

# Responsive public space design

## The Ballon Canvas

## Concept

Public spaces as a place to portray opinion of the city dwellers. By making them a medium of interface for expression from different target groups. Thus making them a place of public performance.



# Why responsive public spaces as a display of opinion?

- Social Value and Placemaking

- Using public installations to reflect direct public opinions to make them act like a place maker in the city.

- to use an installation to activate the imagination and to encourage people to pay attention and perceive more deeply the environment they occupy.

- By making the space to be uniquely interactable by city dwellers and by-enabling people to experience art in the course of daily life, outside of museums or other cultural institutions.

- to make people engage in social interaction—both during the installation and the interaction so that it leads the viewer toward self-reflection and awareness.

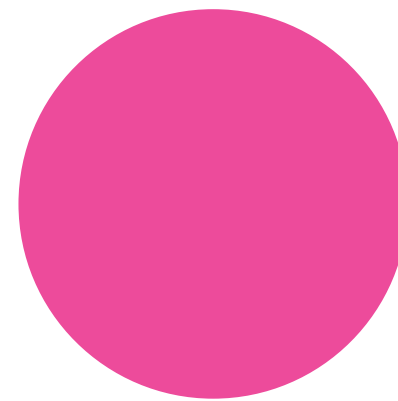
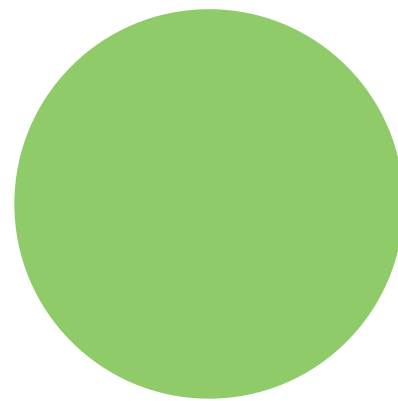
# Public installation to help people express their opinion

By making the installation a medium of interface to express opinion from different target groups.

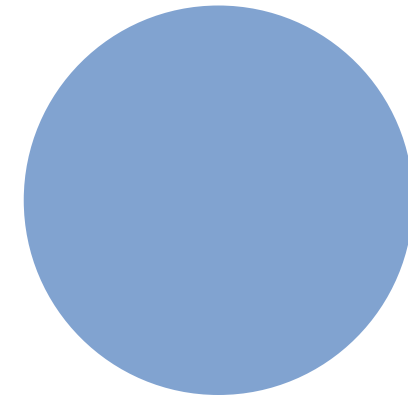
-Hardscape elements such as, Texture and color



