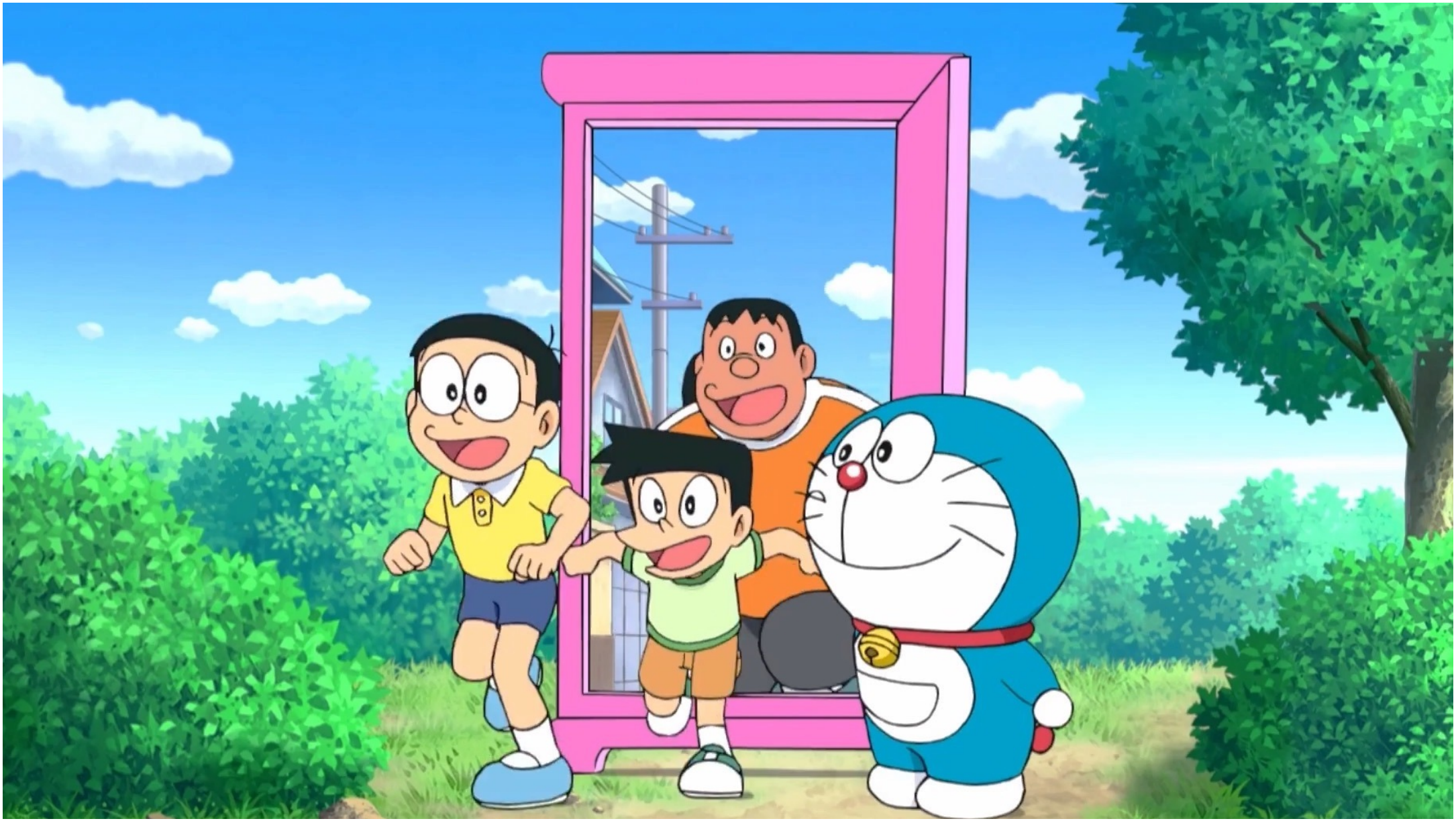
사라진 로봇

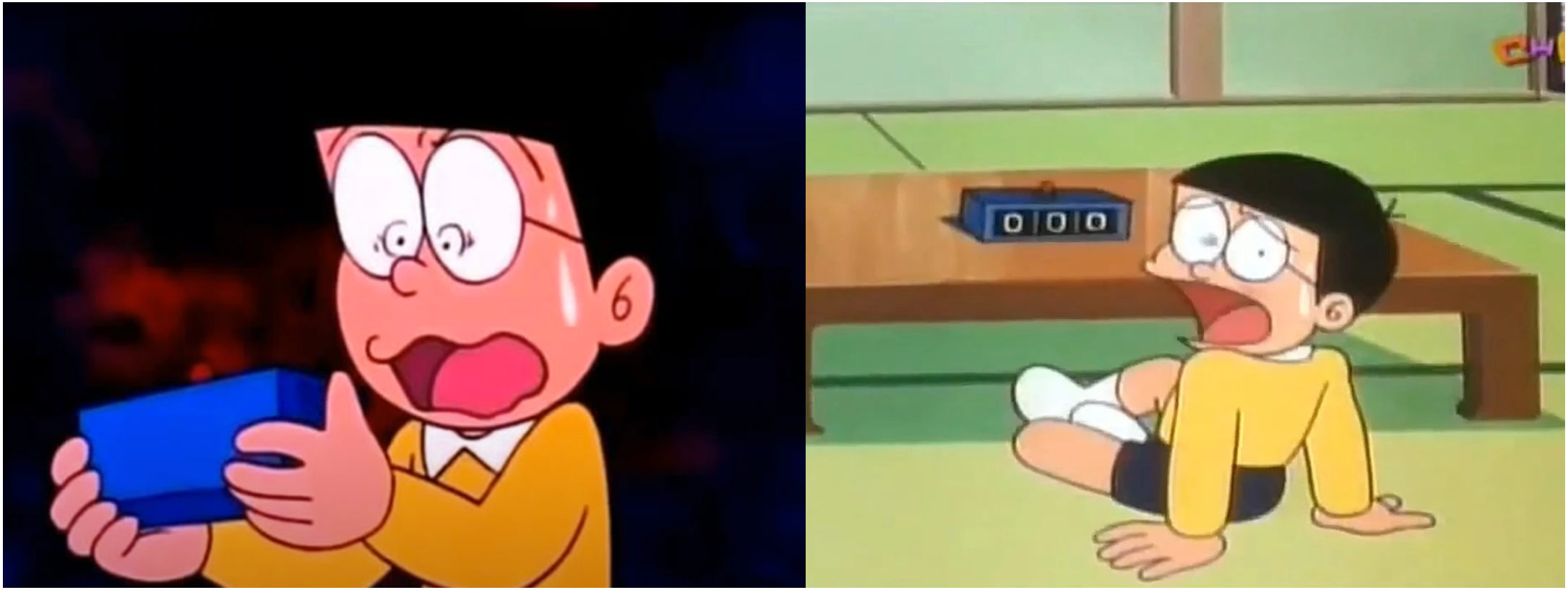
사용자 멘탈 모델을 고려한 자연스러운 로봇 디자인

강다현

