

ROBO-GUIDE

overview

- **problem**
- **research**
- **design**
- **evaluation**
- **interview video**

the main task

"Your university wants to improve the interaction between students and university staff, as well as help them easily navigate the campus, access information and lesson schedules.

Develop a robot guide that can help students and visitors navigate around the university, answer their questions and provide access to information resources.

Consider the needs of both students and university staff, including how to interact with the robot, the types of questions they can ask, and the information they need."

problem | framing

SDU strives to create the most comfortable and accessible environment for students, staff and guests of the university. Why is this important?

Navigating a large campus can be a daunting task, especially for first-year students, new employees, and university guests. Finding the right classrooms, offices, libraries and other facilities takes time and can cause stress in different situations. Although the university provides websites and information stands, these resources are not always convenient and cannot answer all the questions that arise.

Thus, the university wants to improve navigation and access to information using a more modern and interactive approach. The solution is to develop a robot guide.

The question is, how can the robot guide be effectively integrated into the university environment?

problem | framing

The problem boils down to two main issues:

How to make a robot guide attractive and convenient for students and visitors? It is necessary to take into account the different needs of users, develop an intuitive interface and ensure effective interaction with the robot.

How can I provide the robot with up-to-date and complete information about the campus and university resources? The robot must be integrated with the university's information systems and provide reliable data in real time.

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the main methods of interaction with the robot

Voice interaction:

- Talk naturally to the robot, asking for directions or information.
- **Pros:** Easy and intuitive, hands-free.
- **Cons:** May struggle in noisy environments or with unclear speech.

Text interaction:

- Type your request using an on-screen keyboard.
- **Pros:** Precise and reliable, good for complex queries.
- **Cons:** Requires typing skills, may be slower than speaking.

UI interaction:

- Interact with visual elements on the robot's screen, like menus and maps.
- **Pros:** Clear and easy to navigate, ideal for visual information.
- **Cons:** May not be suitable for all users, especially those with visual impairments.

the main methods of interaction with the robot

Robot Location and Navigation:

- Primarily stationed on the first floor for easy access.
- Equipped to navigate between floors using elevators and ramps for stairways. This allows the robot to guide users to any location within the campus buildings.

Addressing Assumptions:

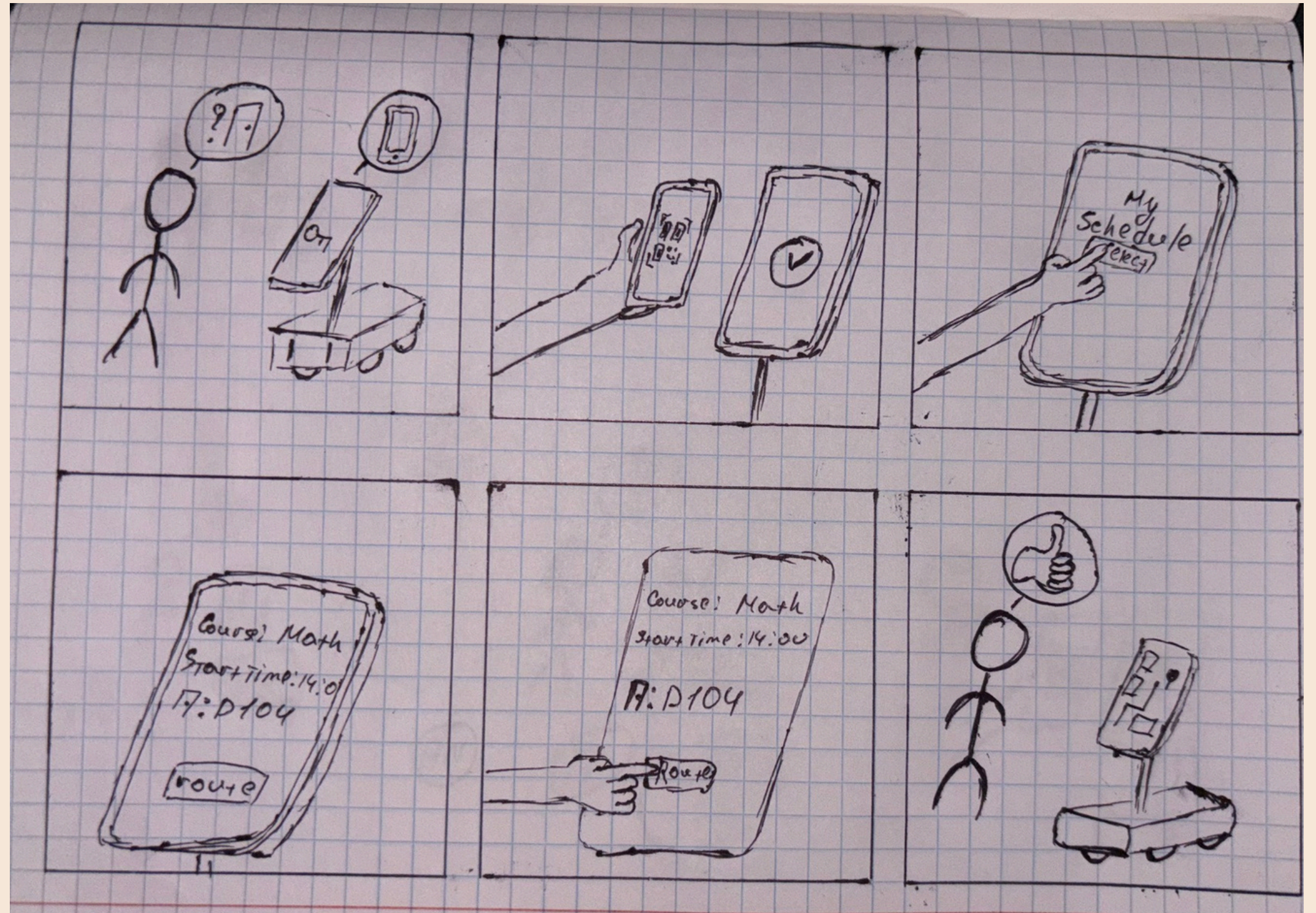
- **Schedule Access:** The robot accesses schedules by connecting to the university's database through a secure API. User authentication through the mobile app ensures privacy and personalized data retrieval.