**Ballons to  
define physical**



**Colors**



-Softscape elements such as Light and digital interaction

# **Physical interaction and sense of place**

Color

-Making people to express their opinion using colors as interaction

Ballons

-In order to inhance physical interaction and sence of place

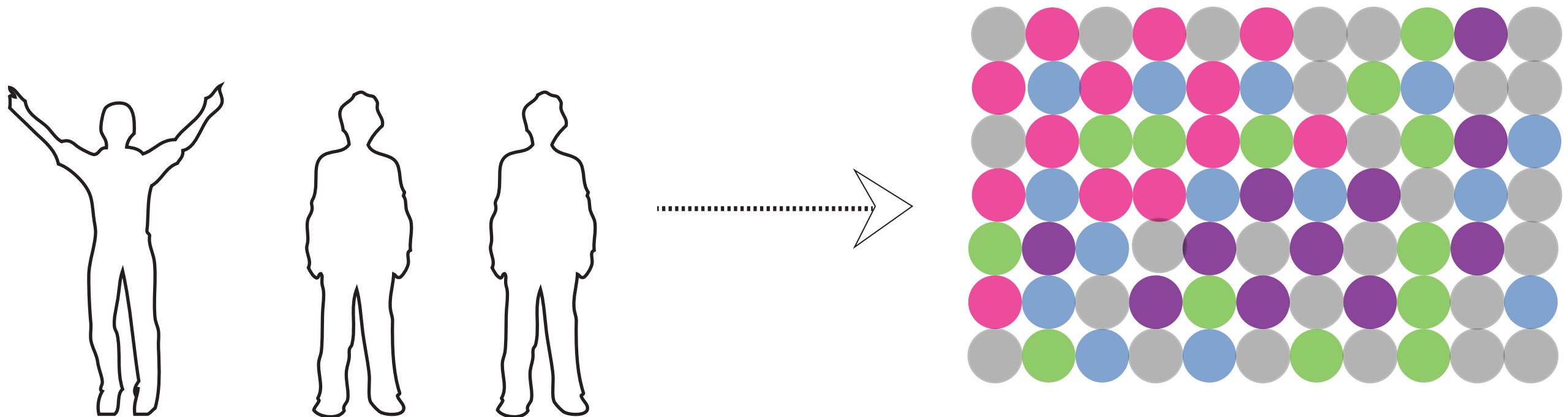
**Trget groups**

**Everyone in the society.**

Kids, Adults And Disabled groups

## concept    Application

- To make people Experience their individual presence and their connection with their community.
- Creating a communal space by creating a space that viewers can directly engage and transfer performce of each other .