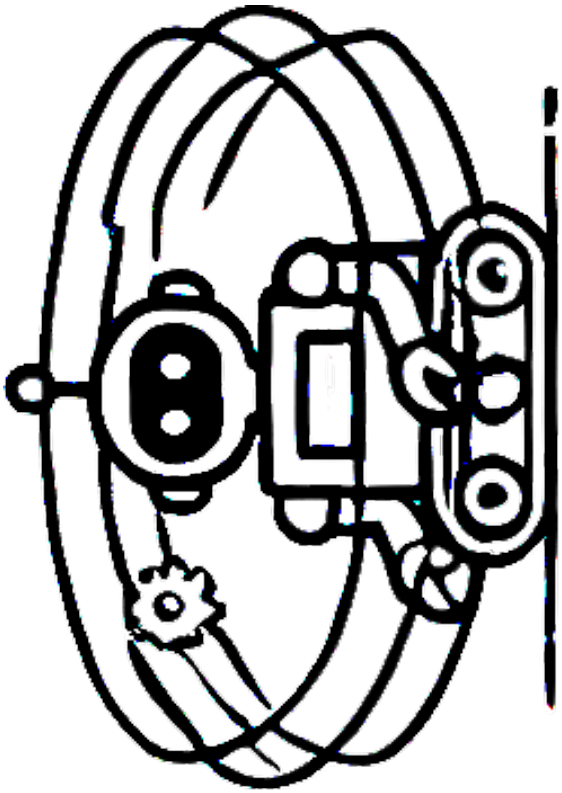
소셜로봇연구회 워크샵
@KROC2025

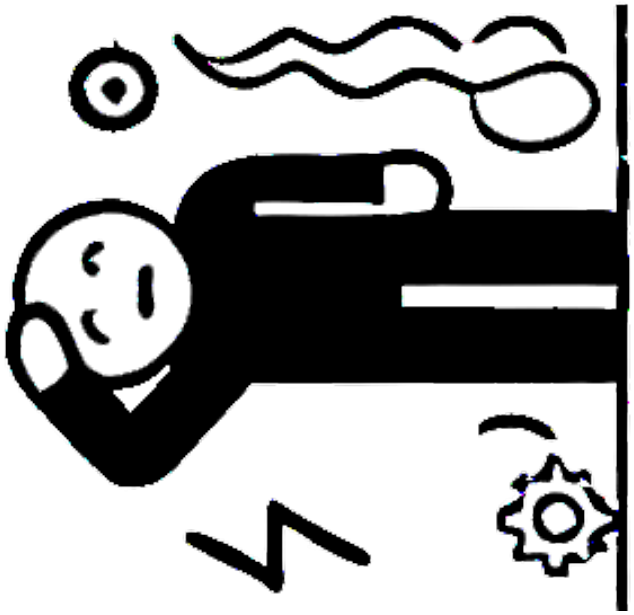

도라에몽





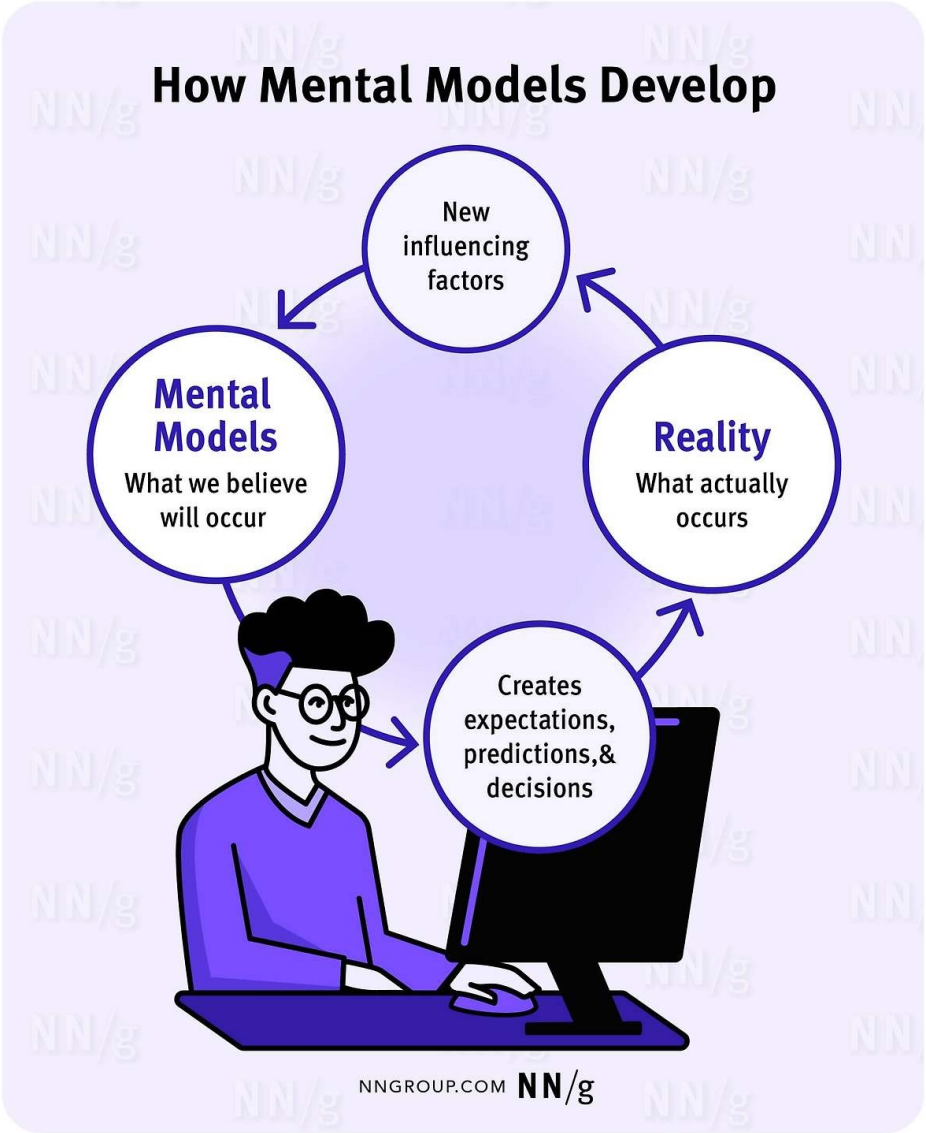
