



## Our city Experience

**A game for stimulating social interaction  
in public spaces.**

# The team



• **Lahore**

Product Development



• **Alicja**

Industrial Biotechnology



• **Eléna**

Packaging Engineering



• **Felix**

Industrial Engineering and Management



• **Sander**

Electronics-ICT

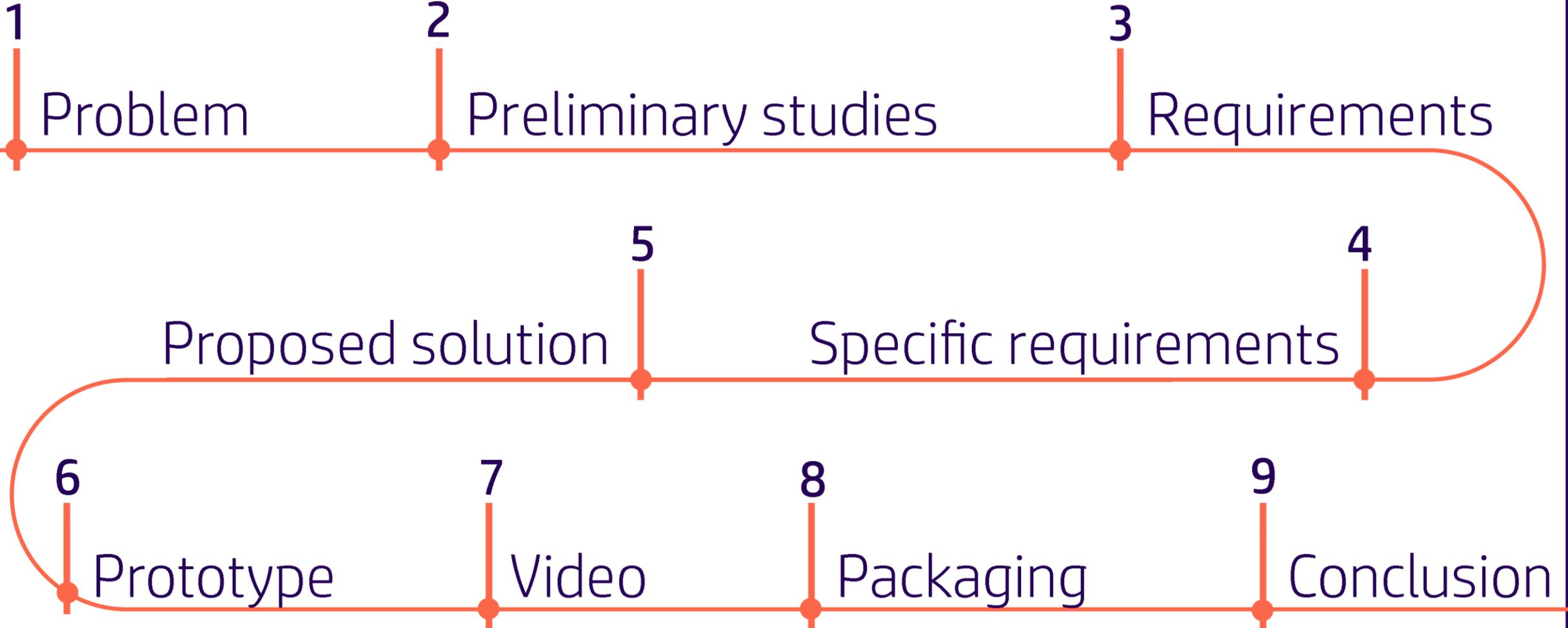


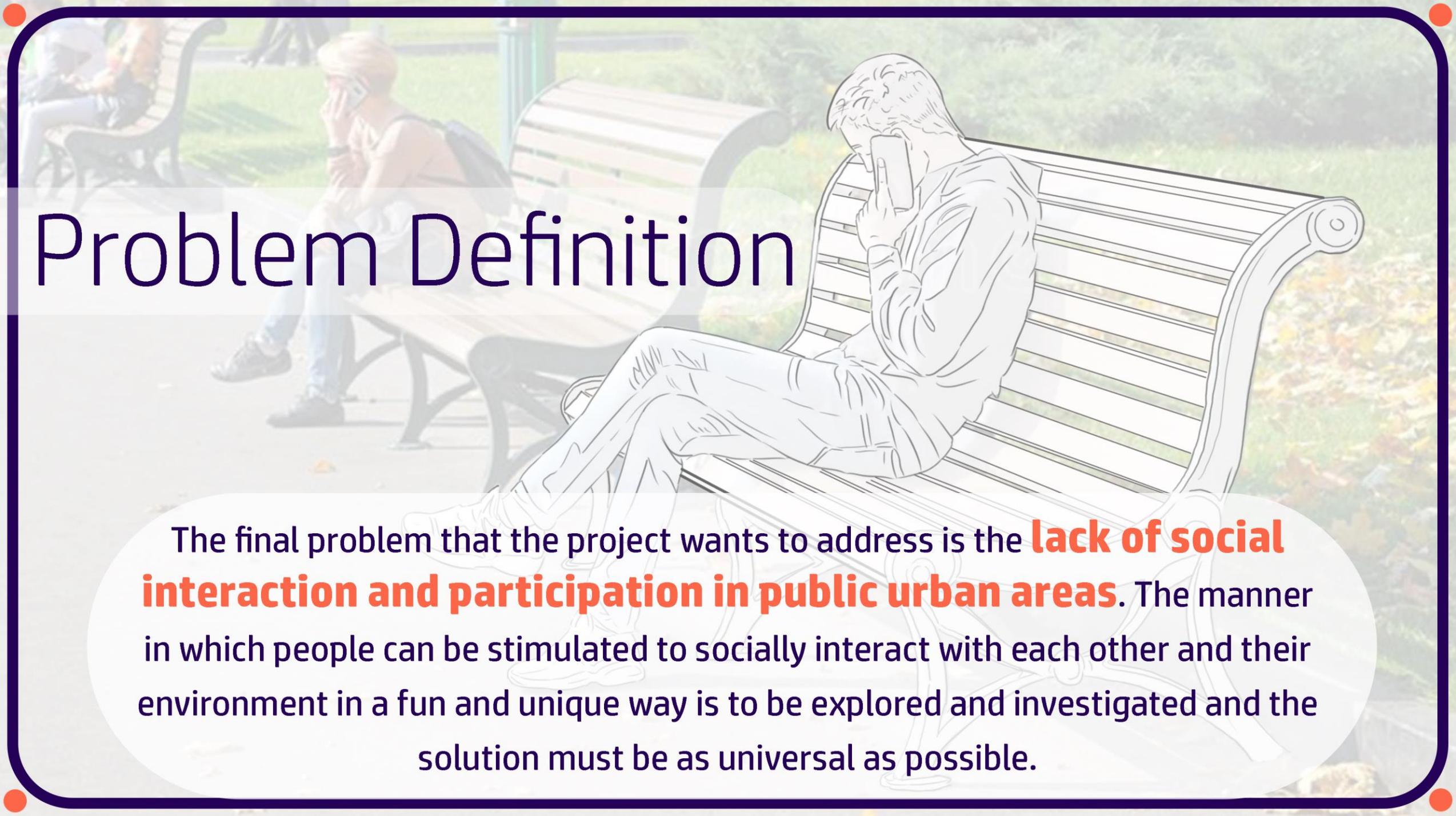
• **Ângelo**

Mechanical Engineering

# Agenda

Timeline





# Problem Definition

The final problem that the project wants to address is the **lack of social interaction and participation in public urban areas**. The manner in which people can be stimulated to socially interact with each other and their environment in a fun and unique way is to be explored and investigated and the solution must be as universal as possible.