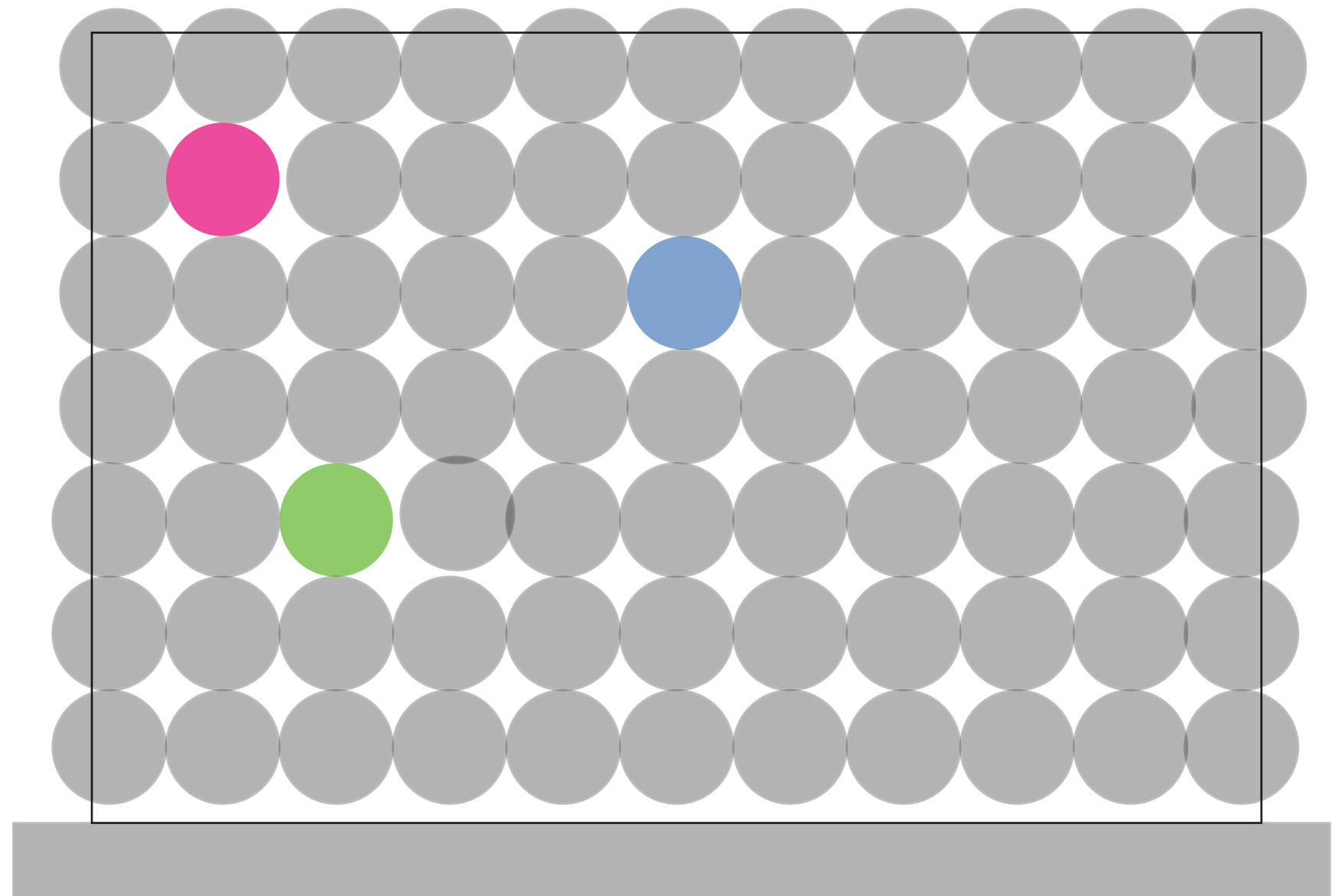


# Physical interaction and sense of place

## Body gestures

-By Making the visitors to interact with the installation using their hand clap

-Initiating visitors to glow the ballons by asking them a specific question about their city.



How do you rate social justice in your city?