PRESENCE+MOBILITY



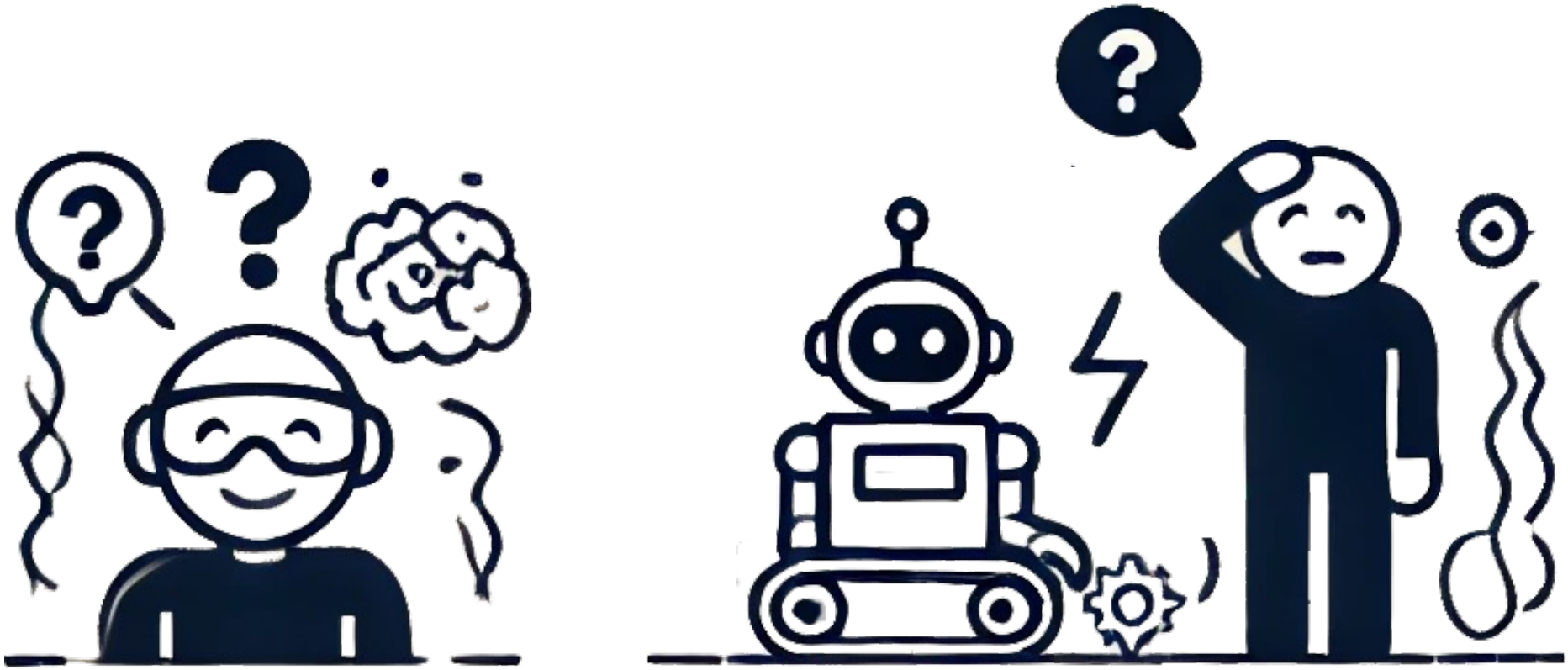


改訂

MENTAL MODEL

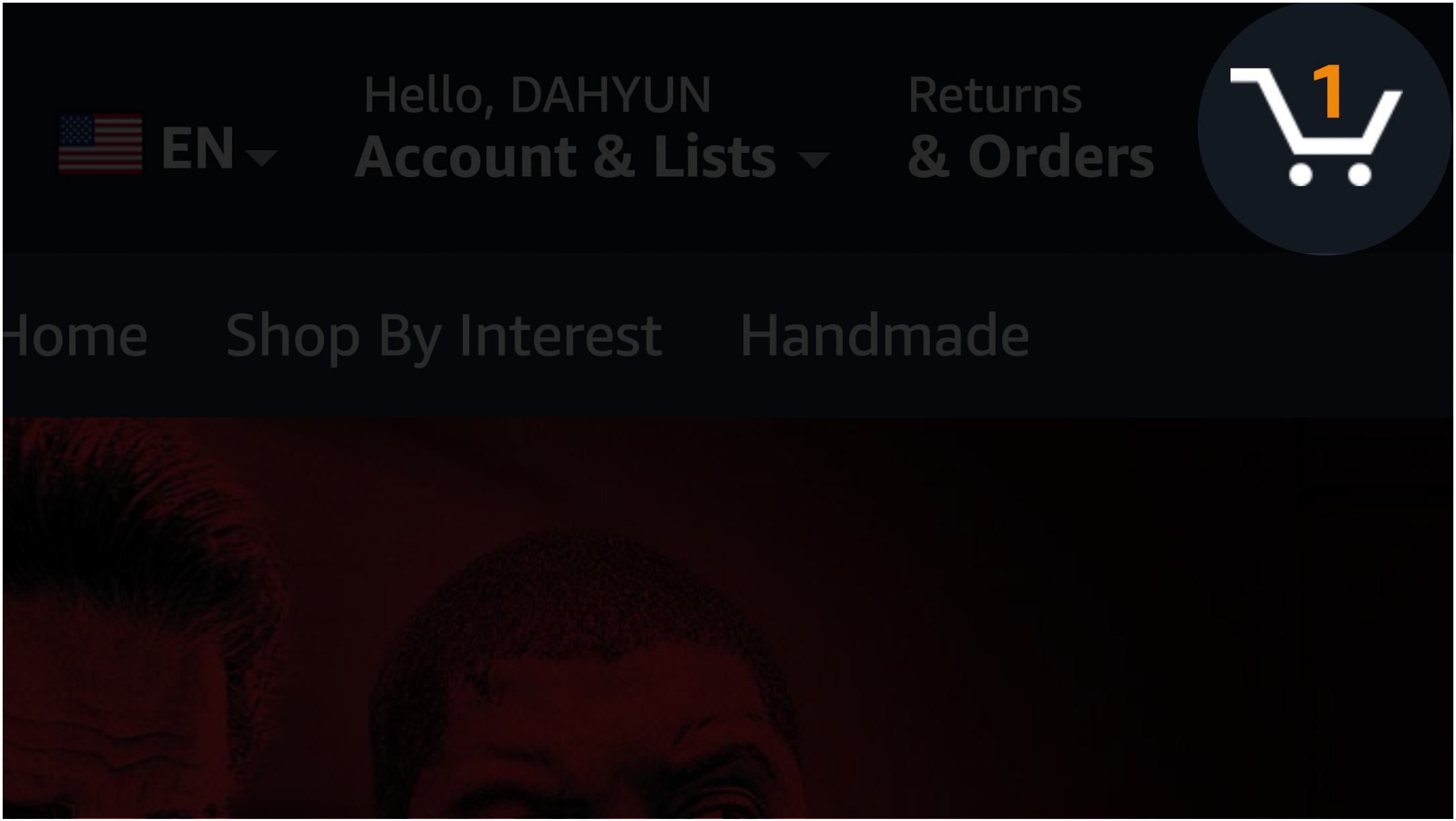


A mental model is what a user believes about the system. This model is constructed primarily on the person's past experiences.



