Robots in SDU University

INF 228 - UX/UI design

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Team Members and Responsibilities

Assemay Rassilkhan - Research Analyst

- Responsibility:
  - Prepare specific and insightful questions for students, stakeholders, staff and provide an audio recording.
  - Conduct interviews and gather data from students, staff and stakeholders.
  - Summarize key points, like suggestions, common issues and any concerns they raise.

Aubakirova Dana - UI designer

- Responsibilities:
  - Create a scenarios.

Yerzat Orazzhan - UX designer

- Responsibilities:
  - Creating the initial design of the robot, sketching it.
  - Developing the user flow that includes all the robot's functions.

Sarbalaeva Diana - UX designer

- Responsibilities:
  - Create a scenarios.
  - Draw a step-by-step storyboard.

Goal of the project: to design and implement various robots that make university life easier and more efficient by improving transportation, assistance, cleanliness, and overall user experience for students and staff.

Our initial idea was to create unique robots for different areas of the university, each designed for a specific purpose and equipped with distinct functions. We wanted to explore how robots could assist in various fields, such as education, security, and healthcare, and how they could enhance efficiency in these areas. However, to save time and focus on developing one robot, we chose to design a medical robot, RoboMed, that would provide essential healthcare services on campus.

Many people on campus lack medical knowledge, and during critical moments, such as accidents or sudden health issues, it's important to have immediate access to medical assistance. This is where RoboMed comes in.

RoboMed is designed to be a versatile medical assistant, capable of performing various functions. About this later...

These robots are not solely based on the interviews we conducted; I also gathered feedback from my groupmates and friends. Their insights helped us refine our ideas and consider what functions would truly benefit the university community.

Description of “RoboMed”

RoboMed is an innovative medical assistance robot designed to provide critical support at SDU University.

The robot can be useful in situations where the patient is unable to speak, and the people around don’t know how to provide first aid, often panicking, especially if it's a close person. Moreover, there are no medical students at our university, and few people know how to administer first aid properly.

Sketches

User Flow

Starting Point: The user either calls RoboMed via an app or a physical call button.

Interaction: The robot navigates to the user's location and engages with the user through its voice assistant.

Medical Assistance: RoboMed measures health parameters, performs diagnostic tests, and provides assistance.

Emergency Alert: The robot sends an alert to medical staff or calls emergency services if required.

End: The robot either helps the user or redirects them to professional medical care if needed.

Scenarios and Storyboards

1.Dilnaz has a fever, and her friend advises her to go to RoboMed.

