, no matter what, nobody knows who you are, are you alright with me recording this?
2	Interviewee 04:	I am, yes.
3	Interviewer (Daniel):	All right, thank you. So, as far as I understand, you are living at International House, it's a residential college. Am I right?
4	Interviewee 04:	Yes.
5	Interviewer (Daniel):	So, I guess I just want to ask what your experience is living with other people around?
6	Interviewee 04:	Overall, very positive, I find it quite enjoyable to be able to see my friends all the time. To be able to go to their dorms and hang out with them, to go to the common rooms hang out with them. I think the negative side of it is oftentimes that late at night, you will hear a lot of noise, either from someone's dorm playing music or from people coming back from the clubs, which can bother people especially if you are a light sleeper. But other than I would find I think everything to be very good. Very positive.
7	Interviewer (Daniel):	Okay, so just want to ask you real quick, it says International House right? Is a community as diverse as the name sounds.
8	Interviewee 04:	It's even more diverse than I thought it would be. I mean, there's there are people from every continent but Antarctica.
9	Interviewer (Daniel):	Oh, nice. So, you get to meet literally everyone from across the world.
10	Interviewee 04:	Basically, not every country of course, but every continent there are, every continent.
11	Interviewer (Daniel):	Okay, so what would you say is your highlight for you, like living at IH, what is the highlight for living for you?
12	Interviewee 04:	The highlights, as I have previously mentioned, is just walking down the stairs and going to food and seeing a bunch of people that I care for that I like being in the same place, not needing to meet up with people not needing to plan anything, just them living in the same place as you makes it easier for you to meet up with them or talk to them whenever you want.
13	Interviewer (Daniel):	That's interesting. How would you describe your relationship with them? With your friends, yeah.
14	Interviewee 04:	Overall, very positive, very healthy friendships. And I would find, I think some people might find the proximity to be a problem. I'm the opposite. I find the proximity just bolsters the relationship in the fact that like, you see, so much of them all the time. So even if it's just been a few weeks, you get to know them a lot better than you would normal friends that you see at work or at school.
15	Interviewer (Daniel):	Ahh ok, so being able to live with other people makes you closer. It helps, just being close to people allows you to build close relationships with others. I see. Okay, I remember you mentioned something about negative side. For example, people coming back late and making noise, right? So, can I ask how, what's the word, how has it impacted you so far? Like what does it do for you?
16	Interviewee 04:	Me personally, it's not too much of a problem, I'm okay with noise. But I do know other people who do wake up from their sleep when either one of their... like their floor mates comes back drunk, or people are outside of the towers, making noise shouting and screaming. And I think that in general, would firstly bother people who are studying, bother people who are sleeping, bother people who are sleeping and who are preparing for a test the next day. So, I think especially in terms of just academic preparation, it might, it might prevent you from studying as well as you would want to.
17	Interviewer (Daniel):	I see, how often does this, okay, just curious how often is this a problem.
18	Interviewee 04:	I think especially, especially if you live where I live, which is right next to the square area of the like the meeting area of the college, like every once in a while you hope you'll hear people and then every like Thursday to Sunday, Saturday you'll see people drinking outside of what we call G lawn so a lot of people coming together and shouting and playing loud music.
19	Interviewer (Daniel):	Ahh, so the people gather around and drink and it's really loud and the noise is disturbing people okay. So just curious, is there any way, how do I say this? Do you have you have you, what have you done about this? Have you done anything to, like, overcome the problem?

- 20 Interviewee 04: There have been times where I've just gone up to someone's door, knocked on the door and said can you be quiet please? Other than that, it's you're not there's not much you can do when it's about a group of people drinking you can't go up to them and say be quiet because it's not very effective. So other than telling them to be quiet, or maybe closing your windows which does help. I haven't really tried anything, mostly because it seems to be more of a problem for other people than it does for me. It's not too big.
- 21 Interviewer (Daniel): So, you do try to see you do how do I say you do try to tell them and try to work things out but it's a 50/50 it works sometimes it doesn't work. Okay. So, besides the noise issue, has there been any other problems? Anything that affects you?
- 22 Interviewee 04: Living with people, right, not college in general?
- 23 Interviewer (Daniel): Yeah, in the context of living with people
- 24 Interviewee 04: Um, I'd say sometimes not with my room. My room is very clean. I'd say I think people are very respectful. But I think there have been times when people not from my floor have used my floors toilet, use my floors bathroom, and they don't always keep it the cleanest.
- 25 Interviewer (Daniel): Oh right, you shared bathrooms.
- 26 Interviewee 04: Yes, we should have bathrooms. So, I think during moments like that, it can be a bit bothersome. Annoying, I guess. But that is not a problem with my floor I think it's a problem with other people using my floor. Or when I use someone else's floor and it's dirty I think, okay, if I have my own bathroom, this wouldn't be like this. But, you know, again, I would say it's a minor issue in the scope of things I generally really enjoy.
- 27 Interviewer (Daniel): Okay, college. Okay, so, on the same note, just curious, let's say, or not let's say, but have you ever had any disagreements with your friends? And if so, how would you resolve the conflict/disagreement that sort of thing?
- 28 Interviewee 04: I guess this will be a hypothetical because honestly, really not that many.
- 29 Interviewer (Daniel): So, you've never had any disagreement or conflict with your friends?
- 30 Interviewee 04: Like I said, with my flatmates, my floormates is, we don't really talk to each other much, but we're all very mindful of each other's kind of surroundings. The one time there was a bit of a confusion with my friend. Basically, when he would exit the bathroom, he would keep the door closed. And usually when the doors closed, it means someone's in so I would always get confused about when he closed his door is someone's still in there or someone not so I wouldn't go into the toilet. It's it was a very small issue. Other than that, hypothetically, again, I appreciate the people around me I think that all very kind of capable of just talking and discussing things calmly so I would just go up to them and talk to them say hello, you know, this is bothering me. Can we discuss this I'm sure they would respond respectfully.
- 31 Interviewer (Daniel): Okay, so in general, the people here are respectful and they're willing to talk things out and try to resolve it?
- 32 Interviewee 04: Especially the people I would call friends.
- 33 Interviewer (Daniel): Ah. Ok so here's the question, right? Because you just mentioned that you don't really talk with the floor mates, but you mentioned you have quite a few friends. So, like...
- 34 Interviewee 04: I find the friends not on my floor or my really tower just, I think when you sit down with people at dinner or lunch or breakfast, you tend to develop relationships while eating food or if you're in the games room, playing pool or table tennis you develop friendships that I don't think I think, I don't know if people avoid making friends with the, with the, with the people that they live on the same floor with but at least in my case, I haven't made any incredibly strong friendships. It's always been like the people I met at food or just walking around International House or during our orientation week.
- 35 Interviewer (Daniel): Okay, so you've made friends with people you sit with, eat with, or maybe play with yea. But then you, okay, so just curious. On one hand, you're saying that you don't talk with your floormates so much. Just curious. What is the reason is it you don't see them often or they just hang out with other people, different friends?
- 36 Interviewee 04: Uh, two well, without giving names, of course, two of them. They, firstly one of them seems to as far as I know, is a master's student. So obviously very different schedule from mine. Just a different lifestyle much more focused on their studies than talking to us. The other one, we're four people by the way. Yeah, the other one. Again, quite different area of study. So quite different area of study. So, I think probably because of that, different interests. But the last one I do actually quite enjoy talking to. But I don't think there's any specific reason why we haven't developed like a meet up every day talk to you everyday kind of friendship.
- 37 Interviewer (Daniel): So it's probably just like different friends.
- 38 Interviewee 04: Yeah, just different people with no specific reason for the last one. But the other ones I think just different like academic life. Okay, probably.
- 39 Interviewer (Daniel): So just curious, right? Because you guys, you and your friends, obviously you live in a shared area. And as far as I know, you guys share a kitchen, share fridges, and share bathrooms, right. So how do I say this? How do you and your friends like share the resources? For example, let's say the kitchen or the fridge, do you share food with your friends, that sort of thing? And how does that work?
- 40 Interviewee 04: I should have mentioned this in the negative parts. I just remembered it sorry. No worries. The shared kitchens. I and I say this, this is not my friends who do it this is not me who does it, but I do see people who use our common rooms will leave the common room in a very messy state and oftentimes, we have to clean the table before we use the table. When it should be the opposite, they should be cleaning the table at least in my opinion. They should be cleaning the table once they finish using the table. So, the table being dirty, the sink being clogged with food, oftentimes, I'm sure if you check the sink now it might be clogged. That is a bit of a problem. And it's never happened to me, but I've had friends, especially in other towers whose food and drinks have been stolen. So, these are these are small incidents in general it's fine. But these do stand out when you are living in a college with other people, they do stand out.
- 41 Interviewer (Daniel): So, like shared spaces like the kitchen, they tend to be messy or dirty. Yeah, and like there are cases of people stealing food.
- 42 Interviewee 04: Very rarely, but it does happen. It recently happened to my friend not in the common room but as they were ordering food.
- 43 Interviewer (Daniel): Okay, fair enough. So, I guess in this case, like all these problems, right? How do you go about dealing with these issues?
- 44 Interviewee 04: As there are senior residents (SRs) and executives, people who run the college, they are students themselves, but they run the college, we either talk to them or like we've mentioned before, just speak to the person directly if you know who's done it. That's not always effective. Neither of them are always effective, I think because the SRs are

- very focused on keeping the peace. They might not always try to, you know, push for the other person to fix their ways because they're more focused on that everyone just kind of you know, let everything be calm and peaceful instead of fixing the problem, I think. But you know, yeah, again, just talk to the SRs or talk to the person who's done it, who's done it, but then again, because they're not because they're not the biggest issues I'd say like that. They're still pretty easily solvable issues, you can just figure it out by yourself.
- 45 Interviewer (Daniel): Okay, so in that case, because you said the previous methods like talking to the SR, the senior resident, or like trying to, like confront the person in in a confront the person that self who did it, you say those methods aren't really effective. So, in your opinion, right, in your opinion, what would be the best way to like overcome this problem to solve it?
- 46 Interviewee 04: That's a good question. I've seen some SRs have implemented strategies or I don't know what they call them, but essentially either posters or writings on the doors or the cupboards, saying this is what this thing is supposed to look like all this is what I would expect of you if you don't continue doing this then I will not allow you to use the kitchen so quite like I guess harsher tactics. They seem to be implementing these once they weren't listened to multiple times.
- 47 Interviewer (Daniel): So, like you're setting, setting down your foot basically putting the rules and regulations.
- 48 Interviewee 04: And that seems to be more effective, honestly. Because, like you're most people listen to the rules, of course, but when you have one or two people who don't listen to a group of 200-plus people, you sometimes need those harsh rules for those few people. It seems to me, at least in a college. I see that seems to be working. I mean, in general, it seems relatively cleaner most of the time.
- 49 Interviewer (Daniel): Okay, fair enough. So just curious, do you see, do you think there's anything that could be improved, like let's say we were to come up? Because for the project where we want to use technology to improve the lives of students here. So do you have any idea or suggestions of how technology can help improve certain aspects of your life?
- 50 Interviewee 04: You're not asking for like a new invention, you're asking for like current technology, right?
- 51 Interviewer (Daniel): It can be anything just it doesn't matter because we just want to see what your idea and what your thoughts are.
- 52 Interviewee 04: I've heard, this is not my idea, I've heard people mention cameras, and I don't know how I think I don't want to think about that. There is a bit of an invasion of privacy.
- 53 Interviewer (Daniel): Oh, you mean like cameras in the common areas?
- 54 Interviewee 04: I've heard people mention it. It's a bit of an invasion of privacy, but I also see the positive of it of it will show people at least who are stealing stuff from the fridge who's not cleaning after themselves. Other than that, again, I don't I'm not saying I agree with that opinion. It's just it's an idea that I've heard. Other than that, I'm unsure I haven't thought about this.
- 55 Interviewer (Daniel): That's okay, that's alright. So, for now, the main, the ones you heard about, it's just mainly cameras to like, monitor the area.
- 56 Interviewee 04: Yea, but again, that brings up issues of privacy right. But the issues that stand out, the cleanliness of the kitchens, the theft of food, and the noise that they make outside of there.
- 57 Interviewer (Daniel): So those are the three main issues. Yeah, noise, the cleanliness, and the stealing food issue. Okay. So Okay, another question, right. So, how often do you share your resources, but maybe when I say share resources, I mean like, because I'm sure you have food that you store in the fridge, for example. So how often do you share or like trade/barter? And maybe you can also talk about like, maybe sharing the common area perhaps what is your experience on that?
- 58 Interviewee 04: Oh, we share quite often. Usually, but not always sometimes with the intent of paying the person back sometimes with no expectation of the person giving the food or whatever it is the resource back when we're making food, one of our friends might, you know, donate some food to the other person. So then what are their what So what they're making my taste better or whatever it is? For example, I had a trouble with my bank card, and I couldn't pay for the washing. So, my friend would give me detergent. That's what it's called right, washing detergent?
- 59 Interviewer (Daniel): Washing detergent.
- 60 Interviewee 04: And I would use that for like a week, for example, just to wash my clothes. So, I think in general, were very kind of helpful towards each other. It is very much a community. Like it's, it's basically a commune, I mean
- 61 Interviewer (Daniel): So, you do share things with one another, Like detergent and maybe food sometimes. Okay, that's interesting. Okay, I think maybe one last question I have will be. Based on your, you've been here for a few months, can I assume that? Seven, eight months, so you've been about seven, eight months. Okay. That is good. What is? I guess my question would be what would you like to see more of in, in general like living in IH? What would you like to see more of what could be better?
- 62 Interviewee 04: I think, I think sometimes a lot of the groups tend to close off and not talk to the other groups. Like when it comes to living with people. So, some groups might, because they speak the same language or come from the same place, they might, like kind of close themselves, like might stay together.
- 63 Interviewer (Daniel): Oh, so certain people from certain countries. They hang out with each other a lot.
- 64 Interviewee 04: I would, and I understand that. I understand why they would do it. If I had people from my country, I would do the same. But I think it would be very nice if people were just... were more open to kind of connect the different groups and just talk to each other. A bit more. That would be interesting. I think it would be nice to see in terms of living together because I mean, you don't get many chances to be around such a diverse group of people.
- 65 Interviewer (Daniel): So, you value the interaction between people of different communities.
- 66 Interviewee 04: I think it's firstly fascinating to see but also just very enjoyable.
- 67 Interviewer (Daniel): What is it, what is it about that that you like? Like?
- 68 Interviewee 04: I think essentially all people have the same, like, we have the same thoughts, the same desires, the same everything. But I think a lot of those things, the way we get around to those things are shaped by the way we're brought up and to hear the differences in language or food, the way we act the way things that the things that are acceptable as jokes things aren't that aren't acceptable as jokes. To see the way those play off each other is very interesting. You get to see. Yeah, I think you get to see what's acceptable and what they'll react to, what they won't react to.
- 69 Interviewer (Daniel): So, you just enjoy seeing people of different backgrounds and just basically how different people think yeah
- 70 Interviewee 04: And just to learn, just understand, like what that I mean, I've learned about so many countries that I knew so little about.
- 71 Interviewer (Daniel): Ahh right, you can ask them about their background and their situation.
- 72 Interviewee 04: And the languages. The languages are my favourite part.

- 73 Interviewer (Daniel): Oh, okay. So, you like learning about the different languages from different countries?
- 74 Interviewee 04: Yea.
- 75 Interviewer (Daniel): Okay. All right. That's all the questions I have for you. Right. Once again, thank you so much for your time and for the interview. All right. Thank you so much.

A.3.2.5 Interview 05 (105)

Quote Number	Speaker	Quote
1	Interviewer (Congrong):	Okay, the first question is, please share your experience living with others. Like, who do you live with?
2	Interviewee 05:	Well, now I'm living together with, the other three girls. They're all like the UQ students. One is a bachelor and another two are masters, like me. So yeah, we four live together in a house.
3	Interviewer (Congrong):	So, can you introduce some general likes or dislikes with others? Like with your roommate?
4	Interviewee 05:	I think, well, generally I would say we get along well. There are girls, and also, we're the same age, and we're all friendly. So, generally, I think there are not so many dislikes. But I think like when you are living together it's more like you can feel kind of you have some support from others. Especially, all of us are girls and also you may feel safer, and some things are very convenient, for example, if we want to order something online, we can do it together, and also, we can sometimes have some activities together, and also share meals, Yeah, so it's quite convenient.
5	Interviewer (Congrong):	What kind of activities do you guys do together?
6	Interviewee 05:	Well, I think basically we just go shopping at different shopping centres. Also, buy some green groceries and other stuff. Sometimes, I also go to the same class with one of my other roommates, so, sometimes we also discuss learning a little bit. Maybe sometimes we also cook together and eat.
7	Interviewer (Congrong):	What kind of information do you want to share with others, and what do you think should be shared?
8	Interviewee 05:	Well, I think as for roommates, the basic information should be something related to our accommodation stuff. For example, the financials are, of course, we need to share bills. And this information is important to keep it clear. We have a consensus about it. And also, our time arrangement because, you know, for example, if someone's coming home very late and she can tell us in advance so we can decide, like, whether to keep the light on or whether to lock the door or something like that. And also some more personal information may be still some life things. For example, we can share information about Some cheap stuff. When there is a discount. Yeah, something like that. It would be good if we could share some study-related information if it is possible. For example, when we have the same class.
9	Interviewer (Congrong):	Okay, the next question is, what is your ideal relationship with your housemates? Like would you prefer to be friends with them or keep your distance?
10	Interviewee 05:	Well, for this, I think it is really different for different people. So, for myself... I'm a little bit like both because if we are friends, you know, with a roommate, everything will be easier. Also, we are all open to getting along with others, but sometimes I still prefer to have some personal space. We're not like twins or something. We're still different people. Also, I really prefer to have some private time and that's why we live in different rooms.
11	Interviewer (Congrong):	Yeah. How do you tend to resolve conflict within your life? So do you have any conflicts with your roommates?
12	Interviewee 05:	So far, it's kind of good. We haven't had any conflict. I think when there is a disagreement, the first thing we do is to communicate. Try to, you know, have a point, everyone agrees.
		And since we're all, like, let's say, I would say kind. People were trying to avoid conflicts. So yeah, you know, no fight, no such things.
13	Interviewer (Congrong):	What is your biggest frustration when it comes to living with other people? How could this frustration be solved?
14	Interviewee 05:	Let me think. So maybe one frustration could be sometimes, as I said, I prefer some private time, but maybe, other roommates, are eating together in the common area. Maybe my diet is a little bit unusual, I only eat one meal every day. So sometimes it's a little bit like, I'm out of this part of activities. It's not right or wrong, it's just a difference between our living habits, but I still prefer that maybe we can just like feel more fitting to this group.
15	Interviewer (Congrong):	How do you and your roommates share resources? Like food, appliances, or space.
16	Interviewee 05:	So, the first thing for space, each of us, has our own room. And also, my room has a toilet. I have two roommates. They share one toilet and a bathroom. We share the kitchen and the living room together. For the food, we share some small things, like chilli or other spices, you know, uh, like the waters, but for fresh food, it's more like we use our own part, for example, some food that is relatively expensive, like a large amount of beef or something. For that part, we are still kind of stuck with our own part. But also, we can share the dishes with others. Yeah. As for appliances, well, I think we share the refrigerator, and the washing machine and, if there are some other things, for example, the hair dryer or some small appliance I think we all have our own. However, it's okay if there is some emergency and they want to borrow ours.
17	Interviewer (Congrong):	Yeah. So, do you always share your own resources with your community?
18	Interviewee 05:	I think it depends on what type of resources there are. For example, if there are very personal things, for example, accessories, or clothes, I won't, like, change clothes with my roommates every day. It's a little bit weird. But for other Stuff. For example, as I said about the hair dryer, it's okay to share maybe just some resources that are too intimate, but also like the shampoo, something like that. We also don't share that shared tower. That's impossible.
19	Interviewer (Congrong):	Yeah. How can technology help with increasing cohesion between housemates and how do you define cohesion in this is up to you.
20	Interviewee 05:	Could you help to explain more about the definition of cohesion?

