Problem Definition

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1.Problem Introduction

As the world of education becomes more open and flexible, student accommodations welcome young people all over the World. In the city of Leipzig, Germany (where this project is based), nearly 15 residential complexes currently host students (Studentenwerk Leipzig, 2025). Student accommodations can provide not only housing, but community, often achieved with the help of events and shared spaces. Such shared places as small cinemas, gyms, study rooms, event halls and more are loved by students, who can find new connections, seek advice, or have fun together as they adapt to a new city, country or even continent.

In spite of the fact that shared spaces are an integral part of socialisation and networking for students, they may become a source of hardship for both housing management and tenants. Management of shared spaces and definition of the responsibility limits appear to be complicated, with a few hundred people and their guests having unsupervised and unlimited access to the common areas (Appendix 10; Appendix12). Lack of organisation led to regular problems with crossbooking, lost track of keys, mess and confusion among the tenants (Appendix B; Appendix C1).

In Lumis Leipzig, one of the newest student residences in Leipzig, tenants took matters into their own hands in an attempt to organise and set rules for the booking of shared spaces. Residents of Lumis initiate booking through the WhatsApp group by writing down the time and date when they plan to occupy the space (Appendix A4; Appendix C). However, such practice has shown accuracy problems, as well as difficulty with tracking the current booking situation of each room in a consistent flow of messages (Appendix C4).

Another side that struggles because of the disorganisation of common spaces is housing management. Some leasing agreements clearly state the personal responsibility of the tenants for the disarray and damages caused by them in the shared spaces of student accommodation. But searching and holding people accountable became a serious quest for the management, as they have no information or any record of who used and was in charge of a specific space.

2.Conceptualization Through Storyboard

The problem has been conceptualized through a series of drawn scenarios in the form of stories, which also form the basis for a concept video, to visually articulate the issues faced by users. Three main scenarios with different scenes will be shown as a storyboard to describe issues related to the current booking system at LUMIS for public use facilities:

- **Scenario 1 (Booking Conflicts):** Describes the inconvenience of using a group chat when booking a public use room. Text messages may get lost or ignored due to the large amount of different conversations and participants in the group chat. Moreover, there is no way to ensure the room hasn't been already booked by another party.
- **Scenario 2 (Access and time-limit issues):** Describes poor organisation as personas are not able to find correct information or access to certain rooms. Keys may get lost or not returned on time, therefore, may inconvenience other individuals in need of specific public spaces but are inaccessible. Moreover, there is no limit of booking time which can create conflict with other residents who would like to use the rooms as well.
- **Scenario 3 (Lack of accountability):** Describes the lack of accountability and mess that different personas have left behind after using public use rooms. Due to not having proper scheduling there is no possible way to know who has not cleaned up after using public facilities, hence other personas are unable to use the room. This can lead to building property getting damaged, lost and destroyed.
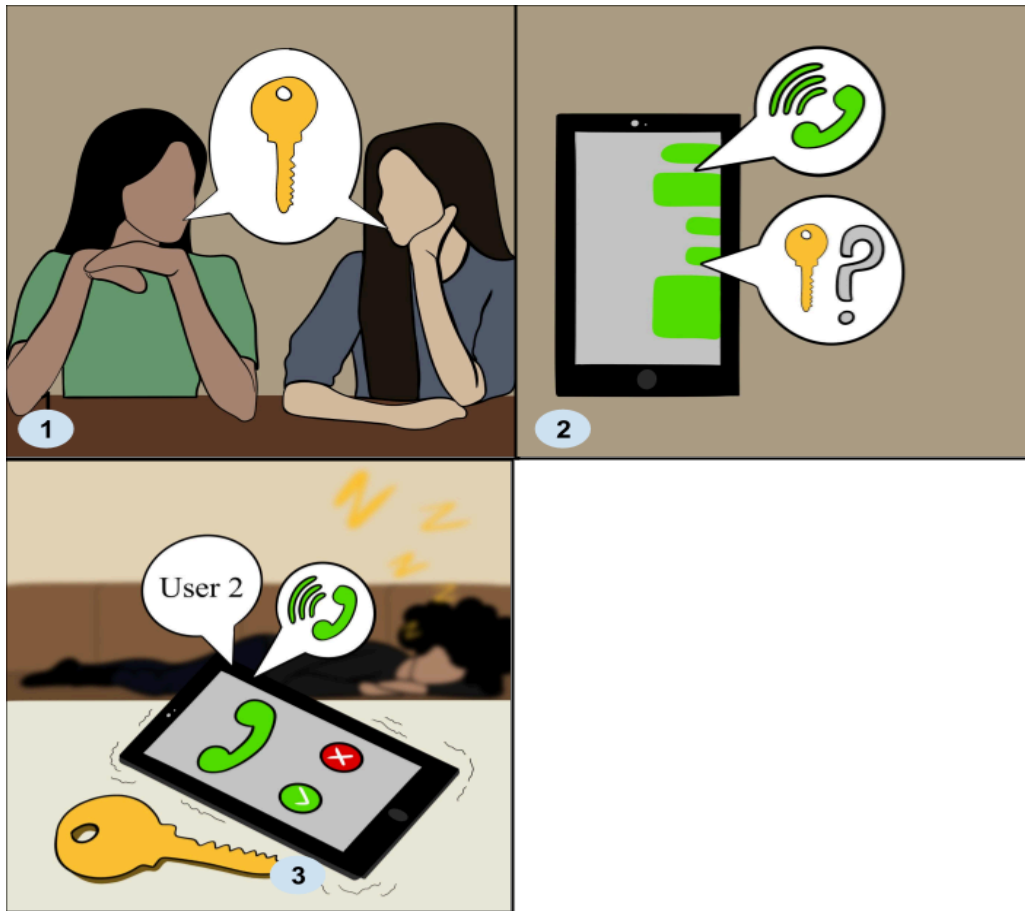
For the conclusion scene, the personas are discussing their feelings and frustrations towards the current booking system. During the conversation the personas "brainstorm" ideas of how to solve this current issue and address the need.