High

Average

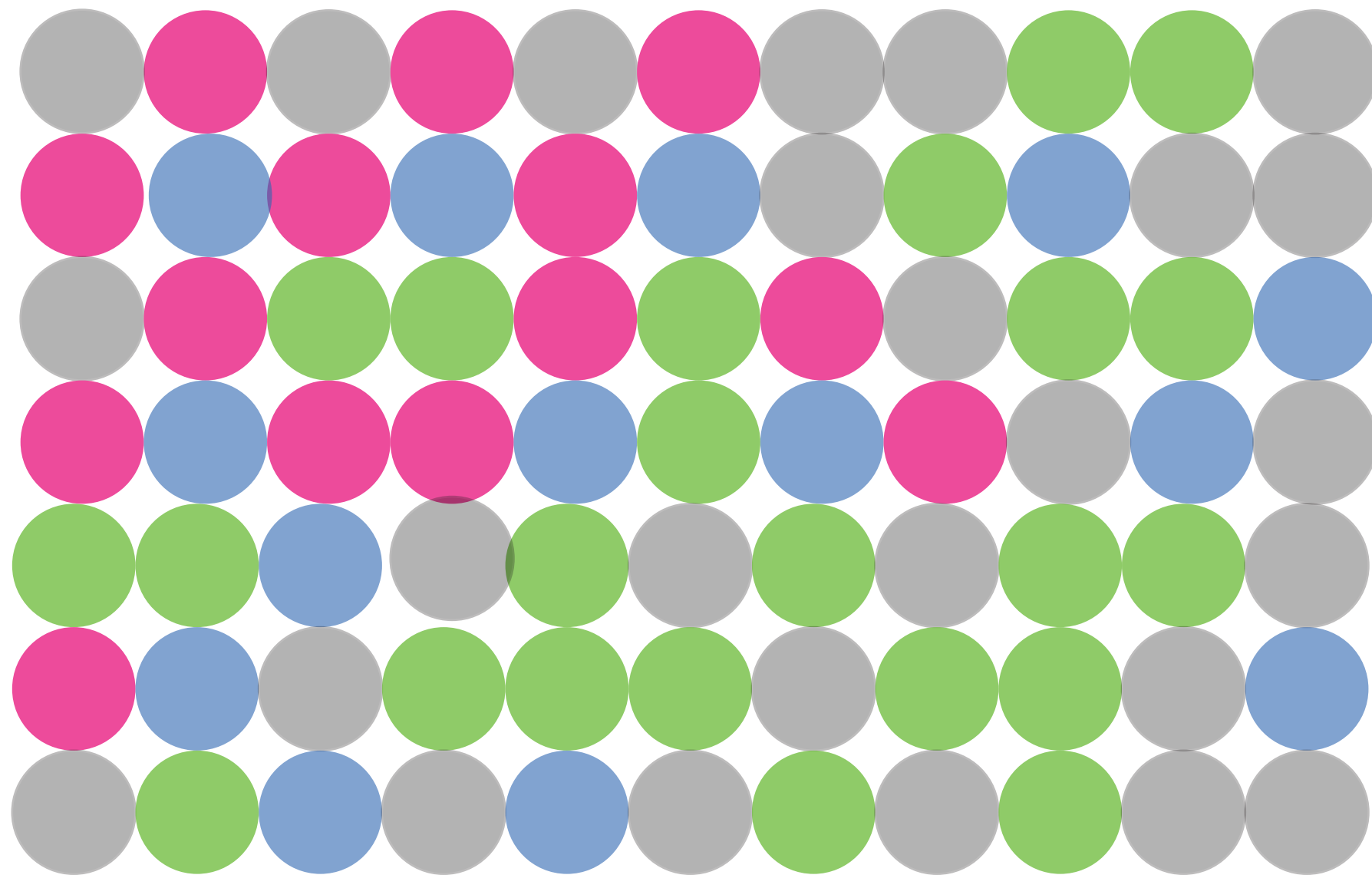
Low



# Design development

The installation as a canvas

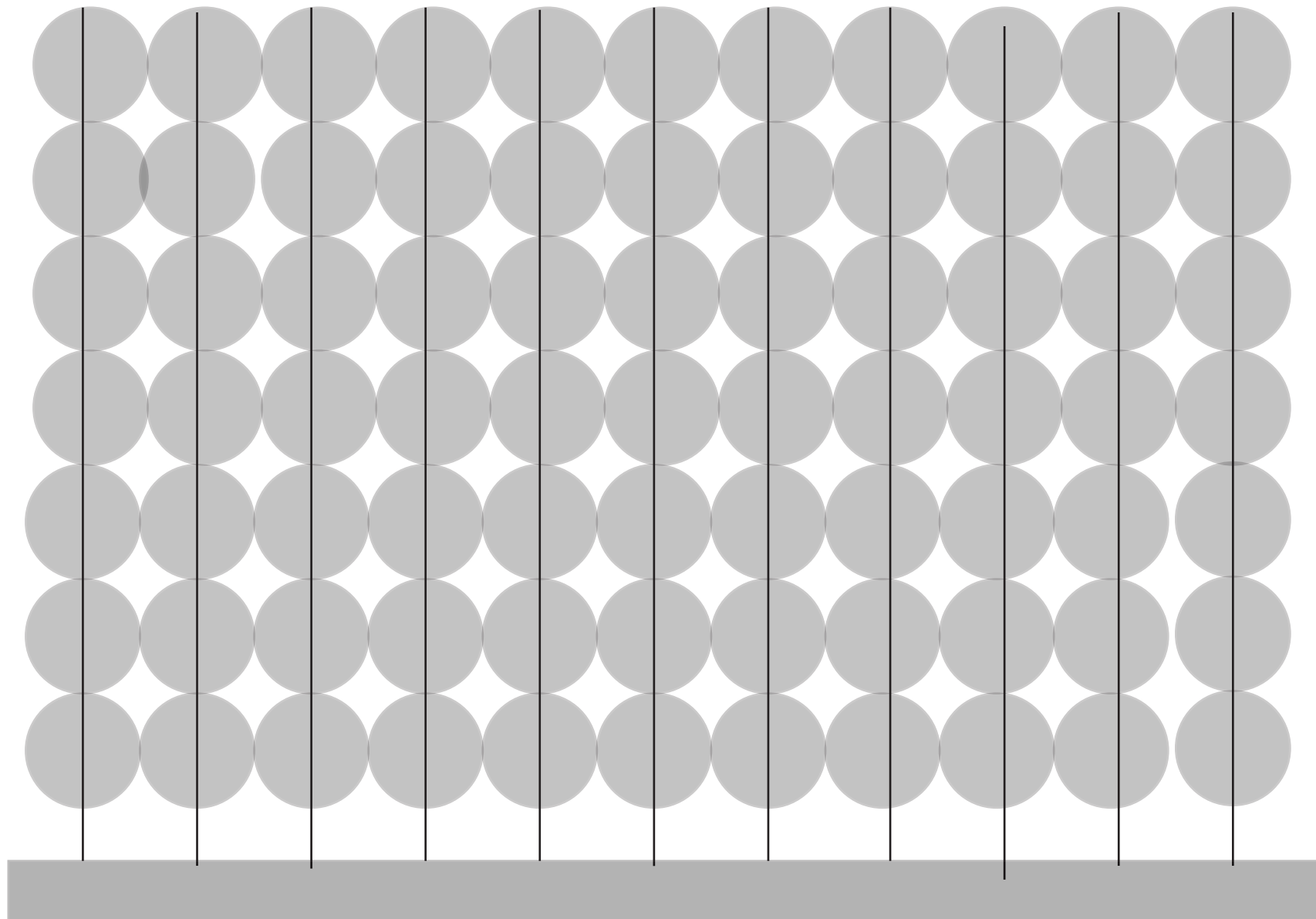
- Each interaction point will be represented by a ballon on the installation
- Making opinions to be viualised using colors.



