Lancaster University Leipzig

Requirements Gathering and Analisys

Interviews and Online Questionnaires

Introduction

Develop a booking system that facilitates the booking of common spaces in the students accomodations, replacing the current uneffective methods.

Purpose of requirement gathering:

→ Understand how students currently book spaces.

→ Identify key pain points and expectations.

→ Gather data to guide the design for an effective booking app.

Requirements Gathering Process (PART I)

1. Planning:

→ Defines objectives and research questions.

→ Select two methods: Interviews and Online Questionnaires.

→ Prepare consent forms.

2. Participant Selection:

→ Students Living in the accommodation.

→ Select two methods: Interviews and Online Questionnaires.

3. Data collection:

→ Conduct interviews with signed consent.

→ Distributed online questionnaires.

Requirements Gathering Process (PART II)

4. Data Analysis:

→ Reviewed interview transcript and questionnaire responses.

→ Identifies recurring problem and needs.

5. Requirement Extraction:

→ Convert the findings into functional, non-functional, usability/UX requirements.

Interviews

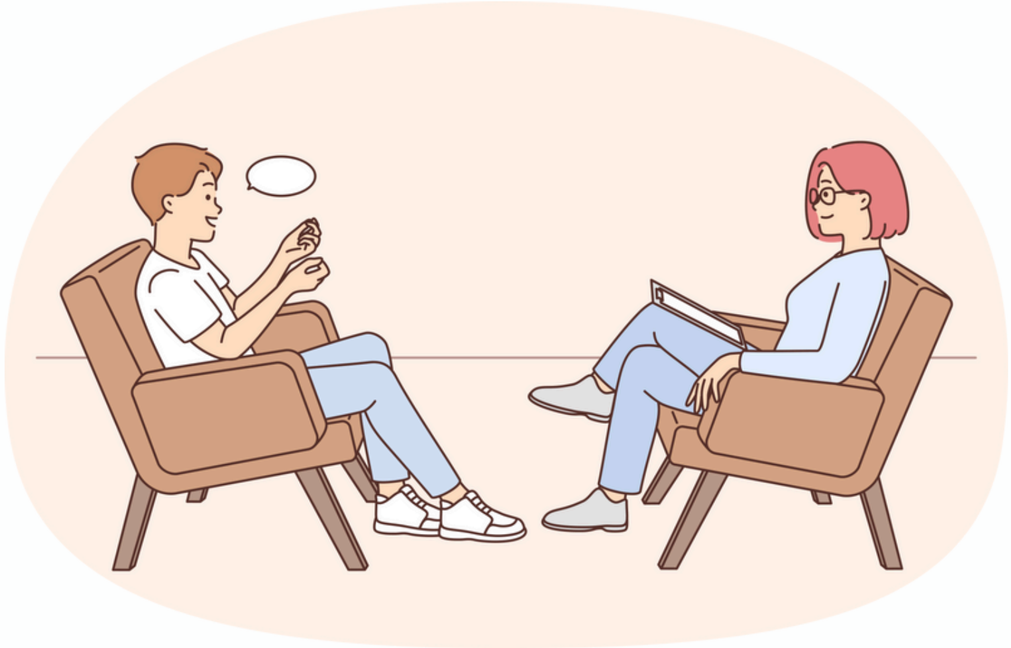
Why interviews?

→ To undestand how students currently book common spaces.

→ To explore frustrations with the current method.

→ To gather detailed insights into real booking behaviours.

→ Allows clarification about certain topics.



Interview format:

→ Semi-structured

→ Conducted in person.

→ Durantion: 5-10 minutes.

→ Participants signed consent forms.

Interviews

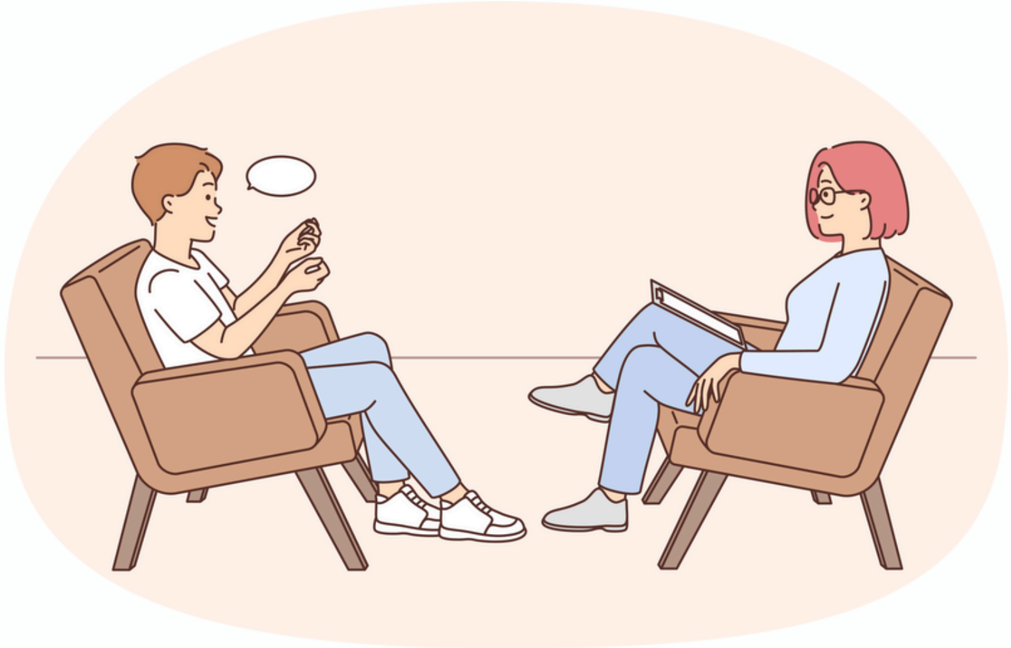
Focus Areas:

→ How they currently book spaces.