User Interaction:

- **Autonomous Interaction:** Users can interact directly with the robot using voice commands, text input, or through a graphical user interface on the robot's screen. This caters to different preferences and accessibility needs.
- **Mobile App Integration:** For personalized information like accessing personal schedules, users can connect to the robot via a mobile app. This allows for secure authentication and personalized data retrieval.

problem | scenarios

- 1.the professor asks for help finding an audience, and the robot asks to log in
- 2.the professor successfully logged in through the mobile application by scanning the QR code
- 3.He clicks on the "my schedule" button
- 4.A lesson is displayed in front of it, the beginning of which is in the next few hours and the "route" button below
- 5.He pressed a button and the robot showed him the route to the classroom
- 6.The professor thanked the robot for its help



Brainstorming

We were tasked with implementing a robot delivery system at SDU. Many ideas were considered, but one that stood out was mentioned by the teacher during a lecture, especially the challenges he faced. Reflecting on our own experiences, we realized that everyone has faced these same issues at some point. New students will continue to encounter them as well, making it a consistently relevant issue year after year.

Why does the university need this?

The university needs this solution if they want to streamline responses to students' basic questions and avoid the chaos or confusion that often arises during the first few days of school..

Why a robot guide?

Right now, robots represent innovation and the future. A robot could provide round-the-clock assistance at the university. It would generate interest among students and others as a new type of helper. Plus, with access to vast data, it could handle most questions quickly and efficiently.