- 21 Interviewer (Congrong): Yeah, maybe just stay with your roommates well together.
- 22 Interviewee 05: Oh, yeah, well, I think it can definitely help if we... Well, let's say have an app or something to manage house related stuff. Because now we're still using the group chat to just communicate and inform everything. So sometimes if we are sharing views, I would say it will be good. But if we have some tools that can automatically calculate our house rent and like we just click a button that we can equalise bills then pay them. because now we still need to enter everybody's account numbers and then take a screenshot after we pay our bills for evidence.
- 23 Interviewee 05: This whole process is a little bit tedious. And also, I would say, for the financial things, it would be good to have a tool to do this. It can also help us to arrange the shared tasks. For example, we need to do the cleaning work and take turns.
- 24 Interviewee 05: Uh, like everybody takes a week's task. Because sometimes we just forget who should be the next one to do chores. And also, for the food storage, because we are still kind of keeping our own part, but also sharing with others, it will be good to have something that can inform us which things belong to whom, and also maybe help to just prevent food from spoiling. You know, like, sometimes there is some food in the refrigerator, and it just lasts too long. Yeah, we're not sure if that person still wants to keep it or just throw it.
- 25 Interviewer (Congrong): So, the last question is, what does your ideal shared living situation look like? What kind of living environment or living culture makes you feel most comfortable?
- 26 Interviewee 05: Well, I think, for now, the living environment is okay. Like, I think both of these can be concluded as part of shared, but still keep our own private space. No matter if it's about resources or the space or connections. Because I think it's interesting because sometimes roommates are not your best friends. We're still keeping some distance and I think it kind of helps to keep all these relationships at a good level.
- 27 Interviewer (Congrong): Yeah, thank you.
- 28 Interviewee 05: No problem.

A.3.2.6 Interview 06 (I06)

Quote Number	Speaker	Quote
1	Interviewer (Congxiao):	Thanks for your time for participating in this interview with relations to your experiences with living in shared accommodation. I appreciate that you are willing to share your experience and at the same time helping us with data collection as well as our work. To start, I would first like to ask about your general experience with living in shared accommodation which in this instance would be student accommodation as you mentioned earlier.
2	Interviewee 06:	Alright, my experience with living in student accommodation... It was traced back to 2019, you know, it was covid period during 2019. I manage to travel abroad to Australia, just before the Australian government shut their border. Everything was hard at that time, and there are not many houses available to rent due to the situation. After a week of staying in the hotel and not being able to find a house to rent, I reached out to a senior of mine at high school, and he suggested to stay in a student accommodation rather than staying in the hotel until I found my ideal place to stay. With his help, I was registered and was allocated to a two-bedroom apartment in Uni Lodge at Southbank, sharing the stay with a pair of couple. I had the smaller bedroom and my own bathroom, and the rest of the space are shared between the three of us including the kitchen, living room, the laundry room, and the balcony.
3	Interviewee 06:	First few weeks of the stay was considered well as we all had different schedules and had just started our semester, while I am very new to Brisbane, I try exploring Brisbane all the time. I don't get to see them as often. It was just more like a place for me to sleep and to rest my feet. I don't feel like it is a place I could call home with the newly built friendship with the pair of couple. I feel like I could not blend in well with them as we all had different things that we are passionate about.
4	Interviewee 06:	Other than that, I don't have much big feelings about sharing the accommodation with someone else.
5	Interviewer (Congxiao):	Alright, understood. Do you mind also sharing with me if you have any particular likes or dislikes about living in a shared accommodation in general?
6	Interviewee 06:	Of course. In general, what I like and dislike about student accommodation can each be explained in three reasons. Talking about why I like that student accommodation, first of all, location wise, it is located close to Brisbane CBD which makes public transport very accessible it shortens the amount of time spent on traveling to various location including unis, grocery shops and city. Second reason relates to the safety as it's just located a minute walking distance from bus and train station. Residents are all being given an access card which only allows access to their own house level and other public facilities such as the gym and the pool. Third reason being the management of the property be in charge of all the utility and bills and a specially for students who might not have enough time to manage all this can prevent all the problems arising from utility and bills.
7	Interviewee 06:	Now, with the dislikes. Sharing the accommodation with someone else means you have to give up your personal space to a certain extent as you are not the only person living under that roof. I did not realize that I require that much privacy until I moved out and I felt so good not having to have someone else under the same roof. Second, I dislike the problems or conflicts that happens between housemates. Conflicts with housemates can often arise due to different personal habits and behaviours and it is always hard to understand other people's behaviour or vice versa. Third reason that makes me dislike sharing accommodation can be sourced from difficulty in maintaining cleanliness especially in the shared public areas.
8	Interviewer (Congxiao):	How would you describe your relationship with the people that you were living with, if you had to?
9	Interviewee 06:	We started as strangers, as time goes by, we started to know a little more about each other and that's when I consider us friends. However, as I mentioned earlier, we don't have much things in common, that stop us from going any further in our friendship so I would say we only went from strangers to housemates and random friend and that was it. The stay in the student accommodation only lasted for about four months and I manage to find a place to move out.
10	Interviewer (Congxiao):	Do you wanna elaborate more on how well you know about your housemate? Or to what extent if you have to say how close are you with them as friend?

- 11 Interviewee 06: Well, of course four months of staying together I would say I know some of their basic information. I know their names, their country of origin, what do they study, even some of their friends as sometimes they do hangout with friend over at our place which of course they asked for my permission.
- 12 Interviewee 06: I know from my observation some of their personality. A little of their likes and dislikes. If I would have to rate how close am I with them, I would say it's a solid 6. As I mentioned earlier, we don't have many things in common, no hobbies, sports or topics that are in common. It's these things that brings people together and yeah unfortunately there's nothing that could bring our relationship closer.
- 13 Interviewer (Congxiao): As you mentioned over time you get to know them a little more, same goes to them. The question here is how comfortable are you with sharing your information with your housemates in terms of what information should be shared and what do you want to share with them?
- 14 Interviewee 06: Well, I would say I am alright with sharing basic information with my housemates. It's hard to even communicate without understanding other people's basic information. However, I prefer not to talk too much about my private personal information to prevent any form of loss that might be generated upon me. This can prevent myself from being put in a bad situation where sharing too much information leads to monetary loss and especially when I am alone in a different country making seeking help a lot harder for me.
- 15 Interviewee 06: We do of course during the four months of living together did shared a lot of information, but they are most of the time sales that is going on to make sure we put our money to full use. We also did always share information on places that we could explore especially when all of us are all new to Brisbane to enrich our student life here in Brisbane. Information that we shared also includes matters such as weather, ways to seek help for studies, food and entertainment. Even we do not share the same hobbies and passion, information like such allows choice for us to try new things and be prepared for what is coming.
- 16 Interviewer (Congxiao): With your experiences sharing the accommodation with random people, what would you say if I were to ask what is your ideal relationship with your housemate?
- 17 Interviewee 06: Ideally, I would hope that my relationship with my housemate could be a lot closer. I wish that we are not just random friend living under the same roof. I wish that I could have a close friend that could give me a hand whether physically or mentally whenever I needed one. A friend that I could rely on and also, he or she can rely on me too. A person that shares the same view and perceptions on how things work.
- 18 Interviewee 06: For example, different people have different level of tolerations towards the cleanliness and the level of lights and noises that is making people uncomfortable, therefore it would be great if the housemate has similar level of toleration to avoid problems arising from these issues.
- 19 Interviewee 06: It would also be ideal if the housemates can share a similar hobbies and passion as I mentioned earlier. This could be hobbies, sports, cooking, reading or anything that people can spend time doing together. After all it's the participation in the same activity that can bring people together.
- 20 Interviewee 06: An ideal housemate should also be easy to communicate. Communication here not just only talks about general communication. Rather, it's the required communication that has to be done to avoid any arguments. Example would be communications on the problems that might exist when sharing the living space together, a person who is willing to listen and communicate and not being ego is always an ideal housemate.
- 21 Interviewee 06: The ideal situation for me and my housemate would be hanging out few times a week for afternoon tea, having lunch or dinner together, exploring new places together, talks about the good or bad things that has happened when we see each other but at the same time we still manage to have our own privacy of our own life.
- 22 Interviewer (Congxiao): As you mentioned before, arguments or conflicts might happen when living with others. When the conflict really happens how would you resolve it or what approach will you be taking to minimize the chance of conflict happening?
- 23 Interviewee 06: First of all, I would say I am a person who has a strong sense of cognitive empathy, I always put myself in someone else's shoes. In preventing conflict or arguments, it is always important to first not get on someone else's nerves. Therefore, when living with someone else I would always try to avoid doing things that I don't like when my housemate is doing or possible actions that my housemate don't like.
- 24 Interviewee 06: I would also try strengthening the bond between us, so we are more open to communicate with each other to avoid any conflicts or miscommunication. Also, it is always important to always let our housemate know how would you prefer getting along while sharing a house or know how they like it so we don't go over the line.
- 25 Interviewee 06: With situation where conflict has already happened, I would say communication is the key aspect to resolving the conflict. I would probably try to talk to my housemate about the problem in a gentle and not aggressive manner. From there, we could try to allocate the source of the problem and try to resolve it. Then we could also reach an agreement on how to avoid the same conflict from happening again.
- 26 Interviewer (Congxiao): Got it. Alright. So, we are now done with your general experience with sharing the accommodation, and we are moving on to topic surrounding resource sharing. What is your experience with resource sharing with your housemates in terms of food, groceries, bills, appliances and etc...
- 27 Interviewee 06: In terms of food and grocery, we don't normally share the cost of cooking between us. However, we did often share the food we cook. Since the three of us all come from different cultural background, we all have different ways or preference when it comes to making food. We pretty much just share the food I cook and in return I got shared with food they cook.
- 28 Interviewee 06: With regards to bills, we do have to split the utility bill between the three of us and they include electricity, water, and internet bills. Other than that, there's not much other spending on utility.
- 29 Interviewee 06: With the appliances, the accommodation is already equipped with general appliances such as kettle, microwave, washing machine and also a dryer. These are all shared to use between us. However, we did shared to purchase a few more furniture that we needed including a dining table and a few chairs, a television, and a rack to put our seasonings and spice in the kitchen to make it tidy and neat. Yeah, that's pretty much it.
- 30 Interviewee 06: Oh, one more thing! We did of course share the cost for all the tools and supplies that is needed for cleaning.
- 31 Interviewer (Congxiao): Would you or have you ever share your personal resources within the community and if yes can you elaborate on how ?
- 32 Interviewee 06: I mean, I don't know to what extend would you define personal resources is but yes, I definitely did. This could include small little things as sharing my own groceries with my housemates when they are out of it without needing to travel to get their dish done. There is also situation when I even lend them money in their emergency situation, but this is just a matter of trust. There could be chance that I would not get my money back, right? So, it is fair to

- say yeah, I definitely would and have share my personal resource with the people I live with cause like I say empathy is the key when living under the same roof with some other people.
- 33 Interviewer (Congxiao): If there are chances that technology could intervene to improve cohesion between housemates, how do you wish it to be?
- 34 Interviewee 06: Moving into a shared accommodation is like opening a blind box. You don't know exactly who you are living with until you are there personally. It is very hard to get along with random people you've never met before. So, it would be great if there is a form of data collection that collects resident's data on their personality and the app could mix and match personalities that would match well. This helps to prevent issue of people who does not have matching personality to be living under the same roof which then creates conflicts and issues. This could be in form like participating in a personality test before allocating residences. It will also be great if we residents had some form of foresight or expectation towards our roommates and have a little knowledge about them.
- 35 Interviewee 06: Furthermore, I also hope that there is some form of tech that could help with ice breaking and help different people getting along. This could be in the form of the availability to send greetings and could be as easy as "good morning", "goodnight", "how's your day being". You know, just some form to show some love to your lovely new housemate. Also, there could be some tech that helps housemate arrange or send invitation to participate in any form of events together with the help of some recommendations from application so housemates can hang out and bond together.
- 36 Interviewee 06: Okay, the last question is, what is your ideal shared living situation? What does it look like? What kind of living environment or culture would make you feel the most comfortable?
- 37 Interviewer (Congxiao): As I mentioned earlier, I prefer staying with people with the same vibe. As long as we had something in similar that we all enjoy, its fine. We could spend some quality time together knowing each other more. I would prefer being close friend with my housemate if we get along well as you are going to spend most of your oversea study time together with these people. Also, when I am in bad situation, I would hope that they would be able to give me a hand since they are the closest person that I could reach out to. It doesn't require any similar culture just people who are alike and have similarities. That's pretty much it. I guess that's all I have to say
- 38 Interviewee 06: Thanks for your time with me. I appreciate you taking your time to answer all my questions with so much patience. Thank you again and have a nice day!
- 39 Interviewer (Congxiao):

A.3.3 Ethics Consent Forms (User-Research Interviews)

A.3.3.1 Consent Form Template

Figure 14 shows a modified Ethics Consent Form template, adjusted to fit the context of Team Orange Crocodile's project. Refer to subsequent pages for the signed consent forms.

Participant Information Sheet and Consent Form	
USER RESEARCH FOR DESIGN COMPUTING PROJECT	
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YOUR PARTICIPATION <p>To better understand users within the problem space, our team has decided to conduct interviews with individuals who identify as someone who currently is or has lived in large, shared accommodation or environments. We kindly ask for your participation in this regard.</p>	
DATA WE ARE COLLECTING <p>From this interview, we are seeking verbal responses to questions and will likely collect voice recordings for the purpose of transcription.</p>	
CONFIDENTIALITY <p>Any and all data collected from you will be anonymised via a serial number system. Any personal information that is obtained will be made confidential. Anonymised data will be aggregated with other responses as part of our analysis. Personal details within your signed consent form will be collected and provided to teaching staff as evidence of participation but will not be associated with the actual data you provide. This means that no one, aside for the person interviewing you, can connect your recorded responses to your participation. At the end of the project, all recorded voice data will be deleted.</p>	
RISKS TO YOU <p>As interviews are verbal in nature, and your responses are anonymised, there will be no risks to you participating in this interview beyond those that exist in your everyday daily life.</p>	
CONSENT <p>With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:</p> <ul style="list-style-type: none"> ▪ This project has been explained to me and I have read and understood the project as detailed above. ▪ I agree to participate in this interview as described in the details above. ▪ I understand that my participation in this interview is voluntary and that I am free to, without reason nor penalty, withdraw from it at any time. ▪ I understand that any personal information will be kept confidential and disassociated from the interview responses I provide. ▪ I understand that during this interview, there are no risks to me beyond those that exist in regular daily life. ▪ I have been informed that I can contact the interviewer or a teaching staff member if I would like more information on this project. ▪ I understand that, aside from gratitude, there are no benefits to me for participating in this study. <p>By signing below, I consent to having my opinions and voice recorded for this interview.</p> <p>Participant's Full Name: _____</p> <p>Participant's Signature: _____ Date: _____</p> <p>The University of Queensland Brisbane QLD 4072 Australia T N/A E d.vyas@uq.edu.au CRICOS PROVIDER NUMBER 00025B</p>	

Figure 14: Interview Consent Form Template.

A.3.3.2 Signed Consent Forms

The following are the signed consent forms of participants to the interviews, presented in no particular order (to maintain disassociation from transcripts).

Participant Information Sheet and Consent Form	
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PROJECT DESCRIPTION <p>The aim of our project is to research, design and develop technological solutions to a problem within the domestic setting. Narrowing down our focus, our team has decided to solve a chosen problem statement of "how one could improve cohesion between members of large share homes or dormitories using technology?".</p> <p>After this initial user research and inquiry phase of this project, our team will conduct a full development cycle of either a hardware or software-based solution to the stated problem statement.</p>	
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COURSE DECO2850 Design Computing Studio 2 – Interaction Design	
COURSE STAFF Coordinator: Dr Bhavna Vyas d.vyas@uq.edu.au	
DATA WE ARE COLLECTING <p>From this interview, we are seeking verbal responses to questions and will likely collect voice recordings for the purpose of transcription.</p>	
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PARTICIPATION IS VOLUNTARY <p>There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you; voice recording will stop immediately, and any other data from or about you will not be included in the research. While there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.</p>	
ACADEMIC PURPOSE FOR THE RESEARCH <p>This interview is part of a larger project that is being conducted as a learning activity at The University of Queensland. If you would like to speak to the course teaching staff about any aspect of this project, you may contact this course's coordinator with the details provided.</p>	
RISKS TO YOU <p>As interviews are verbal in nature, and your responses is anonymised, there will be no risks to you participating in this interview beyond those that exist in your everyday daily life.</p>	
CONSENT <p>With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:</p>	
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<p>By signing below, I consent to having my opinions and voice recorded for this interview.</p> <p>Participant's Full Name: <u>Taylor Tan</u> Date: <u>25/9/2023</u></p> <p>Participant's Signature: <u>Taylor Tan</u></p>	
<p>From this interview, we are seeking verbal responses to questions and will likely collect voice recordings for the purpose of transcription.</p>	
<p>PARTICIPATION IS VOLUNTARY <p>There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you; voice recording will stop immediately, and any other data from or about you will not be included in the research. While there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.</p> </p>	
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<p>By signing below, I consent to having my opinions and voice recorded for this interview.</p> <p>Participant's Full Name: <u>Yanzhuo Yang</u> Date: <u>2023.8.25</u></p> <p>Participant's Signature: <u>Yanzhuo Yang</u></p>	

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COURSE DECO2850 Design Computing Studio 2 – Interaction Design	
COURSE STAFF Coordinator: Dr Bhavna Vyas d.vyas@uq.edu.au	
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<p>By signing below, I consent to having my opinions and voice recorded for this interview.</p> <p>Participant's Full Name: <u>T. N/A</u> Date: <u>25/9/2023</u></p> <p>Participant's Signature: <u>T. N/A</u></p>	

Participant Information Sheet and Consent Form

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

USER RESEARCH FOR DESIGN COMPUTING PROJECT

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COURSE

DECO2850 Design Computing Studio 2 – Interaction Design

COURSE STAFF

Coordinator: Dr Divesh Vyas d.vyas@uq.edu.au

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By signing below, I consent to having my opinions and voice recorded for this interview.

Participant's Full Name: Aidan Ting **Participant's Signature:** Aidan Ting **Date:** 23/08/2023

Participant's Full Name: Lim Tze Xuan **Participant's Signature:** Lim Tze Xuan **Date:** 27/08/2023

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Participant Information Sheet and Consent Form

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

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COURSE

DECO2850 Design Computing Studio 2 – Interaction Design

COURSE STAFF

Coordinator: Dr Divesh Vyas d.vyas@uq.edu.au

CONFIDENTIALITY

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Figure 17: Signed consent form.

Figure 18: Signed consent form.

Participant Information Sheet and Consent Form

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

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COURSE
DECO2850 Design Computing Studio 2 – Interaction Design

COURSE STAFF
Coordinator: Dr. Divya Vyas d.vyas@uq.edu.au

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By signing below, I consent to having my opinions and voice recorded for this interview.

Participant's Full Name: Christopher Douglas Denzil Jones **Date:** 26/08/2022

Participant's Signature: [Signature]

Participant's Full Name: Kylie Mangili **Date:** 20/08/2023

Participant's Signature: [Signature]

SCHOOL OF INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

STUDENT RESEARCHERS
Ella Barthelot
William John Chan
Hai Peng Kevin Goh
Daniel Sheng Yang Ng
Congrong Zhang
Congxiao Zhou

COURSE
DECO2850 Design Computing Studio 2 – Interaction Design

COURSE STAFF
Coordinator: Dr. Divya Vyas d.vyas@uq.edu.au

ABN: 63 942 912 684 CRICOS PROVIDER NUMBER 00025B

Participant Information Sheet and Consent Form

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

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From this interview, we are seeking verbal responses to questions and will likely collect voice recordings for the purpose of transcription.