→ Problems they faced.

→ Expectations in functionalities.

→ Preferences between the given functionalities.



Participants:

→ Number: 12 students

→ Ages 18-22

→ Criterias:

→ Live in Lumis.

→ Use common spaces.

Interview findings

Pain Points:

→ Messages “get buried” in the group chat.

→ No official confirmation or record of reservations.

→Frequent misunderstandings and booking conflicts.

→ No visibility of real-time availability.

Desired Features:

→ A clear booking calendar.

→ Notifications and reminders.

→ Ability to cancel and modify bookings.

→ Visibility of who booked a space and when.

Online questionnaires

Why online questionnaires?

→ To validate patterns found during the interviews.

→ To gather data from larger samples.

→ To identify the features user prefer.

Distribution:

→ Google forms.

→ Shared in WhatsApp group chats.

Online questionnaires

Focus Areas:

→ How they currently book spaces.

→ Problems they faced.

→ Expectations in functionalities.

→ Preferences between the given funtionalities.

Participants:

→ Number: 26 students

→ Ages 18-30

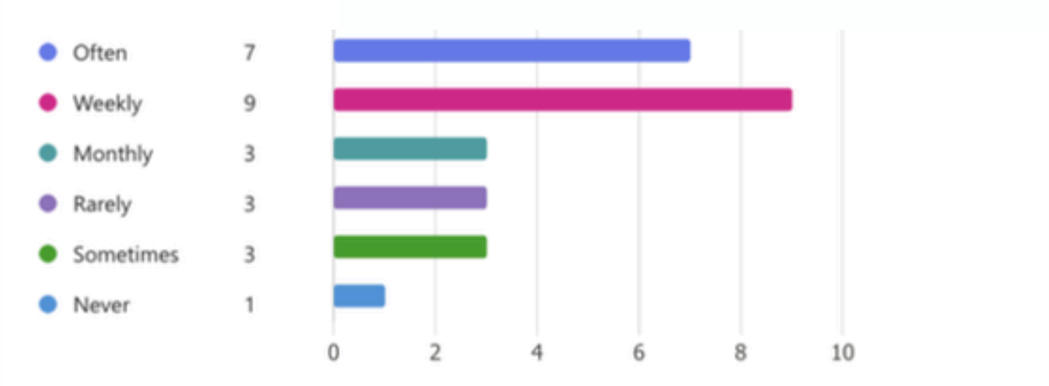
→ Criterias:

→ Live in Lumis.

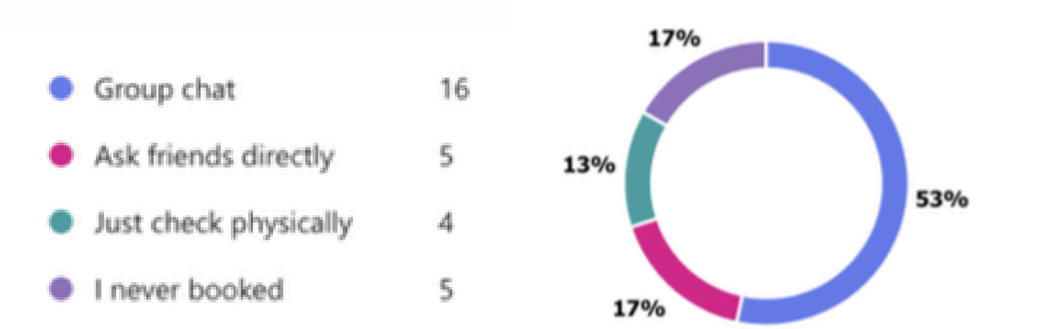
→ Use common spaces.

Questionaire findings

How often do you share spaces?

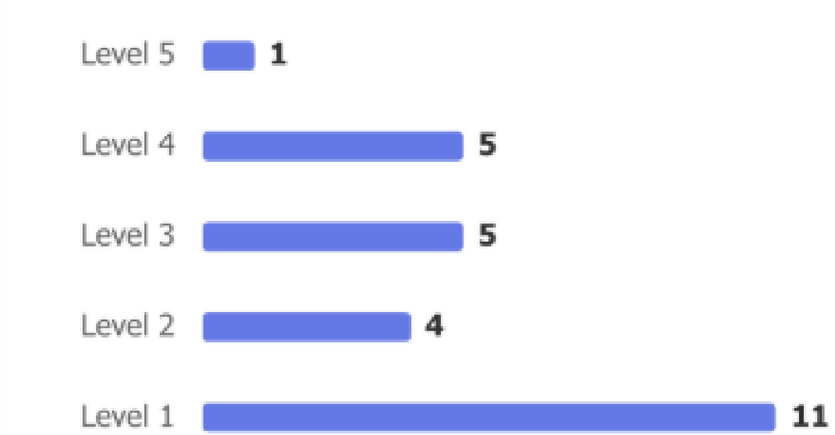


How do you currently book shared spaces?

