

# Dynamic Windows

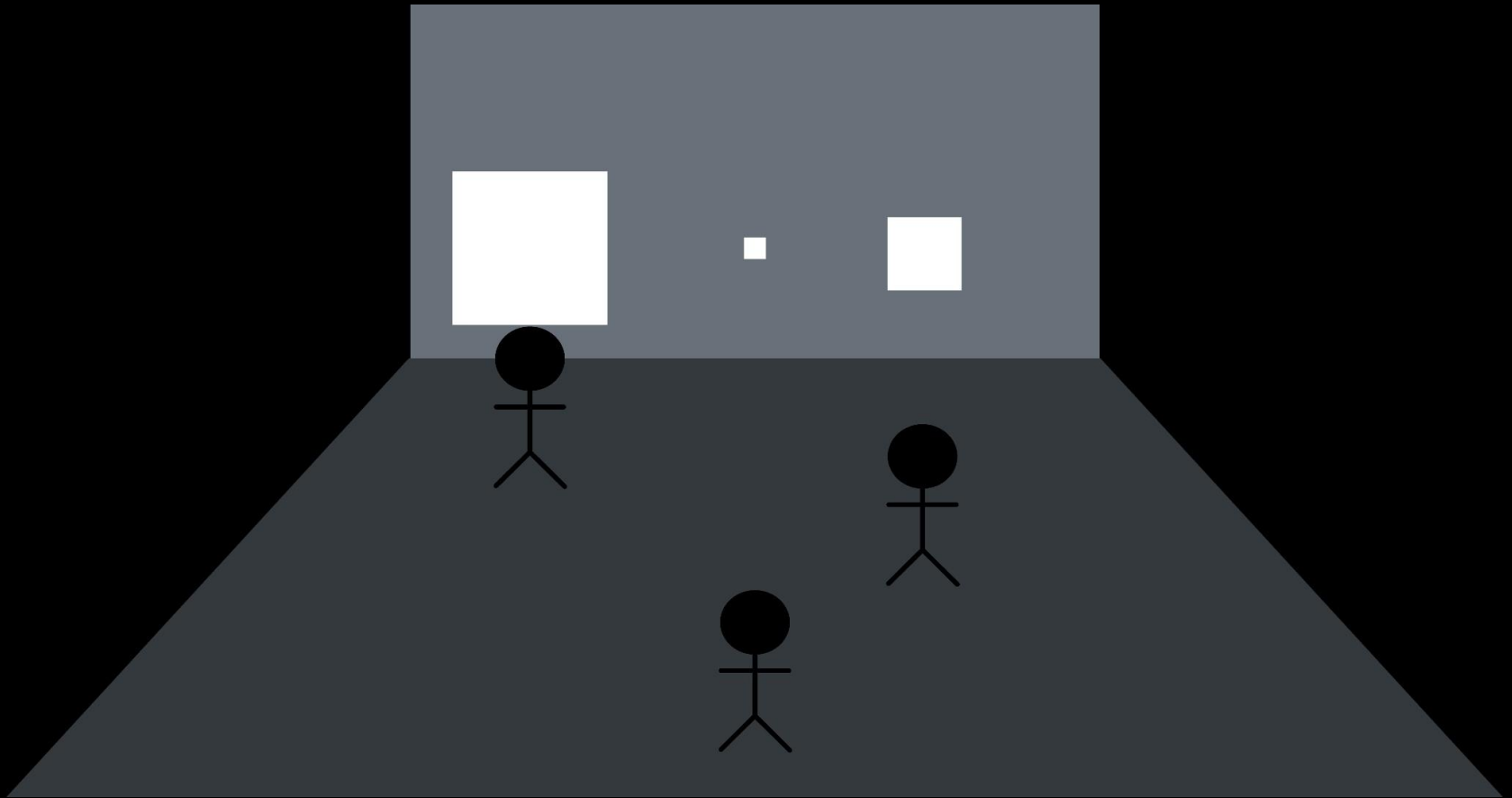
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# Conceptual train of thought

- Dynamically create windows on a wall through **user interaction**.
- Create **interactive tiles** that can be **opened** or flipped to **reveal the background**, whatever it might be.
- When people get within a certain range, **a window forms** in front of them, centered on the person's head.
- The window **grows** inversely proportional to the distance to the person, and **follows** him/her around space.

# Initial concept sketch\*



\*: actual product may differ.

# 2-step procedure

## Conceptual proof of concept:

- **Top-down approach**, think about final construct.
- Create **Virtual prototype**, grid structure simulation.
- Tackle mathematical problem at an early stage.
- Experiment with multiple interaction behaviours.