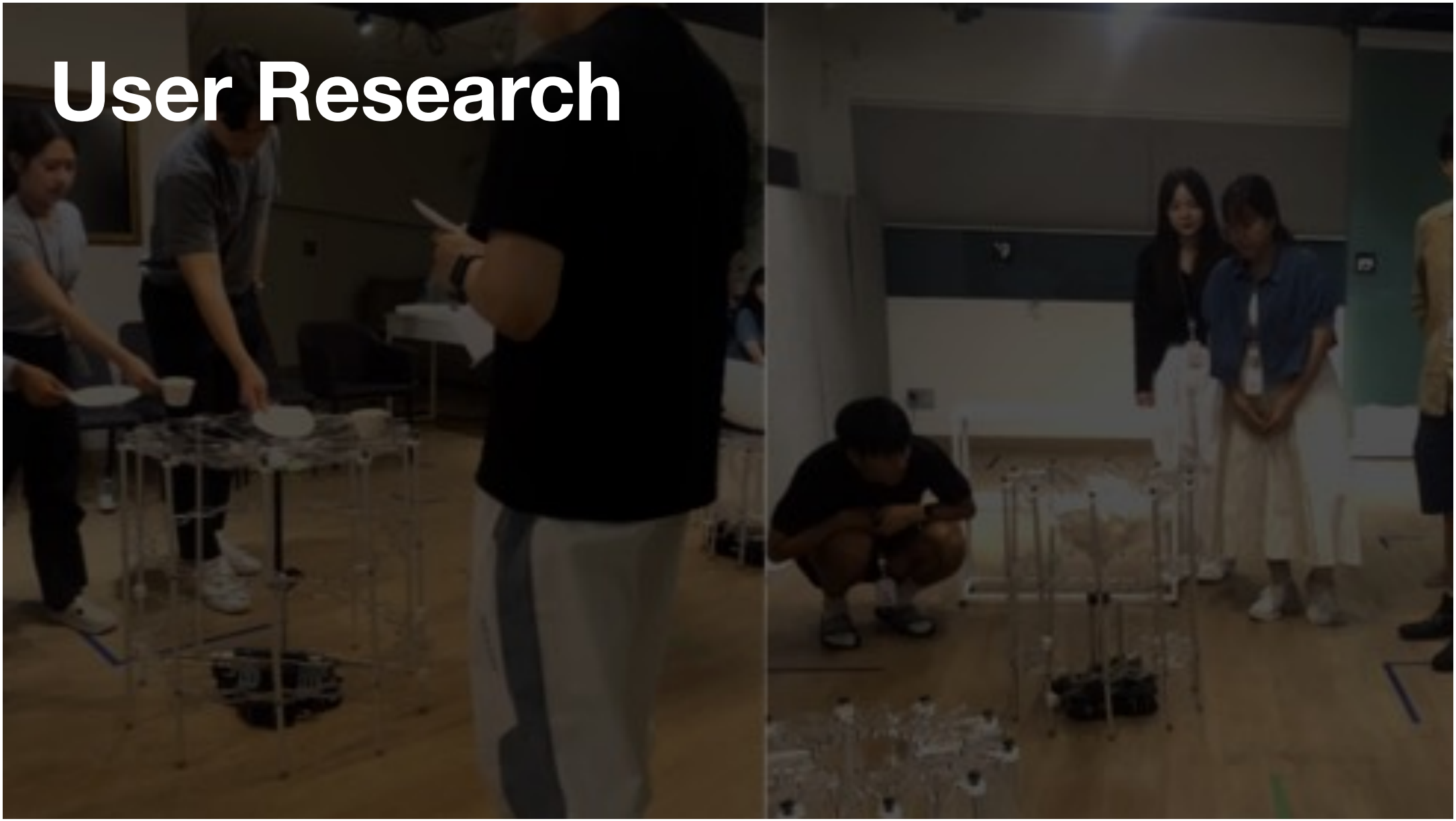

Jakob’s Law
User spend most of their time on other sites. This means that users prefer your site to work the same way as all the other sites they already know.

Interface Metaphor


EN
Hello, DAHYUN
Account & Lists
Returns
& Orders
1
Home
Shop By Interest
Handmade


Store
Collections
Books
Edit
New
Physics
Education
Biology
Education
Treasure Island
Robert Louis Stevenson
Algebra 1
PEARSON
New
RICHARD PRESTON
Wuthering Heights
Emily Brontë
Life on Earth
AN INTRODUCTION
Great Expectations
Charles Dickens
Sample
Chemistry
Education
Geometry
Education

