

WeCare i-Board

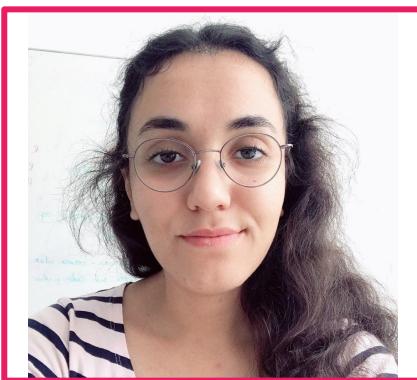
Interactive Robotic Seminar

Team Hugo

Team



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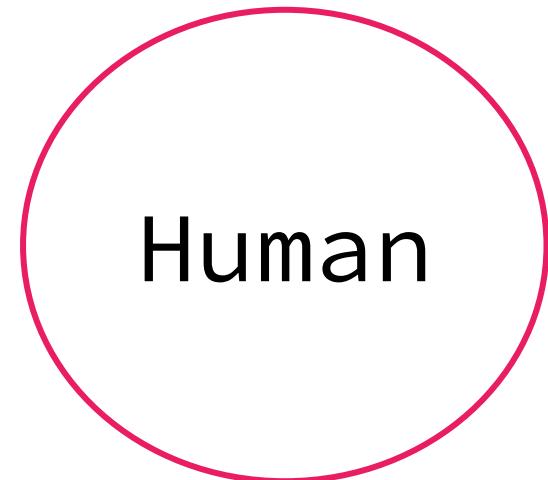
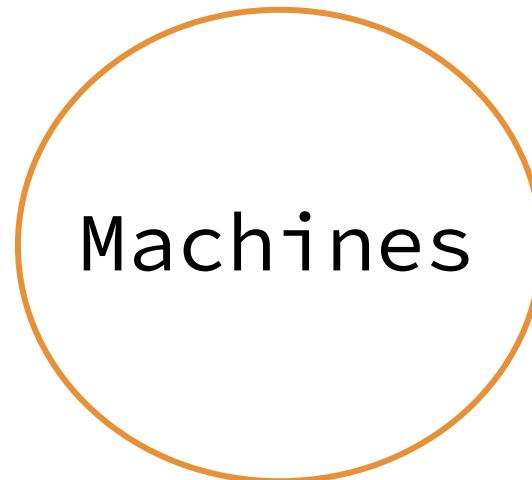
What's the problem

**Physical-Digital World
Gap**

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Physical and Digital World Gap

Despite widespread use of computers and smart systems they are not well integrated in our physical world.



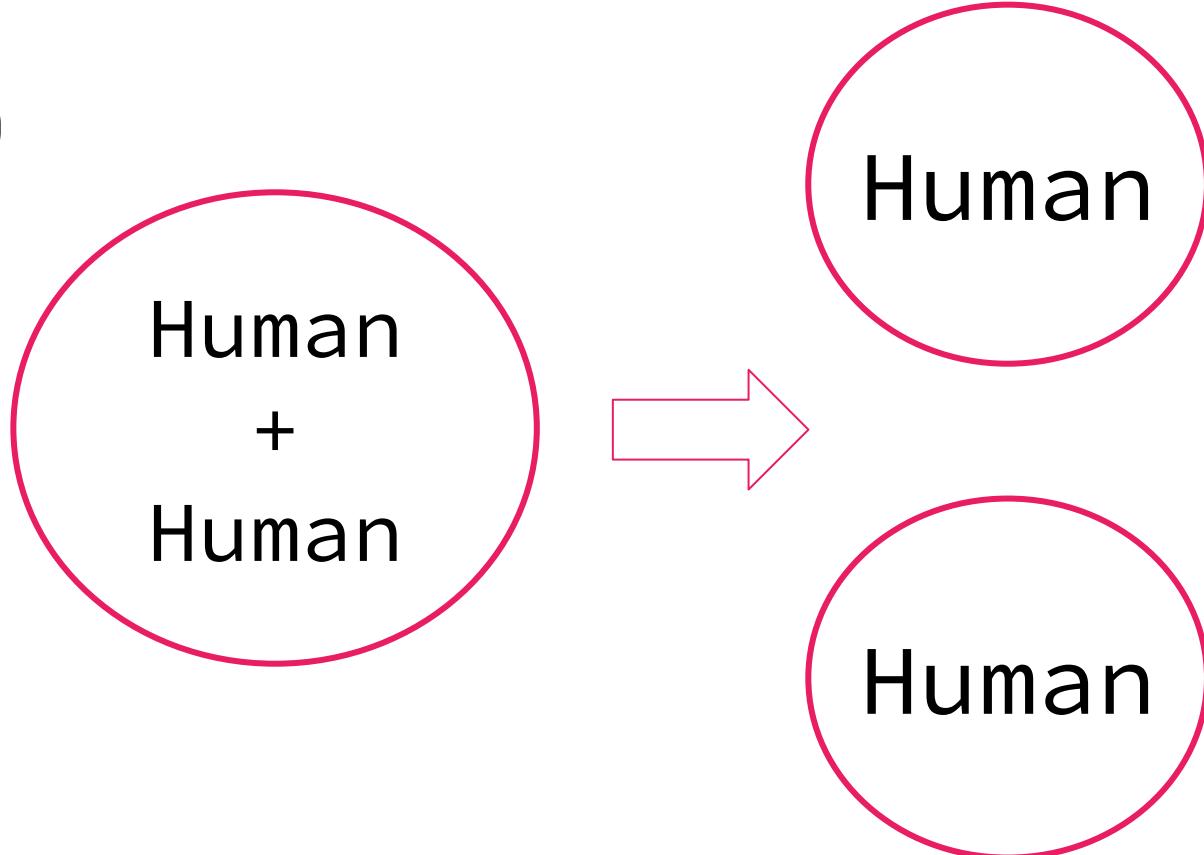
And now ...