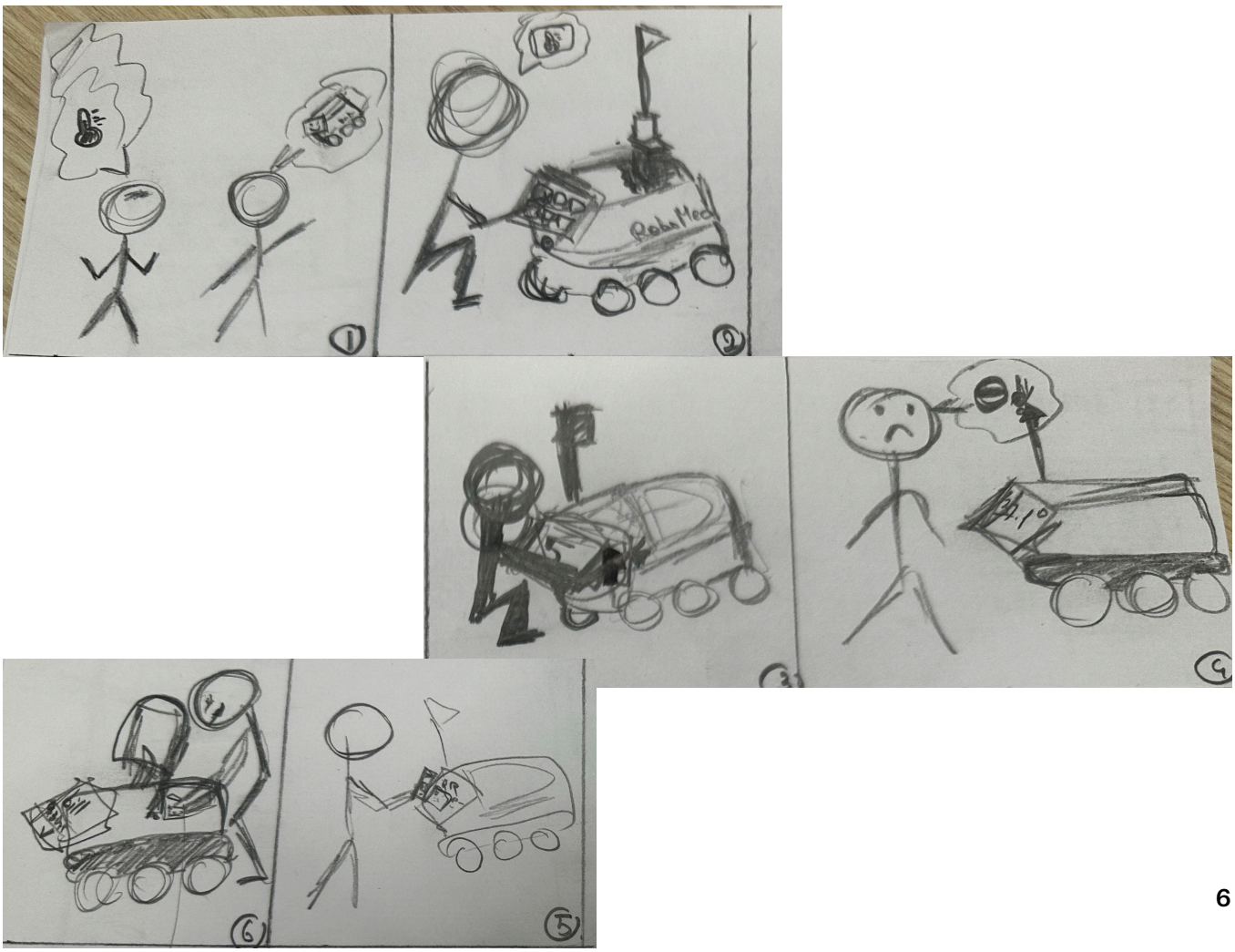
2.She approaches the robot and familiarizes herself with its functions, selecting the temperature option.

3.The built-in thermometer measures her temperature through her wrist, and a timer appears on the screen.

4.Her temperature is displayed on the screen, and she thinks about buying a tablet.

5.She pays for the medication using a QR code.

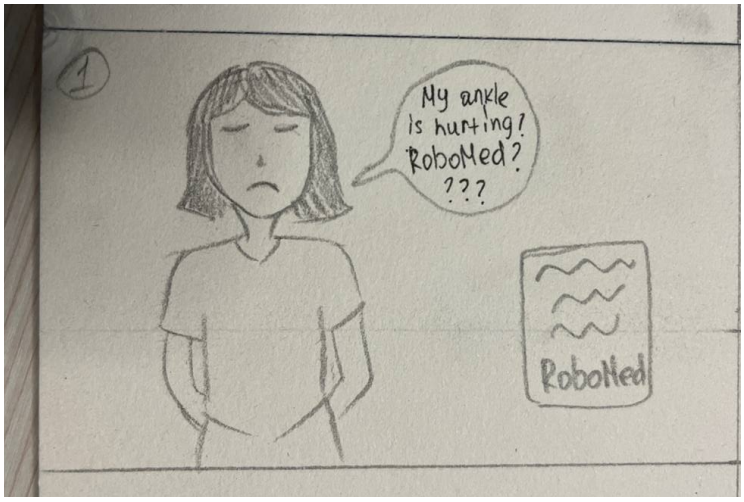
6.She retrieves the medication from the robot.