User Research



CollaBot

A Robotic System That Assists Library Users Through Collaboration Between Robots

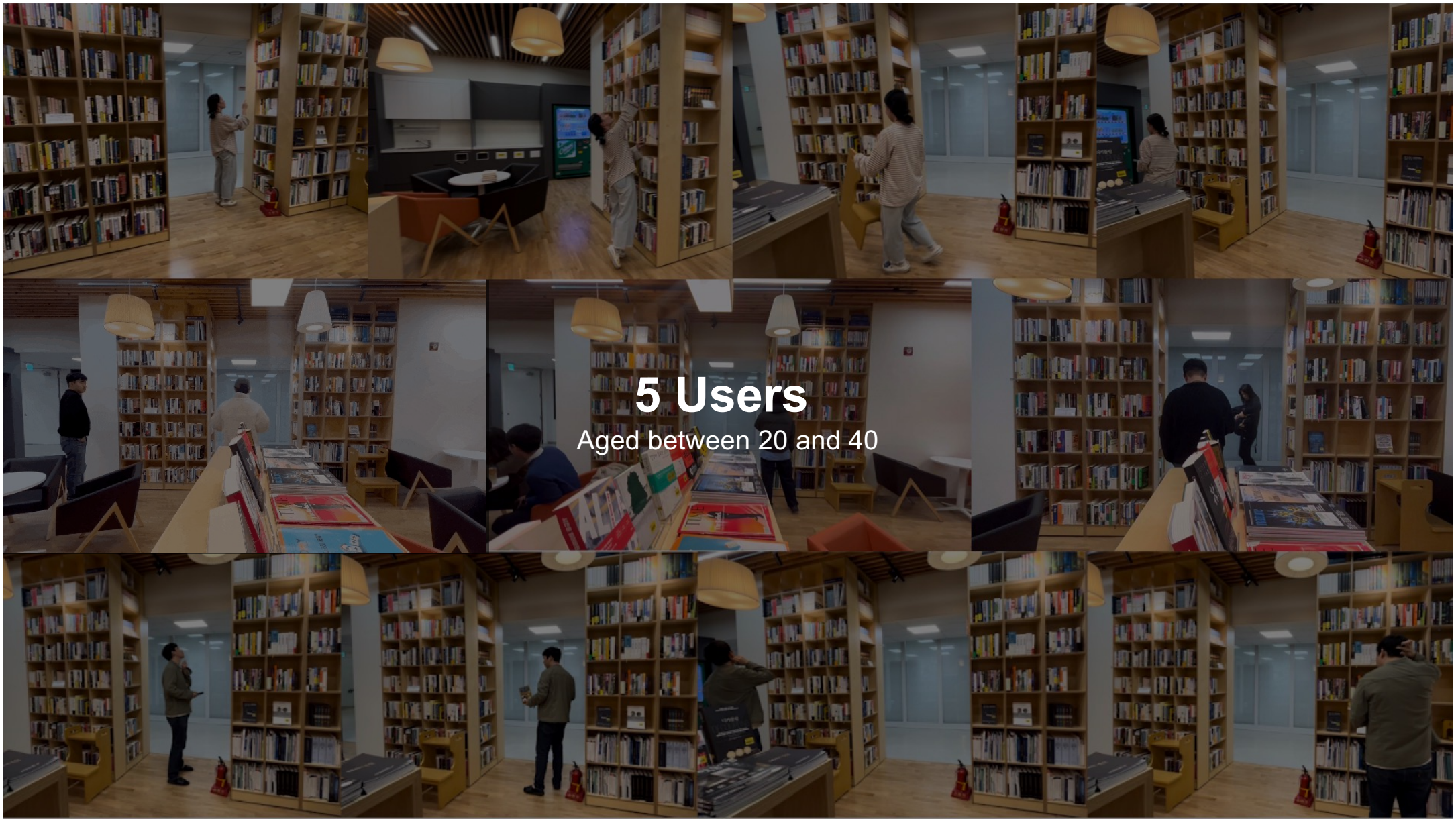
Design Goal

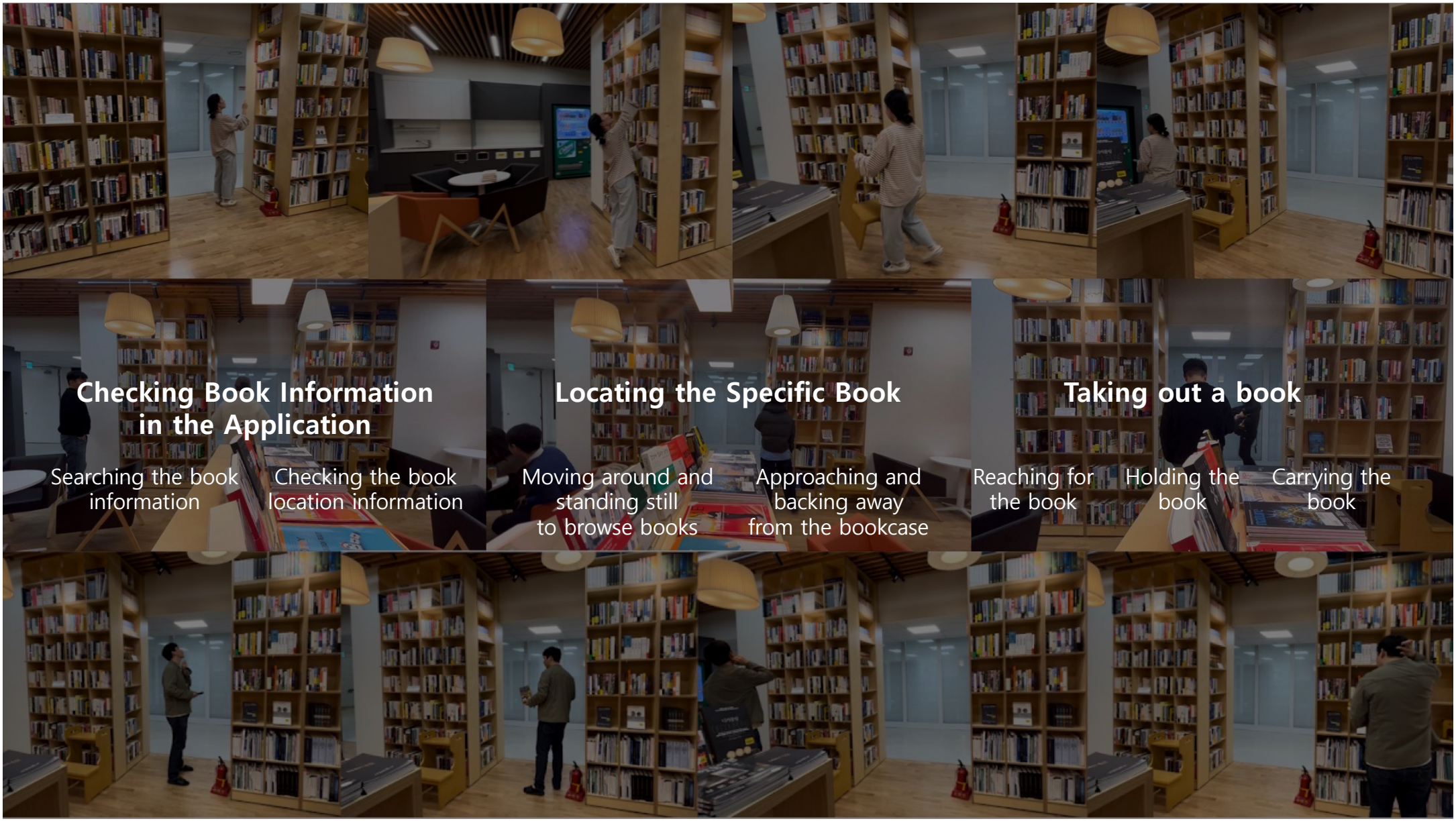
UX Design for libraries, that are designed to be accessible to all users.

