

IBot Network Communication Service

Team Members:

- **Altynbek Adilkhan (220107089)** – Responsible for creating scenarios, developing storyboards, and organizing interviews.
- **Tumabayev Ali (220107023)** – Worked on sketches, development based on interviews, and documentation.
- **Toktassynov Akzhol (220107120)** – Contributed to sketches, development based on interviews, and documentation.

Description of the Idea:

The “IBot Network Communication Service” at SDU is designed to enhance the convenience of students by strengthening communication networks. With this system, students can be online through the public network of SDU without any worries or concerns about the network not catching. Once launched, IBot will autonomously scan the areas of SDU and will register by network level in different blocks, floors, classrooms and areas of the university.

The most popular places at the selected time, be it a dorm room, a study area or any place on campus, it will be directed there and will remain there until the priority changes or until there are no people left in that area. This eliminates the need for students to search for an internet network and create queues at markets, institutions and during events, saving valuable time and providing easy access to materials and the Internet.

Equipped with intelligent navigation, IBot can safely and efficiently navigate the campus, avoiding obstacles and providing fast internet connection around itself. This service not only increases convenience, but also facilitates closer interaction with the library, market, food outlets and, most importantly, the SDU portal, allowing students to focus on their studies.

Scenarios

Scenario 1: Internet Issues During an Online Lecture

Context:

A student is in the H-block classroom for an online history lecture. She notices that the internet keeps dropping out, making it difficult for her to participate.

Interaction:

-- The IBot starts scanning the classroom, driving between the rows. The screen displays information about the number of students and the signal strength.

-- While scanning, the IBot notices that there are 30 students in the classroom and the Wi-Fi signal strength is 2 out of 5.

Result:

-- The IBot stops in the center of the classroom, automatically activating the signal booster.

-- The student and her classmates notice that the internet has become more stable. They can listen to the lecture and ask questions without worrying about disconnections.

Storyboard for Scenario 1:

In the classroom: The student sits at her desk, anxiously looking at her laptop screen, where the connection to the conference is frequently disconnected.

IBot scans the classroom: IBot drives past students scanning the area and the network, its screen displays the signal strength and number of people present.

Detecting a problem: IBot detects that the signal is weaker than usual and automatically decides to stop.

Setting up the booster: IBot stops and its lights flash while it boosts the signal.

Improving the connection: Students smile when the screen displays a message that the connection has been restored and actively participate in the lecture.

Scenario 2: Network congestion during an event

Context:

A student is at an open house in the central part of campus. He tries to connect to the internet, but the network is congested and it is difficult to access the information he needs.

Interaction:

- IBot begins scanning the event area, driving between groups of students. Information about the number of people and the signal strength is displayed on the screen.
- While scanning, IBot notices that there are about 100 students and visitors in the area, and the Wi-Fi signal strength is 1 out of 5.

Result:

- IBot stops in the middle of the crowd and automatically activates the signal booster.
- Visitors and students notice that the internet is more stable.
- They can now access online resources, share their experiences on social media, and interact with the event organizers.

Storyboard for scenario 2:

At the event: A student stands in the crowd, looking at the screen of his phone, which is unable to connect to the internet.