# Preliminary studies

## Requirements



# Specific requirements

Stimulate social interaction

Be a type of game

More mentally challenging than physical

Encourage collaboration

Incorporate competition

Universal in use

Different:

- Ages
- Languages
- Cultures

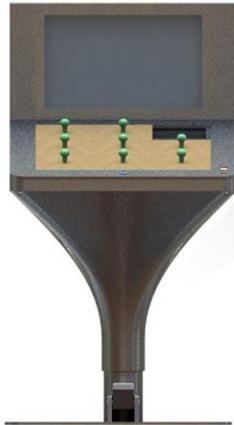
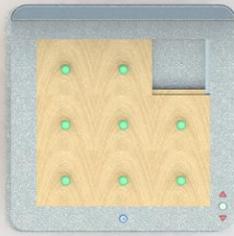
Install in public spaces in cities

Incorporate physical components  
with technology

Implemented in the outdoors

Free participation

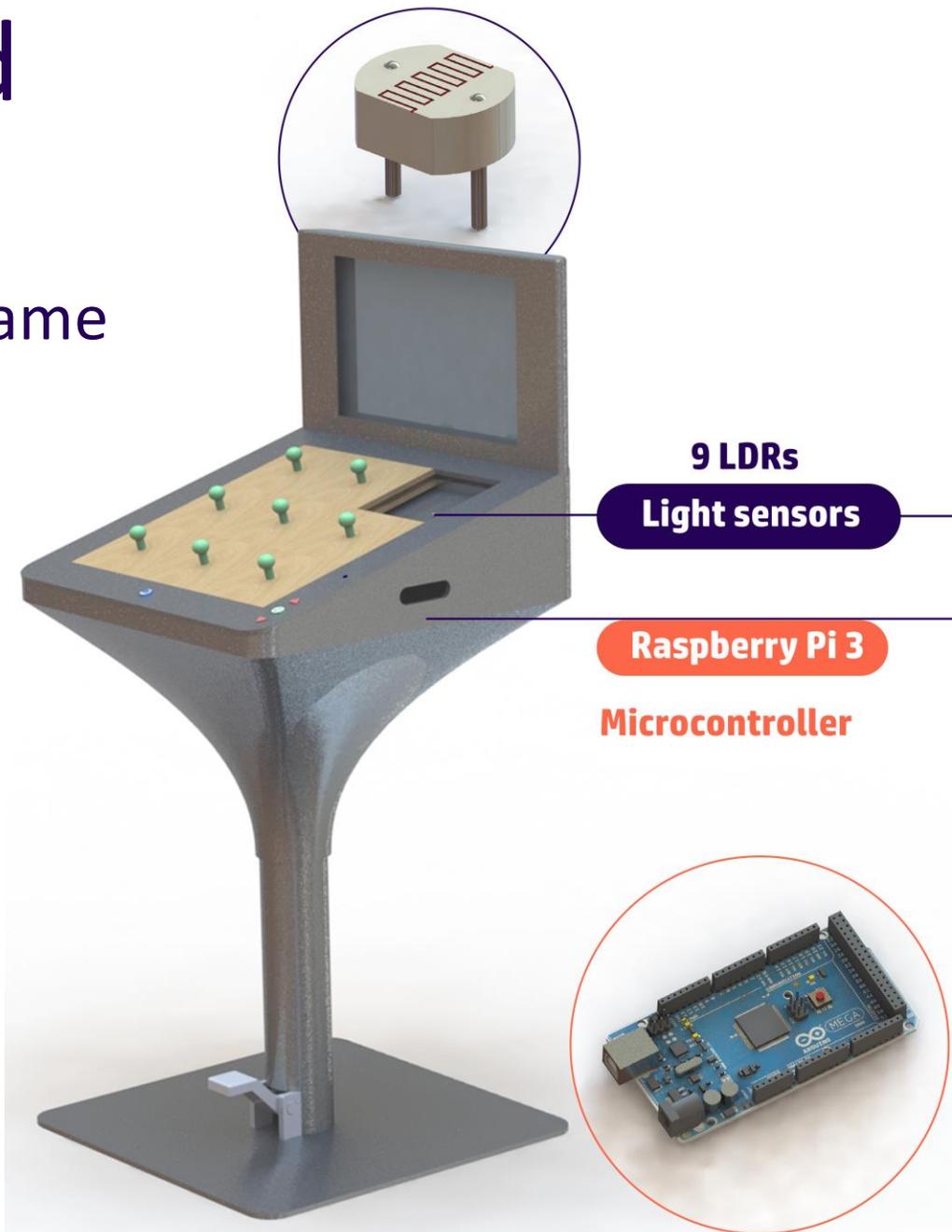
Respect privacy



# Proposed Solution

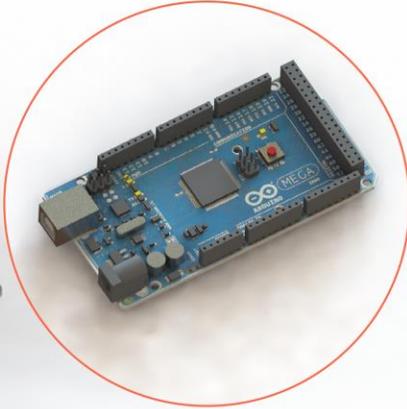
## Sliding puzzle game

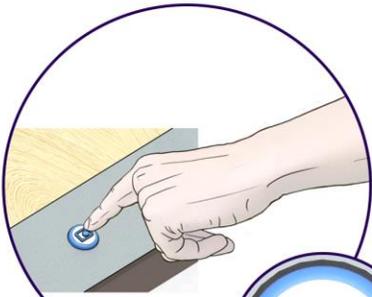
- Installed in public spaces
- Take a photo & solve the puzzle
- Sliding puzzle pieces- movement tracked by light sensors
- Adjustable in height- foot pedal



9 LDRs  
Light sensors

Raspberry Pi 3  
Microcontroller

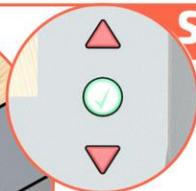
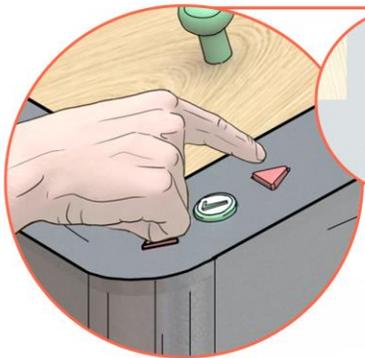