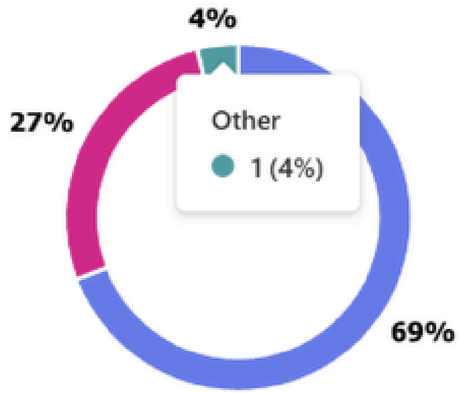


Questionaire findings

How satisfied are you with the current booking system?



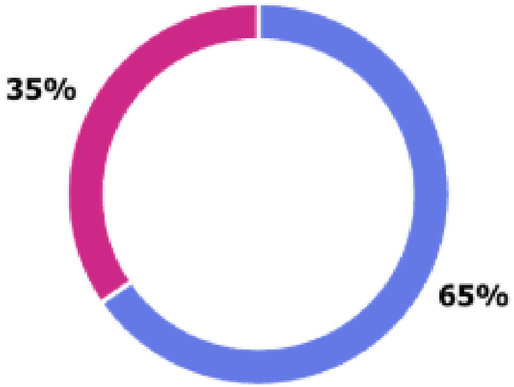
Does it influence your bookings decisions?



Questionaire findings

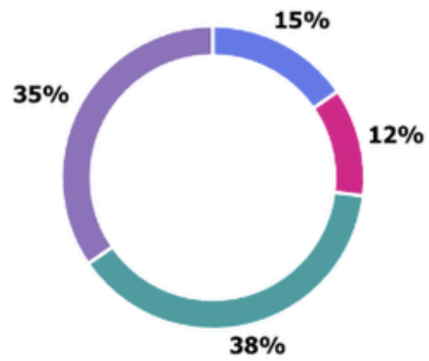
Have u experienced double-booking?

Yes	17
No	9
Other	0



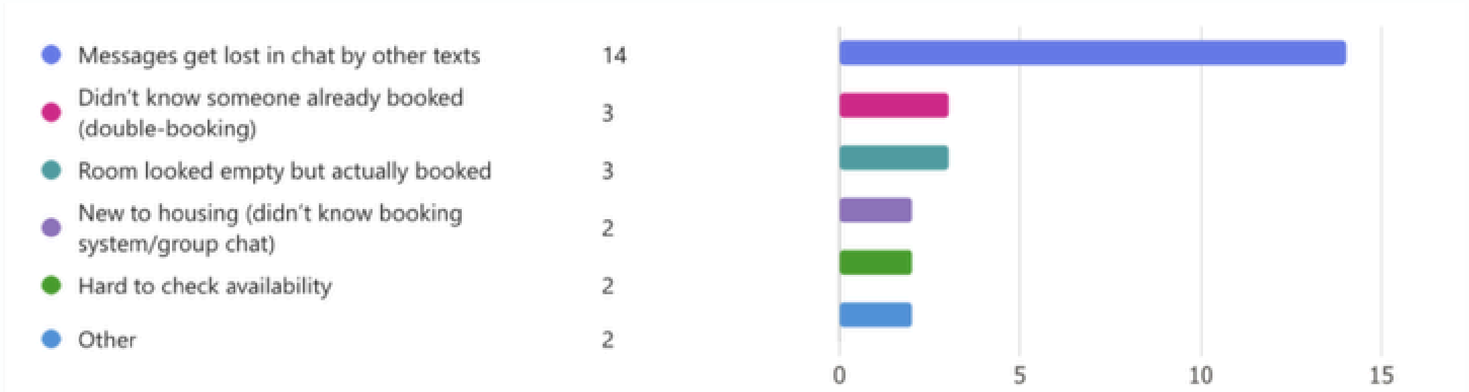
If yes, how often?

Often	4
Sometimes	3
Occasionally	10
Once/twice	9

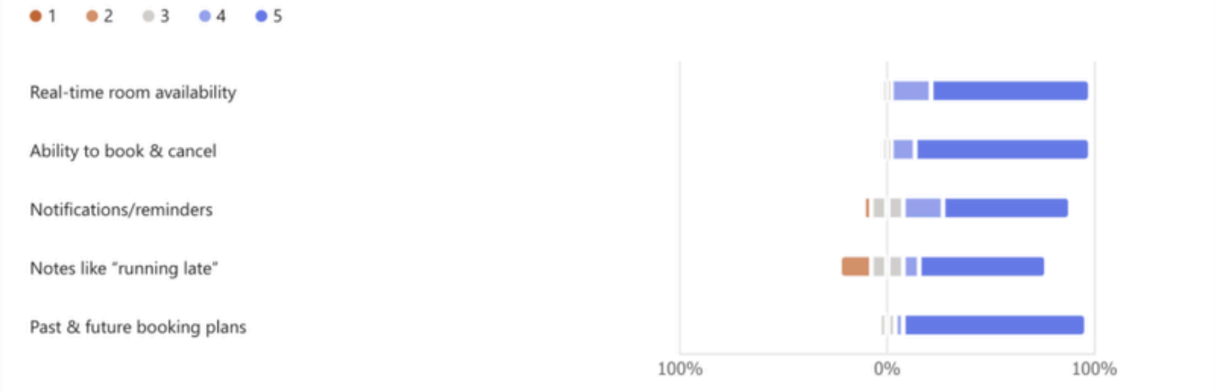


Questionaire findings

Which problem have you experience?