Human-Human Gap



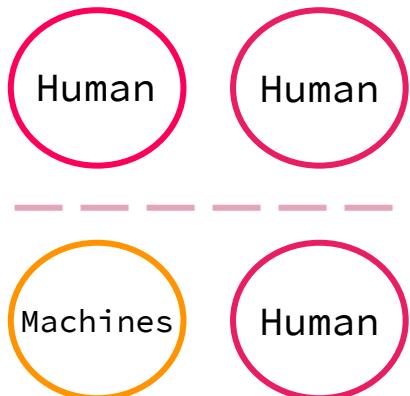
Human-Human Gap

COVID-19 happened.

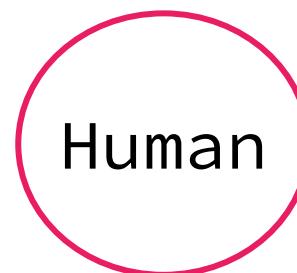
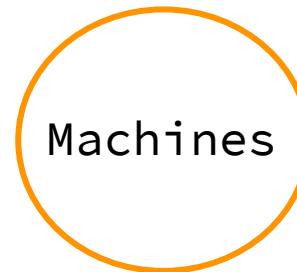
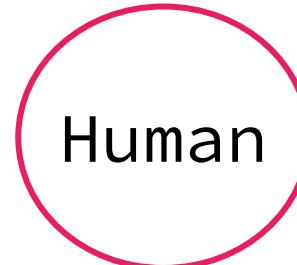