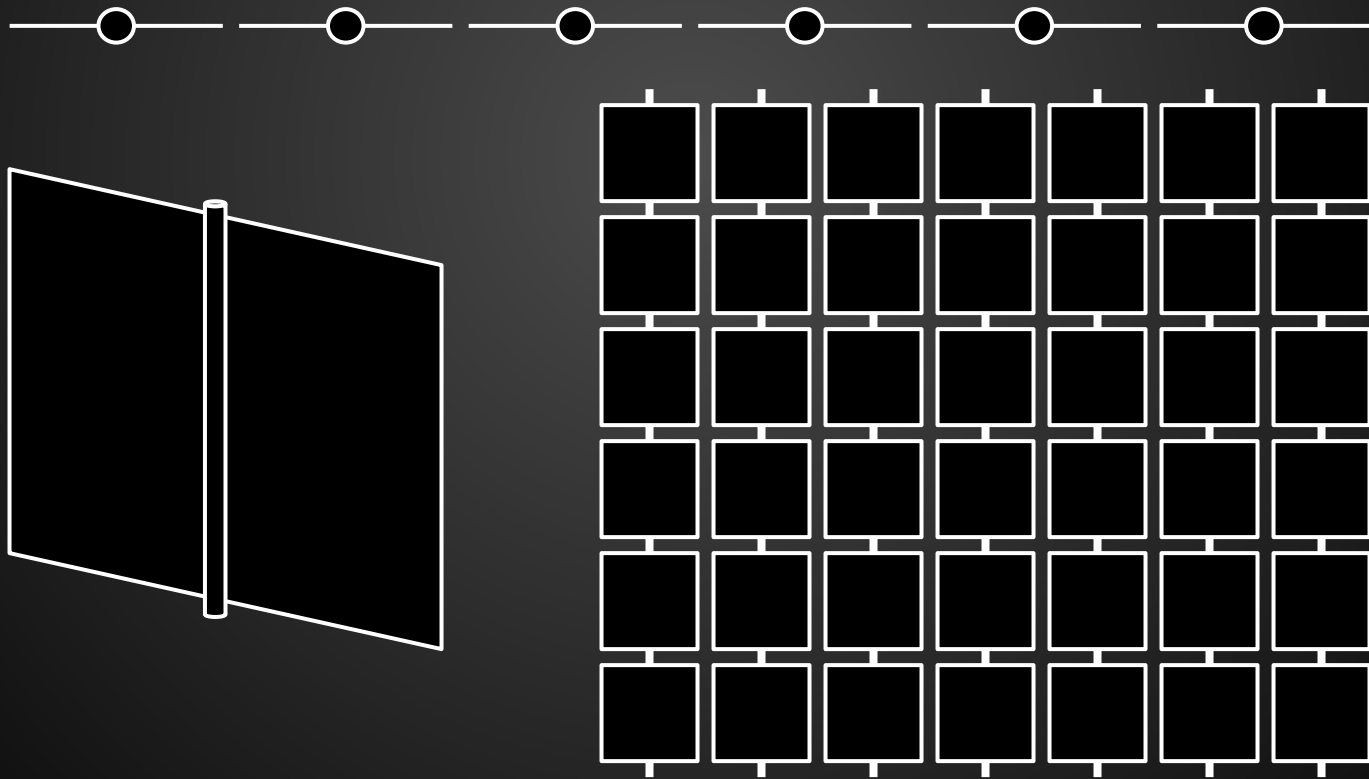
## Physical prototype:

- **Bottom-up approach**, think about physical constraints.
- Design a physical, **scalable solution**, the building blocks used to create the larger scale construct.