How useful the following features would be?



Questionaire findings

Desired Features:

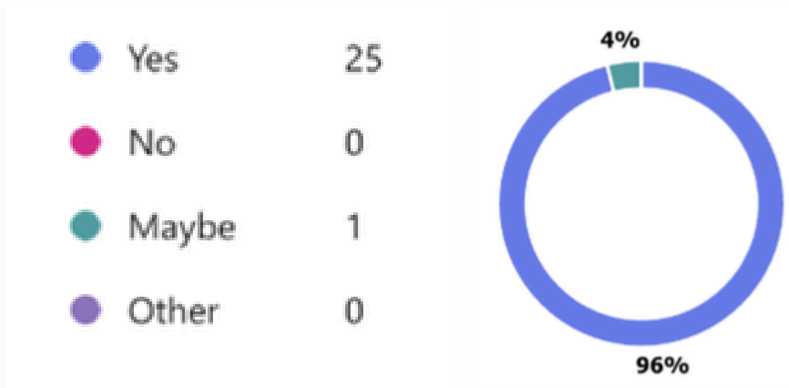
→ A clear booking calendar.

→ Notifications and reminders.

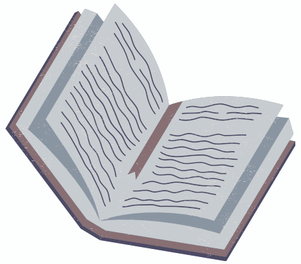
→ Ability to cancel and modify bookings.

→ Visibility of who booked a space and when.

Would you like this system to be an app?



Funtional Requirements

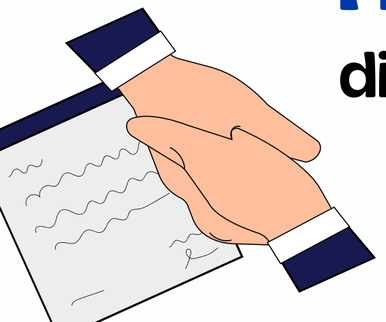


1.User authentication and profile management

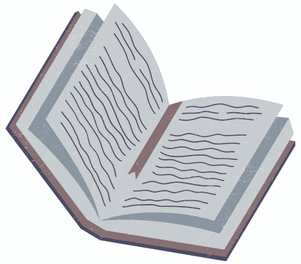
- FR1.1 The system shall allow users to register for an account using their email address, username, and password.
- **FR1.2** The system shall allow users to view and edit their basic profile information.

2.Rooms & Status Viewing

- **FR2.1** The system shall display a list of all bookable shared spaces.
- **FR2.2** The system shall clearly indicate to the user the current availability of each room.
- **FR2.3** The system shall provide a centralized calendar view that displays all scheduled bookings across all rooms.

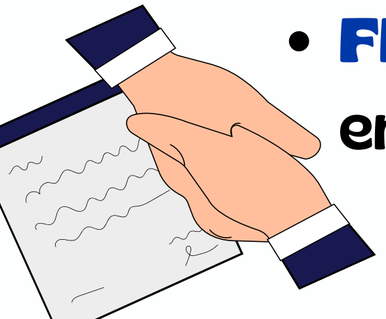


Funtional Requirements

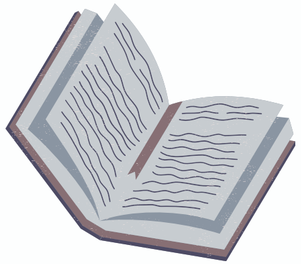


3.Booking Management

- **FR3.1:** The system shall allow an authenticated user to book an available room.
- FR3.2: The system shall prevent double-booking.
- **FR3.3:** The system shall allow a user to view a list of their own upcoming bookings.
- **FR3.4:** The system shall allow a user to cancel their own upcoming booking.
- **FR3.5:** The system shall allow a user who has made a booking to add a short, optional note to their booking ("Running 15 mins late").
- **FR5.1:** All users can selecting a room, date, start time and optionally end time during the booking system.

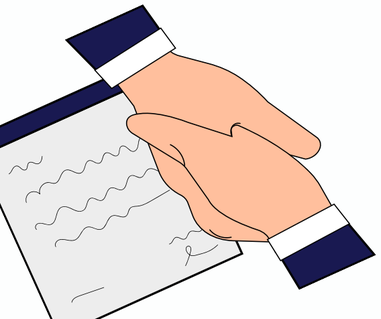


Funtional Requirements

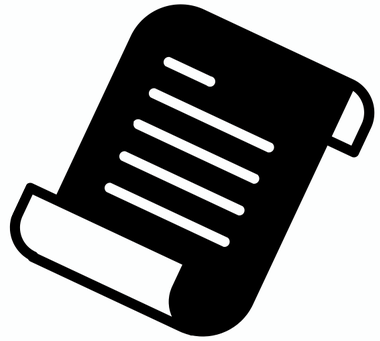


4.Conflict Prevention

- FR4.1: The system shall automatically check out a user after a predefined maximum duration for immediate use or booking with no end time (10 hours).
- FR4.3: The system shall provide a way for users to report a problem which alerts the admin.