2-Layer Gap

Human-Human



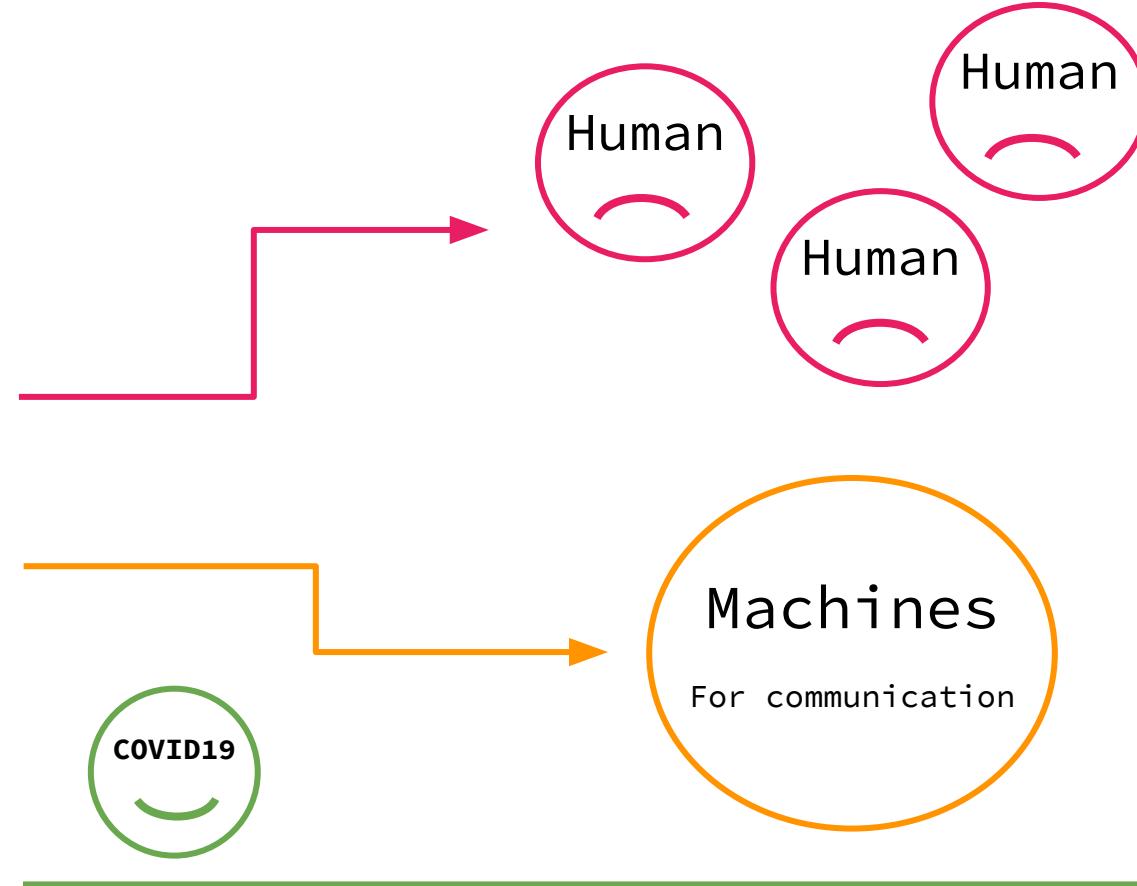
Human-Machine



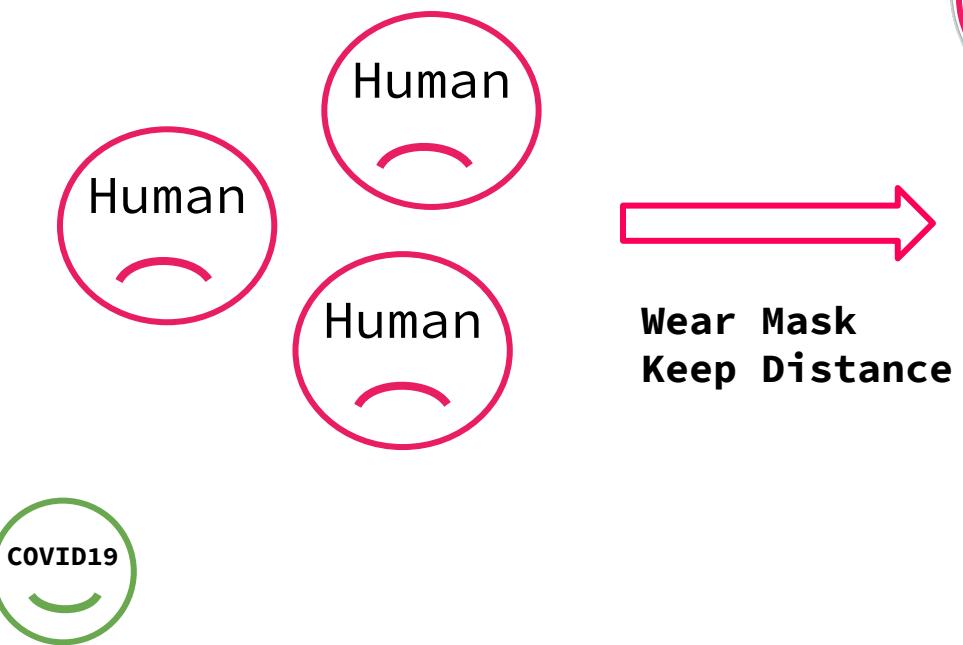
What happened to our communications?

Communication

People hanging around
Sharing Emotions
Enjoying



Communication



**Wear Mask
Keep Distance**

Communication

Relying more on machines for communication.

2-layer gap is more problematic.

Machines

Computers / Smartphones / Tablets

Audio/video call
Text message
Email
Social media
etc.



Hard to Communicate Emotions



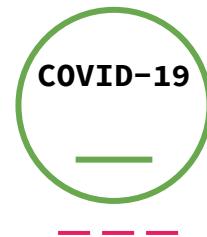
What happened to our communications?



@covid19 you
ruined it ...

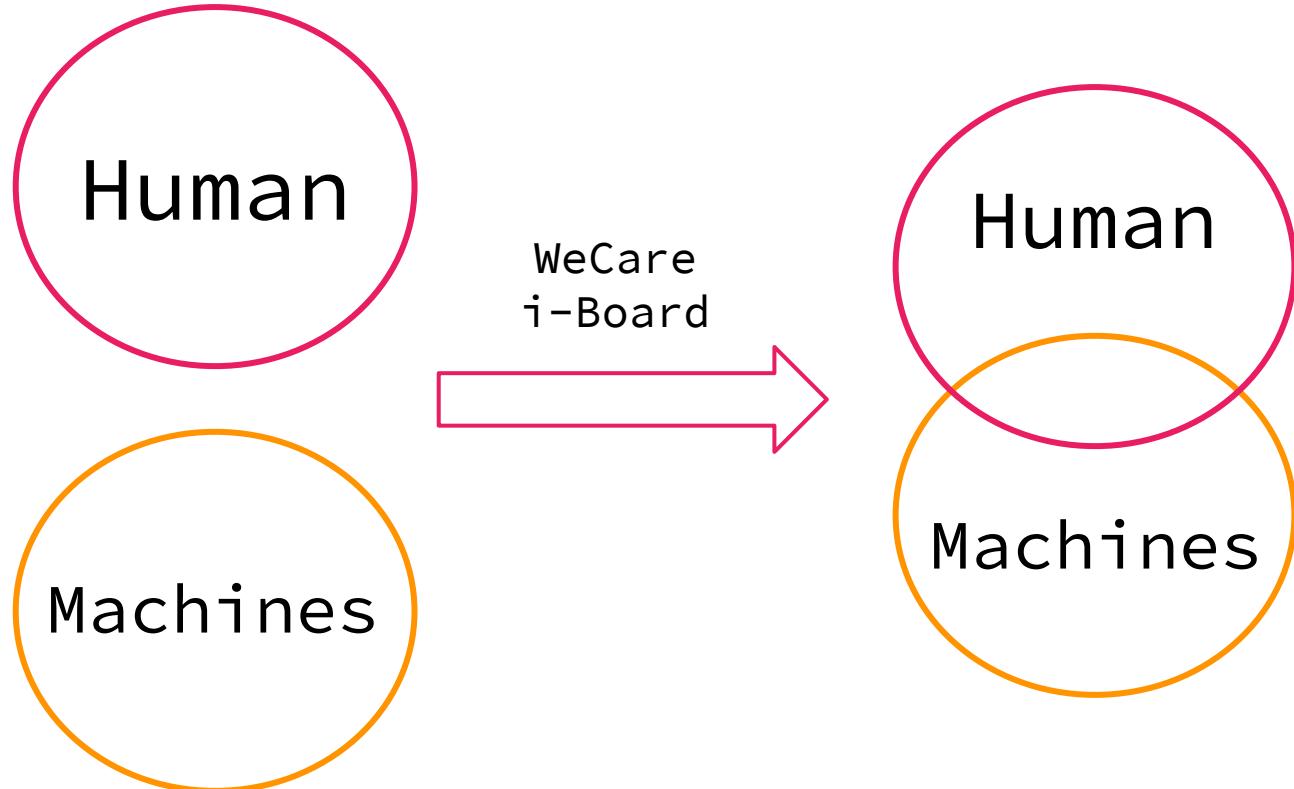
Solution?