Competitive Analysis

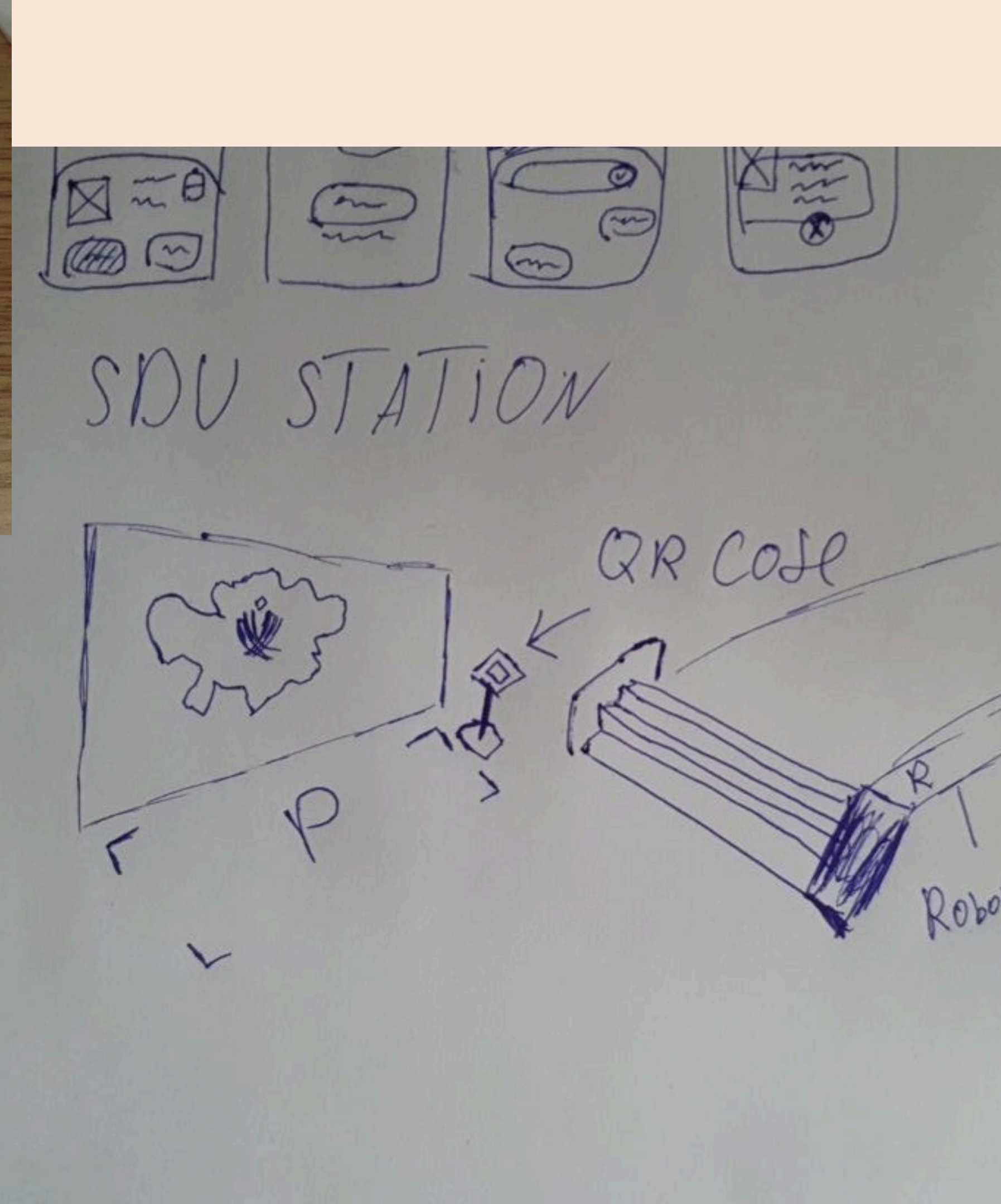
- **Orientation Day**
- **At the beginning of the academic year, the university holds an Orientation Day for first-year students. This event familiarizes them with the campus, showing where classrooms are located, where teachers can be found, where to go with questions, and where the information desk is. It mainly focuses on answering questions about locations and logistics.**
- **Social Media**
- **Any events or activities at SDU are announced on the university's official social media platforms. In advance, students are informed about upcoming events happening on campus.**
- **Advisors (for students only)**
- **Advisors primarily help students with academic issues and assist them in communicating with other students.**
- **Senior Students**
- **If you know a senior student, they can usually answer most of your questions based on their experience.**

The questions were directed exclusively to students, focusing on their challenges with navigation and academics.