2.1.Scenario 1

1. **Scene 1:** Persona 1 (male) and Persona 2 (female) are discussing if they have booked the public use room via the current booking system: texting on the residence group chat.

2. **Scene 2:** Persona 1 and Persona 2 enter the booked room only to find it occupied by other Persona's. After a discussion between the 2 groups, both groups booked by texting on the group chat at different periods of time which caused a double booking to occur.
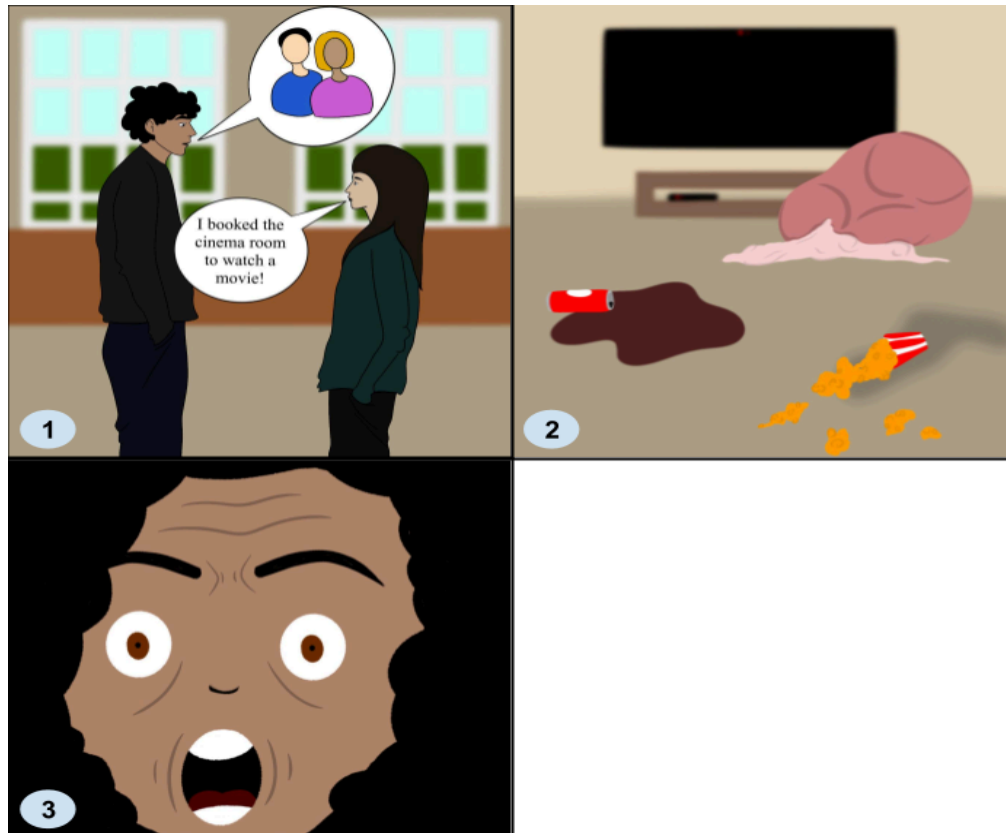
2.2.Scenario 2

1. **Scene 1:** Persona 2 would like to use the public study room but she needs the key. Persona 2 asks the Manager (left female) for access to the study room and the key, however Persona 1 has already booked the room and has therefore acquired the key. Manager informs Persona 2 to contact Persona 1 about the key.