WeCare i-Board



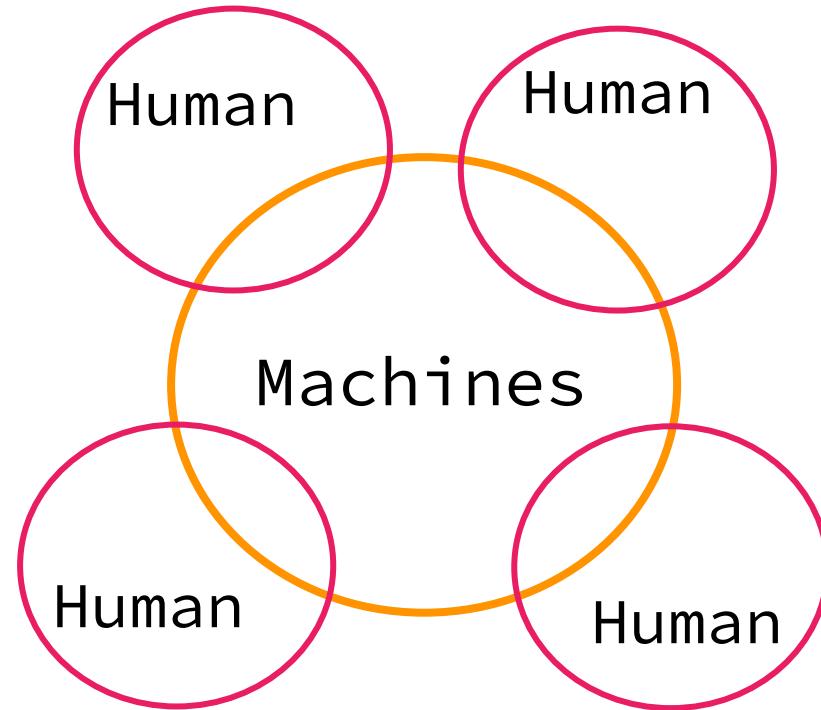
Solution: WeCare i-Board

Reduce the gap.



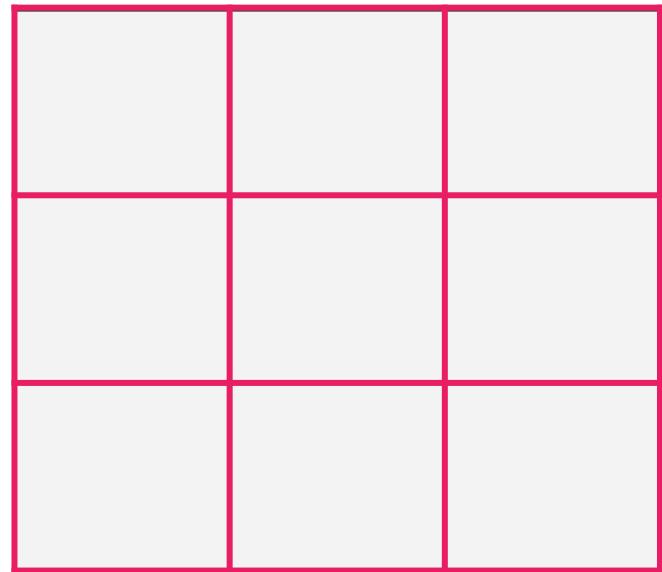
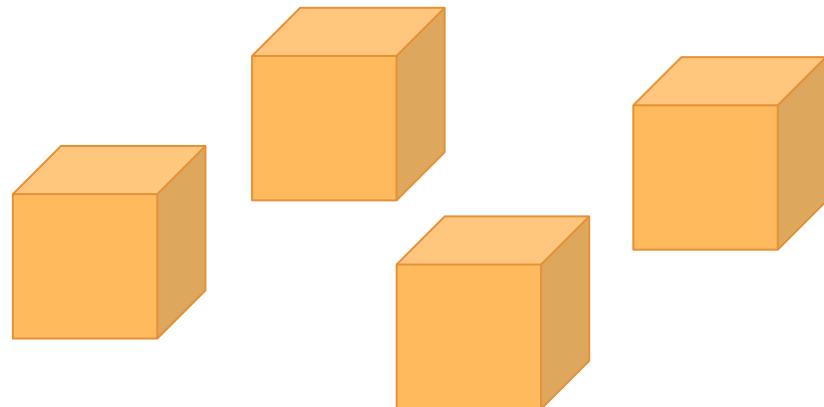
Solution: WeCare i-Board

Brings us closer.