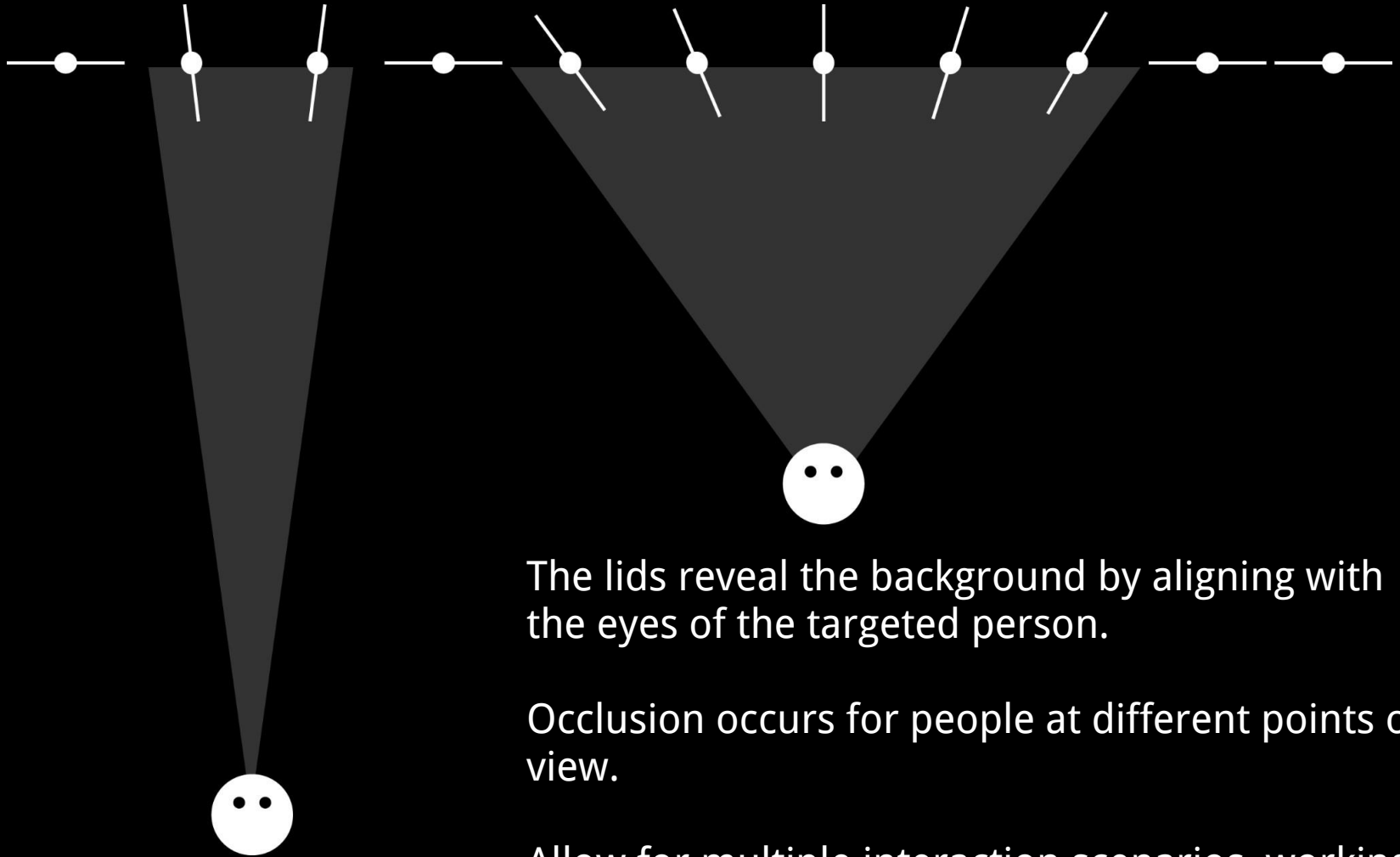
# Physical Prototype

Grid structure with physical pixels.

Mechanical pixels rotate around a vertical axis.



# Occlusion



The lids reveal the background by aligning with the eyes of the targeted person.

Occlusion occurs for people at different points of view.

Allow for multiple interaction scenarios, working with mirrors and reflections, etc.

# Current Implementation

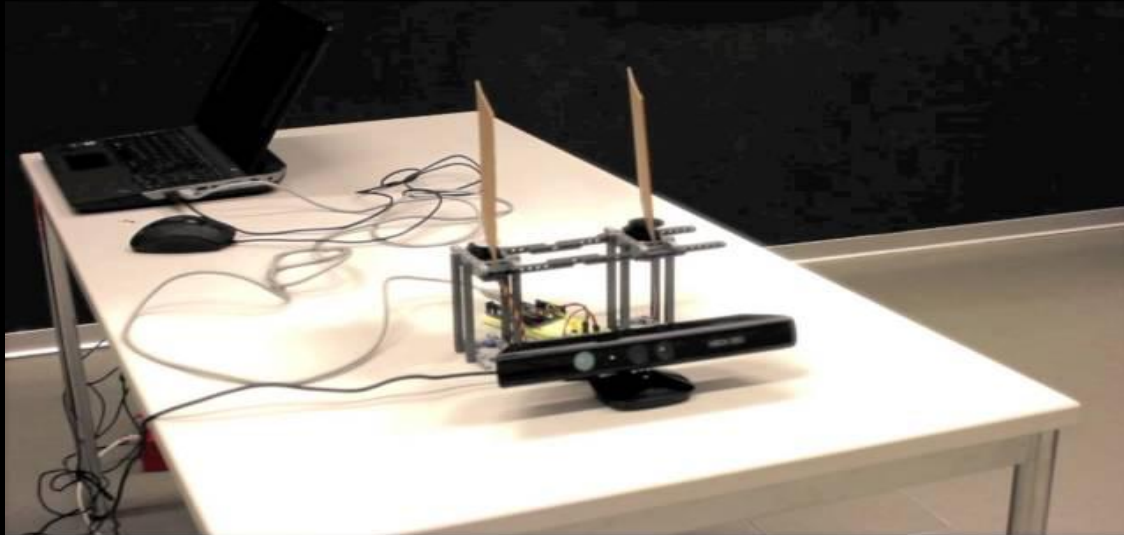
## Virtual proof of concept:

- **Processing** simulation, on-screen pixel grid with different interaction scenarios/occlusion modes.
- **Kinect** is used for head tracking in space and recovering screen coordinates.

## Physical prototype:

- Two physical pixels controlled by an **Arduino** 2009 board and powered by two servomotors.
- Interfaced with a lighter version of the virtual simulation sketch, real world coordinates recovered from Kinect capture.

# Video presentation



<http://vimeo.com/castiboy/dynamic-windows-sinlab-2012>

<http://youtu.be/cTNB6vGTz48>



# On the long run...

## Status quo:

- Two complementary approaches to guide further development.
- A vision of where to go and how to build it from the ground up.

## What to do next:

- Refine concept/vision, design more precise interaction cases and a physical setup/exhibition.
- Create a first, fully functional prototype, a small working interactive wall that would join the conceptual and physical developments.