2. **Scene 2:** Persona 2 attempts to contact Persona 1 for the location and access to the key and schedule however there is no response. Persona 2 is left defeated and unknowing of the future bookings of the study room.

3. **Scene 3:** Whilst Persona 2 is attempting to contact Persona 1 (in Scene 2) to question the location of the key and scheduling of the study room. Persona 1 is unavailable due to sleeping in the study room with the key next to the phone. This makes the public room completely inaccessible to other Personas.
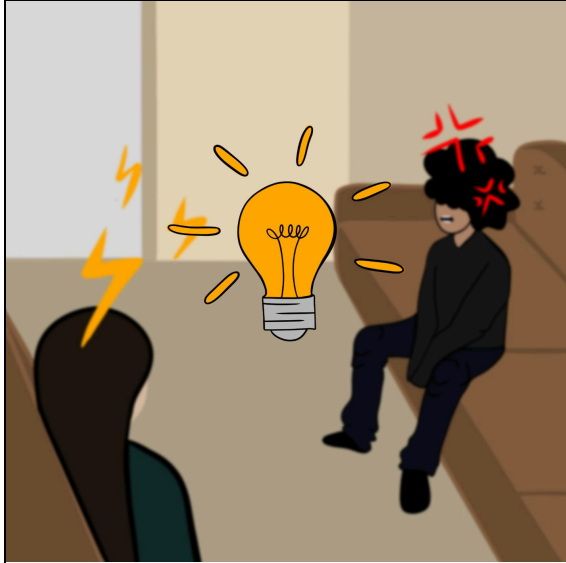
2.3.Scenario 3

1. **Scene 1:** Persona 1 wants to invite some friends over to watch a movie. Persona 2 booked the cinema room to watch the movie with Persona 1 and others.

2. **Scene 2:** The group enters the cinema room and were left shocked to see the mess of the room left by the previous users. It is unknown who left this mess as there is no proper booking system hence no accountability can be taken.

3. **Scene 3:** The camera flickers between Scene 2 and Scene 3 showing the mess and the expression of Persona 1 showing "shock" and "disappointment" from the state the cinema room was left for later use by other personas.

2.4. Conclusion Scenario

1. **Conclusion Scene:** Persona 1 and Persona 2 are having a heated discussion on the current booking system and express a need for change to solve this current issue.

3. Conceptualization through Video

In order to better display to a broad audience the problems that have been explored, using the scenarios from the storyboards, a short 3 minute video was filmed which represents the problems in question. This includes a conclusion scene as well. The video aims to better introduce people who have never experienced or known about student accommodations to this concept.

The video can be found here: [video](#)

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4. Stakeholders and Persona Preparation

Understanding who is being affected by the problem and the potential solutions is essential to developing a way to solve these issues. The primary and secondary stakeholders in this system will be:

- **Primary Stakeholders (Users)**: The Tenants of Lumis Leipzig, who require a fair, visible, and simple system to book shared spaces. Secondary Stakeholders.
- **(Staff/Management)**: The Residence Manager and Customer Service Advisor (Staff), who need a mechanism for oversight, accountability, and automated management of room access and facility issues.

5. Conclusion

This initial phase of the project, Activity 1, has successfully defined and conceptualized the main problem: the inefficient and disorganized management of shared public spaces within student accommodation, specifically at Lumis Leipzig. The reliance on informal booking methods, like group chats, leads to predictable issues such as double-bookings, conflicts over access and keys, and a complete lack of accountability for room condition and damages. The introduction set the scope and real-world impact on both tenants and housing management. The subsequent Conceptualization through Storyboard and the supplementary Conceptualization through Video visually and in a story-like manner showed these frustrations, highlighting the need for a solution. Finally, the Stakeholders and Persona Preparation section identified the primary users (Tenants) and secondary users (Staff/Management), whose particular needs for fairness, visibility, access control, and accountability have be taken care of in the next design phase. The base is now laid to move forward into a more research based need-finding process for generating a solution.