**Push buttons**



**Camera**

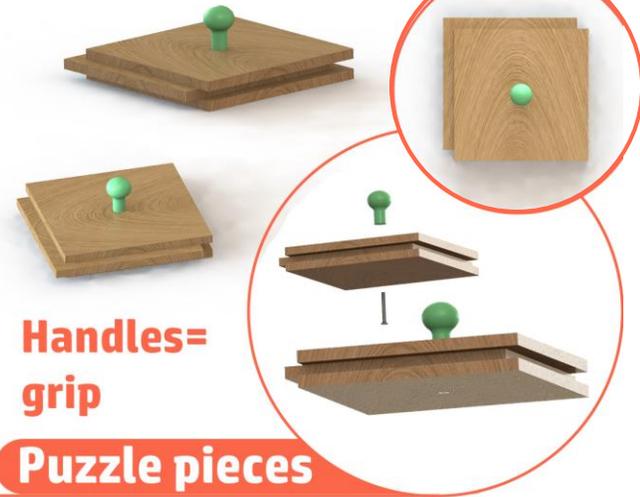
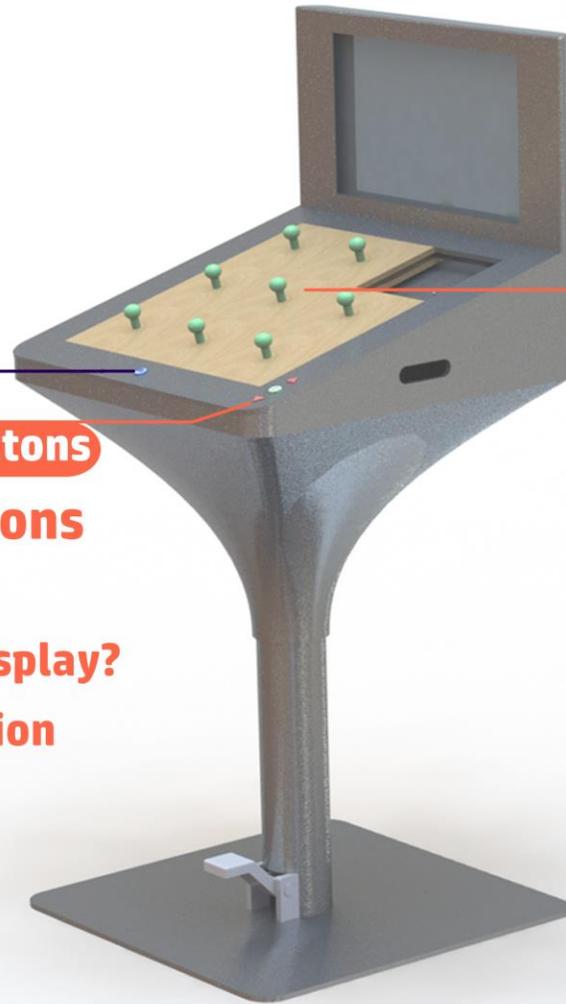


**Selection buttons**

**Push buttons**

**-Publicly display?**

**-Filter selection**

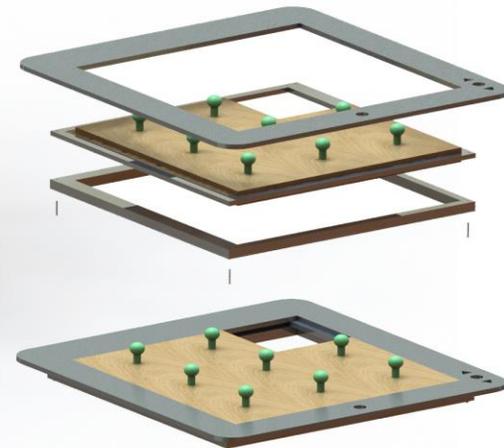


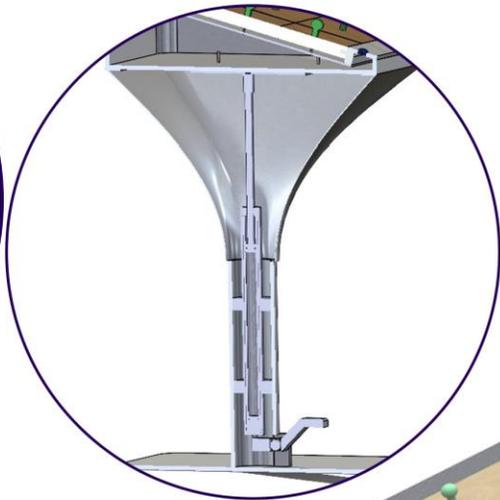
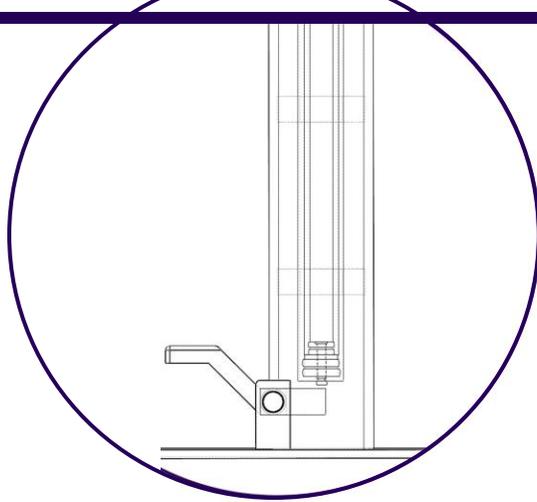
**Handles=  
grip**

**Puzzle pieces**

**8 Puzzle pieces**

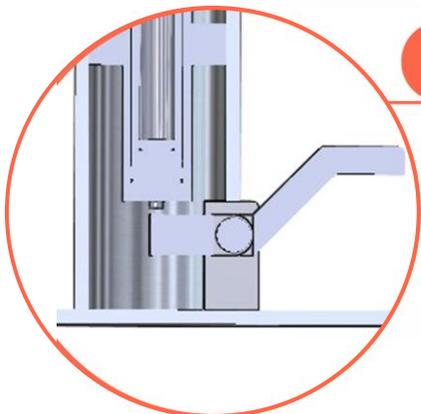
**Lip-and-groove system  
= sliding mechanism**