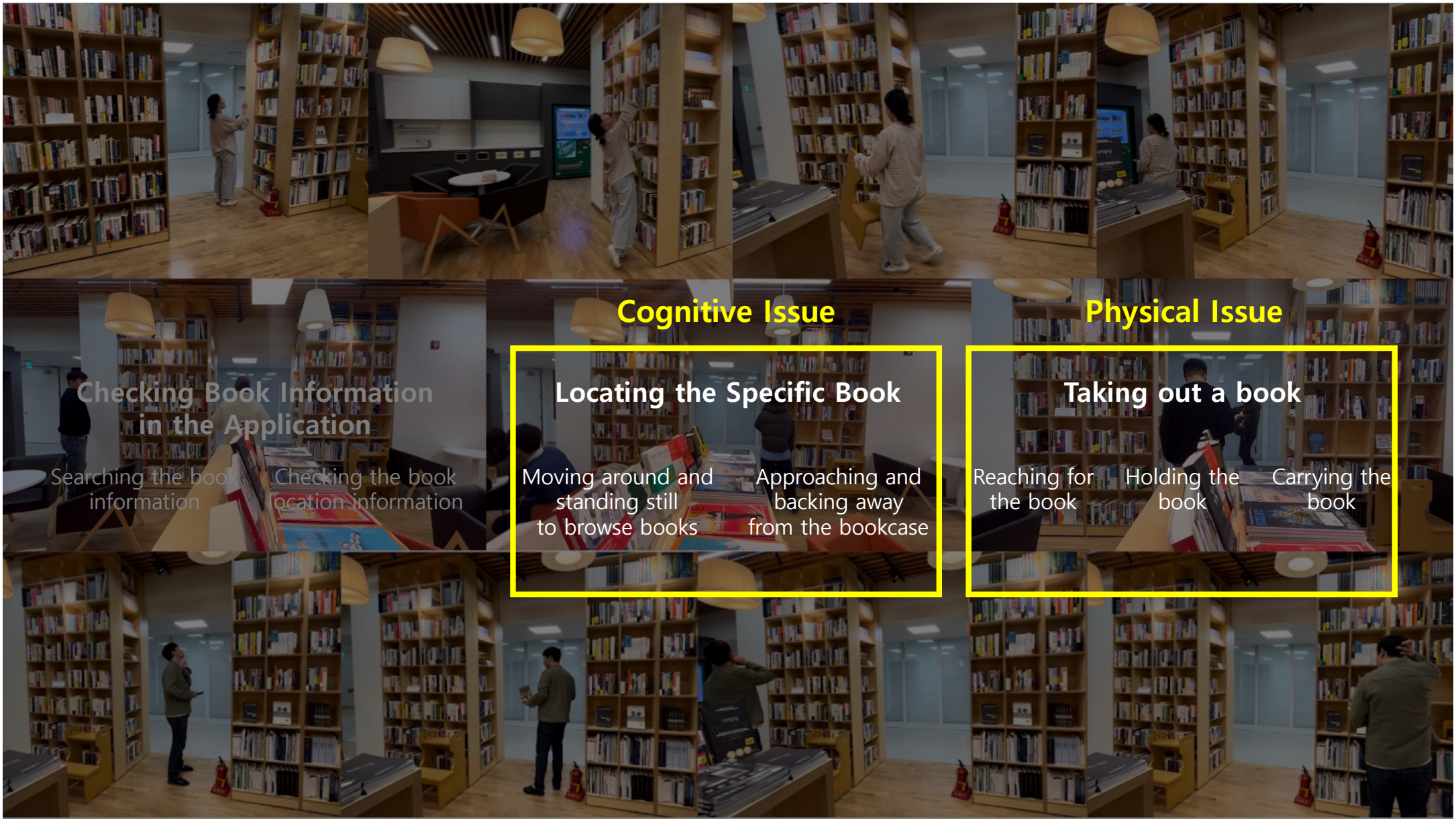
Achievement

1st Prize in Hardware Category, The 14th International Conference on Social Robotics (ICSR 2022), Robot Design Competition, Florence, Italy, 2022.