CONFIDENTIALITY
Any and all data collected from you will be anonymised via a serial number system. Any personal information that is obtained will be made confidential. Anonymised data will be aggregated with other responses as part of our analysis. Personal details within your signed consent form will be collected and provided to teaching staff as evidence of participation but will not be associated with the actual data you provide. This means that no one, aside for the person interviewing you, can connect your recorded responses to your participation. At the end of the project, all recorded voice data will be deleted.

PARTICIPATION IS VOLUNTARY
There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you, voice recording will stop immediately, and any other data from or about you will not be included in the research. Whilst there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.

ACADEMIC PURPOSE FOR THE RESEARCH
This interview is part of a larger project that is being conducted as a learning activity at The University of Queensland. If you would like to speak to the course teaching staff about any aspect of this project, you may contact this course's coordinator with the details provided.

RISKS TO YOU
As interviews are verbal in nature, and your responses is anonymised, there will be no risks to you participating in this interview beyond those that exist in your everyday daily life.

CONSENT
With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:

- I understand that during this interview, there are no risks to me beyond those that exist in regular daily life.
- I have been informed that I can contact the interviewer or a teaching staff member if I would like more information on this project.
- I understand that, aside from gratitude, there are no benefits to me for participating in this study.

By signing below, I consent to having my opinions and voice recorded for this interview.

Participant's Full Name: Christopher Douglas Denzil Jones **Date:** 26/08/2022

Participant's Signature: [Signature]

Participant's Full Name: Kylie Mangili **Date:** 20/08/2023

Participant's Signature: [Signature]

SCHOOL OF INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

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A.4 Research Analysis – Affinity Diagram



Figure 21: Affinity diagram identifying common themes and user-values, condensed from user research data.

Appendix B: Before User Testing & Evaluation

B.1 User Persona Poster



Figure 1: Fictional Persona: "Ellen Wakes" (Image by SHIVETS production, 2021).

Gender	: Female
Age	: 20
Occupation	: 2nd Year Commerce Student
Address	: Rm 202, Students R' Us, St Lucia, QLD

Goals:

Ellen is currently undertaking a Bachelor's Degree in Commerce with a major in Accounting, and is currently staying at the student accommodation dormitory called "Students R' Us". She aspires to one day work in one of the Big Four such as 'KPMG' or 'Ernst and Young'. In this endeavour, Ellen knows she needs to focus on her studies as the competition is high. At the same time, she also knows she needs to make contacts and get along well with her fellow student-residents in the student accommodation dormitory where she lives.

Motivations & Values:

- Doing well in university—in order to one day get a corporate job.
- Building contacts.
- Saving money, and using that to buy expensive business clothes.
- Being organised.

Frustrations:

- Academic and professional failures.
- Wastage of any resource.
- Inefficient use of time.
- Misunderstandings.

Introspective Quote:

"I just saved a bunch of time and money by changing my commute's route! Isn't that great?!?"

Scenario—Usage of 'HomeSquare' Application:

Ellen is at the supermarket, purchasing groceries for her weekly meal-prep. She notices a super-sale on for beef products for 80% off, but they expire today! Not wanting to waste this chance at mega savings, Ellen decides to buy the beef at the risk of them expiring before she can cook them—she places them into her shopping cart while making a mental note that she must cook them today.

Not one to waste any time, Ellen hops onto the 'HomeSquare' application, which all her fellow student residents were advised to download before moving into the building, to check if anyone is using her floor's kitchen. She sees that it is currently in use, but will be free at 8:30pm tonight. It's not an ideal time to cook, but it's not too late either. She makes a booking on the app to use the kitchen at that time.

Whilst on the application, she realises she also needs a rice-cooker to prepare the rice she had planned to cook as part of the meal-prep, but she doesn't have one! Not to worry though, as she sees that her floor-mate Alan has listed his rice-cooker to be freely used. It is also free at 8:30pm, so Ellen books the rice-cooker too.

Feeling secured that she is able to cook her meal-prep tonight, Ellen confidently purchases the beef and rice and returns home triumphantly with groceries in hand and savings in the pocket. She is overtly pleased with herself.

Figure 22: User Persona "Ellen Wakes"

B.2 Proof-of-Concept Development

To review the code for the proof-of-concept build of HomeSquare, follow the GitHub URL:

https://github.com/justgenetic/DECO2850_Protoype/tree/Milestone-Exhibit-1/Prototyp2

B.2.1 Whiteboard (Brainstorming) Photos

The following are photographs of the white used during and early programming brainstorming session, intended to kick start the working product's development:

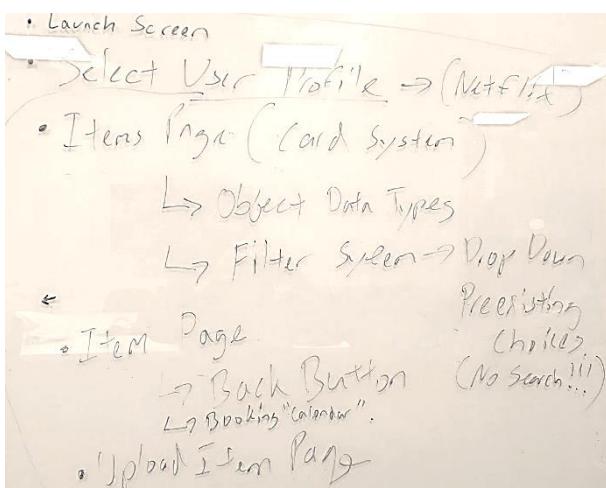


Figure 23: Feature planning (mostly scribbles).

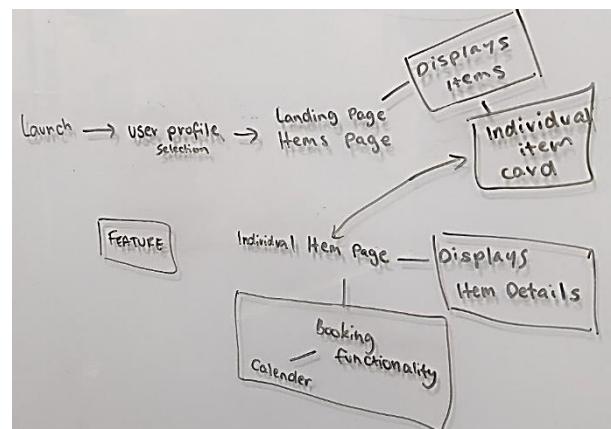


Figure 24: Navigation and component nesting structure.

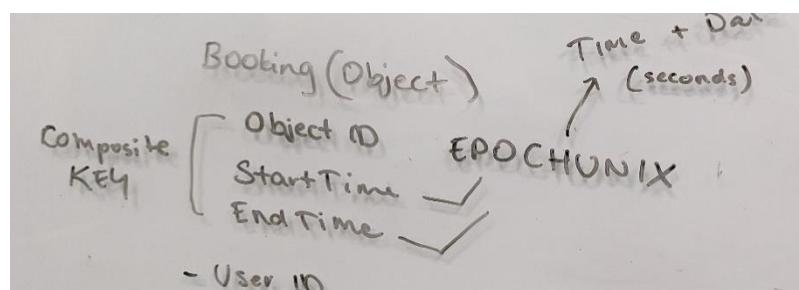


Figure 25: Data structure of a "Booking" object.

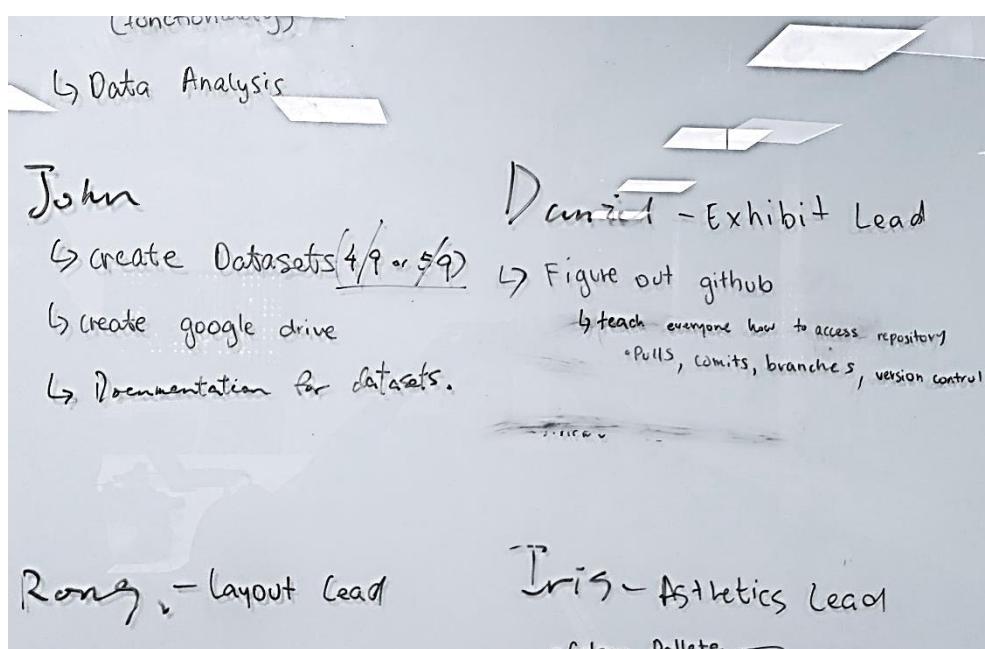


Figure 26: Delegation of development tasks.

B.2.2 HomeSquare's Proof-of-Concept Build's Screenshots

Below are screenshots of HomeSquare's proof-of-concept working build.

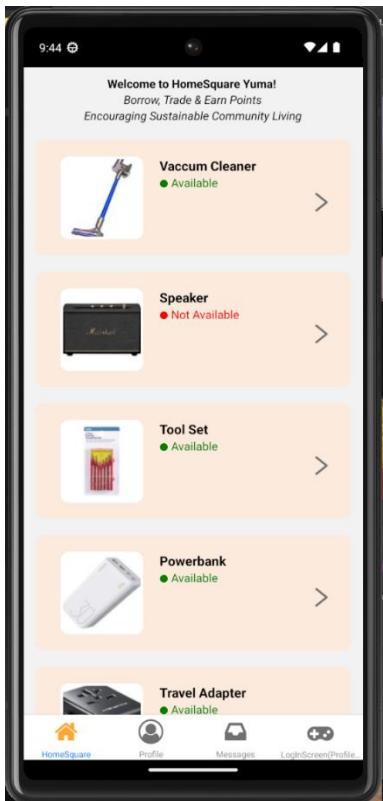


Figure 27: Home Page



Figure 28: Booking Complete Page

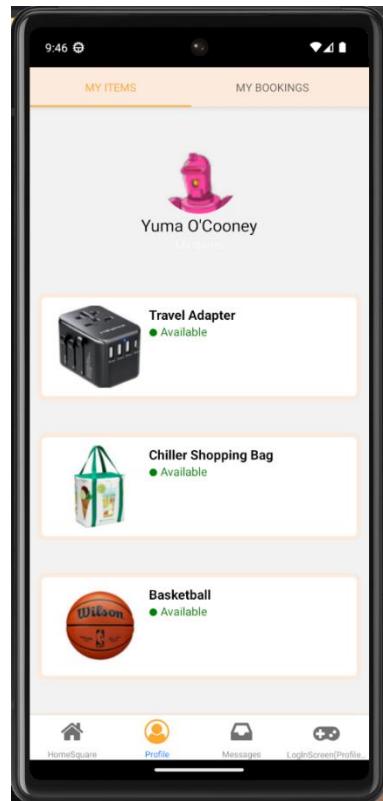


Figure 29: Profile Page (My Items)

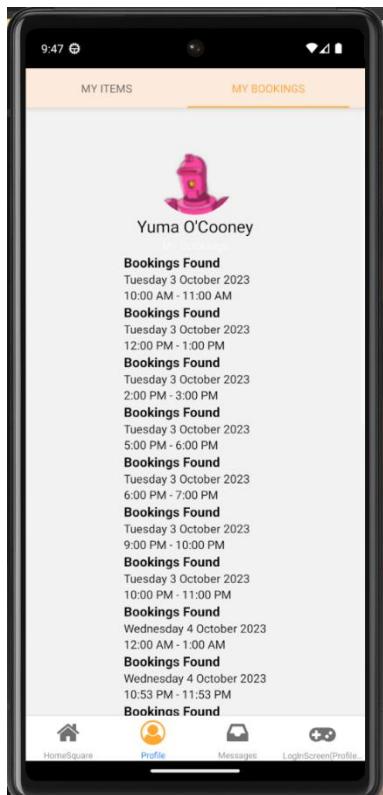


Figure 30: Profile Page (My Bookings)

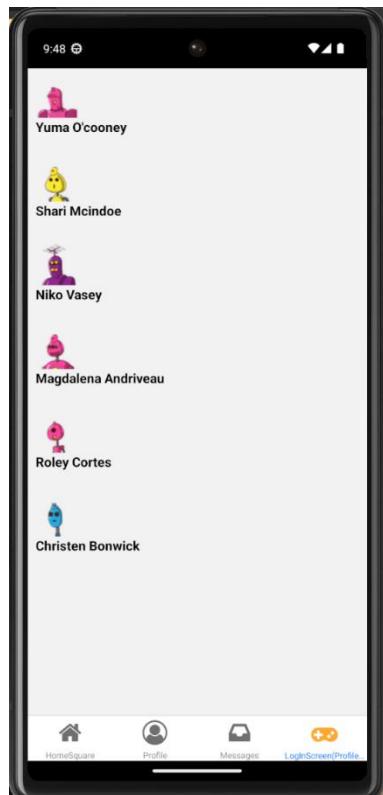


Figure 31: Profile Select Page

Appendix C: User Testing & Evaluation

C.1 User Testing & Evaluation Audio Transcripts

Note: Except for Tester 06 (T06), all user testing and evaluation transcripts are of audio recordings for the entire testing session. This includes the blind test, demonstration, and subsequent interview.

Note: All interview transcripts have been anonymised and consent forms have been disassociated and jumbled in Appendix C.2. This was done to protect the privacy of the user testers.

C.1.1 User Testing & Evaluation Tester 01 (T01)

Quote Number	Speaker	Quote
1	Interviewer:	Let's go through this right, now, really quickly. The aim of our group project is to improve social cohesion among people who live in shared accommodation. So, for example, you and I, we are living at IH, right? Student accommodation, right? So, for that purpose, we created our HomeSquare app, right? So that's our prototype. Very simple. Two functions, right? The HomeSquare allows you to be able to share resources. So, you can like, say I have a vacuum cleaner, and then someone wants to borrow it. So, the app makes it easy for people to borrow things from each other. So that's one, and the other one is... the other goal would be to help build community ties, that is good sense of community basically. So that you want to be able to build a stronger relationship with people that we live among here. So, with that in mind, we're going to get you to just move over there really quickly. Okay, so before we start, right now, I'm just going to get you on the app and give you a few tasks. But before we do that, just going to show you real quick right now. So, this is an emulator on the laptop. So, if you want to drag or scroll, you just do this, basically, you click and then you scroll up down, basically. Yeah. Okay, so one last thing, right. So this is a user testing method that we call think aloud. So, it is going to be a bit weird, but basically you need to vocal out your thoughts. Basically yeah, let's say I want to get something from the kitchen. I'm going there, I open the door, I get the milk, oh no, the milk is expired. So now I just buy a drink from the vending machine. Because it allows us to like, understand your thoughts and any problems that you encounter. So basically, just say it alright?
2	Tester 01	Right, okay.
3	Interviewer:	Okay, so what I need you to do right now is really simple. You're going to borrow a vacuum cleaner, borrow a power bank, you going to check out the Events page, just check it out the Events page, and then you going to check out your profile page as well. So these four things. Whenever you are ready.
4	Tester 01	I go to items (page) and then find a vacuum cleaner. Power bank is one of them, okay. Okay, so there is the date time of the booking? Okay, that's very easy. Yeah. Okay. And then vacuum cleaner. Also confirmed, okay. Yeah, that's very simple. That's cool. Okay, and events page.
5	Interviewer:	So, this page? Yes. Well, we haven't created the functionality for this yet. Since this is just a prototype, you can just move on to the profile page.
6	Tester 01	Okay, profile page. And say these are like, items that you're lending out, oh no, bookings. Okay, so these are items that you're booking. Oh. Okay. So, these are the items that you're lending out. Yeah. Okay. Okay. And then...
7	Interviewer:	So, this is if you have any events that you created, then you can go there and check it. This is things that you're borrowing. Yeah. And so that's okay. So yeah, that's basically all of that, that's all functionalities. Okay, so now I am going to record you.
8	Tester 01	Okay, yeah.
9	Interviewer:	And I'm going to record you and then I'll ask you a few questions based on what you've just done right?
10	Tester 01	Yeah.
11	Interviewer:	Alright, so we're recording now. Okay. So, first question, right. So based on what you've just added, based on your what I've just asked you to do. Tell me what do you think of the prototype? Like, how was your experience?
12	Tester 01	It's good. It's very self-explanatory. And very simple to use. Like it's... (Chuckles)
13	Interviewer:	No worries, no worries, just take your time.
14	Tester 01	Yeah, like, it's just it's very easy to see everything and very simple to navigate.
15	Interviewer:	Okay, so do you like about it? Like what stands out to you?
16	Tester 01	Um, the functionality of it. It's a really good idea. Um, and...
17	Interviewer:	Oh, so you like the ability to (like) share and borrow items?
18	Tester 01	Yeah, I think it's smart and easy rather than like, posting on Facebook and hoping that someone replies like oh, yeah, I have this thing that you can monitor.
19	Interviewer:	Okay, it makes sense. It makes it easier than Facebook page, yeah? Fair enough. Then Okay, on the flip side, what do you not like about it? Or like, what do you think can be improved upon?
20	Tester 01	Um, honestly, nothing that I can think of? It's good. It's simple. It's, I mean, it's a prototype. So obviously, like it's not finished. And so, the Events page and like, there isn't really anything to dislike about it. It's very easy to use. Okay. Yeah, simple.
21	Interviewer:	Okay, so another question. So right now, let's assume it is completed right. So, assumed it is a fully functioning app, it is finished, it's completely ready to use right? Let's assume that okay. Then, if that was the case, right, because obviously, you are a student who came from Thailand, and now you're living at international house among other students, right? So, assuming this is completed, how relevant is this app for you? How relevant is it to you like in your life in general.
22	Tester 01	Very relevant, honestly, like if I could have had something like this to borrow a travel adapter when I needed to, before I could actually, like, have my own ones for all of my stuff. It would have been really useful and like, yeah no I think it's really good and very... what's the word...applicable?
23	Interviewer:	Okay, fair enough. So, I guess now we just a few simple questions that you said it was easy to use, right? Then, what was the word? Yes. In terms of like the design flow, right?
24	Tester 01	Yeah.