**Gas lift system  
= Height adjustment**

**Pneumatic lift**

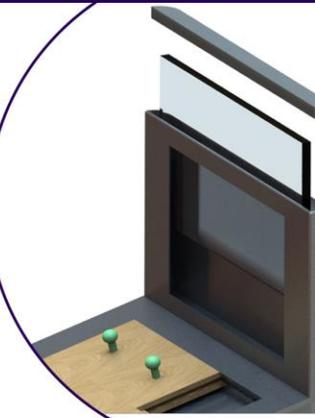


**Foot pedal**

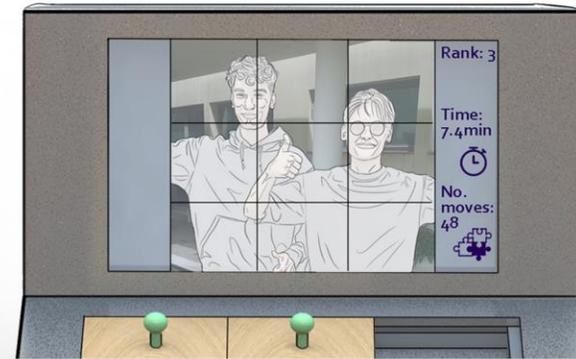
**Pedal lever  
Pivot pin**



**Screen  
Display**

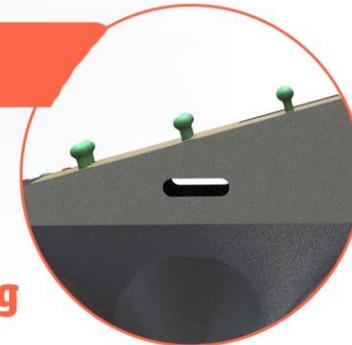


**Screen  
Rubber insert  
Aluminium  
screen frame**



**Handles**

**Handle  
indents for  
easier handling**



# Prototype

Materials and construction adjustments and final design



White Oak



Plywood



Aluminium



Steel



Pneumatic lift



Office chair  
gas lift

# Prototype

- How it works

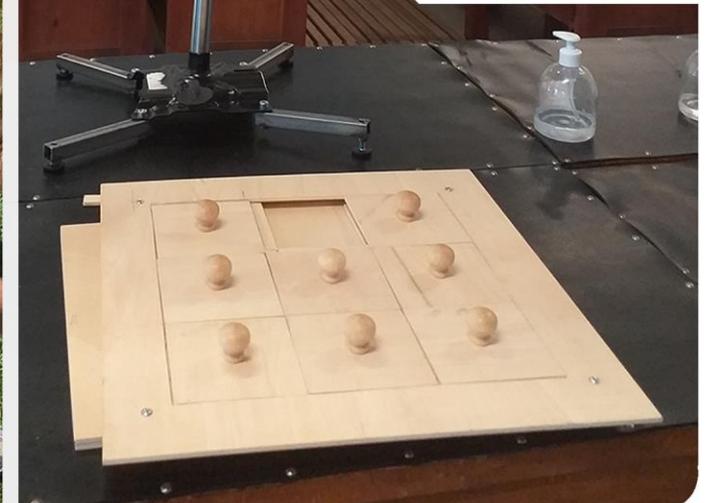
Lip and Groove system  
in the sliding pieces

Handles for grip

Pedal activation system  
(How to lift and push  
down the equipment)

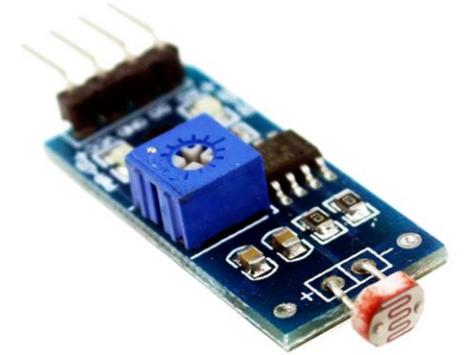
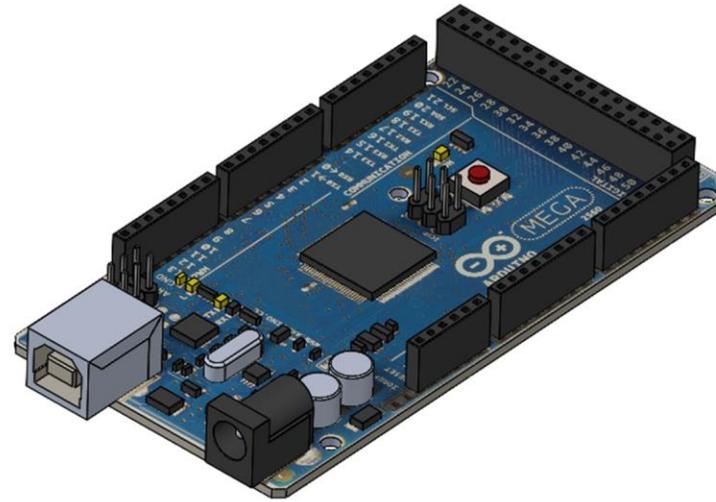


Use of a laptop



# Prototype

Software and electronics



Microcontroller:

Raspberry Pi 3 > Arduino Mega

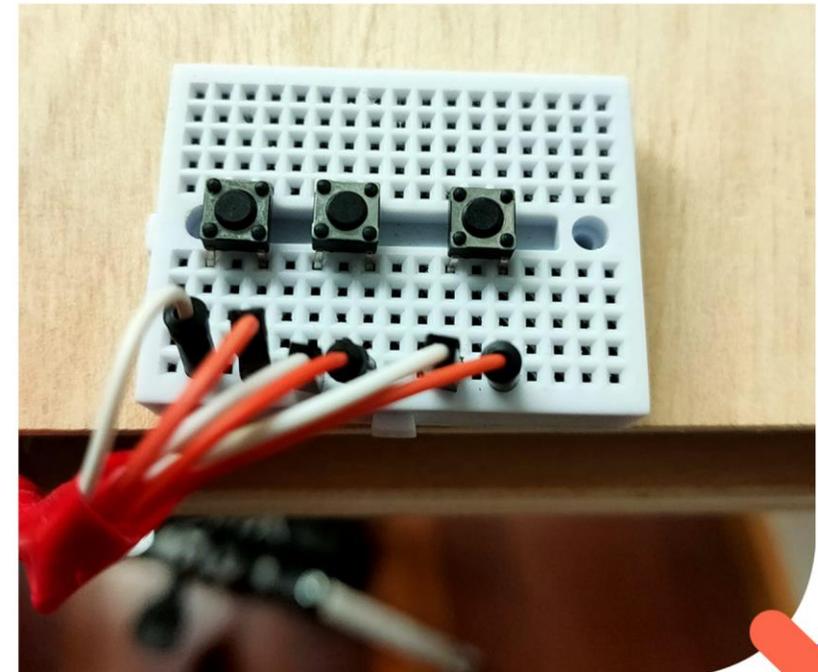
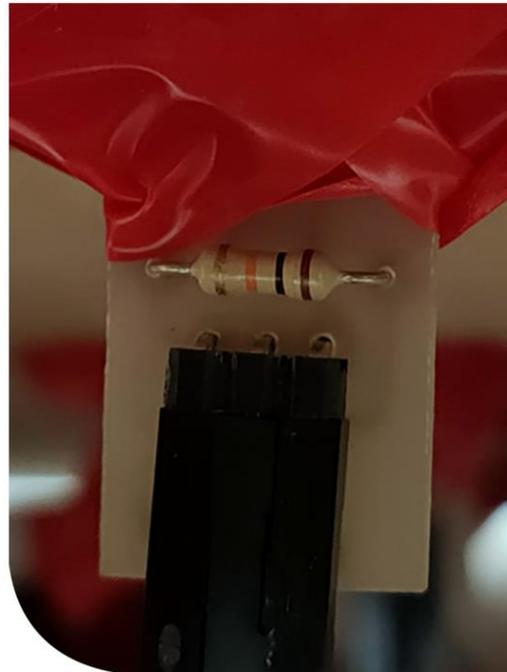
9 LDRs