Robot World Award in Robot Service Category, 2023 International Robot Exhibition, Seoul, Korea 2023


5 Users
Aged between 20 and 40

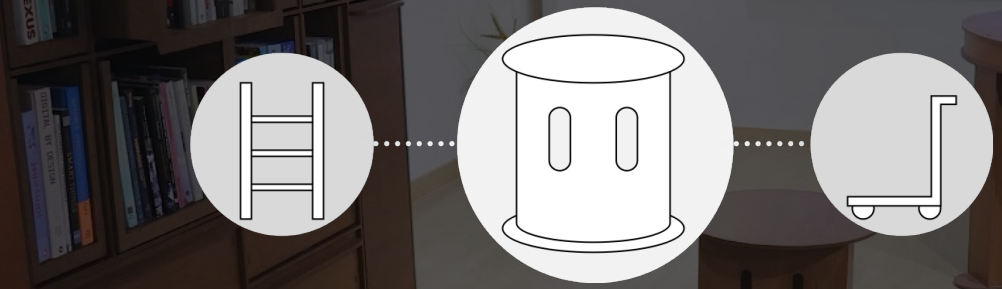

Checking Book Information in the Application
Searching the book information
Checking the book location information
Locating the Specific Book
Moving around and standing still to browse books
Approaching and backing away from the bookcase
Taking out a book
Reaching for the book
Holding the book
Carrying the book


Checking Book Information in the Application
Searching the book information
Checking the book location information
Cognitive Issue
Locating the Specific Book
Moving around and standing still to browse books
Approaching and backing away from the bookcase
Physical Issue
Taking out a book
Reaching for the book
Holding the book
Carrying the book


DIGITAL
SMART

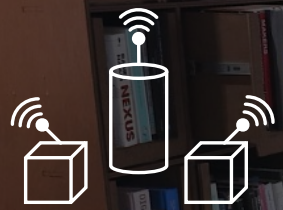
Main Idea and Objective

Depending on the situation, a product-type robot can provide a user with its **original function + transformed function**

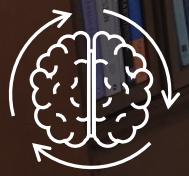


Main Idea and Objective

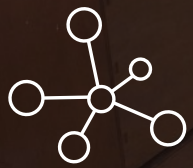
Integrated system consisting of several product-type robots including a robotic bookcase, stools, and a desk.



Each product-type robot perceives environmental and users' information.

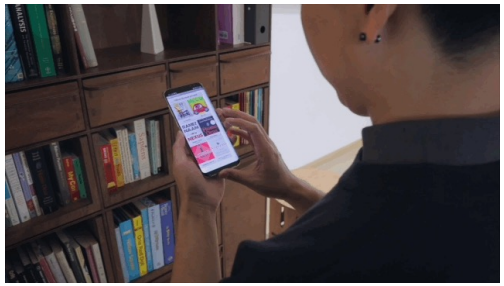


The robotic library system integrates the information, recognizes situational contexts.



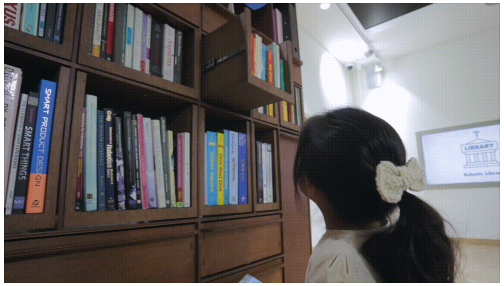
The system provides customized service to users by collaborating among product-type robots.

Book Search



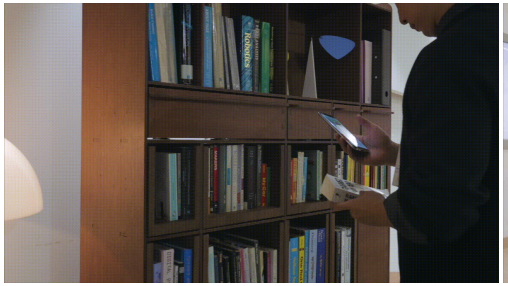
The robotic bookcase extends the shelf containing the book and notifies the user of its location.

Retrieving a Book



If the CollaBot system identifies that the user is facing difficulties retrieving the book due to the height, the robotic stool of the system assists the user as a ladder.

Retrieving Multiple Books



The CollaBot perceives that the user might encounter challenges in handling multiple books simultaneously, the robotic stool helps the user as a cart.

Leaving the Library

Once the user has selected all the desired books and proceeds to exit the library, the robotic stool with books follows the user to the reading room or lending area. When a user approaches the desk, the stool gently moves backward to facilitate a comfortable seating experience.


Robotics
NEXUS
DIGITAL BY DESIGN

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