# Design implementation

Arrangement of ballons

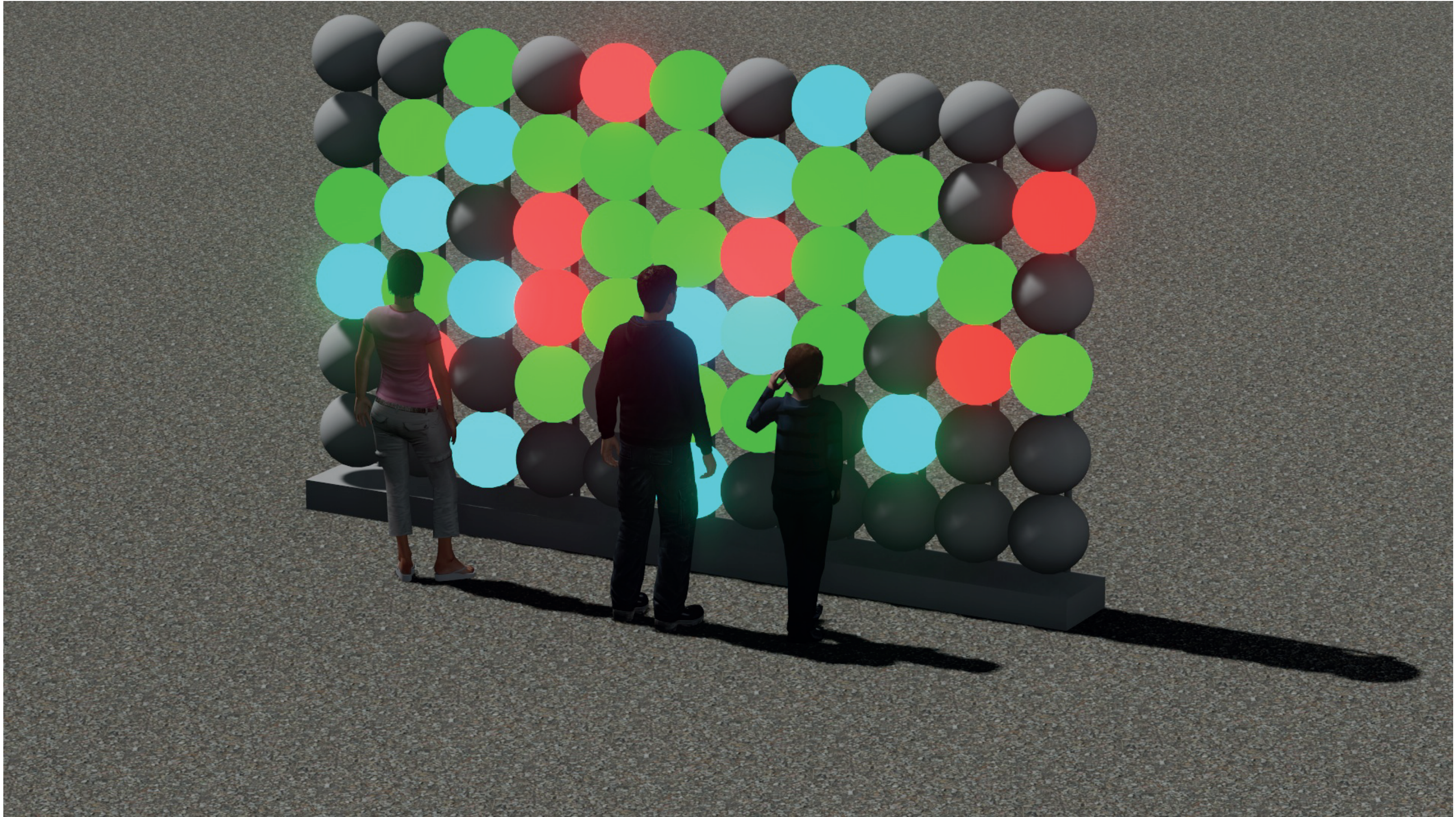
Material Layout



connectin the ballons n a vertical raw to adress lighting of  
each individual LED light in using one Arduino