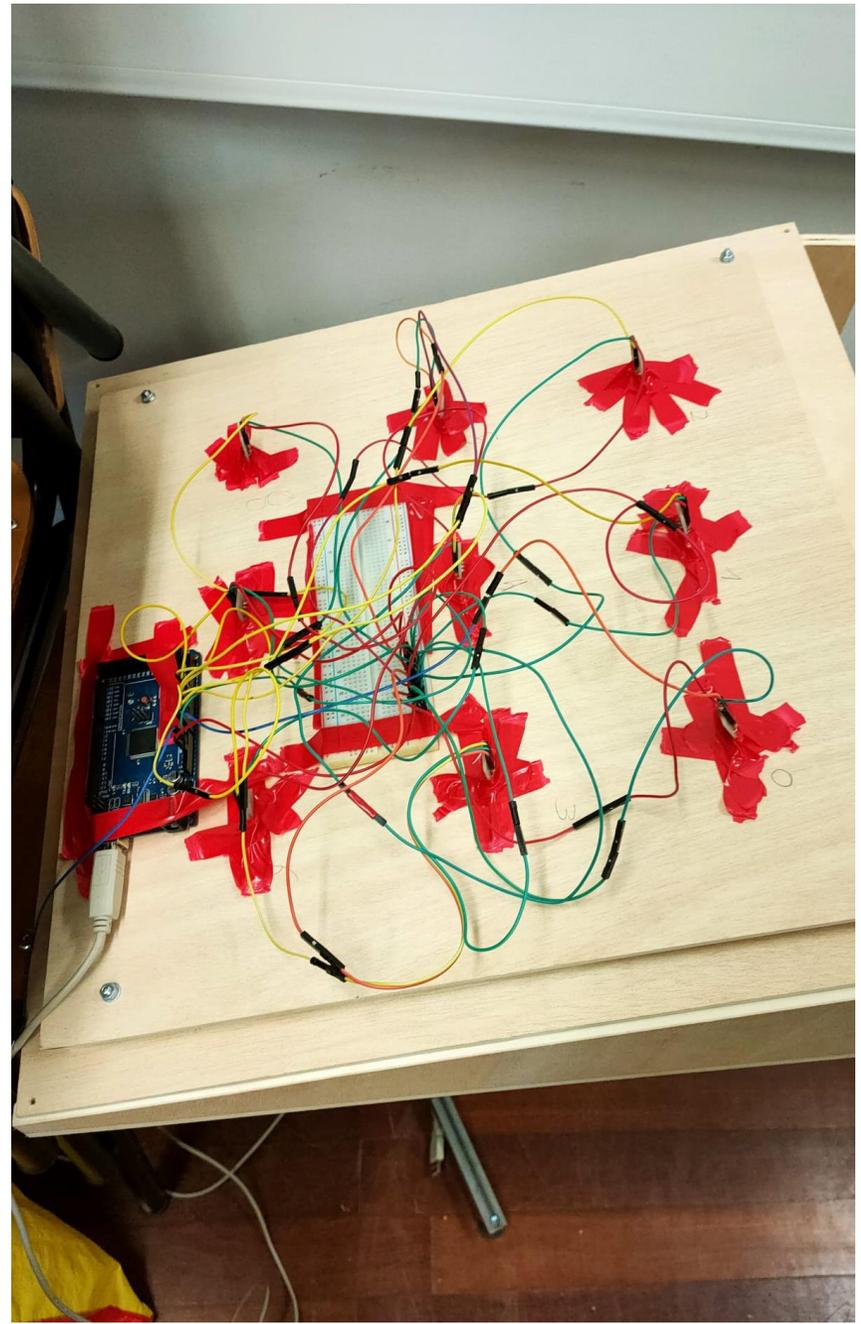
Wiring

LCD screen > Laptop screen

3 Push buttons

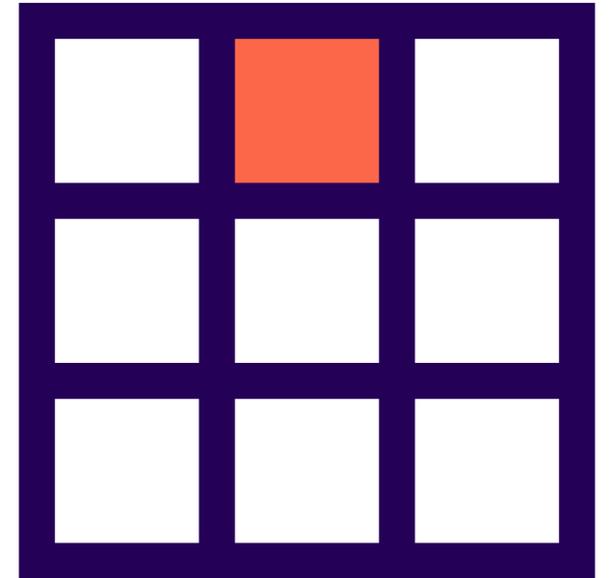
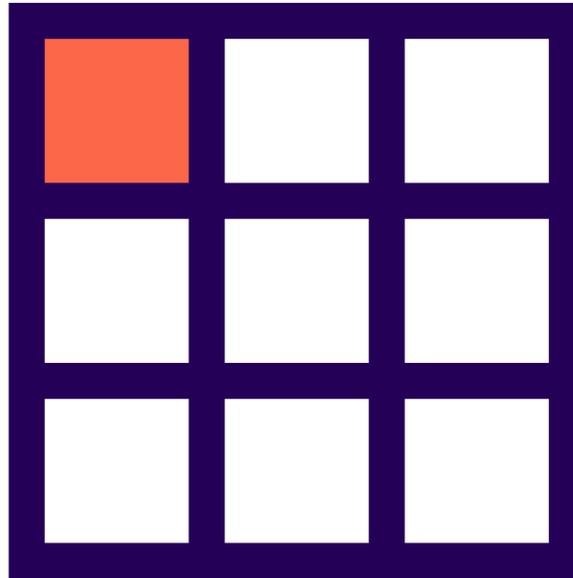
Resistors