- 25 Interviewer: Okay. So yeah, the way you would navigate, and you move through the different pages in the app. What do you think it is awkward?
- 26 Tester 01 I think it's good. It's smooth. It's like there's no clutter, there's no fluff.
- 27 Interviewer: Have you come to any trouble or difficulty while using the prototype?
- 28 Tester 01 No? It's all very self-explanatory. Very simple. Just tells you everything that you need to know and you just like, you don't really need any introductory, this is where this goes, this is how you get to this part. It's very, very simple. It's good.
- 29 Interviewer: Okay, that's all the questions I have. Thank you.
- 30 Interviewer: Okay, so that's like the first part of this right. So basically, you look at the first page that you were on, basically there, so that is this and then we have another idea. So first of all, right? So, what you've done just now was go through the functionality of the core functionality, which allows you to share items to each other to borrow and all that. So that's one. The other goal of the app as I've mentioned, is to be able to build community. So here we have two ideas, right? The node idea and the plant idea. Okay, so I'll go through this on project. So, this is the node idea. And the node idea is to essentially what this is, it maps out the relationships between different people. So, like, this could be you, this could be me, this could be Ty, this could be someone else, right? So, these are all like the people who live in a shared accommodation, and then it helps to map up and show the different relationships between different people. So how it does that is we have two things. The first one is based on the items that you borrow, right? So, let's say this is the vacuum cleaner for example, right? It is the vacuum cleaner, that it will show who is lending it out, who owns it right? So for example, user A owns a vacuum cleaner, he's lending out the vacuum cleaner, and then you will also show who is borrowing the vacuum cleaner. So maybe use the F user E and user B they are all borrowing the vacuum cleaner. So this one will just show the relationship between different people based on the items. So like he's lending it out, you know, and then these people are borrowing it. And another one we have is... Sorry I have pointed it wrong. This is the items, and this is the events, basically. So, the other thing, right? So, let's say we watched movie last week, so Movie Night, the date, and then you just show who went for it. So maybe is a C D E, they all went to the movie night, right? So that's the second thing. It also maps the relationship based on shared events that people attended to so the goal of this app is to help build relationships so that you can see what you can see who is (lending whom?) so you know who to ask for. And then you can see the different events. So one concept theoretically is maybe for example, let's say I like to play badminton, right? I like to play badminton but I don't have anyone to play with, then when I look at this, I see Oh, actually, there was an event like a badminton competition, like two weeks ago, yeah, notice that use A, F and E they participated. So basically that I can, I now know that I have people who can play with. So now Hey, can I join you guys and play badminton in the next time you guys want to play badminton? Yes, I'll do that. So yeah, you can see the events they had and basically you can find any common interest within the people and therefore help build relationships. So that's the rough idea for the nodes concept, right? This is the other concept. This is the plant idea right? So basically...
- 31 Tester 01 I like plants.
- 32 Interviewer: Oh you like plants?
- 33 Tester 01 Hahaha are you kidding me? (Chuckles)
- 34 Interviewer: Obviously, haha you like plants. But anyways, this is a rough concept, right? Okay. As a community right, you will share one plant and together you will grow the plant. So how it works, right? We don't really have a good idea of what we want yet, but this is rough concept, right? You get points based on how many times you share a thing and you use that points to water the plants. For example, let's say I have a vacuum cleaner right? The more people borrow, like the more people borrow my vacuum cleaner, the more points I get and with that points I can water the plant. And so slowly, you can see that as a community it is slowly start to grow the plant so he started sampling, and then becomes a tree. So that's a rough idea. Okay, so now I'm gonna record you once again to record your responses to my next set of questions okay.
- 35 Interviewer: Okay, so here we are, we are recording and okay. So based off based on what I just explained to you, right So in your opinion, which concept best represents the relationship between people that basically we should invest, maps out to show the relationship of people?
- 36 Tester 01 I think the nodes, because it gives a clear like, a literal map of relationships between people and events and like, item rental? I don't remember which word is the right word, but yeah, which (I am used to being barred by here?). This one, the right one (referring to the plants) I feel makes it into a bit more of a competition, rather than, like mapping out a sense of relationships and things like that.
- 37 Interviewer: Oh, this one the plants idea you feel like more for competition.
- 38 Tester 01 That's what Yeah, a little bit. Oh, like, as and it doesn't map out relationships with people. It kind of...
- 39 Interviewer: Just shows that people are involved in the right?
- 40 Tester 01 Yeah, and like incentivizes people to like lend their things out, I guess, but, like, I feel like the nodes one gets a clearer sense of like relationships between people. So it's more community centered, rather than this one looks a bit more. Like I do like this idea. I think it's really cool.
- 41 Interviewer: Yeah, it's more competitive?
- 42 Tester 01 A bit, yeah. Like, I think it's a good idea. I just don't think it centers around the community aspect of it, if that makes sense.
- 43 Interviewer: Okay, fair enough. So building upon what you just said, right then just to clarify which console what it's one thing to represent a relationship or like, show the relationship then by building a relationship is entirely up right. So, in your opinion, which concept helps to build and foster relationships between people who live in accommodation. Okay, so you still think that the nodes is still better in terms of like, displaying and now using it so it is better for the helping to build relationships between different people?
- 44 Tester 01 I think so. Because you get to, like, see events and things like that. And so events can be tied to like, like Movie Night, for example, like you said, you can see who's attending a certain movie night and so like, I think that gives people more of a sense of like, being more of a like doorway to make friends for example, if like this, this event that they really want to go to, and they can see who's going to this one doesn't the current one doesn't really show like events and who's going to want and stuff like that.
- 45 Interviewer: Okay, so, just one more question there I guess, or two more. Based on what I've just shown you, right, which one do you because it's one thing to for it to work but we also want it to appeal to the user. So yeah, next question is just

		simply which concept do you like better? which one feels nice? Which one do you like this? So you'd like the nodes better?
46	Tester 01	I guess. Yeah.
47	Interviewer:	Just to confirm one last thing? Which one do you think best suits the functionality of the app? I guess? Yeah.
48	Tester 01	Yeah, I think the nodes suits the functionality of the app and it kind of is very cohesive with like the rest of the like the borrowing aspect, the events and like, it kind of flows. I feel like the platform might be slightly out of place.
49	Interviewer:	So, you'd like this better, but in terms of which one works best? Is it this nodes?
50	Tester 01	I think so. Like, I do really like this idea. I think it's really cool. But I think that this one probably fits a lot better with...
51	Interviewer:	The whole, just the whole purpose on the end. Yeah. Okay. All right. Thank you so much for your time.

C.1.2 User Testing & Evaluation Tester 02 (T02)

Quote Number	Speaker	Quote
1	Interviewer:	So I'm just going to explain to you, right. So very simply, the aim of the project is to... yeah, the aim of the project is to increase social cohesion among people who live in shared accommodations. For example, you and I, we live in IH where we share the facilities, right? Basically, so it's a combination of all that. So the goal of this is to increase the feeling of community. And so that's why we created our HomeSquare. So really simple, HomeSquare has two main functions, the first one is to be able to share resources. So for example, let's say vacuum cleaner right, and you want to borrow it. So that's what the app is for to make it easy for you to borrow. And the other function is to build a sense of community so that we have the events page where it allows you to, for example, let's say I want to watch a movie on the 2nd of October, I want to watch a movie, I just posted it on the events page, and everyone can see, hey, this guy's is watching a movie, do you guys want to join? Then like, yeah, you can join or no, I have commitment on other things. So yeah, the goal of that, is one, being able to share sources with each other, and two, to build a sense of community. And that's what we have on the app. So okay, so now we'll get you over and then we'll get you to very quickly just stay around on the app. Alright so very simple right, but you're you have like a few tasks really easy. So before I start, I'm going to get you to I'm going to get you to one, borrow a vacuum cleaner, two, borrow a power bank, three, check out the Events page and four is look at your profile pages. Because basically that you have your profile and then from your profile you can see what you have, it's very simple. Now before we start, we going to explain to you right, so for this test, right, we're going to use a think aloud method basically is like monologuing. So it's going to, it will feel a bit weird. So basically, let's say how it is going to work. For example, let's say I want to like get milk from the fridge in the kitchen. I will be like, oh, I am going to side kitchen, I open the door, I grab the milk, oh no, but the milk is expired. So I throw the milk away. So basically, the whole purpose of this is you say whatever you're thinking, right? So whatever you're doing whatever you're thinking whatever problems you encounter, or any issues, you just say it out loud, so that we can just understand what problem you are going through. So just basically think aloud, just say what you have. Then right now, for this app, you're going to do... just remind the tasks again, borrow vacuum cleaner and borrow power bank, check out the Events page, and then lastly, just check out your own profile page. Right? Just give me a moment. Go ahead, whenever you are ready. Yeah.
2	Tester 02	All right.
3	Interviewer:	So this just to quickly say, this is Android emulator basically. So you can like, use clicks and drags, right? Go ahead.
4	Tester 02	I am seeing the interface of the connection app and see different users with different profile pictures. Next I'm going to the items part...
5	Interviewer:	So just give it a bit of time because it is a bit slow there, so don't worry about it.
6	Tester 02	Yeah, and because I want to find out if there's a vacuum cleaner. I need to figure out how to like move through different... Oh, yeah, I can move through different items by clicking on this sign. It's relatively intuitive. Okay, one of the items that I need is a power bank. But the other one is vacuum cleaner. So I'm going to click on the vacuum cleaner first. I will be able to select the day and...
7	Interviewer:	Oh so because we haven't implemented the functions in the prototype so like this is just a placeholder.
8	Tester 02	Alright, but I can theoretically confirm the booking here. So I confirmed my first booking of the vacuum cleaner. Now I am looking for another item I want a power bank. It is also on the same page. So I will also confirm the booking the power bank. Right, it is complete. Next I want to check out what events are going on at the moment. So I'm going to the events page which is also relatively intuitive. Alright, events.
9	Interviewer:	There is no functionality there, it's just a placeholder.
10	Tester 02	Yeah. Okay for the events page and there will be events there. Then I'm also checking out my profile. And there are different items that are listed there that I have. I also have some upcoming bookings and no upcoming events yet but there might be some.
11	Interviewer:	Alright, yeah. So that's about it. Thank you for now I'm going to record you on my phone like just going through a few questions and a short interview yeah? Just give me a moment. There we go. Alright, so here's the recording when we started the recording and so very simple. The first question Yeah, so basically, I just want to ask, how was your experience like using Yeah, based on what you've just done? What is you experience?
12	Tester 02	it was a bit unusual at first because of like the computer internet but I could find everything relatively fast in the app. So it was relatively intuitive where to look for like, items, events and profiles. Yeah, when I wanted to search for like what to find.
13	Interviewer:	Okay, so, based on your experience, and so what do you like about it anything particular that you like about it?
14	Tester 02	I really like about it, that it provides an opportunity like if it's in use that provides an opportunity to lend items of other people rather than like buying them because it's annoying to like have to buy stuff, especially if you're like only international and only here for one semester. So it would be really weird for me to buy like something.
15	Interviewer:	Yeah, so like, you like the ability to borrow and share items, yeah?
16	Tester 02	So yeah, I really like that ability of the app.
17	Interviewer:	Another Question. Yeah. So now on the flip side, what do you not like about the app or like maybe? What do you think needs Improvement? And like why? You don't have to stress about it. You can just think about it. Or if you don't, if you don't find a thing, you can just say right now nothing much.
18	Tester 02	Like, there's nothing that immediately crosses my mind.

- 19 Interviewer: Is there anything might need improvement or like what do you think could be better? Yeah. What do you think could be better?
- 20 Tester 02 Um, I mean uh... Yeah. It's pretty hard to tell, like what could be better than the final layout because for example, the events aren't like completely implemented yet. These functions that are implemented yet soon.
- 21 Interviewer: Fine. That's fine. So next question. Yeah. So obviously, like I said, right, this app, the purpose of this app is one, to allow people to share resources with each other and two, what's the word? Build a better relationship with people. So let's assume right, for now, assuming this is completed as soon as the fully functional app completed, fully done, right. If that was the case, how relevant is this app for you, given that you are an international student from Germany, right? So how relevant will this app be for you if it's completed.
- 22 Tester 02 I think for shared accommodation space, I really like the function with the item with the items that you can like lend item from each other and that you have like marketing space for that. And I like the concept about the events. But I feel like there are other apps that like, like social media apps that already kind of have the similar purpose or control for that purpose. So it would need to be like, really outstanding, and like really many people would need to use this app.
- 23 Interviewer: Because there are already apps doing this, right? To share items like on social medias.
- 24 Tester 02 I mean, sharing items like I don't know that many apps like this yet, but...
- 25 Interviewer: Oh yeah, you meant Facebook marketplace, like Facebook owns Yeah, okay, fair enough. A lot of social media, book events to do things together.
- 26 Tester 02 So I feel like the items function is more unique than the events.
- 27 Interviewer: So you like the ability to share items, fair enough. So, okay, so now just general questions, right. How was it easy to use? Was that easy to use any difficulties or like...
- 28 Tester 02 Ss I said, the only little difficulties was because of like being on the laptop. Okay. But other than that, the design of the app is like really simple and easy to use.
- 29 Interviewer: Okay. So like in terms of like the navigation like going from one page to another, was there any difficulties any issues of anything about it?
- 30 Tester 02 No, that's very intuitive.
- 31 Interviewer: Okay, nice. All right. Thank you so much. Now give me a moment.
- 32 Tester 02 No stress.
- 33 Interviewer: Okay, so that's all the way thank you. Now, if you go back to this page, right, as you can see, this is my... Connection?
- 34 Tester 02 Connections page. But basically, it's the same thing. So here, okay. So like I have mentioned one of the goals of our app is to be able to build to basically to foster that sense of community or to build a community feeling right. So we have two ideas. This idea one, this idea two, right? So basically, I will explain this right? So as you can see on the phone and here this is when we call the nodes page, right? So basically, it's uh... okay, so let's call it relationship mapper. Right? It maps out the relationship between many people so let's say user A, B, C, D, right? So it could be yours, it could be me, this could be Thomas, this could be Michelle for example, right? So it's basically just represent the people, right? So how does this work right? This page, it basically maps out the relationship between different people based on two things. First, would be the items so that you remember how you can borrow and like lend items to people? So this will show that relationship so let's say this is the vacuum cleaner for example. This item is the vacuum cleaner, then this will show who is lending it so like who this vacuum cleaner belongs to. So maybe he belongs to user A. And then on top of that, it will also show that who has borrowed the vacuum cleaner so maybe user F, E and maybe user C. then it will draw line. So it will show the relationship between people based on who is lending and who is borrowing that vacuum cleaner. So that's one. The other one would be events. So for example, let's say I want to do a movie night, right? So I created a movie night like that and I have a few friends who want to join. So basically if you show let's say this is movie night, that your link and show user B and user C, user D all going for the movie night. So basically this the whole function of the nodes is to map out the relationship between each individual in the community. So this may be for example, right let's say I like to play soccer. I like to play soccer, but I don't know anyone who plays soccer. Then when I look at the app... Oh, actually, last month, someone did there was a soccer match between A, B, C and E that I realized oh actually do like to play soccer. So it allows me to like see what people have done together. And hey, I actually want to play soccer. Do you mind if I join you guys or do user B wants to play soccer? So that's a function to map out the relationship and see what people have done together. Okay, so that's the first concept. second concept is the plant right? So very simple. It's like you know, those simple act right where you have. Okay, so in this case, we have Jack, Elliot, Tom, Julia, right? They are residents who live in the H tower for example. So what it does is, you have a plant, right? This is like a communal plant, so everybody will have the same plant, is that you start out with a sapling right? Then over time you guys will share and grow that tree together. So you water the plant and then the plant grows into a big majestic tree right. So how it works is based on... Right now, we haven't fully decided yet but the current iteration will be based on your how many times you have shared something. If, so, for example I have a vacuum cleaner, right? The more I share my vacuum cleaner, the more points I get, and with that, I can use my points it basically allows me to water my plant, and slowly the plant will grow. So the more I share my vacuum cleaner to people, the more points I get, the more points I have, the more I water the plant and it grows. So everyone will be able to water the plant together. And then you can see... Oh, for example, Jack is the top, the leader or the leaderboard, he has 100 drops of water that he waters the plant, for example. So yeah, so these are roughly just two concepts. Yeah. Okay, so now I'm going to record you once again. And this time we're going to ask you a few questions based on these concept, right. Alright, so I'm recording now. So really simple. Yeah. Based on the concept Okay. In your opinion, which concept best shows or represents the relationship among users the best. Yeah, which concept better portrays relationship among the people who live in the same area.
- 36 Tester 02 I mean, the concept with the nodes gives more of a like, broad overview on like, who is connected with each other by doing what. While the other one, the other one makes it feel a bit more like game, like, if makes more of like, it brings people to want to like contribute more...
- 37 Interviewer: Oh, so it's like a shared goal, maybe something like that?
- 38 Tester 02 Yeah.
- 39 Interviewer: Okay, so this is like a shared goal, it's also like a game.
- 40 Tester 02 Yeah.

- 41 Interviewer: Okay. And here is another question. Which concept do you think is more likely to help foster relationship? Right so you have mentioned that, based on the first question you mentioned that, that this app is better represents the relationship. So it's one thing to like display relationships, but at the end of the day, the goal for the app is to actually create new relationships and strengthen them. So which concept do you think is more likely to help build and foster relationships among people?
- 42 Tester 02 I think the concept but growing a tree together, if everyone like is excited about it, or everyone like is interested in it has more of a potential to be like, more of like... It gets people to want to like contribute more, while the other one only displays it. Why not like necessarily increasing the engagement between like users....
- 43 Interviewer: So what you are trying to say is that, the plant the idea is more engaging and draws the attention to users better yeah?
- 44 Tester 02 Yeah.
- 45 Interviewer: Okay. Fair enough. Okay, so then, my final question, right. So based on what you've said, so far, based on what I've explained, and based on what you say, which concept do you prefer? Which one feels nicer? Basically, because at the end of the day, the app is supposed to be tailored to the user. Which one do you like better? Which one do you prefer? Which one feels nice for you?
- 46 Tester 02 I preferred the plant one more I think? Because it just adds more like inter activity. It makes it feel like you're actually trying to achieve something together through the app. While the other one only maps like what who has done so I prefer the plant more.
- 47 Interviewer: Ah okay, so you prefer the plant, right?
- 48 Tester 02 Yeah.
- 49 Interviewer: Okay, so that's all Thank you.

C.1.3 User Testing & Evaluation Tester 03 (T03)

Quote Number	Speaker	Quote
1	Interviewer	Just like while we're recording? Yeah so, real quick just gonna get you to sign off on one of these consent forms. So just tell me when you're ready yeah, no stress. Alright, thank you. Very simple, after this we're gonna let you try out the prototype. So he's just gonna set it up for now, but very simple what this app is going to be. Basically for our group project, the goal of our project is to increase social cohesion among people who live in that shared accommodation so like basically cause you live in IH, it's a shared accommodation right so we want to increase cohesion like relationships, so we created HomeSquare. So HomeSquare is an app that, three main functions. One you can list your, your items that, alright make it simple. Main purpose is to share items and also like create a sense of community to make things. So to that end, we have HomeSquare, which allows you to: one you can list your items you have. So for example, I have a vacuum cleaner that I just happen to have and I'm willing to let people use. So on my side, I'll put up the item and say hey, I have a vacuum cleaner that I'm willing to share. Then for other people say, oh okay, I need to clean my room today. They can go to the app and they can book the item they need, maybe a power bank or vacuum cleaner. Yep, say hey, I want to borrow this. I click on it, then you can book it. So when you book it, you choose like, what day what time you want to book it and then so that's the main part, the booking. And then the other part is, what's it called, the Events page so that let's say you want to watch a movie with friends, right? So you just go to the events page, hey, I want to watch a movie on 22nd October. Then you post it there then people can reply and like hey, I can go or sorry, I'm not free, that sort of thing. And okay, one more thing is, okay I'll explain that part later okay. So now main function, the main function of the app, you can like borrow items and you can search for items. Yeah, and it's a prototype is not fully finished. The functionality is not fully there. Alright, so before that, so after this I'm gonna, no you will do this first and my friends, my friends they're just here to take notes and see what you do. But here's the thing, we need to use this method call think aloud. It will feel very weird because it basically you're monologuing your thoughts. So for example, let's say I need to prepare water right? I'm gonna get water from the fridge, I'm walking there, oh no there is no water there. So basically, you're going to use the app but as you think you have to say out loud, which just allows us to observe you basically that's all. So I'll admit it'll feel weird but just try your best.
2	Tester 03	Okay I will try.
3	Interviewer	Okay, so if you can just move on over. So before that, I'm just gonna explain the task. Okay, so simple, your task is really simple. You're gonna borrow a vacuum cleaner and you're gonna borrow a power bank. And you gotta go check out the events page because the functionality is not fully there yet.
4	Tester 03	So, vacuum cleaner, power bank
5	Interviewer	Then you got to check out the Events page, cause you can't create the events yet just check it out. Yeah, so this is well, Android emulator. But I'll admit, this is a blind test. So I won't instruct you how to do it, you just play around with the app and see. You just have to actually figure out because that's how we test the function. Just blindly go in, play around, see what to do and then try to complete what I asked you to do.
6	Tester 03	Okay.
7	Interviewer	Alright, ready? Anytime you're ready, just go.
8	Tester 03	Okay, so
9	Interviewer	You can just use the mouse and then like. Not this, this is the physical buttons on the phone that turn off. So don't have to touch that because that's just like physical buttons on the phone.
10	Tester 03	Okay. So it's mainly around here? So different users. So, items.
11	Interviewer	So just give it some time. I think it's a bit slow because we're trying to run an actual phone inside the laptop.
12	Tester 03	So booking of vacuum cleaner and then a power bank. Vacuum cleaner, Tuesday, confirm booking, booking complete. Okay, so go back to items. speaker, power bank, booking, done.
13	Interviewer	Yeah, because you'll see afterwards.
14	Tester 03	So the events. Checking events page, one, two. Okay.
15	Interviewer	So it's actually pretty fast.
16	Tester 03	Yeah, it's pretty accessible. Pretty nice.
17	Interviewer	Okay, so. Okay, so this is where I just ask you a few questions, I'm gonna record, you okay if I record?
18	Tester 03	That's fine.