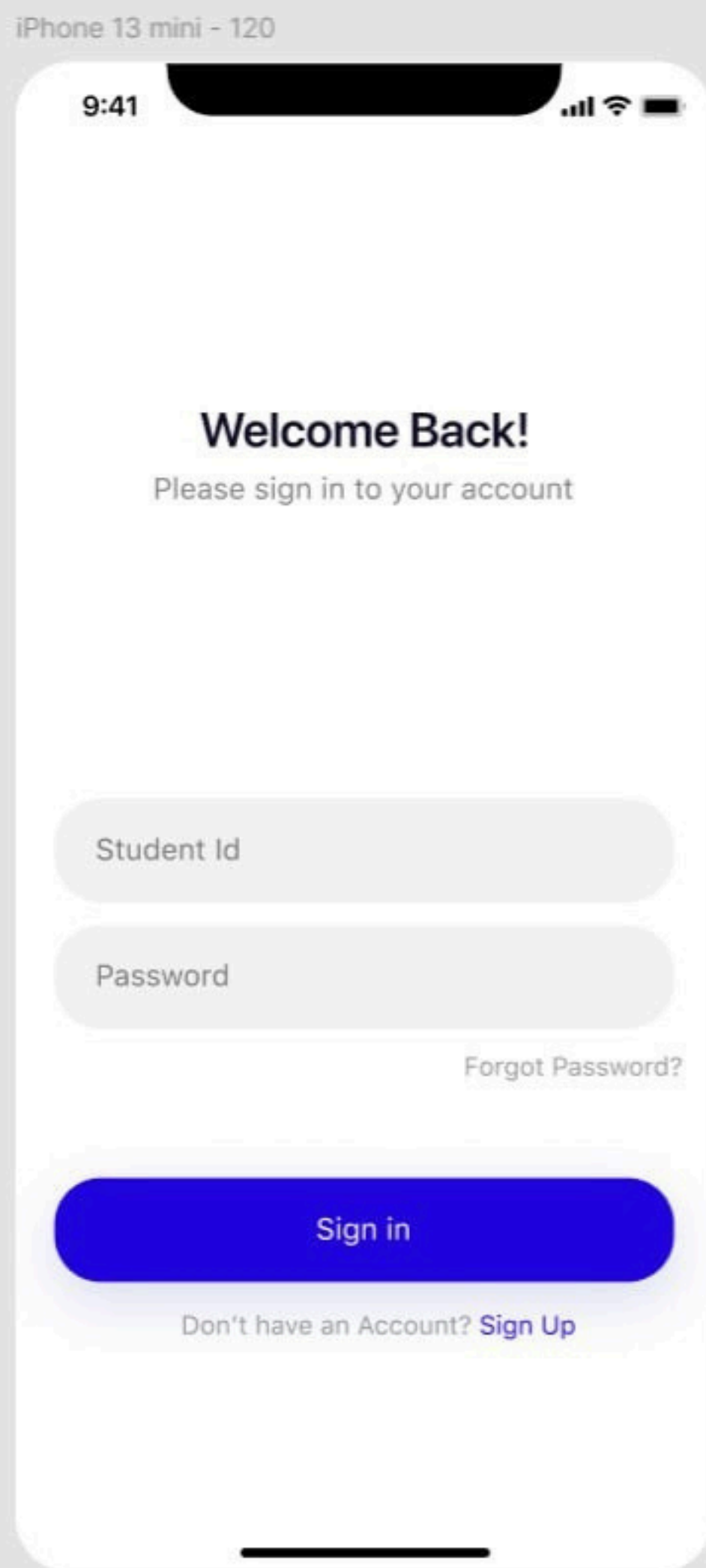
- **Challenges**
- **Difficulty finding classrooms, halls, and gyms.**
- **Social skills and making connections.**
- **Academic-related questions.**
- **Issues with the website (problems with registration).**
- **Questions regarding English courses and tuition fees.**