Non-Funtional Requirements



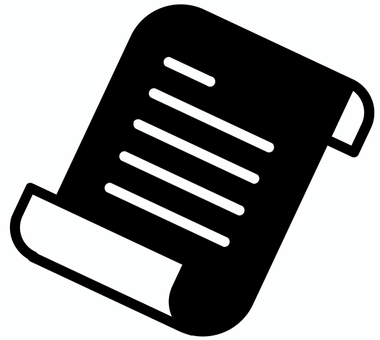
1.Performance

- NFR1.1: The app shall load the main dashboard and room status in under 2 seconds.
- NFR1.2: The booking confirmation process shall be completed in under 3 seconds.

2.Reliability & Availability

- NFR2.1: The system shall be available 99% of the time, 24/7, excluding planned maintenance.
- NFR2.2: The system shall have robust error handling to prevent crashes during the booking flow.

Non-Funtional Requirements



3.Security

- NFR3.1: All user data and login credentials shall be stored and transmitted securely using encryption.
- NFR3.2: Users shall only be able to view other users' basic profile info and booking notes, not private contact details.

4.Compatibility

- NFR4.1: The application shall be compatible with the latest two versions of iOS and Android operating systems.

Usability Requirements

5.Usability

- NFR5.1: The system shall be easy to learn, with a new user able to make their first booking within 2 minutes of opening the app.
- **NFR5.2:** The interface shall be consistent across all screens.
- **NFR5.3:** The app shall use clear, simple language and icons that is easy to understand with less cognitive effeort.
- **NFR5.4:** A user shall be able to complete a booking from the home screen in 6 taps or fewer.
- NFR5.5: The system shall provide clear, immediate feedback for every user action.

Niki

AGE	20
GENDER	Male
WORK	University Student
LOCATION	Leipzig, Germany
SHARE SPACE USE	Weekly
PRIMARY DEVICE	Smartphone

> "If I could see all bookings in one place, I'd never have to deal with double-bookings again!"

Bio

He frequently uses shared spaces but has so far relied on group chats to check availability and secure a spot. Frustrated by double-bookings, unclear availability and buried messages, Niki wants a more clear and simple system, so he can secure a spot for his plans in an easier and stress-free way.

Personality

Social · Extrovert · Easy-Going · Practical

Core needs

- A clear and visible booking system.
- Receive reminders and easily track all upcoming bookings.
- Automatic time-stamped bookings.

Frustrations

- Messages get buried in group chats.
- Double-bookings are frequent.
- No reliable proof/timestamp to show when he made his booking.

Scenario Niki: Double-booking

Niki and his friends want to play videogames, so they decided to book the gaming room for that night. Niki scrolls trough the group chat and doesn't find any message mentioning booking the room, so he assumes that's free and send the message:" Gaming room booked tonight".

That night, Niki and his group arrive at the gaming room, only to find that another group is already using it. Both insist that they booked the room, however, neither of them can prove it because the messages were on different times and they are now buried under other unrelated messages in the group. Because of the lack of clear booking system, Niki feels very frustrated and the plans for the night fall apart, making Niki wish there was an app that shows confirmed/current bookings so double-booking never happens.

HTA Niki: Double booking

Plan 0: Check room availability using current system (group chat)
- 0.1 Open group chat on the smartphone.
- 0.2 Scroll through previous messages to find if the room we want is available.
- 0.3 Send a message booking the room.

Plan 1: Arrive at the room
- 1.1 Walk to gaming room at planned time.
- 1.2 Check if the room is free.
- 1.3 If the room is occupied, find a solution
  - 1.3.1 Negotiate with the group already there.
  - 1.3.2 Leave and talk with your friends and find a different time.

Plan 2: Reschedule (if negotiation fails)
- 2.1 Check for others available time slots.
- 2.2 Agree on new time with friends.
- 2.3 Book the room for the group chat.

Alice

AGE	20
GENDER	Female
WORK	University Student
LOCATION	Leipzig, Germany
SHARE SPACE USE	Weekly
PRIMARY DEVICE	Smartphone

> "I just want a system that organizes room bookings without scrolling through endless chat messages!"

Bio

She regularly books shared spaces but has so far relied on group chats or physically checking rooms to secure a spot. Frustrated by lost messages and unclear availability Alice is seeking a more efficient, simple and organized digital solution to manage her time.

Personality

Introvert | Thinker | Anxious | Organized

Core needs

- A system to quickly find and book available spaces.
- Receive reminders and easily track all upcoming bookings.
- A centralized system instead of digging through chats.

Frustrations

- Messages get buried in group chats.
- Scroll forever to confirm if someone booked the room.
- Rooms sometimes look empty but are actually booked

Scenario Alice: Lost messages in chat

Alice is planning a movie night with her friends, so early that morning, she sends a text in the group chat asking if the room is available for that evening and closes her phone to go to class.

A few hours later, Alice scrolls through the messages for several minutes trying to find out if someone answered her question but couldn't locate any reply because the group chat was full of unrelated messages about other topics and stickers. This leaves her unsure if the room is free or if another person has already booked.

Feeling frustrated and with no time to find another place to do her movie night, she decides to physically check the availability of the room when the time comes. When she arrives, she finds the room is free and the whole situation could have been avoided if there was a reliable place where she can check the availability of the room without depending on the chaotic group chats.

All this situation makes Alice wish there was a simple and organized way to check the availability of the room without the need to rely on the chaotic group chats.