- 19 Interviewer All right, so I'm just gonna start the interview now. So right, after using this product right, so real quick just wanna ask, what are your thoughts on the app? Like what do you think about it based on your experience? What do you feel? What do you think?
- 20 Tester 03 I think that it's really accessible. It's really simple to use. I think that is a nice thing for people to have, especially when we, especially for international students who have to find somewhere else to call home. So it's nice to have a sense of community whereby you can lend people things you can confirm, and you can offer your help. You can make events get people together. I think it's a really nice thing to do.
- 21 Interviewer Define accessible. What do you mean by that?
- 22 Tester 03 Accessible meaning to say, it's really easy to navigate the app. So there's different sections here, which I can just easily select. I can select the items which are really just right there for me to see. It's very easy for me to access all these things, and then do the booking and for the events as well, just clicking on the events portion, I was able to see everything which is really nice.
- 23 Interviewer Okay, so just to just summarize, what do you like about it? What do you like other than accessibility?
- 24 Tester 03 Accessibility one, convenience that will be another one for what will be the nice thing of having a shared community of like trying to encourage everybody to be together on this app. Getting people to know each other helping each other in a shared accommodation.
- 25 Interviewer Okay, so what do you like opposite what do you not like about it or what do you think can be improved?
- 26 Tester 03 I have no clue so far. These are simple things that I've been able to do. Maybe if, maybe if I were to use it more than I want to be able to find things that can be added into the app but so far the concept seems really nice. The accessibility the use of the app as well. It's pretty simple. It's very functional for me to use.
- 27 Interviewer Okay so, let's okay, so let's assume for a moment, let's assume this app is complete right. Let's say it's a fully working app and complete. How relevant would it be say, for you as an international student from Singapore. How relevant would it be for you?
- 28 Tester 03 For one is going to be pretty nice because you can organize things like events, especially with the section page of events, you can organize events with a lot of people around. It might not just be your own group like, you can encompass everyone on the other side. People who use this might skew towards just their own cluster of friends, like from the same country. So like for example, if people are coming in from, let's say, the US. So maybe they will cluster together they will just do that for themselves and not be inclusive of other people.
- 29 Interviewer So you're worried that people will just tend to stick around their own social cliques?
- 30 Tester 03 Yes. So that's the only thing this will be nice for everyone here to get to know everyone as a whole instead of just staying clustered towards who or where you come from.
- 31 Interviewer Okay, okay. Then, okay so you said it was easy to use. So, one last question. In terms of like the design flow, like, like how to explain this, like moving from one page to another page. What do you feel about that? Is it smooth, is it weird, awkward, or maybe like, it's intuitive, the, just the navigation of the whole thing like going through the whole entire app, what do you think of that?
- 32 Tester 03 I think this ties in with how I say most accessible so everything was pretty smooth. So one thing led to another, it was pretty seamless, and it was pretty easy for me to understand. Okay, I clicked like I wanted to borrow a vacuum cleaner. I just had to go into the events, the items section, click on the vacuum cleaner and then follow up by having to see the availability, there's time slots and everything and then confirm the booking from there so the app itself pretty seamless, pretty accessible, very nice to use.
- 33 Interviewer Alright, okay, thank you. Okay, so that's one part done. So here comes the next part, right? Okay. Okay, so Okay, so this is basically just that right? So here's the thing, right? Okay. So as you know, one part of it is to be able to share resources. The other part of this, the other goal of this app is to, what's the word, community building basically. So we were trying to brainstorm with ideas and here are two concepts we have basically, we this is one idea, this is another idea, right? So basically, we were trying to choose which one's better but basically, the goal of it is the goal of this concept is to be able to build and foster better relationships between one another. So I'll just go to a different so like what you see right here, right, basically right here. It's a, how to explain it, it's like a, it's basically a relationship map a bit like that. So that is basically has two things right? Yeah. Okay, so yeah, if you can see the different uses, right? Use a 123. So in the real world, maybe my name Daniel, Kai, John etc. So how it works, it works. This app will, not the app this thing, this function will map people's relationships based on events and items. So for example, when I say items right, for example the vacuum cleaner that you borrowed. So this one will show like hey, who's vacuum cleaner is this? Like maybe it's his vacuum cleaner and show that this came from user A. Then after that it will show who borrowed it there will be multiple links, maybe user C, user E, user G borrowed the vacuum cleaner, which came from user A. So that's the one that's one thing it will show that the items are there, who is lending it, who is borrowing it and the second one would be events. So remember the events page? So you'll also have it'll also do similar function it will be like we have this event which is like maybe Movie Night then it'll show who went for it. So it's like just how to say, so it's basically a relationship map to show who borrowed, who lent and also like, who did what and what. So let's say we take badminton, then it'll show who went to play badminton. So that's the core function for that. Essentially, it shows the relationship then you can see oh, okay, so he's like hey, if I want to borrow a vacuum cleaner or power bank I know who to look for. So you can see these are who I spend time with playing badminton. Or let's say maybe you for example, let's say I want to play badminton, but I don't have any friends because I didn't know. Then you can see oh actually, there was this day they were playing badminton, I can see user B, C and D they played badminton that day. So now I know hey, they actually play badminton and so next time I go hey, you guys wanna play badminton. So it shows, it shows the interaction and you can see oh what they've done. The goal is to help people get close together after that, okay? So that's one idea, the nodes or the relationship map let's call it relationship map. So this is the second idea is uh okay, this one is really simple idea. It's kind of like as you can see, this is basically grow a plant right. So very simple. This community will have one common plant right so you guys start off with like a sapling. You start off with sapling and then after that, let's say this is jack and his friends who all stay in the same place. The more they share their items, the more points they get. And with the points you get, you get to like water the plant and then grow it. So the idea for that is very simply just to get the people together and like, grow the plant together. So it's like a community effort to grow that plant and watch it bloom into a tree. To be honest, I'll be honest, we haven't fully fleshed out this idea but right now the rough concept is because when you share items and people borrow it, then you get points for that. You basically get points for sharing your stuff with people because we wanted
- 34 Tester 03 So more interactions equals to more points?

35	Interviewer	Yeah, more interactions equals to more points, which means you water the plant.
36	Tester 03	Okay, interesting.
37	Interviewer	Yeah, so that's the rough gist about the whole thing. Okay, so I'm gonna record you one more time, but this time is to get your feedback based on this two things. Right so I'm gonna record you one more time. So just a few simple questions. Yeah, okay. So based on the two concepts I've explain, which concept which in your opinion, which concept shows or represents the relationship among users the best? Yeah.
38	Tester 03	Relationships among users or interactions I believe that nodes will be able to track it better because you have, it has, has a mind map in a sense whereby it tracks how each item interacts with any, any one person at one point. Whereas the other idea kind of doesn't track it in a sense, because instead you're tracking in points. So the interactions and everything else, it's kind of hard to track. So as for example, the nodes, you can figure out activities or like groups of people that may enjoy a certain activity and you want to join or you want to invite them to because you guys share the same hobbies or interests. Whereas if you use the second idea, it's harder to track what kind of activities or what kind of interactions these people have with one another. And yeah, so the nodes one seems to be easier to
39	Interviewer	So the nodes, for you the nodes, the node concept it better represents a potential relationship among people.
40	Tester 03	Yeah, yes.
41	Interviewer	Okay, so then building upon that, which, so which concept do you think helps build like. So it's one thing to be able to see the relationship, but which concept do you think better, how to say, which concept do you think helps you build or foster relationship better, in terms of actually getting because the goal at the end is to get people closer together so which concept do you think does that well?
42	Tester 03	I think still the nodes because eventually the nodes allows you to track or keep an eye on certain activities that people are carrying out. So from there other groups of people may be like, okay, so they enjoyed this, this activity. So maybe I can join them, maybe you can invite them to certain activities that you guys might have in common, or they can offer the invites to many other people who might have the same interest whereas the second idea, not so much because you're not able to see what kind of interests or activities that they are involved in. And this the other thing would be because you're lending out your equipment, you're not exactly tracking who is with who. So it's a bit harder to see or harder to measure the interactions between the item lender and the item user.
43	Interviewer	Okay, so then I guess, so generally, the last question would be which one would you prefer? Like, generally just the whole idea or concept. Not only do we want it to build relationships and all, but it's an app right. So ideally, the app needs to suit the user's tastes. So last question is really simple. Which one do you like? Which one do you prefer? Which one feels nicer for you? Basically
44	Tester 03	For me nodes concept seems to be nicer comparatively to the second idea, just because it has more information. It allows me to see the interactions between people better, it allows me to be able to have a better understanding of the event, like different interactions within different groups of people, maybe different people in the community. So it's a nicer way for me to see. But the second concept has a very nice idea of like, trying to get people together for a common goal, which is to grow a plant, which is also pretty nice. Maybe tying in both ideas will be really, really good.
45	Interviewer	So you propose that we try and combine both ideas?
46	Tester 03	Yes. So the mind map, interaction map for the nodes and then incorporating a common goal on top of it as well.
47	Interviewer	Okay, I see. Great, so that's all the questions thank you. Okay yeah, so that's basically it. Thank you so much. Yeah
48	Tester 03	Nice.
49	Interviewer	Done. Thank you so much. Thank you.

C.1.4 User Testing & Evaluation Tester 04 (T04)

Quote Number	Speaker	Quote
1	Interviewer	Okay, but before that, let's start you really off. So I need you to sign this consent form really simple. It's you know, for formalities. And because what we're gonna do is interviews. I'm gonna record you for a few minutes. Yeah. So you talk through it, yeah
2	Tester 04	It's the 7th right?
3	Interviewer	Yeah, today's the 7th. All right, nice. So I'm just gonna walk you through this project. The goal is to increase social cohesion among people who live in shared accommodation, so that's you and I. We live at IH, International House, a shared accommodation for students. So the goal of the app is to increase social cohesion of people who live in an area right? So that's why we have created the HomeSquare. So HomeSquare, two functions okay. First, we want to be able to facilitate the sharing of resources among people so that you can share by lending your stuff and people can borrow stuff. So that's one. Number two is we want to be able to build a sense of community among people. We just want to strengthen and build relationships between people who stay in the same area. So that's HomeSquare. Okay, so now I'm gonna get you to basically try the prototype but before that, just a few things right. The prototype just if I just explain to you we have, we have one we have the one page that allows you to book resources so basically, let's say I want to borrow a vacuum cleaner. So we have a page that allows you to borrow the vacuum cleaner say from what time to what time. Another one, so we have an events page and basically events page is just for the people to post their events oh okay, I want to watch a movie on next Friday, then people can see hey, I want to watch or maybe no I can't watch because I'm busy for example. So events page notification of events, upcoming events, so that's that and okay. Are you familiar with the term think aloud? Okay, very simple. It will I'll admit, it'll feel a bit weird, but basically think aloud is you're gonna say out everything you think. So for example, I want to get a glass of milk from side kitchen. I just I walk to side kitchen, I open the fridge and get a carton of milk. Oh no, the carton of milk has expired, what do I do? I don't know what to do so I just not take it. I go to the vending machine and grab and buy a drink instead. So basically the whole point of think aloud is you say everything you think so whatever you see whatever you're doing any problems that you encounter, you just say it out so that my friends and I we can listen to what you say and then based on that build opinions and understand the app. Alright, so let's just move you over there. Okay, so very simply, test prototype we have for now, right. So I'm gonna give you, it's really easy just a few tasks. I'm gonna get you to borrow a vacuum cleaner, borrow a power bank, get you to check out the Events page, and also check out your profile yea. So this four tasks and really quickly just gonna get you to the because this is an emulator on the iOS. So you want to scroll right you press the drag, so you click and then

you scroll around to drag it. Yeah, okay. Yeah, but okay, so that that alright, whenever you're ready. Okay, yeah, go ahead. Yeah, whenever you ready.

4 Tester 04 So the first thing is borrowing a vacuum cleaner right?

5 Interviewer Yea so a vacuum cleaner and the power bank.

6 Tester 04 Scrolling. Okay, power bank you said as well?

7 Interviewer Yes.

8 Tester 04 Nice nice. Right. So.

9 Interviewer Cause it's not fully implemented yet, so this is like the prototype.

10 Tester 04 So confirm button. Okay. Nice. Awesome. Easy. Cool. So then just click back along. And back in items available months, confirm booking. Done, okay. Yeah. Very easy. Alright, so what else wanted to do?

11 Interviewer You need to check out the Events page just checks to see if there's anything on. We haven't implemented the functionality yet, so now you just need to check out the profile page.

12 Tester 04 Okay nice, I like it. And then my items should be. Wait, how do I get back to the? Okay, yeah. Inflatable pool. Cool. Yeah, nice table. Right.

13 Interviewer Okay. So yeah, you're supposed to checkout the profile page so that's done. Alright, thank you. Okay, so now here's what we're gonna do. I'm going to go record and just ask you a few questions based on what you've just done, alright?

14 Tester 04 Okay.

15 Interviewer All right. So I'm recording now. So I'm gonna ask you a few questions, right. Okay. So based on what you've just done, just looking at the prototype. What do you think of the prototype based on your experience? How was it?

16 Tester 04 Yeah, it was pretty straightforward. Like I could navigate around easily. I think it looks pretty clean, and yeah, nice to use.

17 Interviewer Ok, so yeah, so I guess what, what do you like about the app, anything that stood out to you in particular?

18 Tester 04 Um, I guess just like, really just yeah, how easy it is to get around like, you just have the full button at the bottom. And then that's it like everything you need. That's crazy. Yeah, to everything.

19 Interviewer So now on the flip side, what do you not like about it? Or what do you think can be improved?

20 Tester 04 I mean, I guess like for example, if I'm in items and like you have a list of everything, it's does kind of seem a little bit random. Like I don't necessarily know like example vacuum cleaner is up the top that's fine, but then I don't know exactly where to get a, I don't know, a GoPro camera if I needed.

21 Interviewer Ahh ok, so you're saying, okay. So to improve upon the app, you're saying we need more organization basically, yea, so basically we should have a category and then we choose category cleaning, or clean or like maybe electrical items and based on the categories we can like see which ones you want to borrow. Okay, so you're saying that you want categorization to make it easier to find items? Yeah. Okay, fair enough. Anything else?

22 Tester 04 I think the rest of us all pretty good.

23 Interviewer Okay. Okay. Fair enough. Okay, so another question, right. So, for now, let's assume that that's 100% complete. Let's assume that the app is fully functional, completed and ready to use right. Then if that is the case, right? How relevant would this app be for you? Because obviously, we're trying to we want to test this app since this app is meant for people who live in like shared accommodation. And you're right now you're living in International House, which is a shared accommodation. So how relevant do you think this app is for you?

24 Tester 04 I think I would use it like, particularly, it's really annoying when you go to get something from the common room or and it's not there. And here you could just check it and book it. Yeah, that's good.

25 Interviewer Ok so this app allows you to see it make it basically helps you to check the availability of items that you want.

26 Tester 04 Exactly, and I was going to say as well with the events, it's always fun, like sometimes you know, I'll just be in my room and it's boring and I've got nothing to do. If I see an event on and yeah, it'd be nice to just go and check it out.

27 Interviewer So the Events page does help you just shows like what people are doing and what they're doing. Okay, fair enough. So, okay, so now just a few couple questions on like the app itself. Was it easy to use, like this easy to use?

28 Tester 04 Yeah, I mean, the scrolling was a little awkward, but obviously that's because it's like that. Apart from that, yeah no.

29 Interviewer Okay then one last thing, like the in terms of the design interaction flow right. I mean, like navigating the entire app. What do you feel about that? What do you think about it? Was it awkward? Was it easy?

30 Tester 04 I think it was all pretty straightforward. I think the only thing that I was kind of expecting is like if I'm in here and I'm on an item, like I was expecting like a back button.

31 Interviewer Ah, you're expecting a back button. Yeah, true.

32 Tester 04 It doesn't make it more awkward on that thing to just press on once again.

33 Interviewer All right. All right. So that's all the questions I have, thank you. Give me a moment. Okay, so that's one part done so now, really quickly. So if you look at the first page here, okay, so it's basically this. That page is the same as this right now we have this. So here we go. As you know, one of the goals of the app, on top of sharing with each other, the other goal for the app is to be able to to help build relationships with people who live together in the same accommodation, right? So we have two ideas, right? So let's go through each. The first one is this, this is the first idea. This is the nodes page, right. So the goal of that is to basically we want to be able to show the friendship, the relationship between people who live in the same accommodation. So what do we have right so user A, B, C. Could be Drew, could be Daniel, could be John, all these people, right? So how it works is it maps the relationship between people with two criterias. Yeah. So the first one is the item so you know the items that you borrow and all that. So basically, it maps people by showing who is lending it, and who is borrowing it. So for example, a vacuum cleaner, let's say it's my vacuum cleaner, so it's my vacuum cleaner, it will show a vacuum cleaner and show that hey, this is mine and I'm lending it to people. And then on the other hand, you will also show who's borrowing it. So maybe user F, user E, user C they're all borrowing my vacuum cleaner then you can draw lines. So basically, basically it's a relationship mapper that maps out your relationship to people based on the items. And another thing to consider is events. So it also maps out based on events. So for example, let's say I let's say we watched a movie last week. It shows up here, movie night then it'll show who went to the movie user A, C, D and F all went to movie night. So the purpose of this the purpose, the purpose of this concept right, is to one, show the relationship between different people so you know how it works, what's going on, and on top of that it allows people to find, it also helps people to find new relationship like so for example, let's say for example, I play soccer right. Let's say I play soccer but I don't have anyone to play with. So if I look at you, I can see oh actually, they had a soccer match two weeks ago, and I see that user C, D and E they had they will participate in the soccer match. I like soccer, so then based on that I can say hey, do you guys want to join me? Or can I join you and play soccer together? So it's basically to help show the relationship between people based on whatever that may be. You can find common interest in each other. Okay, that's cool. So that's the first concept and the second concept is the plant concept. So really simple, right. All the

users will be here, and then they all share the same plant. Okay, so you all share the same plan and based on this plan, it's like you get a sapling and then slowly together you grow the sapling by watering it right. So okay, we haven't we haven't really fleshed out the idea yet, but roughly the idea is roughly right now it's what we do is is roughly based on the amount of time you share with people you get more points and you use the points to grow the tree. So for example, like okay, let's say I have a vacuum cleaner and I'm sharing my vacuum cleaner. So the more vacuum cleaner I share, sorry, the more people I share my vacuum cleaner with, the more points I get. The more points I get, the more I grow the tree. So together you grow the tree based on the points you have. Okay, so yeah, that's roughly the idea.