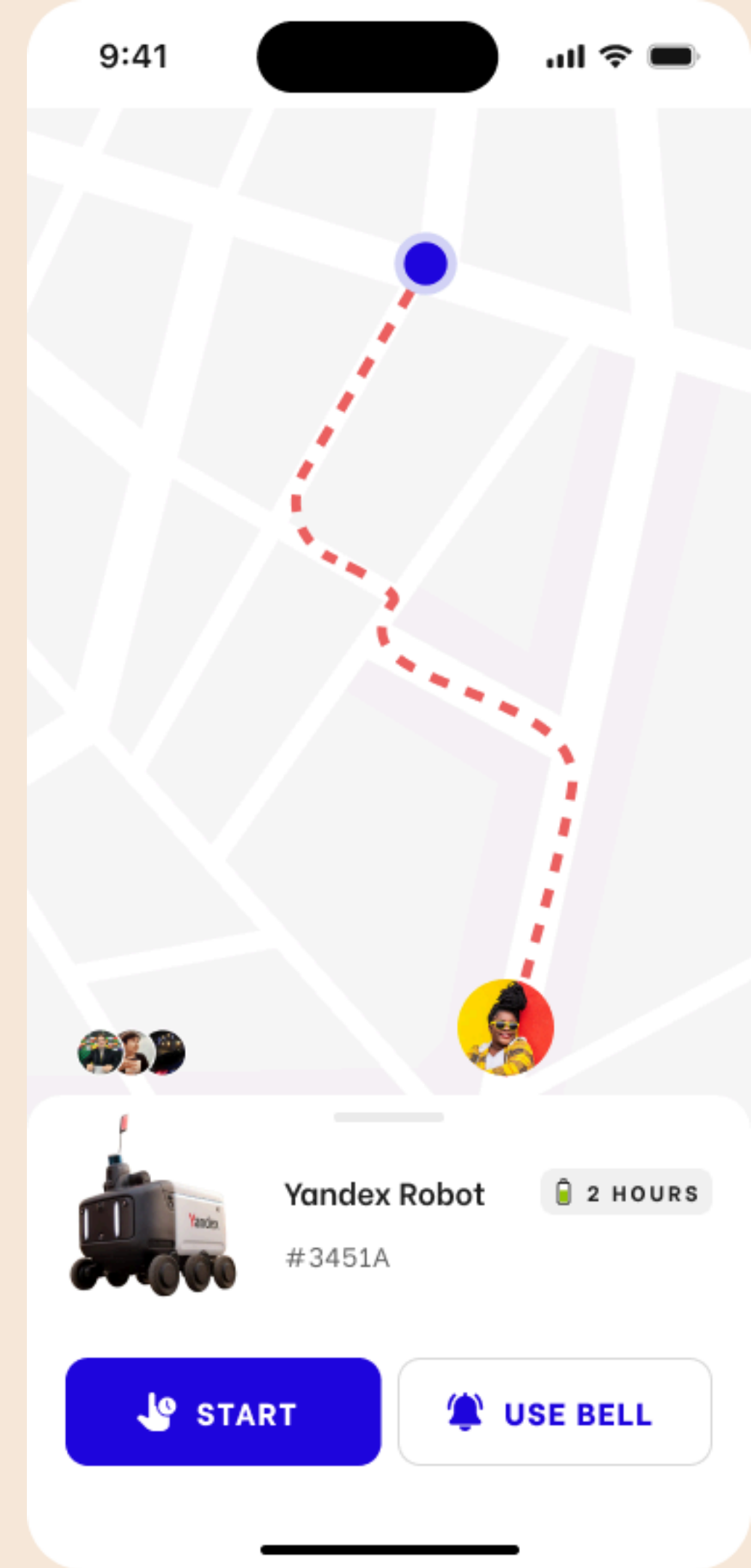
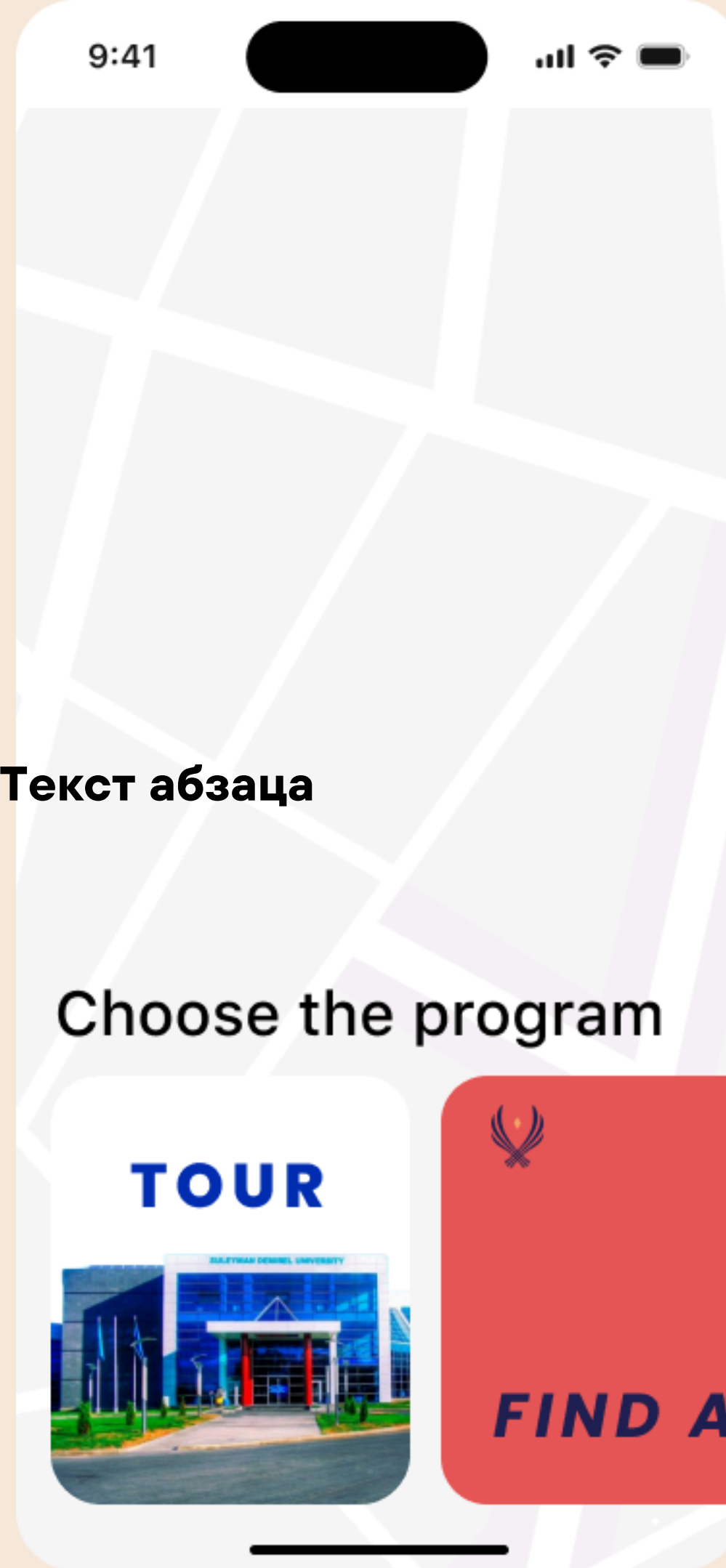
I started to think how to do a minimal app, such as an MVP, i don't love when designers design a super app which can do anything.