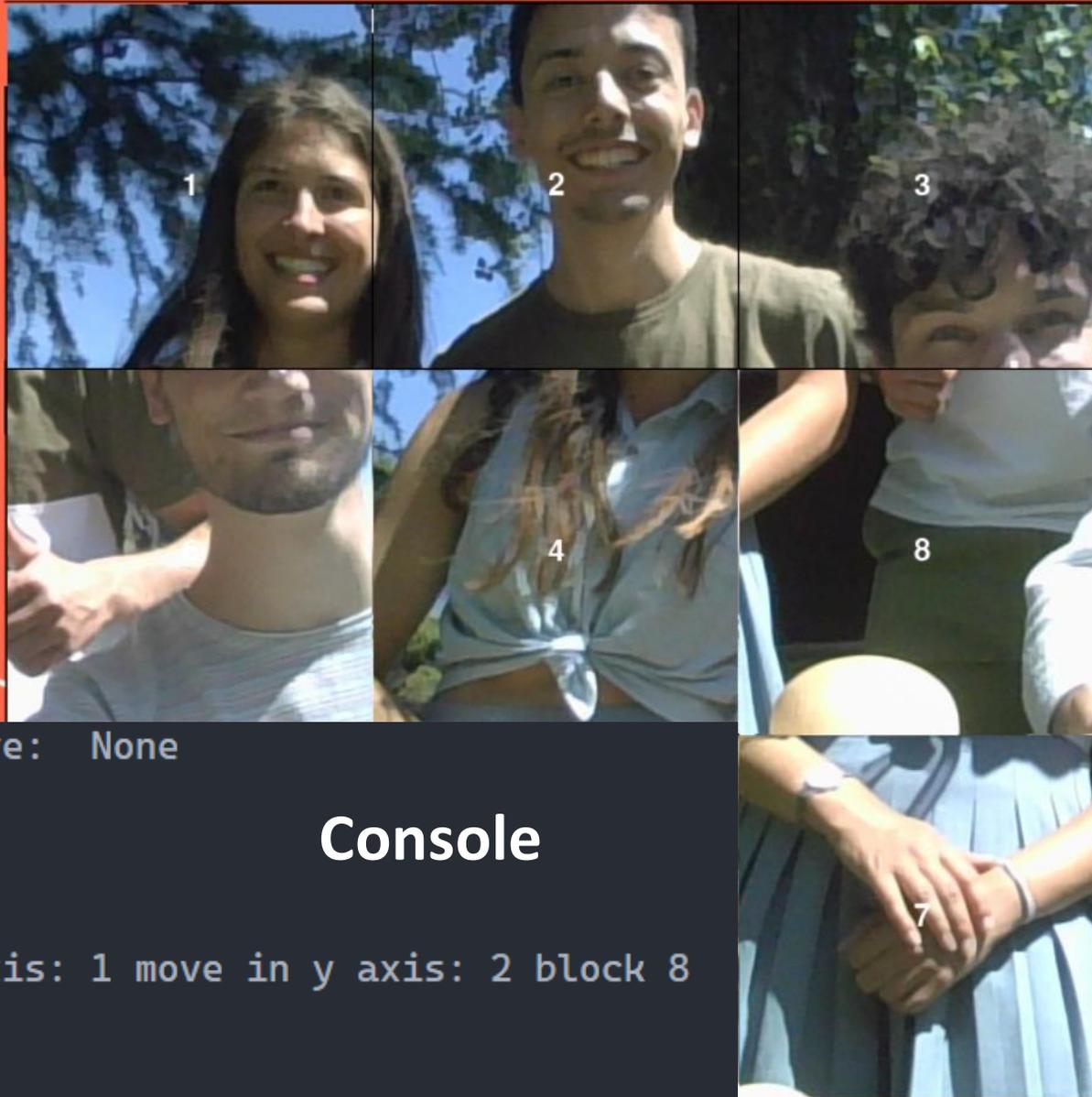


Pos 1 --> Pos 2



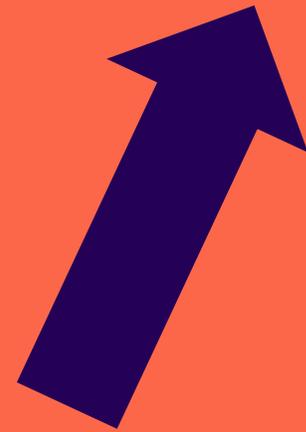
Receiving light

Total Moves: 1  
Elapsed Time: 00:01



Sensor 0: 4  
Sensor 1: 0  
Sensor 2: 13  
Sensor 3: 0  
Sensor 4: 0  
Sensor 5: 0  
Sensor 6: 255  
Sensor 7: 0  
Sensor 8: 0

Last moved direction: LEFT



```
slide number: 0 last move: None  
board before move: LEFT  
[1, 2, 3]  
[4, 5, 6]  
[7, 8, 0]  
directionLEFT move in x axis: 1 move in y axis: 2 block 8  
updated board  
[1, 2, 3]  
[4, 5, 6]  
[7, 0, 8]
```

Console

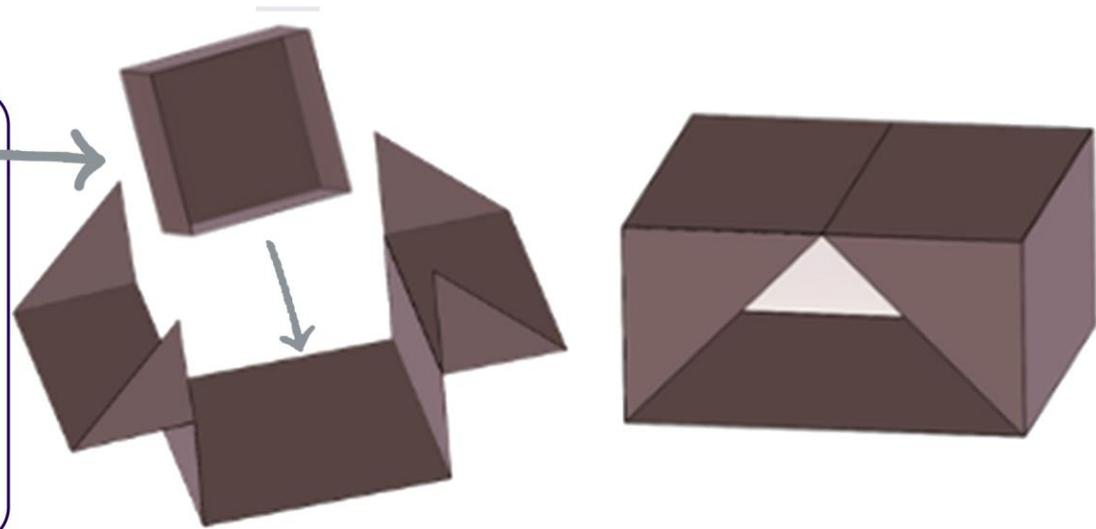
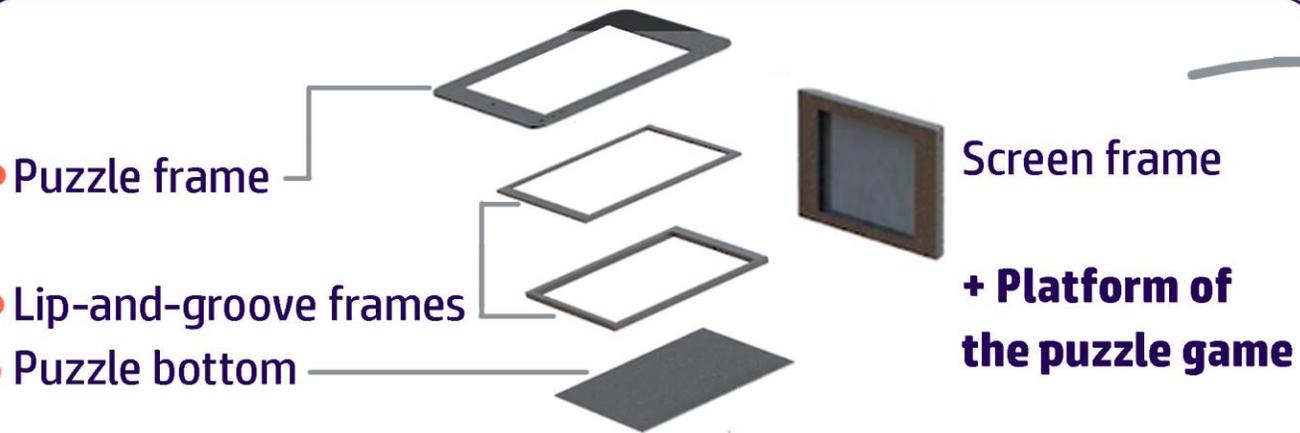
Software