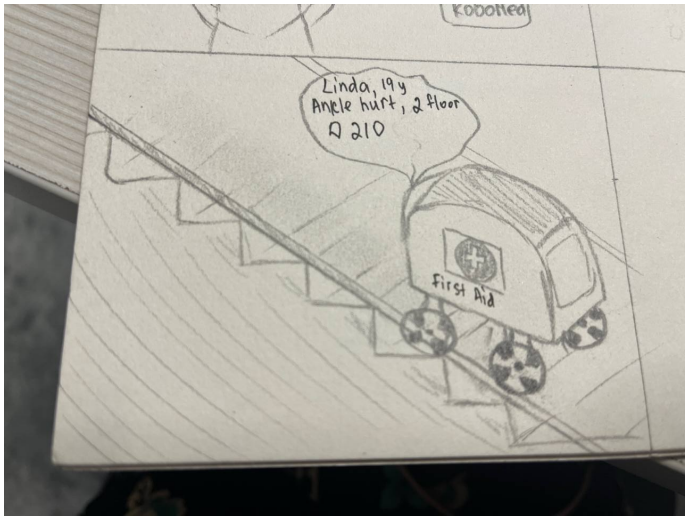
Scenarios and Storyboards

1. She was sitting and fell, injuring her leg.

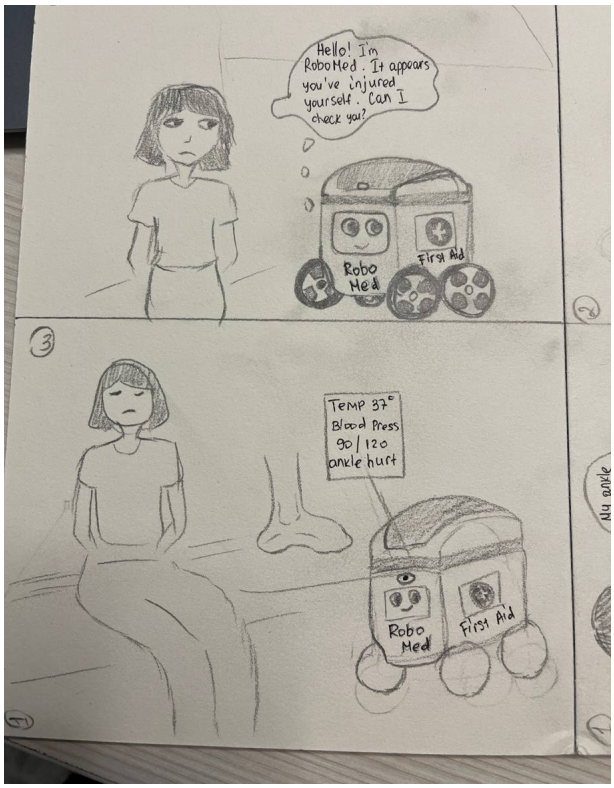
2. With no one around to help, she calls RoboMed through the app in D210.



3. The robot receives the signal and navigates to her location.



4. Using the voice assistant, it asks questions.



5. The robot performs an X-ray, checks her temperature and blood pressure.

6. It sends a signal to the “Жануя medical center”, indicating that the situation is serious.

Questions & Answers

How can we call the robot?

- There will be a robot app where all the procedures performed on the patient will be available. To request the robot, you can either choose buttons (explained below) or specify the exact room number.
- On each floor of the faculty, there will be buttons to call the robot. These buttons will be placed lower so that if someone has fallen, it will be easy for them to reach. We also plan to install them on desks and many in the H block, as it is less populated.

How the robot will navigate the university?

- It will have a flashing light (red/blue) that activates when it is going to assist someone. If there is an urgent situation, such as a person between life and death, it can activate a siren. The sound will not be loud, allowing people to give it passage like they would for an ambulance.
- The maximum speed will be 15 km/h, but in normal circumstances, it will move at about 5 km/h.
- It will have a voice assistant, display subtitles and the exactly map of SDU.