HTA Alice: Lost messages in chat

Plan 0: Check room availability using current system (group chat)

0.1 Open group chat on the smartphone.

0.2 Scroll through previous messages to find if the room we want is available.

0.3 Send message asking if the room is free.

0.4 Waiting for a reply.

Plan1: Find reply and decide what to do next

1.1 Scroll through the chat to find a relevant reply.

1.2 Decide whether to go and check it physically.

Plan 2: Verify physically the room availability (if needed)

2.1 Walk to the cinema room.

2.2 Check if it's occupied.

2.3 If occupied, leave and try to find another solution.

Santiago

AGE	28
GENDER	Male
WORK	Programmer
LOCATION	Leipzig, Germany
SHARE SPACE USE	Sometimes
PRIMARY DEVICE	Laptop

Bio

He does not use the shared rooms as often but he is tired of relying on a group chat to book a room when he need it. Frustrated by unclear messages and a disorganized way too secure his spot, Santiago wants a system that allows people to make mistakes and reminds him when his booking it is about to start, so he can have an easy time when he uses the shared spaces.

Personality

Introvert | Analytical | Routine-oriented | Organized

Core needs

- An human error-proof booking system.
- Avoiding any unnecessary social interactions.
- Wants to receive reminders before his booking starts.

> “I want an organized way to book a room without worrying about any small mistakes I might make during the process.”

Frustrations

- Wasting time checking if a room is booked or not.
- Conflicting messages in the group chat.
- The absence of a structured booking schedule.

Scenario Santiago: No room & misspellings

After he was promoted, Santiago decided to celebrate alone, playing some of his favorite games. He bought a bag full of snacks and drinks and went to the gaming room.
When he reached, the room was already full of people. So, without another alternative, he tried the cinema room. Fortunately, it was empty, so he arranged his snacks and as he was about to set up the TV, someone opened the door and as soon as they saw Santiago, they told him to leave as they booked it a long time ago on the group chat. Confused, Santiago asked them what they meant. The person showed him the message in the group chat and explained that's how you book a room there.
Later, while he was enjoying his snacks in his room, Santiago entered the group chat about his accommodation and tried to book a room. He sent a short message with the date and time. However, Santiago rechecked his message and saw he forgot to mention which room he wanted to book.
After all of this, Santiago just wants a simple way to book a room without stressing about mistakes or having to argue with other tenants again.

HTA Santiago: No room & misspellings

Plan 0: Check physically the room availability

0.1 Go to the room.

0.2 Check if it's occupied.

0.3 If there is someone inside, go to another room.

Plan 1: Try to find another room

1.1 Go to another room and check if it is free.

1.2 If it is, go inside and use it.

1.3 Leave the room if someone booked it in advance.

Plan 2: Book a room in advance through the current system (if needed)

2.1 Send a message booking a room.

2.2 Wait for a reply to see if someone has already booked it.

2.3 Correct any misspellings in the previous message.

Maevis

AGE	27
GENDER	Female
WORK	Technician
LOCATION	Leipzig, Germany
SHARE SPACE USE	Often
PRIMARY DEVICE	Smartphone

> “I just want something that works fast. I don't want to waste my time scrolling through hundreds of messages.”

Bio

She uses the shared rooms often but has to rely on a group chat to book a room and check if it is free or not. Frustrated by wasting time on scrolling through dozens of messages and having to deal with arguments when double bookings occur, Maevis wants a quick and intuitive system, so she can book a room easily and trouble-free.

Personality

Energetic · Observant · Impatient · Straightforward

Core needs

- A quick and intuitive booking system.
- A clear view of the rooms' availability.
- Being able to cancel the booking if the plan changed.

Frustrations

- The current way to book rooms is too messy.
- Sometimes thinks booking a room is a waste if time.
- Arguing who booked a room first when a double booking occurs.

Scenario Maevis: Endless search

Maevis is planning a movie night with her workmates after a long week. She decided to book the cinema room as they are quite a big group, so she decided to check its availability. She goes to the cinema room and finds it full of people watching a football game. She asked them when they would finish, but they told her to check the group chat. Frustrated, she quickly closes the door and goes to the group chat. While scrolling, she spotted a few booking messages; she had no idea how to book a room as she had never used it before, so she tried to find for how long those people booked the cinema room.

A few minutes later, tired of this process, she decided to send a message asking if anyone had booked the cinema room already for the time she wanted.

The time for her workmates to arrive is getting closer but still no answer, as her message quickly got lost in the flood of messages. So, she decides to text her friends to go to a restaurant instead.

This situation makes Maevis wish there was a better system to check if a room is booked instead of wasting your time scrolling endlessly hoping you might be lucky enough to book the room without a problem.