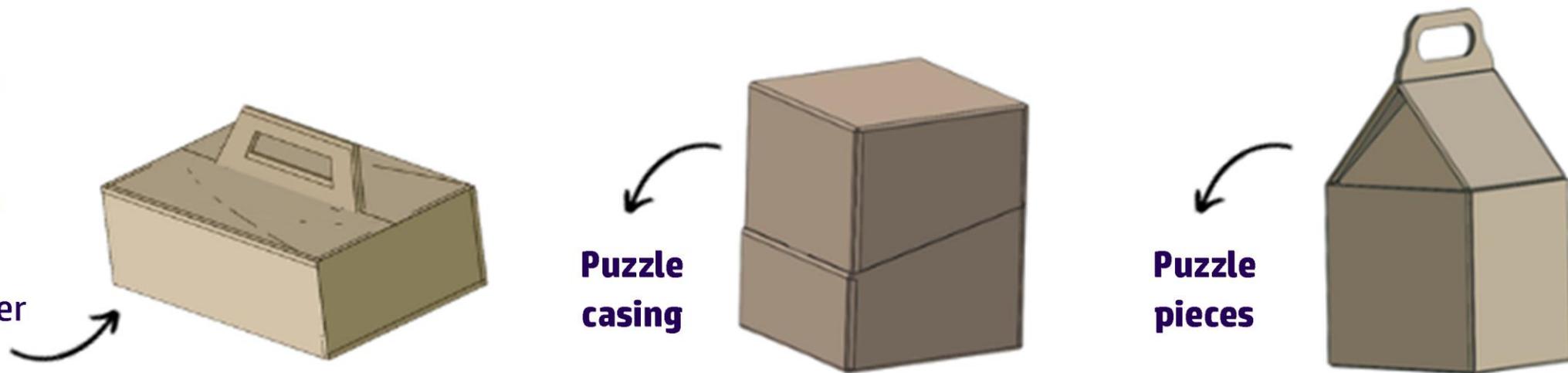
Video.....



# Packaging



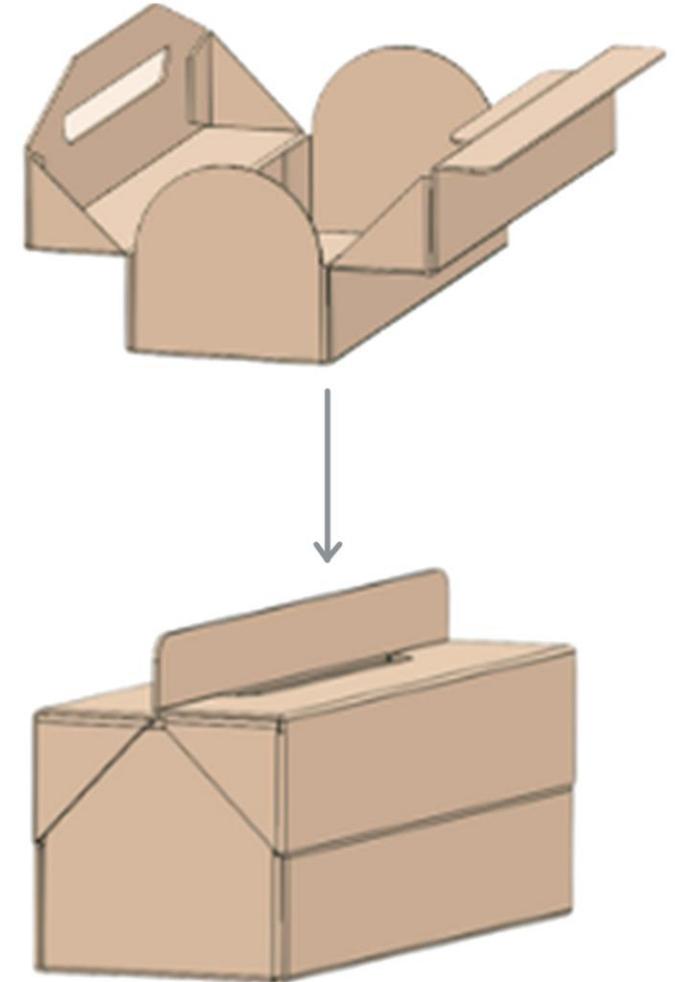
- Push buttons
- Screws
- Light sensors
- Cables
- Microcontroller
- Handles



# Packaging



- Leg base
- Structure base
- Pneumatic lift
- 2 retainers
- Cylinder base
- Foot pedal



# Leaflet

**Our City Experience**  
An interaction stimulating game for public spaces

**SHIFTI**

**STEPS:**

- 1 Push the button to take a photo-look at the screen to make sure you are within the frame.
- 2 Choose the artistic effects you want.
- 3 Your photo will appear jumbled up on the screen.
- 4 Slide the physical puzzle pieces vertically or horizontally to complete your photo on the screen as quickly as possible.
- 5 Your time and score will appear on the screen-have a race with another team!
- 6 Once the puzzle is completed, choose whether your photo can be on display or not.
- 7 Scan the QR code if you want to download your photo.

ISEP INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO

**WHY?**

People in public areas are often focused on their own digital world, **unaware of the environment around them or the people in their nearby surroundings.**

Public areas should be places where people go to enjoy the city.

Engaging in a challenging game **stimulates social interaction between people, encourages participation and propels positive experiences** in the city environment.

**WHO?**

People who use public spaces alone, or joining with friends.

Age: ANY  
Culture:   
Background:  Language:   
Nationality:  Locals:   
Capability:  Tourists:

Meet new people, face challenges together and overcome the barrier of talking to strangers with us!

**SHIFTI**

**Our City Experience**  
An interaction stimulating game for public spaces

LOOK FOR OUR OTHER DESTINATIONS

WWW.SHIFTI.COM

00351 76 744 7944

SHIFTIPUZZLE@GMAIL.COM

ISEP INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO

**WHAT?**

A unique, interactive and exciting puzzle, offering visitors the opportunity to engage with others and create long-lasting memories.

The installation combines technology with physical moving components that allow people to pose and take photos of themselves together, which will be captured by a camera built into the product.

However, instead of the traditional photo printouts, the photo will be jumbled into digital pieces, creating a puzzle-like effect.

To see the full photo, people will have to complete a sliding puzzle by physically moving the corresponding puzzle pieces on the interactive platform.

**STEPS:**

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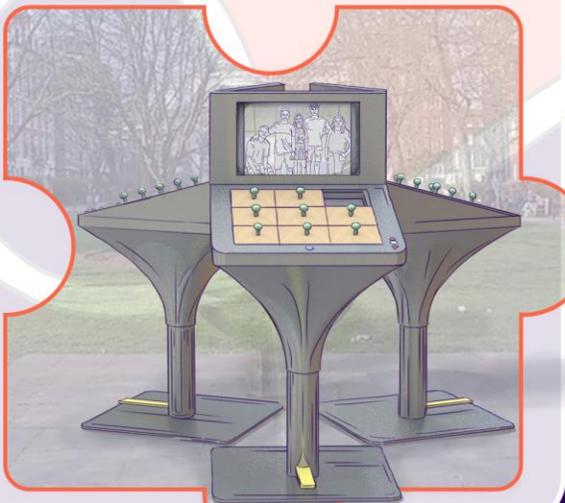
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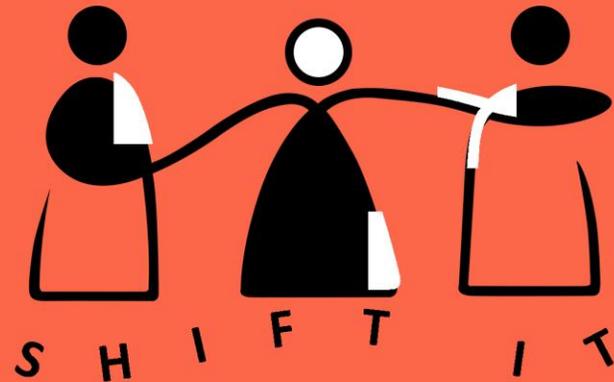
## WHO ?

People who use public spaces alone, or joining with friends.