34 Tester 04
35 Interviewer
That's really cool. I like that.
Okay so I'm gonna record you again and I'm gonna ask you some questions based on the concept. Alright. Alright, so we're recording right now. Okay. So first question right, in your opinion, which concept best shows the relationship among people so like these two concepts right, which one best shows or represents the friendship or like basically the relationship between the different people in the accommodation?

36 Tester 04
37 Interviewer
Yeah. Okay. I think I don't know without taking too much, but I'm kind of drawn to the first one.
The first concept right now. Okay, so quite simple. That one best shows the different relations among people. Okay, fair enough. So the second one is building upon your first answer, right so based on what you said. Which, it's one thing to like, show relationship, it's another thing to build it so my second question would be, which concept right helps to build/foster relationship among people?

38 Tester 04
39 Interviewer
I think for that I might have to actually say the plant.
What makes you say that?
Just so you know, it's cute. That's the right word, but it's nice to work together in the team. Even if it's not a real planet feels like for achieving growing together. And it feels like we bond over that.

41 Interviewer
I guess. Well, okay. I guess I mean, the last question is just based on on everything you just said, what you've gone through. Which concept do you like the best? Which one feels the best, nice for an app like this? Because based on this app, we obviously want to build relationships and share resources with each other. So which one basically just suits the best, which one suits the app the best?

42 Tester 04
43 Interviewer
I mean, as much as I like the plant idea, I feel like this first one, the nodes kind of feels like it fits in a bit more.
Okay, so you think the nodes based on the functionality of the node concept it best suits the app? Okay, fair enough. All right. Thank you so much. All right, thank you so much. Yeah. So that is basically it.

C.1.5 User Testing & Evaluation Tester 05 (T05)

Quote Number	Speaker	Quote
1	Interviewer:	Yeah, so, real quick is gonna get you to sign off on this document.
2	Tester 05	All right.
3	Interviewer:	Okay, so really simple after this together that you will try out the prototype here. So he's just gonna set it up for now, but very simple this app is going to be discounted, basically for good project. The goal of our project is to increase social cohesion among people who live in that shared accommodation so that basically the village is receiving that share combination right so we want to increase cohesion like relationships, so we create a consequence. So homeschoo has an app that tree teammate functions. One you can list your your items that make it simple main purpose is to share items and also like create a sense of community to make things. So to that end, we have homestead, which allows you to one we can list your items we have so for example, this I have a vacuum cleaner that I just happen to have and are willing to let people use. So on my site, I'll put up the recommendation and say hey, I have a vacuum cleaner. I'm willing to share it for other people that say, oh, okay, I need to clean our internet. Again, go to the app and again that book The Fannie Mae, the power bank, or vacuum cleaner, because Yep, say hey, I want to borrow this. I click on it, then you can book it. So when you book it, you choose like, what day what time you want, you can book it and then so that's the main part you will get. And then the other part is what's the Events page so that you don't miss a you want to watch movie friends, right? So you just go to the events. There's a hey, I don't want to watch a movie on the second October that you posted there that people can reply and like hey, I can go or sorry, I'm not feeling the sorting. And Okay, one more thing is a guy explained to me John Yeah, the other products do they do. So now main function, the main function that you can visit, you can barter items and you can search for items. Yeah, and it's a prototype is not fully finished. The functionality is not fully there. Okay, I will do the job. Yep. Alright, so before that, so after this, you do this first and my friends, my friends race with agency to take notes. But here's the thing we need to use this magical thing about it will feel very weird because it basically you're monologuing so for example, let's say I need to prepare water. Right? I'm gonna go to the fridge I'm walking there are no calories. So basically, you're going to use the app but as you think you have to say just allows us to observe you basically. It's got a few we'll just show you guys. Okay, so you can just move over this object. Okay, so basically, your task is really simple. You're gonna borrow a vacuum cleaner and you're gonna borrow a power bank. And you gotta go check out the events because not all functions are available yet
4	Tester 05	So borrow a vacuum cleaner and a power bank?
5	Interviewer:	And then you got to check out the Events page, you can not create a event just check it out. Yeah, so this is well enjoy related. But this is a blind test. So I won't instruct you how to do it. You just play around the MSE. You just have to actually figure out so because that's how we test the function. just blindly go in, play around, see what to do and try to come to you. Okay, right ready.
6	Tester 05	Okay, I am ready.
7	Interviewer:	You can just use the mouse.
8	Tester 05	No...Not this...
9	Interviewer:	This is the physical buttons on the for that. Because there's just like a physical buttons on the phone. Okay. So it's mainly around here, back different users. See?
10	Tester 05	So, I tend to do that.
11	Interviewer:	So just give it some time. I think it's a bit slow because I will show you an actual for this.

- 12 Tester 05 So booking of vacuum cleaner and then power bank. So first cleaner ...Tuesday...conform booking and then complete. Okay, so what's your down perspective items? Is speaker in terms power bank and some booking items we don't really need that anymore. Yeah.
- 13 Interviewer: And the events. Space. One, two. Okay,
- 14 Tester 05 so it's actually pretty fast. Yeah?
- 15 Interviewer: Yeah it's pretty accessible. Pretty nice.
- Okay, so. Okay, so this is where I just ask you a few questions. I'm gonna record you given that. I just record .all right, Let's do this. Real quick.
- All right, so I'm just gonna start the interview now. So right after using this product, right, so real quick, you some ask, what are your thoughts on the app? Like what do you think about it based on your experience? What do you feel? What do you think?
- 16 Tester 05 I think that it's really accessible. It's really simple to use. I think that is a nice thing for people to have, especially when we, especially for international students who have to find somewhere else to call home. So it's nice to have a sense of community whereby you can learn people things you can confirm, and you can offer your help. You can make events get people together. I think it's a really nice thing to do. Defined accessible. What do you mean by that accessible meaning to say, it's really easy to navigate that so there's different sections here, which I can just easily select. I can select the items which are really just right there for me to see. It's very easy for me to access all these things, and then due to looking for the events as well, just clicking on the events portion, I was able to see everything which is really nice.
- 17 Interviewer: Okay, so just to just summarize, what do you like about it? What do you like what accessibility on it?
- 18 Tester 05 Accessibility one convenience that will be another one for what will be the nice thing of having a shared community of like trying to encourage everybody to be together on this app 20 people to know each other helping each other in a shared accommodation.
- 19 Interviewer: Okay, so what do you like opposite what do you not like about it or what do you think can be improved?
- 20 Tester 05 I have not to focus so far. These are simple things that I've been able to do. Maybe voted maybe if I wanted to use it more than I want to be able to find things that can be added into the bustle for the console. It seems really nice. The accessibility the use of the app as well. It's pretty simple. It's very functional for me to use.
- 21 Interviewer: Okay, so let's assume for a moment, let's assume this app is continuing. Let's say it's a fully working app or complete. How relevant when they say for you as an international student from Singapore. How relevant would it be for you?
- 22 Tester 05 For one is going to be pretty nice because you can organize things like events, especially with the section head of events, you can organize events with a lot of people around. You might not just be your own group in like, you can encompass everyone on the other side. People who use this mic straight towards just their own cluster of friends, like from the same country. So like for example, if people are coming in from, let's say, the US, so maybe they will cluster together they will just do that for themselves and not be inclusive of other people
- 23 Interviewer: So you're worried that people will just tend to stick around their own social cliques?
- 24 Tester 05 Yes. So that's the only thing this will be nice for everyone here to get to know everyone as a whole instead of just staying clustered towards who or where you come from.
- 25 Interviewer: Okay. Okay. Okay. So you said it was easy to use. So, one last question. In terms of like the design flow, like, like how to explain this, like moving from one page to another page? What do you feel about that? Is it smooth, is it weird, awkward, or maybe like, it's intuitive, the, just the navigation of the whole thing like going through the whole entire module?
- 26 Tester 05 I think this ties in with how I say most accessible so everything was pretty smooth. So one thing led to another, it was pretty seamless, and it was pretty easy for me to understand. Okay, I clicked like I wanted to borrow a vacuum cleaner. I just had to go into the events. The Items section, click on the vacuum cleaner and then follow follow up by having to see the availability, there's time slots and everything and then confirm the booking from that so they self be seamless, pretty accessible, very restless.
- 27 Interviewer: Alright, okay, thank you. Next
- 28 Interviewer: Okay, so that's one part done. So here comes the next part, right? Okay. Okay, so Okay, so this is basically just that right? So here's the thing, right? Okay. So as you know, one part of it is to be able to share resources. The other part of this, the only goal of this app is to was word community building basically. So we were trying to brainstorm with ideas and here are two concepts we have basically, we this is one idea, this is another idea, right? So basically, we were trying to choose which one's better but basically, the goal of it is the goal of this concept is to be able to build and foster better relationships between one another. So I'll just go to a different so like what you see right here, right, basically right here. It's a turbine explain it is like a is basically a relationship now a bit like that. So that is basically has two things right? Yeah. Okay, so yeah, if you can see the different uses, right? Use a 123. So in the real world, maybe my name Daniel chi John. So how it works, it works. This app will not do this thing. This function will map people's relationships based on events and titles. So for example, when I say I contract so for example, the bank back in April, so this one will show like Hey, who's vacuum cleaners is like up like maybe this is vacuum cleaner. And they show that this came from US aid. After the it was a social group borrow that there will be multiple links, maybe use a C use E is a G borrowed printer, which came from us. So that's the one that's one thing you show that the items are there who is spending it, it was borrowing it and the second one would be events so remember the events page. So you'll also have you also do similar function you will be that we have this event which is like maybe Movie Night, then your show that who went for it. So it's like just other so it's basically a relationship back to show who broke through that. And also like, who did what so let's say we take that ninja ninja show who want to play badminton. Okay, so that's the core function for that. Essentially, it shows that relationship there you can see oh, okay, so he's like Sorry, hey, I know you're on bro vacuum cleaner apartment and have to look for you can see a so these are who I spend time with during that meeting? Or that? Let's say let's say maybe you for example, let's say I want to play badminton, but I don't have any friends because I do know that you can see Oh, actually, there was this day. The thing that matters I can see using a b c and d to play badminton that day. So now I know Hey, they actually had to do everything and so next time I go, Hey, you guys update everything. So it shows is that the shots I need to show that the interaction? And you can see that oh, what is the goal is to help people that get close together after that, okay? So that's one idea, that note or that relationship that there's quite a relationship and so this is the second idea is uh Okay, this one is really simple idea. It's kind of like as you can see, this is basically grow plant right. So very simple. This community will have one common plant right so you get a start up with like a sapling. You start off with

sampling and then after that, they say this jack at this time, so their offensive scheme is interesting. The more they share their items, the more points they get. And with the points you get, you get to learn what are the influence? So the idea for that is very simply just to get the people together and like, grow them together. So it's like a community effort to grow. That seems rather than watching you have to do be honest, I'll be honest, we haven't fully we haven't fully fleshed out this idea. But right now the rough concept is because when you share items and people borrow it, then you get points for that. You basically you get points for sharing this stuff with people because we want it's more points, which makes you wonder. Okay, interesting. Yeah, so that's rough just about the whole thing. Okay, so I'm gonna record you one more time, but this time is to get your feedback based on this

right so I'm gonna record you one more time. So just a few simple questions. Yeah, okay. So based on the two concept of explain, which concept which in your opinion, which concept shows or represents the relationship among users the best? Yeah.

Relationships around users or interactions based on belief that notes will be able to track it better because you have, he has, has a mind maybe lessons whereby he tracks how each item interacts. With any, any one person had one point. Whereas the other idea kind of doesn't track it in a sense, because instead you're tracking in points. So the interactions and everything else, time is kind of hard to track. So as for example, the nodes, you can figure out activities or like most people that may address that activity and you want to join or you want to invite them to because you can share the same hobbies or interests. Whereas if you use the second idea, it's harder to track what kind of activities or what kind of interactions these people have with one another. And yeah, so the last one seems to be easier to see the notes

so for you the notes the note concept is better represents a potential relationship among people. Yeah?

Yes

So then building upon that, which, so which concept do you think helps do that? So it's one thing to be able to see the relationship, but which concept do you think better? I say, which concept Reading helps you build a foster relationship better, right? So like actually getting because the goal of the end is to get people closer together so we can send you the right mix that

I think still the notes because eventually the notes allows you to track call, keep an eye on certain activities that people are carrying out. So from them other groups of people may be like, okay, so they enjoyed this, this activity. So maybe I can join them. Maybe you can invite them to sort of activities that you guys might have in common, or they can offer the invites to many other people who might have the same interest whereas the second idea, not so much because you're not able to see what kind of interests activities that they are involved in. And this the other thing would be because you're lending out your equipment. You're not exactly tracking who was before. So it's a bit harder to see or harder to measure the interactions between the item lender and an item user.

Okay, so then I guess, so generally, the last question would be which one would you prefer? Like, generally just the whole idea or concept is not only do we want it to build relationships? Is it abstract? So ideally, the app needs to suit the user state. So last question is really simple. Which one do you like? Which one do you prefer? which one feels nicer for you? Basically,

for me notes concept seems to be nicer comparatively to the second idea, just because he has more information. He allows me to see the interactions between people that allows me to be able to have a better understanding of the event like different interactions within different groups of people. Maybe different people in the community. So it's a nicer way of community. And the second concept has a very nice idea of like, trying to get people together for a common goal, which is to grow apart, which is also pretty nice, maybe time time, both ideas will be really, really good.

So you propose that we try and combine both eyeballs?

Yes. So the mind map, interaction map for the notes and then incorporating a common goal on top of it as well.

Okay, I see. Right. So that's all the questions Thank you. Okay, yeah, so that's basically it. Thank you so much. Yeah, no, yeah. Done. Thank you so much. Thank you.

All good ,Thank you

C.1.6 User Testing & Evaluation Tester 06 (T06)

Note: Due to miscommunications regarding the timings of audio recordings, the interviewer for this tester only started the recording after all tests and demonstrations were completed.

Quote Number	Speaker	Quote
1	Interviewer:	The first question is What do you think of the prototype? How was your experience?
2	Tester 06	Well, I think it's quite useful, but it seems to be quite simple at the moment. In terms of the basics, I think it's okay, it's okay. But I think there are still some features that can be added. For example, if you're an owner, you should be able to chat, and if you're in a flat, shouldn't you be able to communicate with the flat? If you live in a building, you can contact the condominium as well. Or if I live in a building, I can contact the property owner.
3	Interviewer:	Okay, what did you like about it?
4	Tester 06	I think it's good to share things because sometimes you may not be able to contact the person you want to borrow something from. For example, if he is sleeping or something, and I want to borrow that thing, then I am too embarrassed to disturb him. So if I set it up in advance, it would be more convenient for me and I wouldn't be socially intimidated.
5	Interviewer:	Well, and then there's something that you don't like and you need to change. Why?
6	Tester 06	Oh, there's a lot of things. First of all, I think the graphics on the front page could be better planned. Because maybe when I first looked at it, I couldn't understand it, and then you explained it to me and I got it. Well, and then I was actually going to ask are these lines fixed? I think they can be kind of dynamic as well. I think that part could be changed because at the moment it just doesn't make sense to me at first glance.
		OK and then the second one, the choose time, I think it should be the time when the owner of the thing is free, he can set the time when the thing is lent out, but this looks like you are setting it up for them, so this should be the

- corresponding time. Also, on the events screen, if there are lots and lots of events, I'd like to see a category on there so I can quickly find the events I'm interested in.
- And then there's this Profile page, I want the first thing I see to be something I'm booking, not something I own. In your opinion, which concept shows or represents the relationships among users the best?
- I think the second one, but the second one also has some flaws, and there are some things I don't like. So you think planting trees one is better, right?
- Yes, I think this one is better because it feels like everyone is raising things together. But I think there are also areas that need to be tweaked, you know, like let's say you get this point from you lending out something or an activity. Oh, let's say I lend out books, well, I may only have books, and I don't have anything that's just something that people just really like to cheerfully lend out, and then I'm very low on points, so there's no way that I can contribute to our community or to our unit, and then people won't think that I don't have enough love ah. But that doesn't prove that I don't love this community enough.
- Which concept is more likely to help foster/build relationships among users?
- Well, I'm going to go with the second one. Because the second one I think is more interactive, but maybe the mechanism can be changed. That is, we can raise something together, or we can decorate a virtual space together or something like that. And then the way of points could be a bit more diversified, not just saying that we are borrowing things.
- Which concept do you prefer?
- I think the second one is better. But for the first one, the main reason is that the first one is a little bit messy and I find it a little bit hard to accept. The second one is a method that I am more familiar with. You know that Alipay has a method called "ants planting trees", and then friends plant trees together, you know that, right? I think this method is quite good, just need to change the form.

C.2 Ethics Consent Forms (User Testing & Evaluations)

Attached in the section are the Ethics Consent Forms for the participation of testers during user evaluations. The wording for these consent forms is similar to the template found in Appendix A.3.3.1, with minor adjustments. As such, no new template was made.

 THE UNIVERSITY OF QUEENSLAND A U S T R A L I A	USER TESTING FOR DESIGN COMPUTING PROJECT			
<p>PROJECT DESCRIPTION</p> <p>The aim of our project is to research, design and develop technological solutions to a problem within the domestic setting. Narrowing down our focus, our team has decided to solve a chosen problem statement of "how one could improve cohesion between members of large share homes or dormitories using technology?".</p> <p>After the user testing phase of this project, our team will refine our software-based solution for the stated problem statement based on the feedback.</p>				
<p>YOUR PARTICIPATION</p> <p>To better understand users within the problem space, our team has decided to conduct user testing with individuals who are currently living or have lived in large, shared accommodation or environments. We kindly ask for your participation in this regard.</p>				
<p>DATA WE ARE COLLECTING</p> <p>From this interview, we are seeking verbal responses so we will collect audio recordings for the purpose of research and take pictures throughout the user testing session.</p>				
<p>CONFIDENTIALITY</p> <p>Any and all data collected from you will be anonymised via a serial number system. Any personal information that is obtained will be made confidential. Anonymised data will be aggregated with other responses as part of our analysis. Personal details within your signed consent form will be collected and provided to teaching staff as evidence of participation but will not be associated with the actual data you provide. This means that no one, aside for the person interviewing you, can connect your recorded responses to your participation. At the end of the project, all recorded voice data will be deleted.</p>				
<p>RISKS TO YOU</p> <p>As interviews are verbal in nature, and your responses is anonymised, there will be no risks to you participating in this interview beyond those that exist in your everyday daily life.</p>				
<p>PARTICIPATION IS VOLUNTARY</p> <p>There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you; voice recording will stop immediately, and any other data from or about you will not be included in the research. While there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.</p>				
<p>ACADEMIC PURPOSE FOR THE RESEARCH</p> <p>This interview is part of a larger project that is being conducted as a learning activity at The University of Queensland. If you would like to speak to the course teaching staff about any aspect of this project, you may contact this course's coordinator with the details provided.</p>				
<p>CONSENT</p> <p>With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:</p> <ul style="list-style-type: none"> • This project has been explained to me and I have read and understood the project as detailed above. • I agree to participate in this interview as described in the details above. • I understand that my participation in this interview is voluntary and that I am free to, without reason nor penalty, withdraw from it at any time. • I understand that any personal information will be kept confidential and disassociated from the interview responses I provide. 				
<p>By signing below, I consent to have my opinions and voice recorded as well as my picture taken for this interview.</p> <p>Participant's Full Name: <u>BO BO XIAO</u></p> <p>Participant's Signature: <u>Tao</u></p> <p>Date: <u>7/10/23</u></p>				
<p>The University of Queensland Brisbane QLD 4072 Australia</p> <p>ABN: 63 942 912 684 CRICOS PROVIDER NUMBER 00025B</p>				

Figure 32: Signed consent form. With added photo consent.