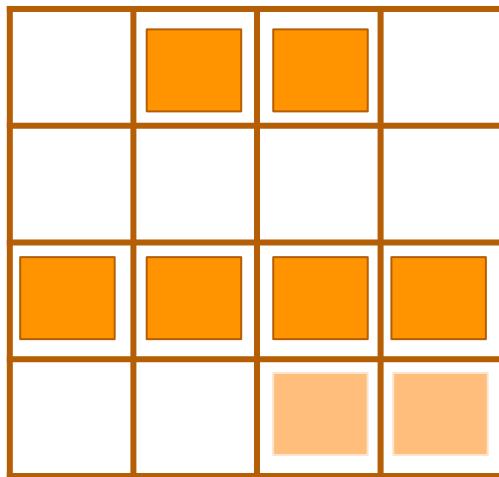


How It Works?

An interactive board with small blocks.

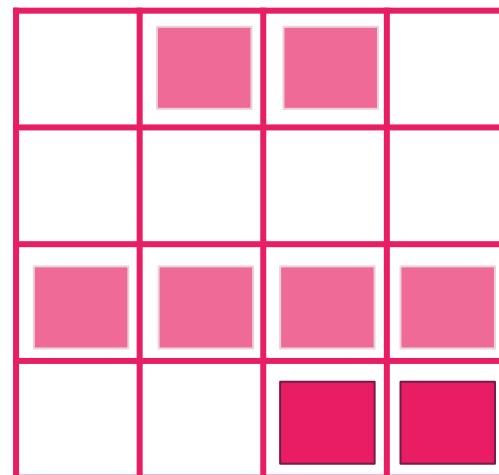


How It Works?



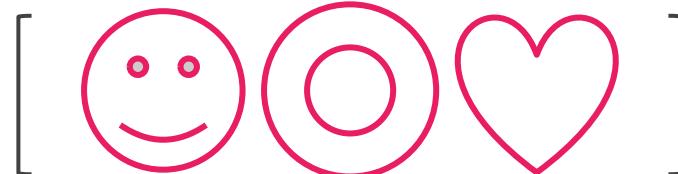
User A

User B



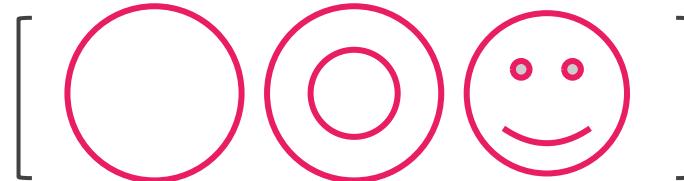
What Is Robotic?

- Mechanical + Electrical parts
- Assists Humans
- Better Remote Communication
- A Physical Mean To Express Emotions



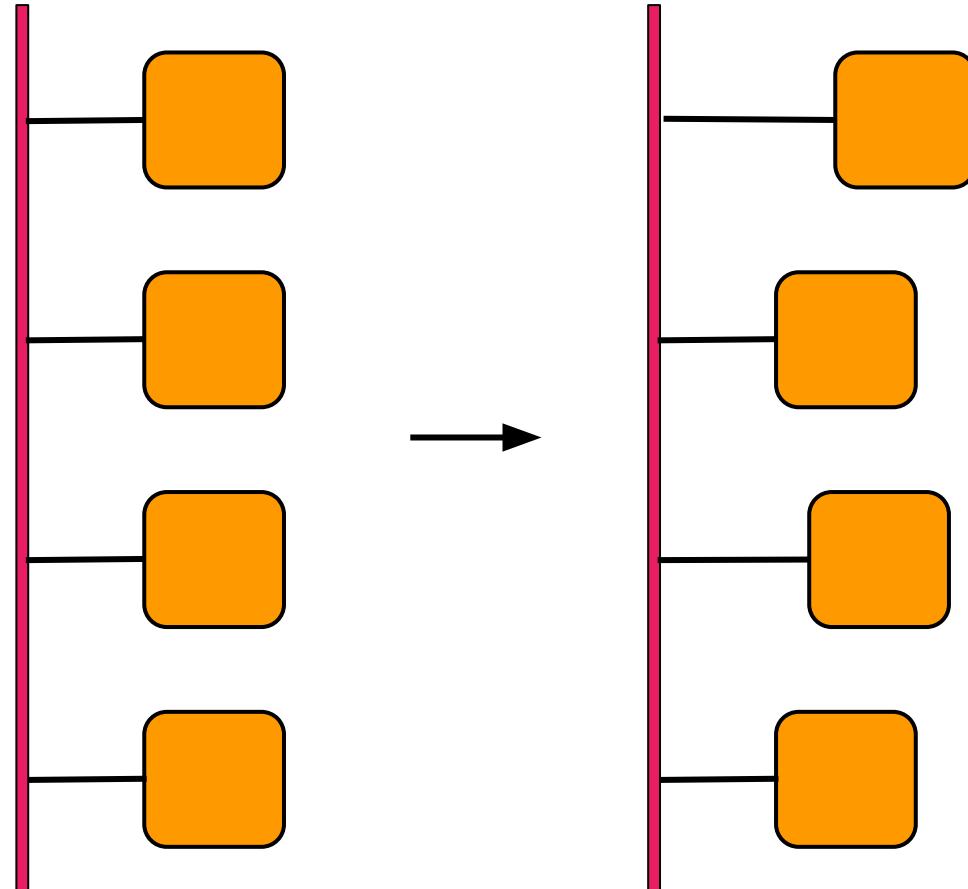
Is It Tangible?