### ANY

- Age
- Background
- Nationality
- Capability
- Culture
- Language
- Locals
- Tourists

Meet new people, face challenges together and overcome the barrier of talking to strangers with us!



# Our City Experience

An interaction stimulating game for public spaces



LOOK FOR OUR OTHER DESTINATIONS

[WWW.SHIFTIT.COM](http://WWW.SHIFTIT.COM)

00351 74 744 7944

[SHIFTITPUZZLE@GMAIL.COM](mailto:SHIFTITPUZZLE@GMAIL.COM)



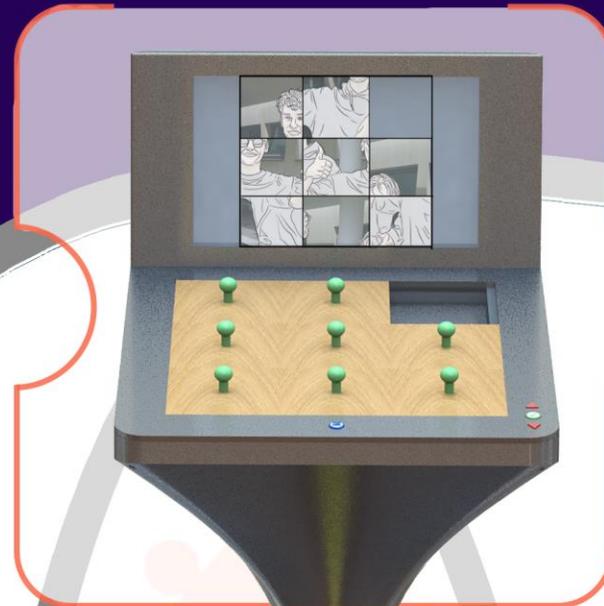
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To see the full photo, people will have to complete a sliding puzzle by physically moving the corresponding puzzle pieces on the interactive platform.



## STEPS:

1

Push the button to take a photo-look at the screen to make sure you are within the frame.



2

Choose the artistic effects you want.



3

Your photo will appear jumbled up on the screen.



4

Slide the physical puzzle pieces vertically or horizontally to complete your photo on the screen as quickly as possible.



5

Your time and score will appear on the screen-have a race with another team!



6

Once the puzzle is completed, choose whether your photo can be on display or not.



7

Scan the QR code if you want to download your photo.



# Flyer



## Our City Experience

### WHAT?

- An interactive sliding puzzle
- A unique and exciting installation!
- A fun and engaging way to interact with each other while creating lasting memories.

### WHO?

- Scan the QR code to discover the various locations in the city.

### WHERE?



- Scan the QR code to discover the various locations in the city.

S H I F T I T



1

Push the button, take a photo-look at the screen to make sure you are within the frame.



2

Choose the artistic effect.



3

Your photo will appear jumbled up on the screen.



4

Slide the physical puzzle pieces to complete your photo on the screen as quickly as possible.



5

Your time and score will appear on the screen-have a race with another team!



6

Choose whether your photo can be on display or not.



7

Scan the QR code to download your photo.

Participation is  
FREE!



# Poster

## WHAT? •

- An interactive sliding puzzle
- A unique and exciting installation!
- A fun and engaging way to interact with each other while creating lasting memories.

## WHO? •

- Tourists, locals, children, adults
- Any language, culture, background, nationality.

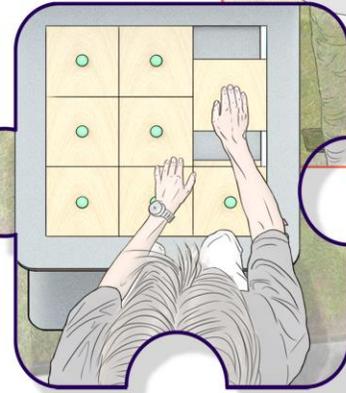
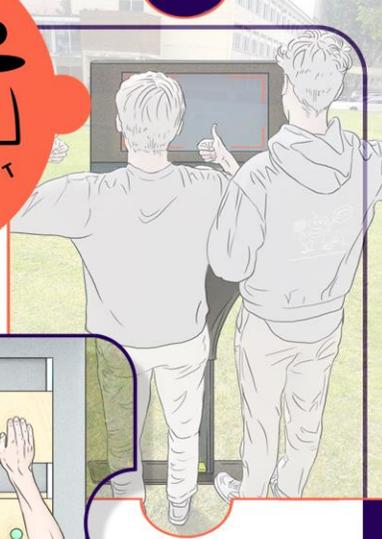
## WHERE? •

- Scan the QR code to discover the various locations in the city.



## HOW? •

- 1 Push the button, take a photo-look at the screen to make sure you are within the frame. 
- 2 Choose the artistic effect. 
- 3 Your photo will appear jumbled up on the screen. 
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- 7 Scan the QR code to download your photo. 



Stimulating social interaction in public spaces



Alicja Faber  
Angelo Torres  
Elena Boucher  
Felix Jungkivist  
Lahore Hauspie  
Sander Spaas



# User Journey



1 Public spaces within the city often lack social interaction



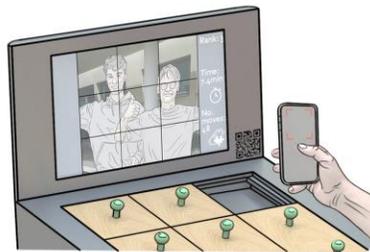
2 Game is installed in public space with photos on display. Gets noticed by a passer-by



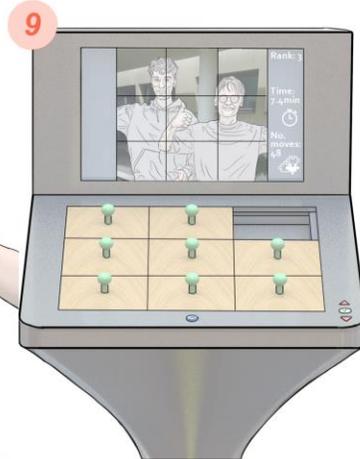
3 Read the instructions



4 Find someone to collaborate with



9 Scan the QR code to access Shift it's website to see ranking and download photo



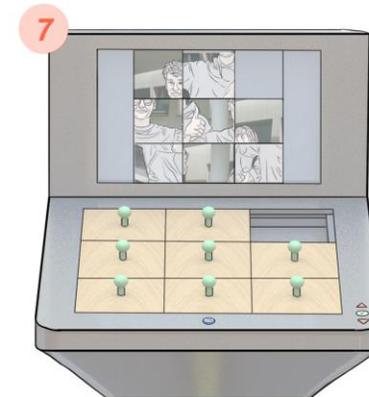
Once the puzzle is done, the original photo as well as time and number of moves for completion appears onscreen.



10 Use the buttons to select whether to publicly display it or not

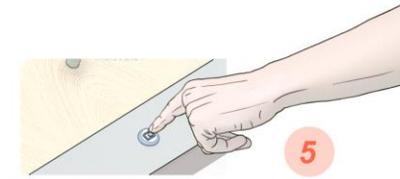


8 Slide the puzzle pieces horizontally or vertically to solve the puzzle onscreen. Use the handles for better grip



7 The photo appears scrambled up as 8 pieces on screen

6 Use the buttons to select the desired filter



5 Press the blue button with the camera icon and pose in front of the screen to take a photograph. The actual photo cannot be seen, but users can see in the frame where to stand

# Conclusion

Thank you for  
listening!