Participant Information Sheet and Consent Form**USER TESTING FOR DESIGN COMPUTING PROJECT****THE UNIVERSITY OF QUEENSLAND AUSTRALIA**

School of Information Technology and Electrical Engineering

and Electrical Engineering

STUDENT RESEARCHERS

Ella Barthelot

Willinson John Chan

Hai Peng Kevin Goh

Daniel Sheng Yang Ng

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COURSE

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PROJECT DESCRIPTION

The aim of our project is to research, design and develop technological solutions to a problem within the domestic setting. Narrowing down our focus, our team has decided to solve a chosen problem statement of "how one could improve cohesion between members of large share homes or dormitories using technology?".

After the user testing phase of this project, our team will refine our software-based solution for the stated problem statement based on the feedback.

YOUR PARTICIPATION

To better understand users within the problem space, our team has decided to conduct user testing with individuals who are currently living or has lived in large, shared accommodation or environments. We kindly ask for your participation in this regard.

DATA WE ARE COLLECTING

From this interview, we are seeking verbal responses so we will collect audio recordings for the purpose of research and take pictures throughout the user testing session.

CONFIDENTIALITY

Any and all data collected from you will be anonymised via a serial number system. Any personal information that is obtained will be made confidential. Anonymised data will be aggregated with other responses as part of our analysis. Personal details within your signed consent form will be collected and provided to teaching staff as evidence of participation but will not be associated with the actual data provided. This means that no one, aside for the person interviewing you, can connect your recorded responses to your participation. At the end of the project, all recorded voice data will be deleted.

PARTICIPATION IS VOLUNTARY

There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you; voice recording will stop immediately, and any other data from or about you will not be included in the research. While there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.

ACADEMIC PURPOSE FOR THE RESEARCH

This interview is part of a larger project that is being conducted as a learning activity at The University of Queensland. If you would like to speak to the course teaching staff about any aspect of this project, you may contact this course's coordinator with the details provided.

RISKS TO YOU

As interviews are verbal in nature, and your responses is anonymised, there will be no risks to you participating in this interview beyond those that exist in your everyday daily life.

CONSENT

With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:

- This project has been explained to me and I have read and understood the project as detailed above.
- I agree to participate in this interview as described in the details above.
- I understand that my participation in this interview is voluntary and that I am free to, without reason nor penalty, withdraw from it at any time.
- I understand that any personal information will be kept confidential and disassociated from the interview responses I provide.

By signing below, I consent to have my opinions and voice recorded as well as my picture taken for this interview.

Participant's Full Name: Drew M Salmin

Date: 7/10

Participant's Signature:

Date: 7/10

Participant Information Sheet and Consent Form**USER TESTING FOR DESIGN COMPUTING PROJECT****THE UNIVERSITY OF QUEENSLAND AUSTRALIA**

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Willinson John Chan

Hai Peng Kevin Goh

Daniel Sheng Yang Ng

Congcong Tang Ng

Congcong Zhang

Congxiao Zhou

COURSE

DECO2850 Design Computing

Studio 2 – Interaction Design

COURSE STAFF

Coordinator: Dr Dhaval Vyas

d.vyas@uq.edu.au

PROJECT DESCRIPTION

The aim of our project is to research, design and develop technological solutions to a problem within the domestic setting. Narrowing down our focus, our team has decided to solve a chosen problem statement of "how one could improve cohesion between members of large share homes or dormitories using technology?".

After the user testing phase of this project, our team will refine our software-based solution for the stated problem statement based on the feedback.

YOUR PARTICIPATION

To better understand users within the problem space, our team has decided to conduct user testing with individuals who are currently living or has lived in large, shared accommodation or environments. We kindly ask for your participation in this regard.

DATA WE ARE COLLECTING

From this interview, we are seeking verbal responses so we will collect audio recordings for the purpose of research and take pictures throughout the user testing session.

CONFIDENTIALITY

Any and all data collected from you will be anonymised via a serial number system. Any personal information that is obtained will be made confidential. Anonymised data will be aggregated with other responses as part of our analysis. Personal details within your signed consent form will be collected and provided to teaching staff as evidence of participation but will not be associated with the actual data provided. This means that no one, aside for the person interviewing you, can connect your recorded responses to your participation. At the end of the project, all recorded voice data will be deleted.

PARTICIPATION IS VOLUNTARY

There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you; voice recording will stop immediately, and any other data from or about you will not be included in the research. While there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.

ACADEMIC PURPOSE FOR THE RESEARCH

This interview is part of a larger project that is being conducted as a learning activity at The University of Queensland. If you would like to speak to the course teaching staff about any aspect of this project, you may contact this course's coordinator with the details provided.

RISKS TO YOU

As interviews are verbal in nature, and your responses is anonymised, there will be no risks to you participating in this interview beyond those that exist in your everyday daily life.

CONSENT

With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:

- This project has been explained to me and I have read and understood the project as detailed above.
- I agree to participate in this interview as described in the details above.
- I understand that my participation in this interview is voluntary and that I am free to, without reason nor penalty, withdraw from it at any time.
- I understand that any personal information will be kept confidential and disassociated from the interview responses I provide.

By signing below, I consent to have my opinions and voice recorded as well as my picture taken for this interview.

Participant's Full Name: Thomas Lassell

Date: 7/10

Participant's Signature:

Date: 7/10

The University of Queensland
Brisbane QLD 4072 Australia
ABN: 63 942 912 684
CRICOS PROVIDER NUMBER
00025B

ABN: 63 942 912 684
CRICOS PROVIDER NUMBER
00025B

Participant Information Sheet and Consent Form**USER TESTING FOR DESIGN COMPUTING PROJECT****PROJECT DESCRIPTION**

The aim of our project is to research, design and develop technological solutions to a problem within the domestic setting. Narrowing down our focus, our team has decided to solve a chosen problem statement of "how one could improve cohesion between members of large share homes or dormitories using technology?". After the user testing phase of this project, our team will refine our software-based solution for the stated problem statement based on the feedback.

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- This project has been explained to me and I have read and understood the project as detailed above.
- I agree to participate in this interview as described in the details above.
- I understand that my participation in this interview is voluntary and that I am free to, without reason no penalty, withdraw from it at any time.
- I understand that any personal information will be kept confidential and disassociated from the interview responses I provide.

By signing below, I consent to having my opinions and voice recorded for this interview.

Participant's Full Name: Ayla Monegue Hutchinson

Date: 01/10/23

ABN: 63 942 912 684
CRICOS PROVIDER NUMBER
00025B

Participant Information Sheet and Consent Form**USER TESTING FOR DESIGN COMPUTING PROJECT****PROJECT DESCRIPTION**

The aim of our project is to research, design and develop technological solutions to a problem within the domestic setting. Narrowing down our focus, our team has decided to solve a chosen problem statement of "how one could improve cohesion between members of large share homes or dormitories using technology?". After the user testing phase of this project, our team will refine our software-based solution for the stated problem statement based on the feedback.

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DATA WE ARE COLLECTING

From this interview, we are seeking verbal responses and will collect audio recordings for the purpose of research.

CONFIDENTIALITY

Any and all data collected from you will be anonymised via a serial number system. Any personal information that is obtained will be made confidential. Anonymised data will be aggregated with other responses as part of our analysis. Personal details within your signed consent form will be collected and provided to teaching staff as evidence of participation but will not be associated with the actual data you provide. This means that no one, aside for the person interviewing you, can connect your recorded responses to your participation. At the end of the project, all recorded voice data will be deleted.

PARTICIPATION IS VOLUNTARY

There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you; voice recording will stop immediately, and any other data from or about you will not be included in the research. While there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.

ACADEMIC PURPOSE FOR THE RESEARCH

This interview is part of a larger project that is being conducted as a learning activity at The University of Queensland. If you would like to speak to the course teaching staff about any aspect of this project, you may contact this course's coordinator with the details provided.

RISKS TO YOU

As interviews are verbal in nature, and your responses is anonymised, there will be no risks to you participating in this interview beyond those that exist in your everyday daily life.

CONSENT

With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:

- I understand that during this interview, there are no risks to me beyond those that exist in regular daily life.
- I have been informed that I can contact the interviewer or a teaching staff member if I would like more information on this project.
- I understand that, aside from gratitude, there are no benefits to me for participating in this study.

By signing below, I consent to having my opinions and voice recorded for this interview.

Participant's Full Name: Ji Long

Date: 8/10/2023

ABN: 63 942 912 684
CRICOS PROVIDER NUMBER
00025B

THE UNIVERSITY OF QUEENSLAND AUSTRALIA	
USER TESTING FOR DESIGN COMPUTING PROJECT	School of Information Technology and Electrical Engineering
PROJECT DESCRIPTION	The aim of our project is to research design and develop technological solutions to a problem within the domestic setting. Narrowing down our focus, our team has decided to solve a chosen problem statement of "how one could improve cohesion between members of large share homes or dormitories using technology?". After the user testing phase of this project, our team will refine our software-based solution for the stated problem statement based on the feedback.
YOUR PARTICIPATION	To better understand users within the problem space, our team has decided to conduct user testing with individuals who are currently living or has lived in large, shared accommodation or environments. We kindly ask for your participation in this regard.
DATA WE ARE COLLECTING	From this interview, we are seeking verbal responses and will collect audio recordings for the purpose of research.
CONFIDENTIALITY	Participation is voluntary
	There are no direct benefits to your participation in the interview. Participation is voluntary and you can choose to stop at any time. Should you wish to stop, no consequences would befall you; voice recording will stop immediately, and any other data from or about you will not be included in the research. While there are no material benefits to you for your participation in this interview, if you would like to see the results of the project, you may contact the individual conducting your interview at any time.
RISKS TO YOU	Academic purpose for the research
	This interview is part of a larger project that is being conducted as a learning activity at The University of Queensland. If you would like to speak to the course teaching staff about any aspect of this project, you may contact this course's coordinator with the details provided.
CONSENT	With much appreciation, we require your informed and written consent to participate in our research. Please read the following statements and, if agreeable, sign below:
	<ul style="list-style-type: none"> • This project has been explained to me and I have read and understood the project as detailed above. • I agree to participate in this interview as described in the details above. • I understand that my participation in this interview is voluntary and that I am free to, without reason nor penalty, withdraw from it at any time. • I understand that any personal information will be kept confidential and disassociated from the interview responses I provide.
	By signing below, I consent to having my opinions and voice recorded for this interview.
Participant's Full Name:	<u>Sirion Facc</u>
Participant's Signature:	<u>Sirion Facc</u>
Date:	<u>07/10/2023</u>
The University of Queensland Brisbane QLD 4072 Australia T N/A E dvysas@uq.edu.au W uq.edu.au ABN: 63 942 912 684 CRICOS PROVIDER NUMBER 00025B	

Figure 37: Signed consent form.

C.3 User Testing Insights from Each Tester

C.3.1 Insights from Tester 01

Keywords	Quotes from interview	Analysis
Functionality	I think it makes it really easy, rather than like post it on Facebook hoping that someone replies 'oh ya, I have this thing that you could borrow'	The participant wished to avoid the process of asking around if she is ever in need of borrowing something.
Simplicity	I think it's good, it's not sloth, it's all very self-explanatory, very simple, just tells you everything that you need to know.	The participant enjoyed using something that is not very complicated to navigate around.
Competition	The plant I feel it makes it into more of a competition rather than mapping out a social relationship, it just incentivises people who are lending out. I just don't think it centres around the community concept.	The participant felt like the score from borrowing and lending growing the tree might lead to an unhealthy competition between housemates which might lead to an unhealthy form of competition.

Table 3: Tester 01 User Evaluation Insights

C.3.2 Insights from Tester 02

Keywords	Quotes from interview	Analysis
Systematic and organized	I can move to different items by moving to different signs. This is relatively intuitive. I would be able to select the day. I can theoretically confirm the booking here.	The participant felt good with the ability to confirm the dates of the borrowing as he could organise his time for the use of that appliance.
Economical	I like that we have the opportunity to lend items instead of buying them, especially when you are an international student and if you only have one semester here.	Rather than paying a full sum of the amount to buy an appliance, the participant would be more than happy if someone else living in the same environment were happy to borrow the item, they needed from them.
Clarity	The concept of the notes gives more of a like broad overview on like who is connected to each other by doing what.	The participant feels like it is hard to build an actual connection with this system as it only shows the borrowing and lending relationship but not the actual bond.

Table 4: Tester 02 User Evaluation Insights

C.3.3 Insights from Tester 03

Keywords	Quote from Interview	Analysis
Accessibility	"I think that it's really accessible. It's really simple to use."	The user's feedback is generally positive, highlighting the app's accessibility and simplicity.
Community Building	"It's nice to have a sense of community whereby you can lend people things, you can communicate, and you can offer your help."	The user values the concept of building a sense of community and fostering relationships.
Relationships	"I have not found any issues so far. It's pretty simple, very functional for me to use." "It's more points, which makes you wonder."	Users emphasized the significance of fostering better relationships among residents in shared accommodations through the app. They appreciated the idea of creating a sense of community and enabling people to help each other.
Interactions	"It's more points, which makes you wonder."	The user feedback underlines the importance of tracking interactions and activities among users. This feature was considered essential for promoting community building and cohesion.
Nodes Concept	"The nodes concept seems to be nicer compared to the second idea, just because it has more information."	The preference for the "nodes" concept suggests that users appreciate tracking interactions and activities among community members.
Combination of Concepts	"Maybe both ideas will be really, really good. So, you propose that we try and combine both ideas?"	The user's suggestion to combine both concepts may indicate a desire for a more comprehensive approach to community building and relationship tracking.

Table 5: Tester 03 User Evaluation Insights

C.3.4 Insights from Tester 04

Keywords	Quote from Interview	Analysis
Resource categorization for better organization	"It does kind of seem a little bit random. Like I don't necessarily know where to get to."	The user suggests improving resource categorization to enhance item discoverability and organization.

App relevance to users in shared accommodations	"I would use it, particularly when you go to get something from the economy. You could just quickly check."	The user finds the app relevant for checking item availability and attending events in shared accommodations.
Ease of use	"Yeah, it was pretty straightforward. Like I could navigate around easily."	The user appreciates the app's user-friendliness and navigation.
Missing back button	"I was expecting like a back button. It doesn't make it more awkward."	The user suggests including a back button for smoother navigation within item listings.
"Nodes" - fosters relationship discovery	"Basically, it helps show the relationship between people based on whatever that may be. You can find common interest in each other."	The "Nodes" concept is highlighted for its ability to demonstrate relationships and help users discover common interests.
"Plants" - fosters bonding through shared growth	"It's cute. That's the right word, but it's nice to work together in a team. It's not a real plant, it feels like for achieving growing together. And it feels like we bond over that."	The "Plant" concept is praised for fostering teamwork, shared growth, and a sense of bonding among users.

Table 6: Tester 04 User Evaluation Insights

C.3.5 Insights from Tester 05

Keyword	Quote	Analysis
Back button	"I think what could be better is if you click on an item you don't want to confirm like a button to go back..."	Navigating through the app would be easier if back buttons were implemented.
Convenient	"Like it's well organised, you can just see the items, what's available, what's not available. Just borrow it easily, and then just go to events."	The app makes it easy to share and borrow items from friends.
Friends tab	"...maybe in your profile, to see who your friends are."	The user wants to have a section in the profile page to see all his friends.
Representation of friendship	"...the nodes also show like the network of community."	The user likes the node concept which shows everyone's friendship within the community.
Competitive	"...whereas the plant makes it more competitive."	The user is worried that people will become competitive and focus on reaching the top of the leaderboard. This defeats the purpose of the plant concept which is to encourage people to share their things.
Similar interests	"You can just see who shares your interests and yeah, just find more people."	The user likes the node concept because it helps him find other people with similar interests and make new friends.
Node becomes messy	"...I think that as time goes on, it would get too complicated. So, I think would probably be best to like, refresh it every week or something."	The user is worried that the nodes will become messy and cluttered over time. He suggests that the nodes be updated periodically to only show recent information.

Table 7: Tester 05 User Evaluation Insights

C.3.6 Insights from Tester 06

Keywords	Quotes from interview	Analysis
Useful and simple	"Well, I think it's quite useful, but it seems to be quite simple at the moment."	The participant felt the whole interaction flow is easy and the functions are useful.
Need Instruction	"...at the moment it just doesn't make sense to me at first glance."	The participant felt confused at first when she saw the Node page, so it will be better to have a word instruction when users first enter the App.
Delete "points" feature	"I'm very low on points, so there's no way that I can contribute to our community or to our unit..."	The participant thought using points would cause misunderstanding among residents.
Messy for Nodes	"The main reason is that the first one is a little bit messy..."	The participant was concerned that the interface would become difficult to understand as more items and events were added.

Table 8: Tester 06 User Evaluation Insights

Appendix D: After User Testing & Evaluation

D.1 High-fidelity Prototype (After User Testing)

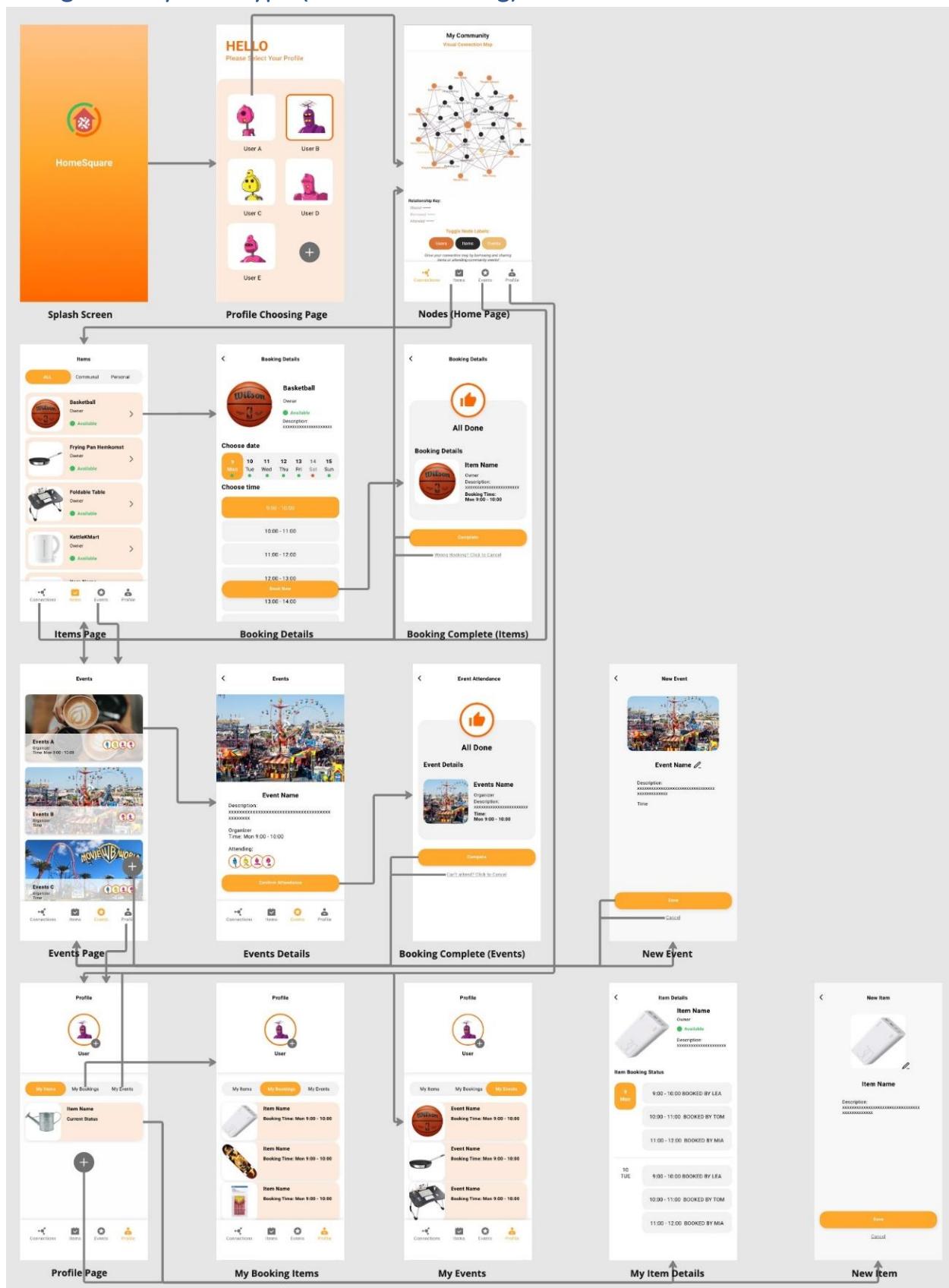


Figure 38: The final Interaction Flow Diagram for the High-Fidelity Prototype of HomeSquare.