Interview

I planned to interview three different people: a kazakh student, an international student, and a staff member. However, I was unable to interview the staff member. At the moment, we have:

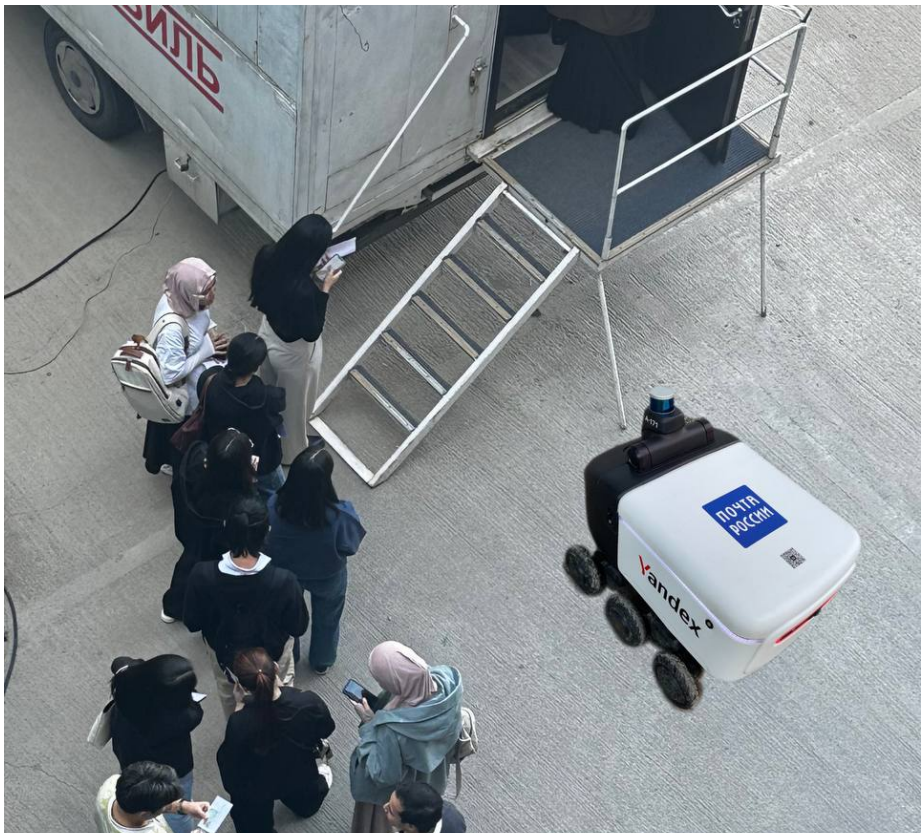
1. Dilnaz, a third-year computer science student.
2. Akmeir and Aibibi, first-year computer science students.

I asked the same questions. The questions mainly focused on the campus, language barriers, student services, the library, and market. They were general questions, I think.

Key insights that I get:

- As expected, all interviewees shared a common problem: finding a place in the library. They mentioned difficulty locating specific books and study areas.
- The two transfer students reported facing numerous problems, starting from communication issues to making reservations.
- Since they are here for the first time, they mentioned getting lost on campus several times, similar to my experience during my first year.
- They expressed a strong preference for live, human interaction, and I believe that robots should be designed to enhance and support human abilities, rather than replace them.

How the robot can move around the university:



Conclusion

RoboMed is a medical assistance robot that can improve the overall healthcare experience at SDU University. Its primary goal is to bridge the gap in medical support, providing students and staff with immediate medical assistance in emergency situations. The insights gathered from interviews and feedback have helped shape RoboMed's functionalities, ensuring it aligns with user needs and addresses common campus challenges.

In the next steps, we will focus on usability testing to gather more detailed feedback from potential users, further refining RoboMed's design and functionalities.