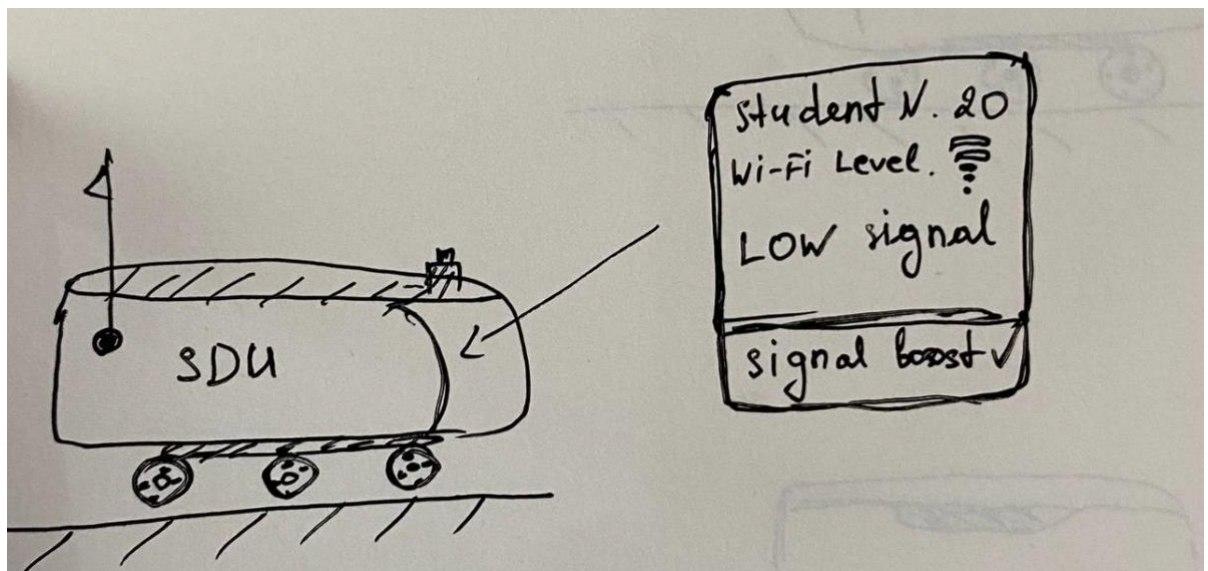
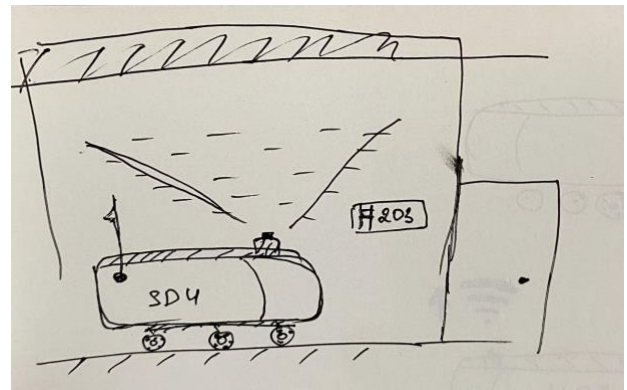
IBot scans the area: IBot drives past groups of students scanning the area and the network, its screen displays the signal strength and number of people present.

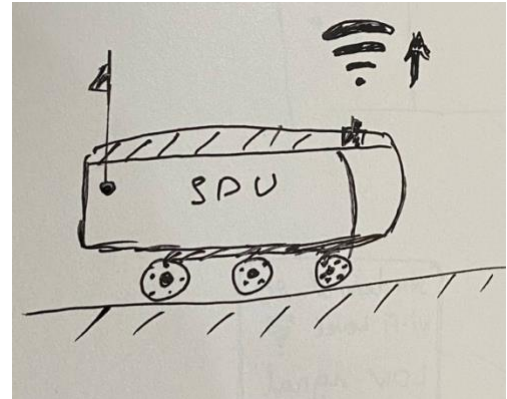
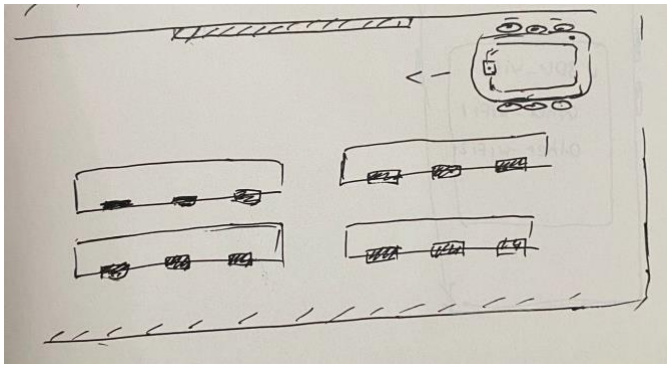
Congestion detection: IBot detects that the signal is weak and there are too many people in the area, automatically deciding to stop.

Booster setup: IBot stops and its lights start to flash while it boosts the signal for those around it.

Connection improvement: Students blog when the internet is stable and can easily interact with online resources and share their experiences.

Sketches:





Interview:

We conducted interviews with SDU students to gather feedback on the Bot's concept. The key points from these interviews included:

Key findings:

Feature requests: Students suggested adding real-time location tracking.

Concerns: There were concerns about the robot's performance during peak hours and in adverse weather conditions, and that it might wander off-location.

You can access the interview audio files through these links:

- [Interview 1](#)
- [Interview 2](#)
- [Interview 3](#)

[Presentation:](#)