- Digital Information Embodiment
- Go Beyond the Limits of GUI
- Expand Affordance of Simple Objects

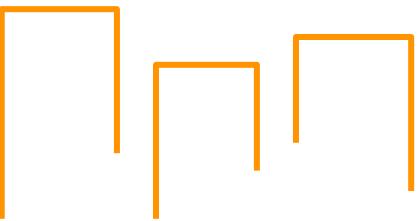
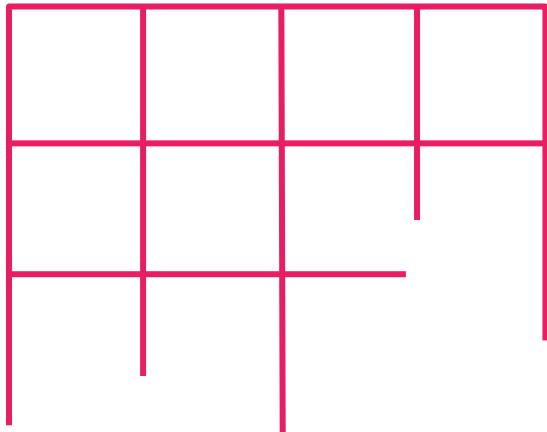


Details

Board and Blocks



Details



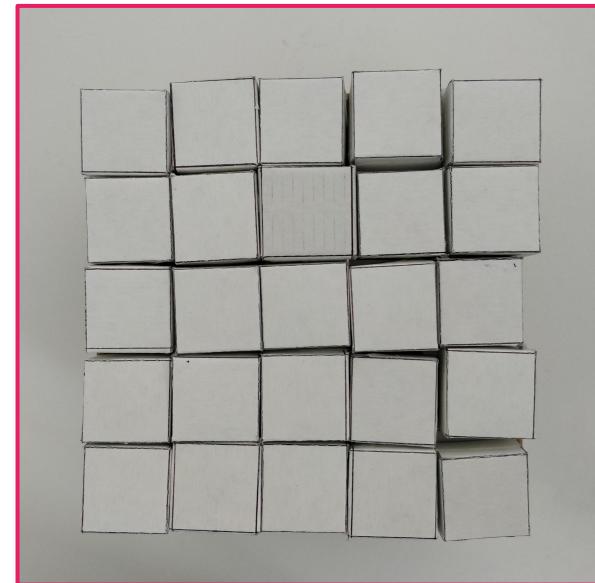
Blocks

- Move
- Change Color
- Interactive Surface

Board

- Tactile Feedback
- Change Background Color
- Audio

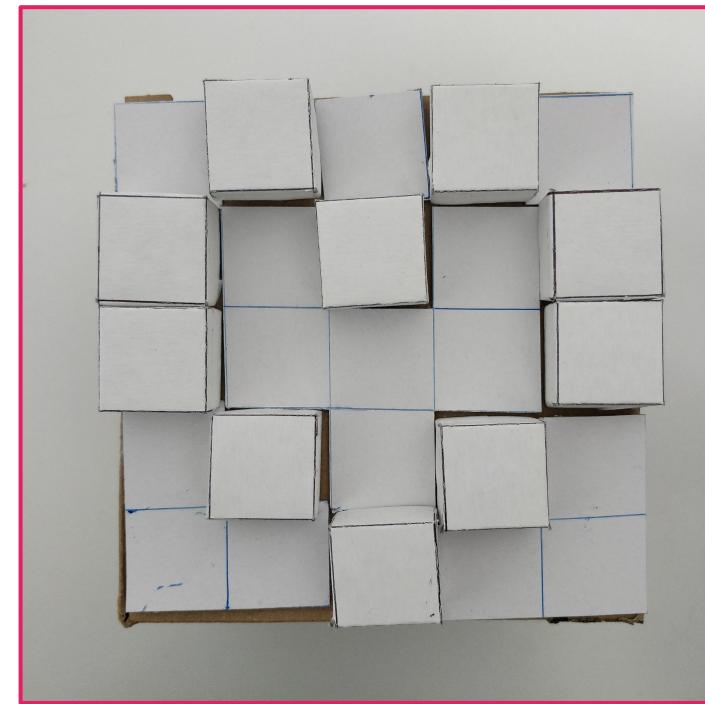
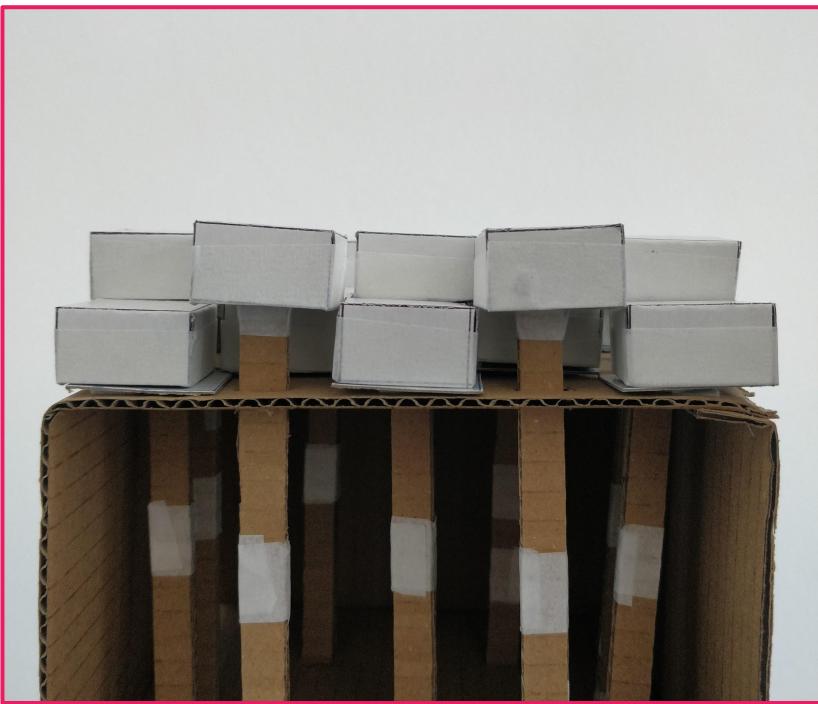
Prototype i-board