HTA Maevis: Endless search

Plan 0: Check physically the room availability

0.1 Go to the room.

0.2 Check if it's occupied.

0.3 If there is someone inside, ask them when they will be done.

Plan 1: Find the booking message and decide the next steps

1.1 Open the group chat on the smartphone.

1.2 Scroll through the chat to find the booking message.

1.3 Decide to send a message instead.

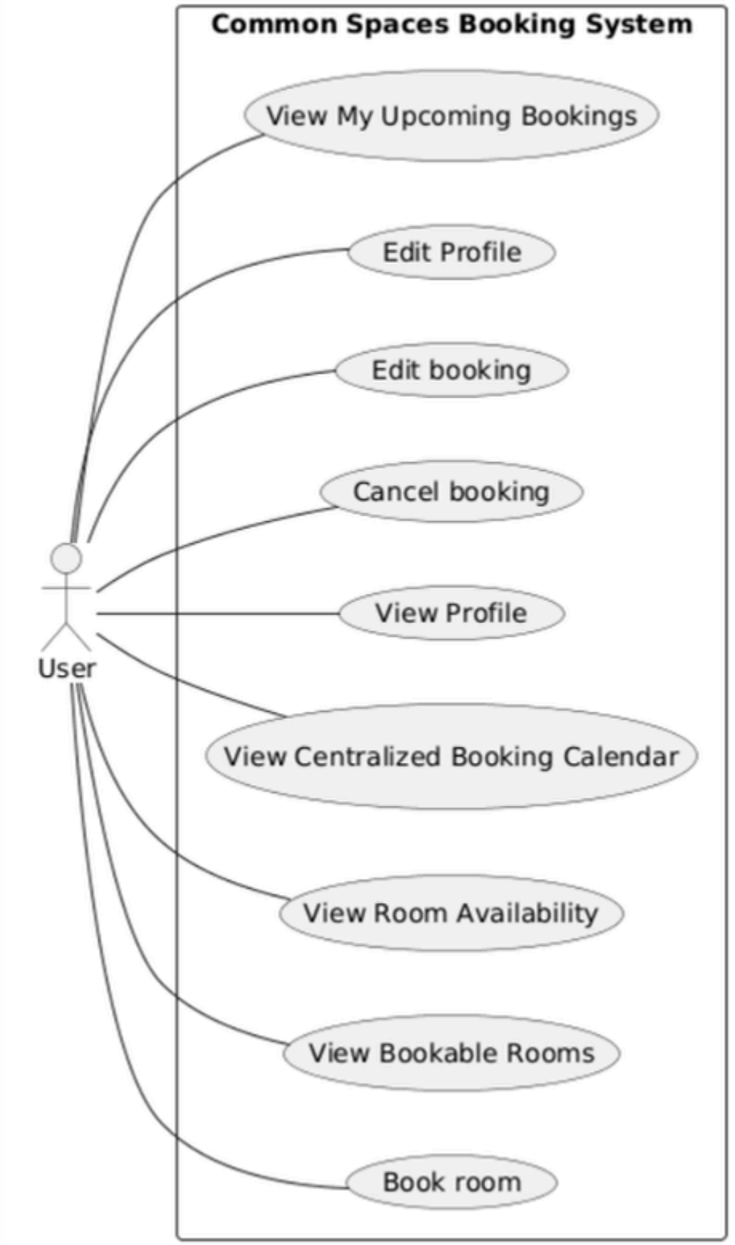
Plan 2: Change the initial plan (if needed)

2.1 Send a message asking if the room is free.

2.2 Wait for a reply.

2.3 If there is no response, change the plan and do something else instead.

Use case diagram



Justification of the requirements

We believed that we could only develop the right requirements for our app if we went directly to the potential users and got to know how they envision the booking tool. For that we needed to know what their interactions with booking spaces had been up to that point, what caused frustrations more often and how we could provide a solution. With this in mind, we choose two methods: Interviews and questionnaires.

Justification of the requirements

💡 Interviews:

From the interviews we got to hear about experiences where something went wrong involving a shared space in an Accomodation. We caught wind of many features which would lead to the necessary requirements of our system.

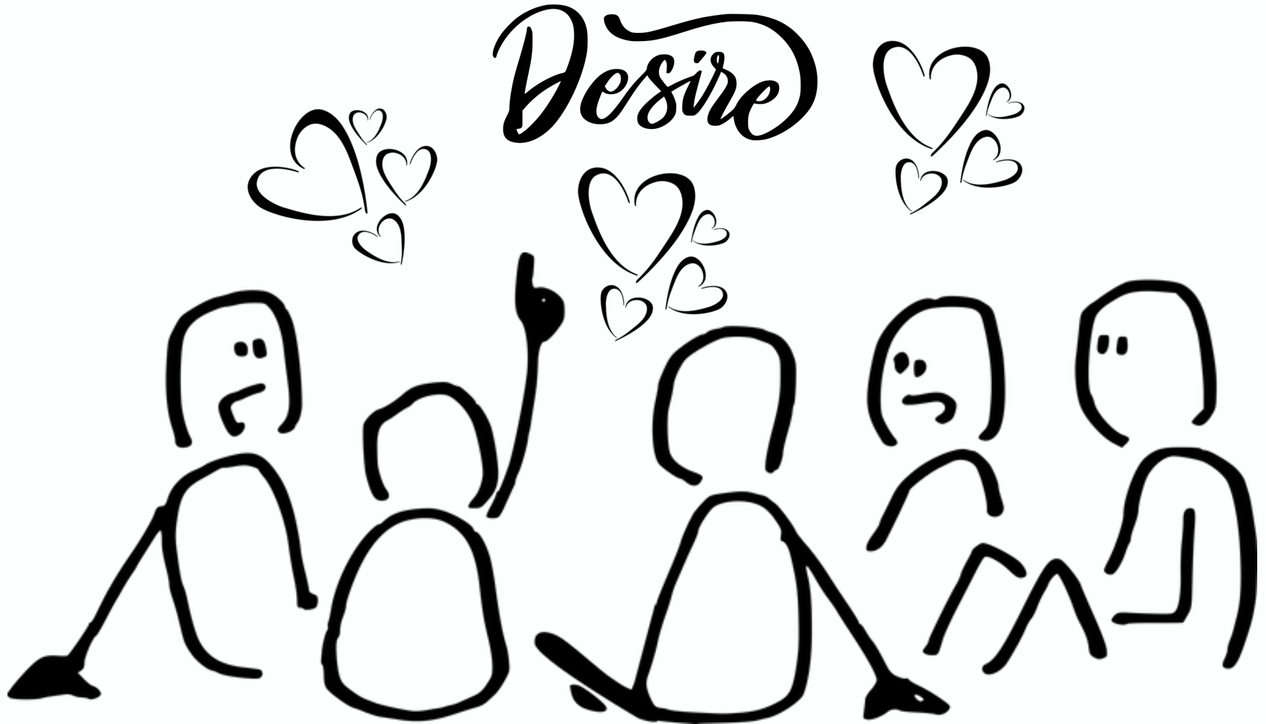
💡 Questionnaires:

The questionnaires gave us meaningful insight into what the users expected from us, especially regarding the usability and reliability our tool would have.

Justification of the requirements

In the end we disregarded some features we initially thought of as useful and necessary. Many users also hoped for the simplicity of the system and privacy of their data, which helped us shape our functional and non-requirements.

Interviews and questionnaires made us create the system based on real users and their desires, not based on assumptions.



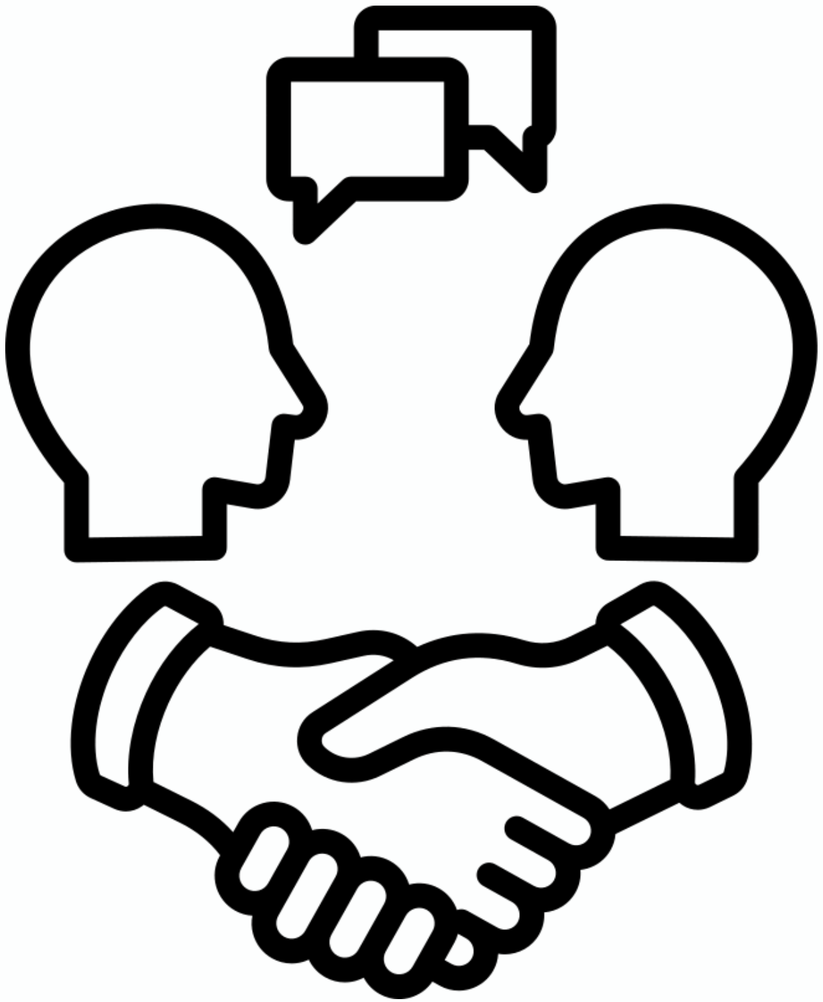
Justification of the requirements

References

Bryman, A. (2016) Social Research Methods. 5th edn. Oxford: Oxford University Press.

Creswell, J.W. (2014) Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 4th edn. Thousand Oaks, CA: SAGE Publications.

Consent Form



Consent Form for Participation and Data Use

Project Title: BookMySpace

Conducted by:

Contact:

Introduction: Thank you for agreeing to help with our Human Computer Interaction (HCI) project. The purpose of the project is to design a system for booking common areas in Lumis. The goal of this questionnaire/interview is to better understand how students currently book common spaces, which are their struggles, and how a digital system could improve the situation.

Cost of participation: The only cost of participating is your time.

Confidentiality: We will treat your identity with professional standards of confidentiality. The information obtained with be analyzed statistically and general findings will likely be used in the report, but individual participants' identities will not be known. Your data will only be used for this project and will not be shared with third parties.

Withdrawal: Participation is voluntary. You are free to withdraw your consent at any time without giving a reason. If you decide to withdraw, your data will be deleted immediately.

Consent Statement: I have read the above statement, understand the nature of my participation in the project, and I freely agree to participate. I recognize my right to withdraw my consent and discontinue participation in the project without fear of any prejudice and recognize that my activities and data generated by my participation will remain strictly confidential.

Name:

Date:

Signature:

One copy of this form will be given to the participant and the original kept with the team responsible for the project.