Please view the whole user interaction flow with each screen: <https://xd.adobe.com/view/df2bd415-a19d-4719-a5cc-b2873de351f1-8a78/>

D.2 Exhibit 2 Poster

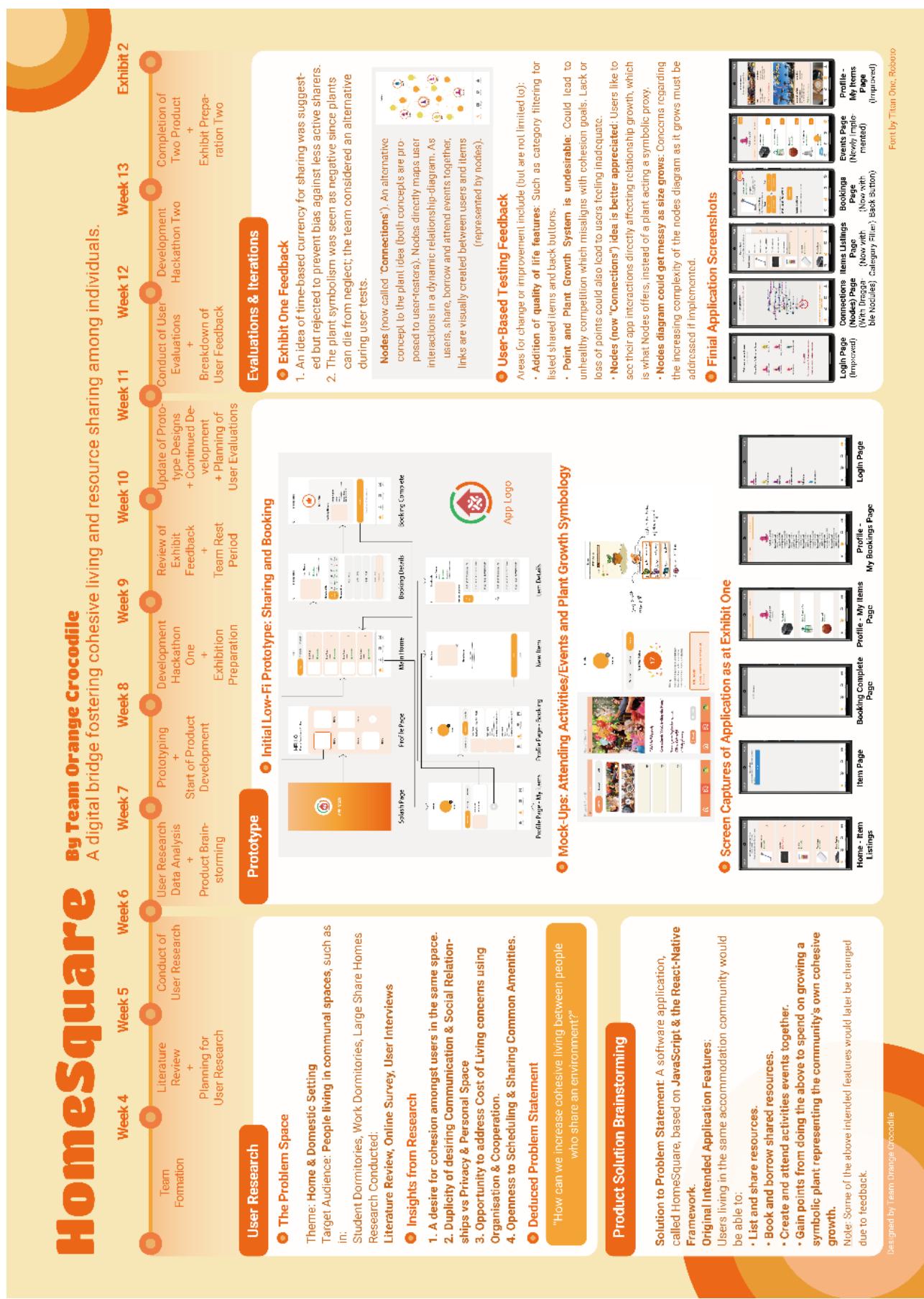


Figure 39: The poster used for Exhibit 2, showcasing Team Orange Crocodile's work (designed for A2 sized paper).

D.3 Exhibit 2 Flyers



Figure 40: Flyer for Exhibit 2 (front page).



Figure 41: Flyer for Exhibit 2 (back page).

D.4 Final Product

HomeSquare's final working code can be accessed from the following GitHub link:

https://github.com/justgenetic/DECO2850_Prototype/tree/main/Prototyp2



Figure 42: Profile Select Page

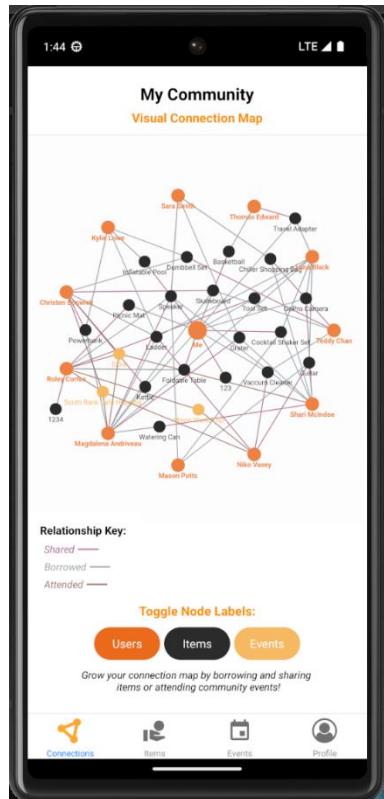


Figure 43: Nodes/Connections Page

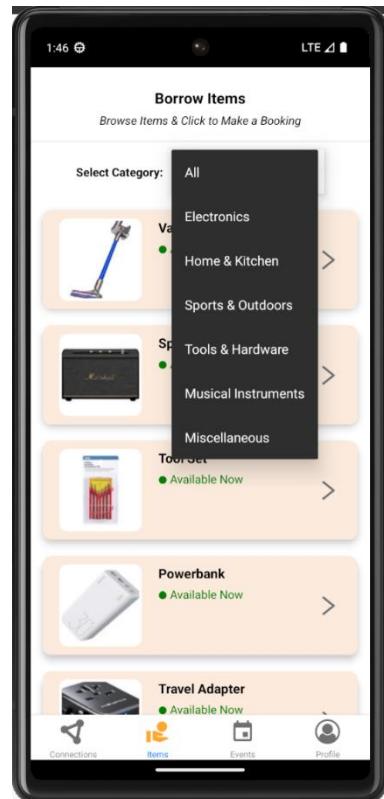


Figure 44: Items Page

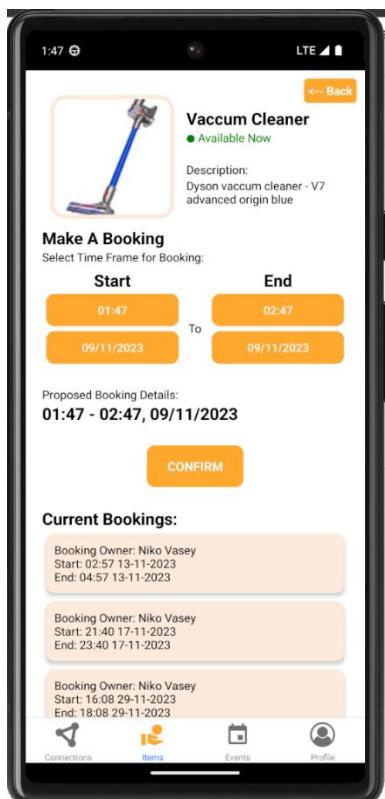


Figure 45: Booking Page



Figure 46: Booking Time Select

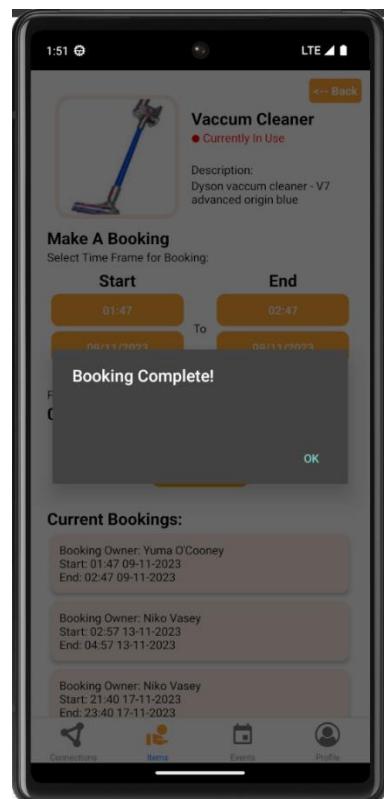


Figure 47: Booking Complete Message

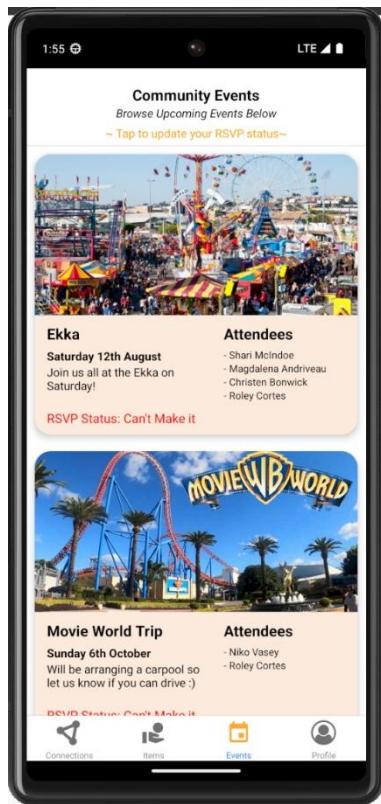


Figure 48: Events Page

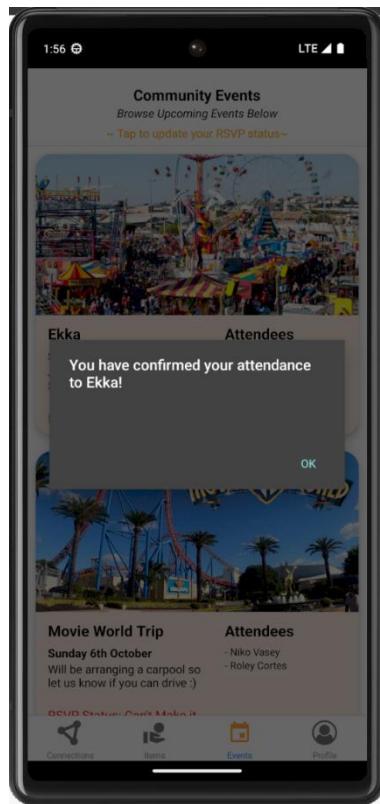


Figure 49: Attendance Confirmed

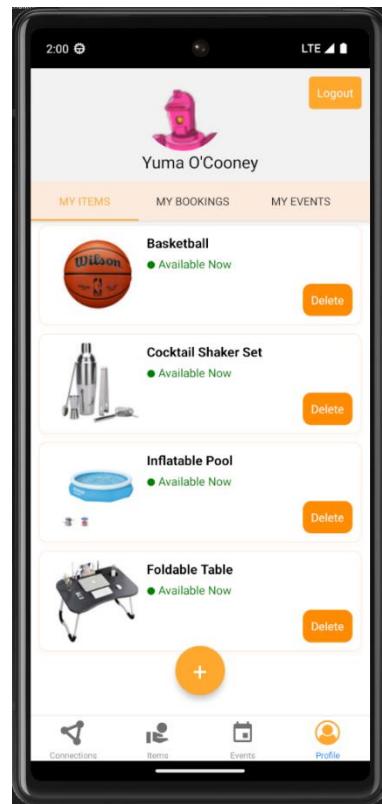


Figure 50: Profile Page (My Items)

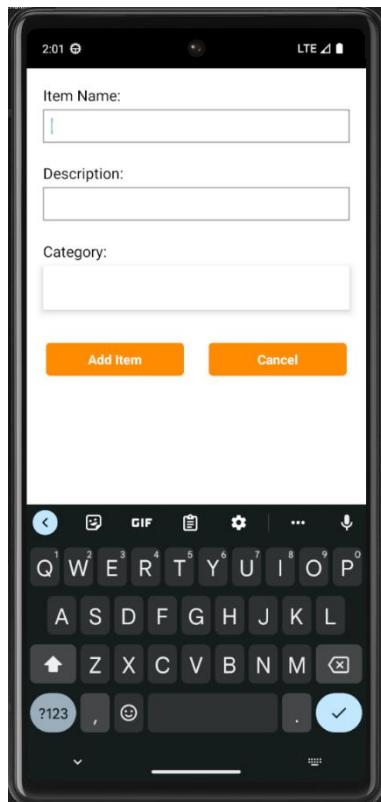


Figure 51: Listing Items

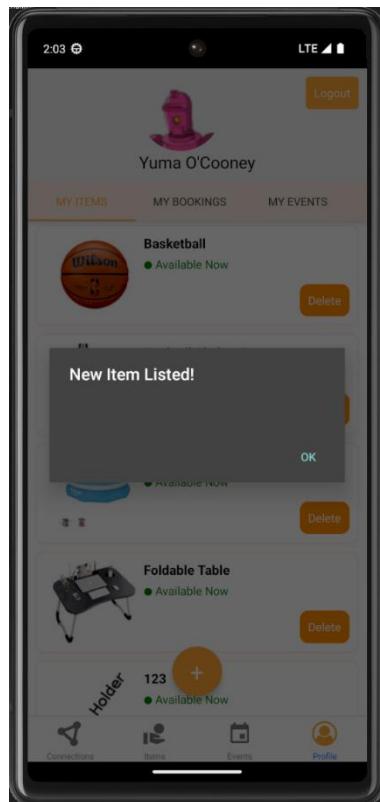


Figure 52: Listing Confirmed

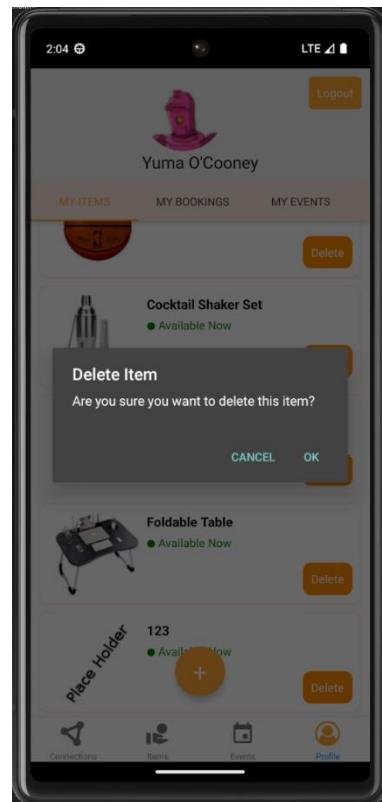


Figure 53: Delete Listing

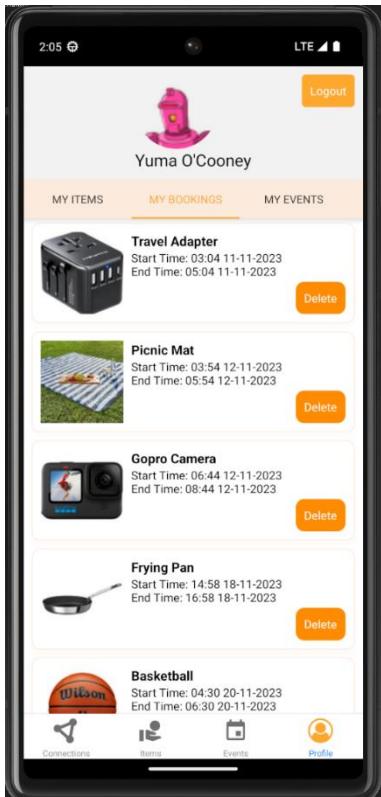


Figure 54: Profile Page (My Bookings)

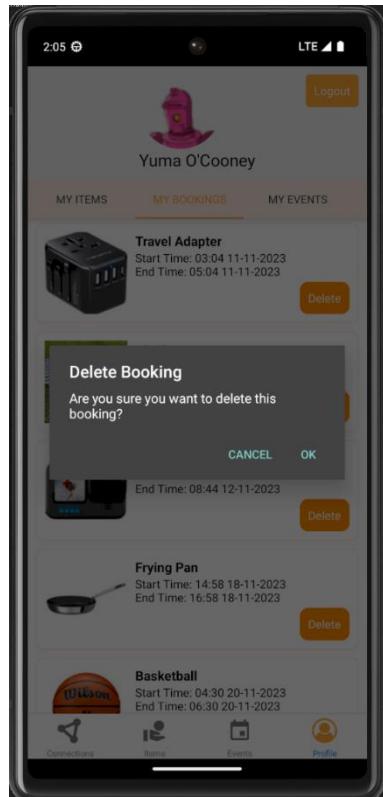


Figure 55: Delete Booking

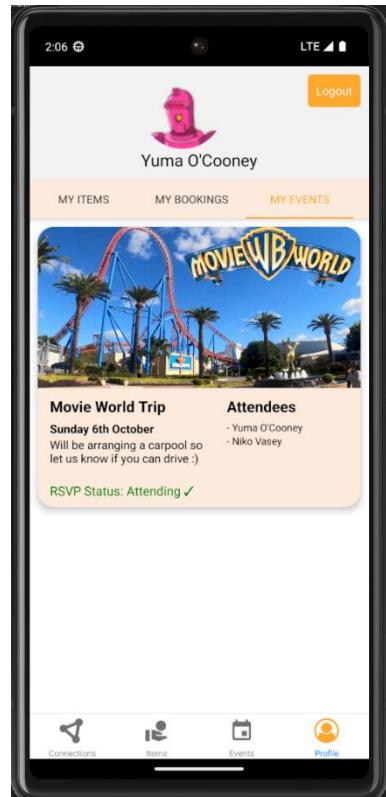


Figure 56: Profile Page (My Events)

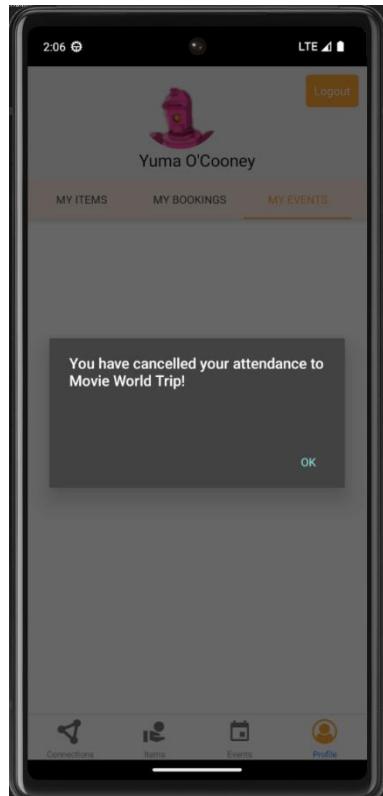


Figure 57: Event Deletion