Prototype User 1



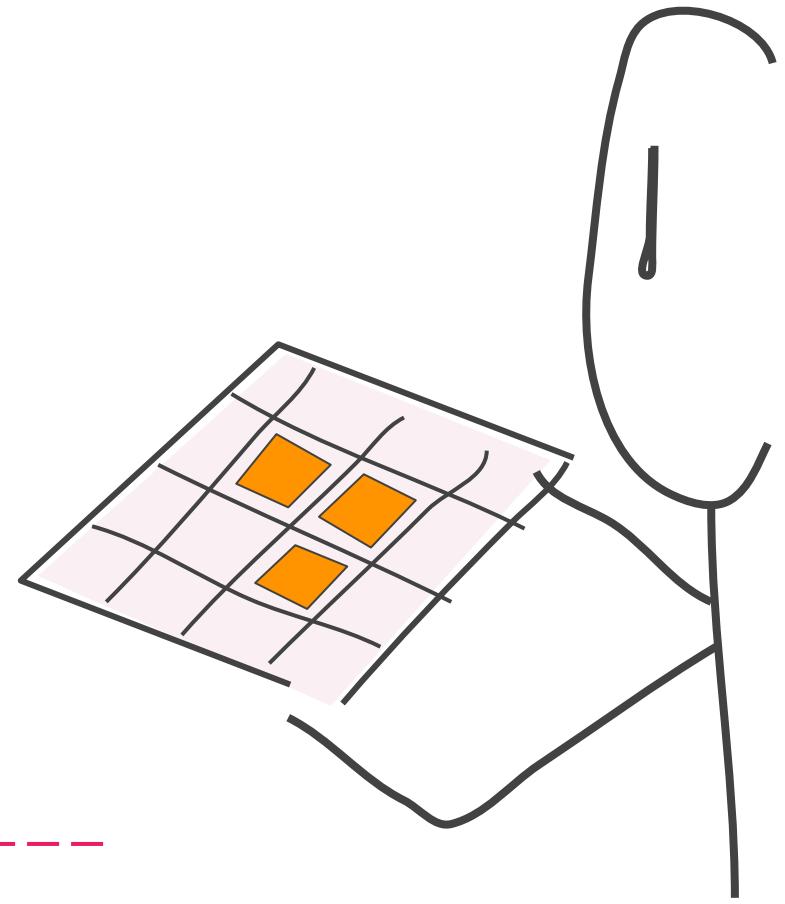
Prototype User 2



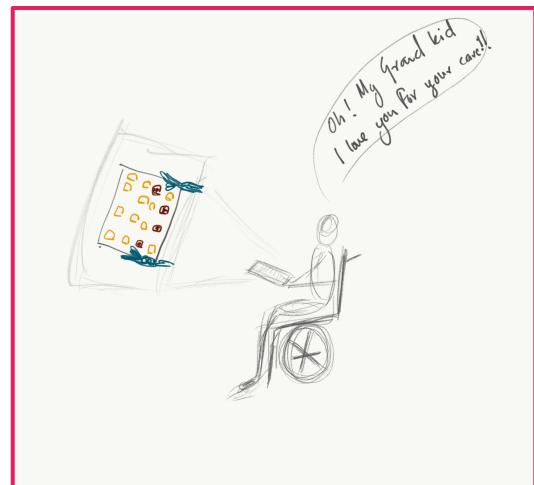
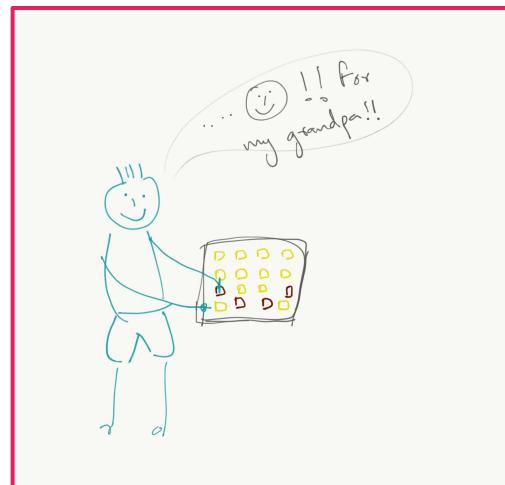
Prototype