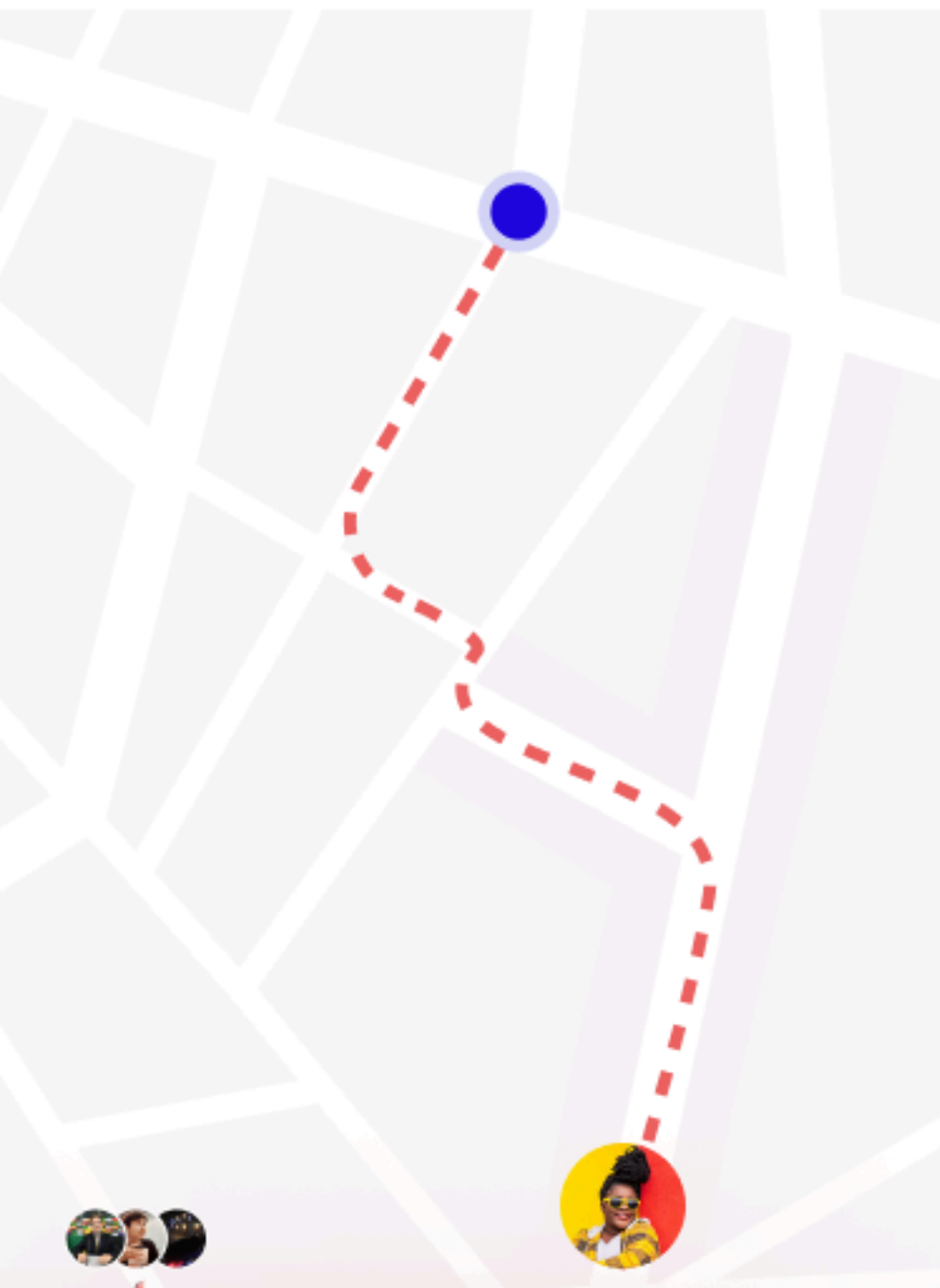
design



Текст абзаца



9:41



Yandex Robot

#3451A

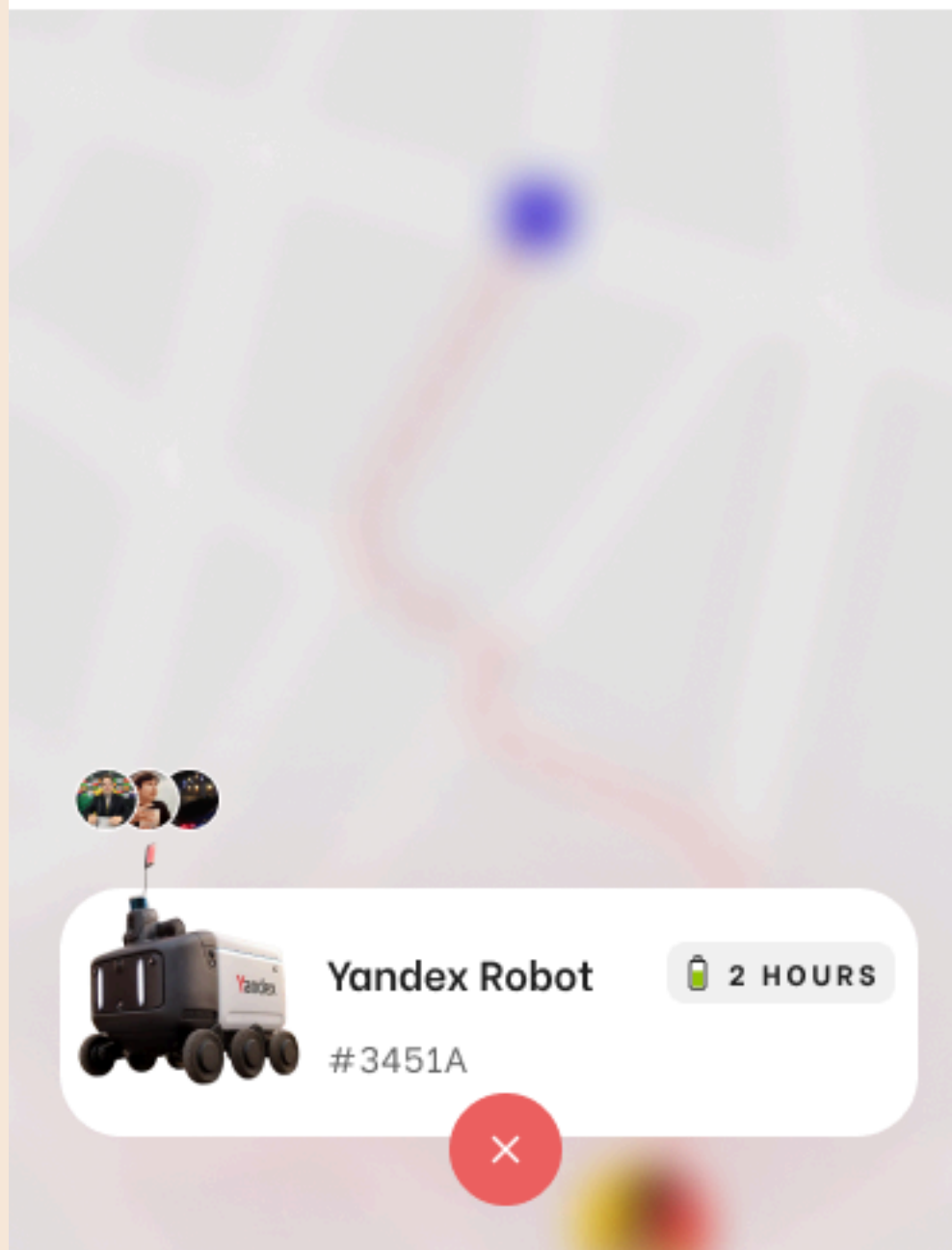
2 HOURS



Ask a robot



9:41



Yandex Robot

#3451A

2 HOURS



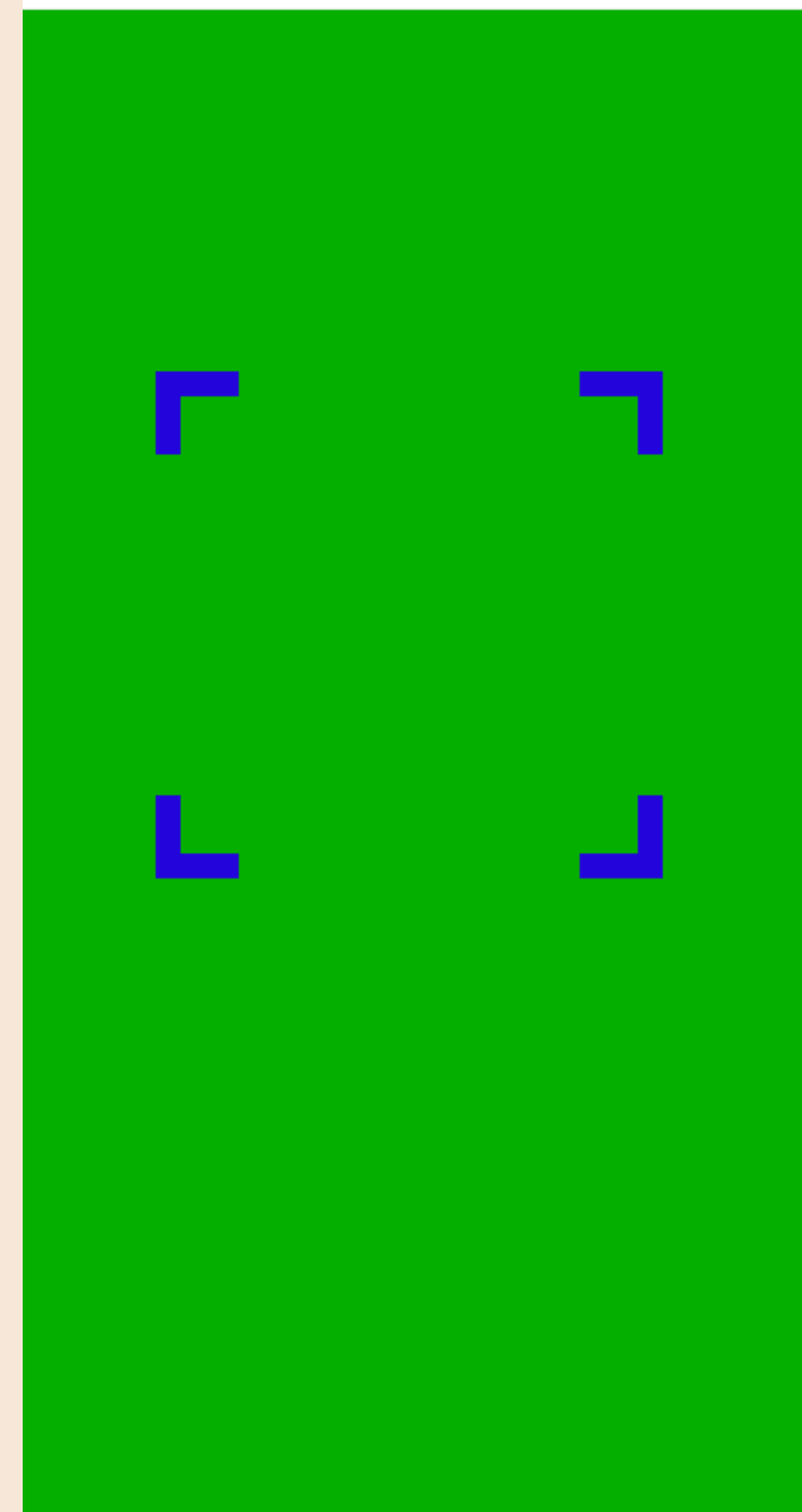
Ask a robot



Where is F105????

Hey, are you new here??
Just Follow me.

9:41



evaluation

- This version reflects feedback on the conceptual design rather than a physical prototype.
- **Objective:** Evaluate the usability and effectiveness of the Guide Robot concept designed for a university setting.
- **Method:** Conduct usability testing with students and faculty to gather feedback on the proposed features and interactions.

evaluation

User Testing Sessions

- Participants:
- 3 students
- 2 faculty members
- Tasks:
- Describe how they would navigate to a location on campus using the robot.
- Discuss the type of information they would want the robot to provide about campus events.
- Identify resources (e.g., library, labs) they would like the robot to assist with

evaluation

Key Findings

- **Usability:**

- 90% found the concept of the robot easy to understand and use.
- Most participants appreciated the idea of intuitive voice commands and a touchscreen interface.

- **Navigation:**

- Participants felt confident that the robot could effectively guide them to destinations.
- Some concerns were raised about the robot's ability to navigate complex building layouts.

evaluation

Positive Feedback

- Users expressed excitement about interacting with the robot concept.
- They found the proposed information retrieval features about campus events to be useful.
- Participants with disabilities appreciated the idea of having a robot to assist with navigation.

Areas for improvement

- **Response Time:** Participants suggested that the robot should have quick responses to commands.
- **Navigation Accuracy:** Recommendations included enhancing the robot's ability to handle complex routes and obstacles.
- **Battery Life:** Users expressed the need for the robot to operate for extended periods without requiring frequent recharging

evaluation

Conclusion

- The Guide Robot concept shows promising potential to improve campus navigation.
- Ongoing evaluation and updates will be essential to refine the design and meet user needs effectively.

interview video

https://www.youtube.com/watch?v=AiBC8dUHWyM&ab_channel=SaidHamzaYilmaz

finish

thank you