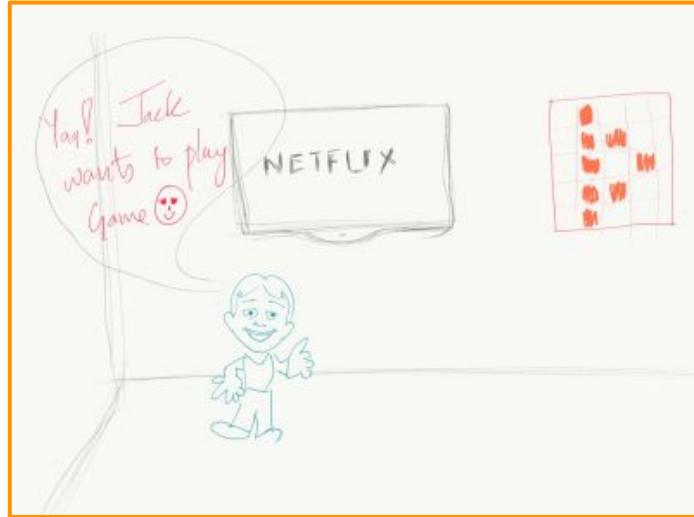
User Scenarios



User Scenario



User Scenario



User Scenario



Technical Feasibility

- **Design ideas**

- Vibration feedback - block placement
- Lighting up the blocks
- Pattern recognition for more tangible display of common emotions

- **Sensors and actuators**

- Sensing the blocks
- Moving the blocks

- **Predicted feasibility:**

- The block-board interaction is simple
- Activating each block - Challenge
- Remote connection - Possible
- Alignment and precision for movement - Challenge



Tasks distribution

- **Board design**
 - Size
 - Shape
 - Colours

- **Block design**
 - Size
 - Shape
 - Number of blocks for max. Utility
 - Placement of LEDs

- **Material selection & more functionality**
 - For better display
 - Algorithms

- **Sensors and actuators**
 - Sensing the blocks
 - Moving the blocks



Timeline

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Milestone 1

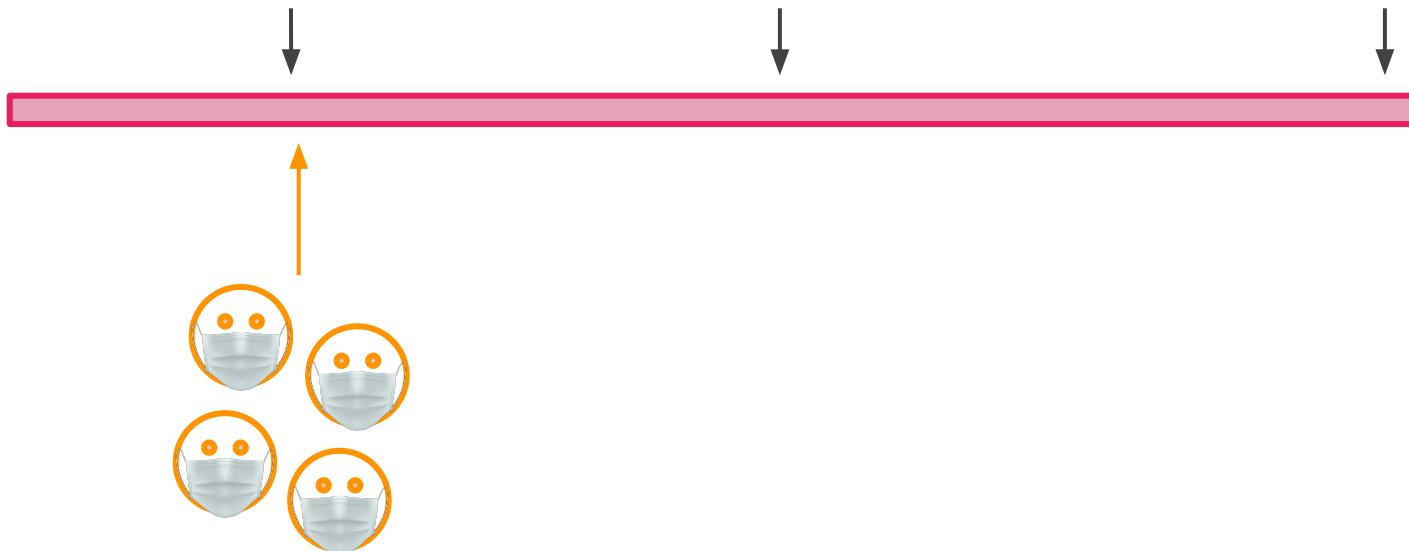
Project Idea
Scenarios
Prototypes

Milestone 2

Hardware Choice
Project
Implementation

Milestone 3

Final
Presentation
Report



Thank you :)