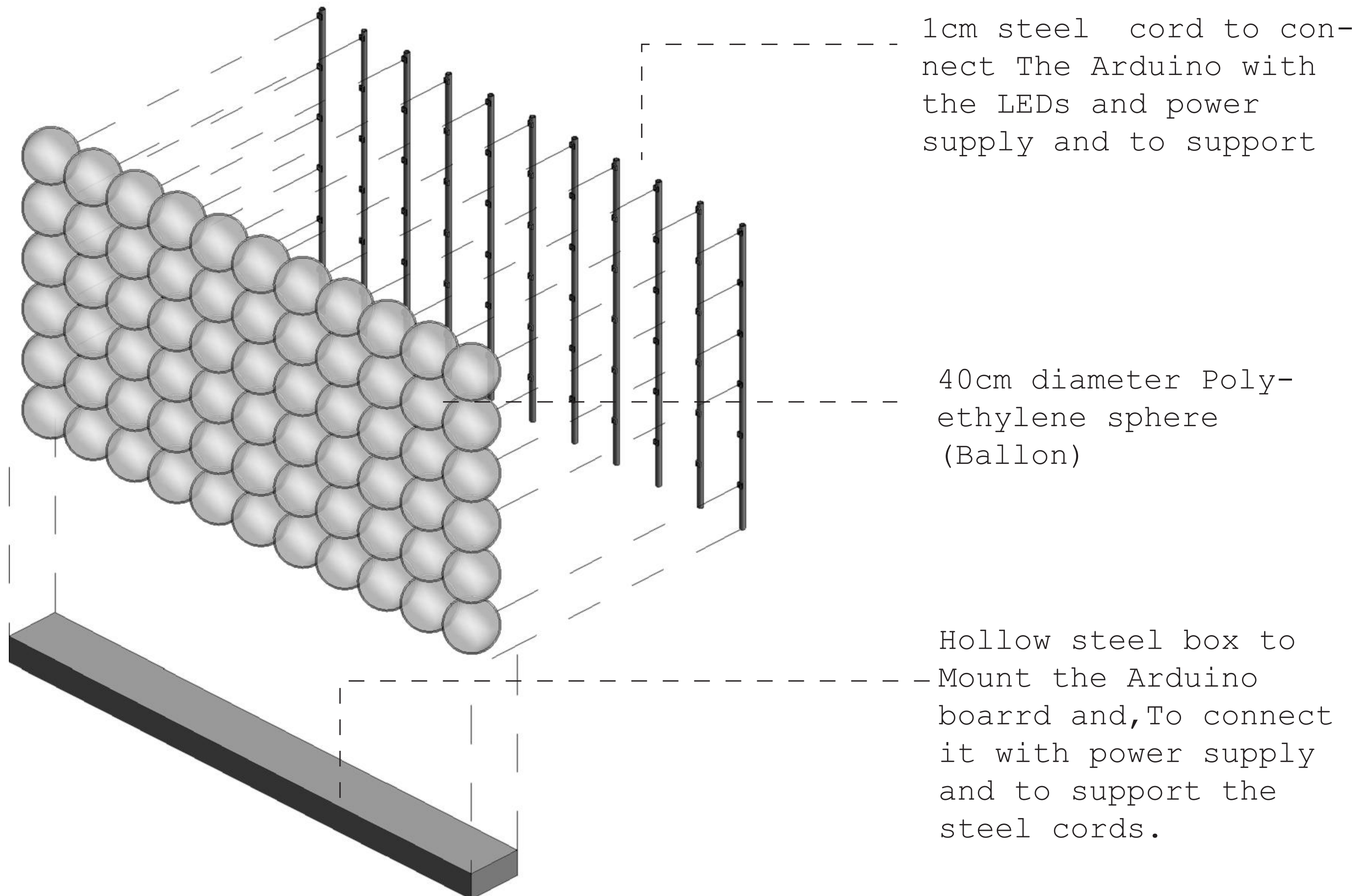
# Design and interaction



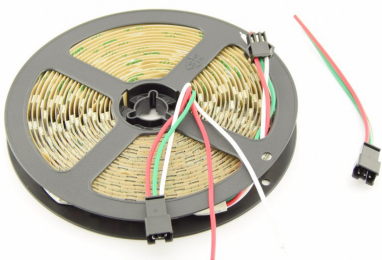
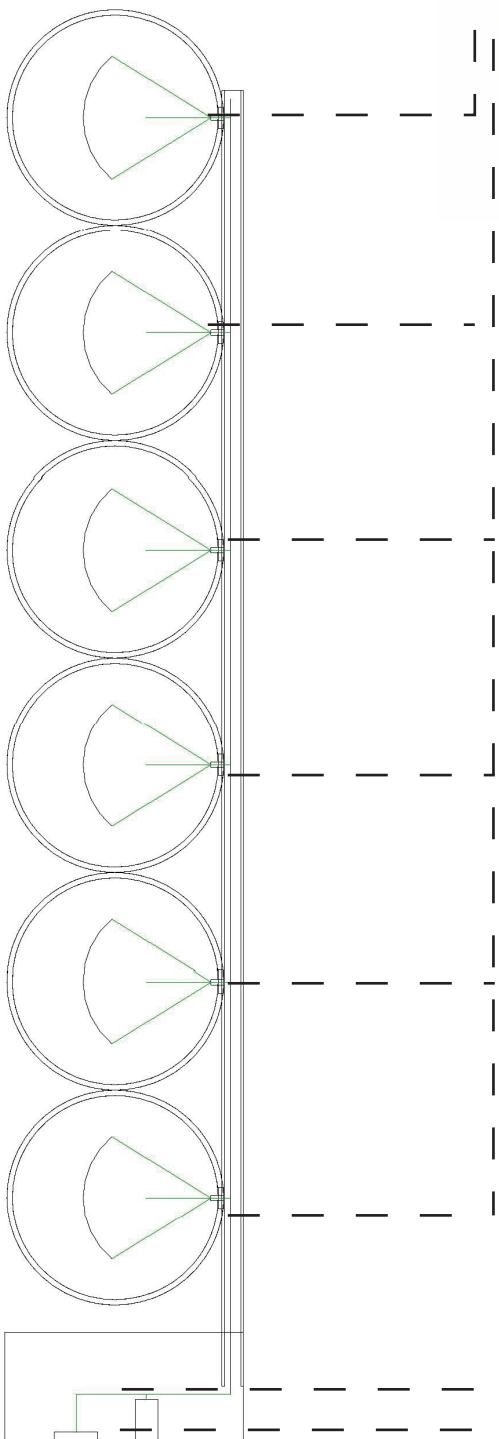
Expressing their opinion using color and body gesture



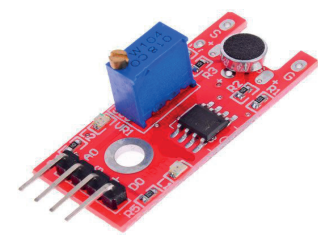
# Materials,Details,installation and implementation



# Materials



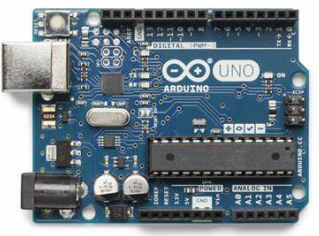
WS2812B LED Strip



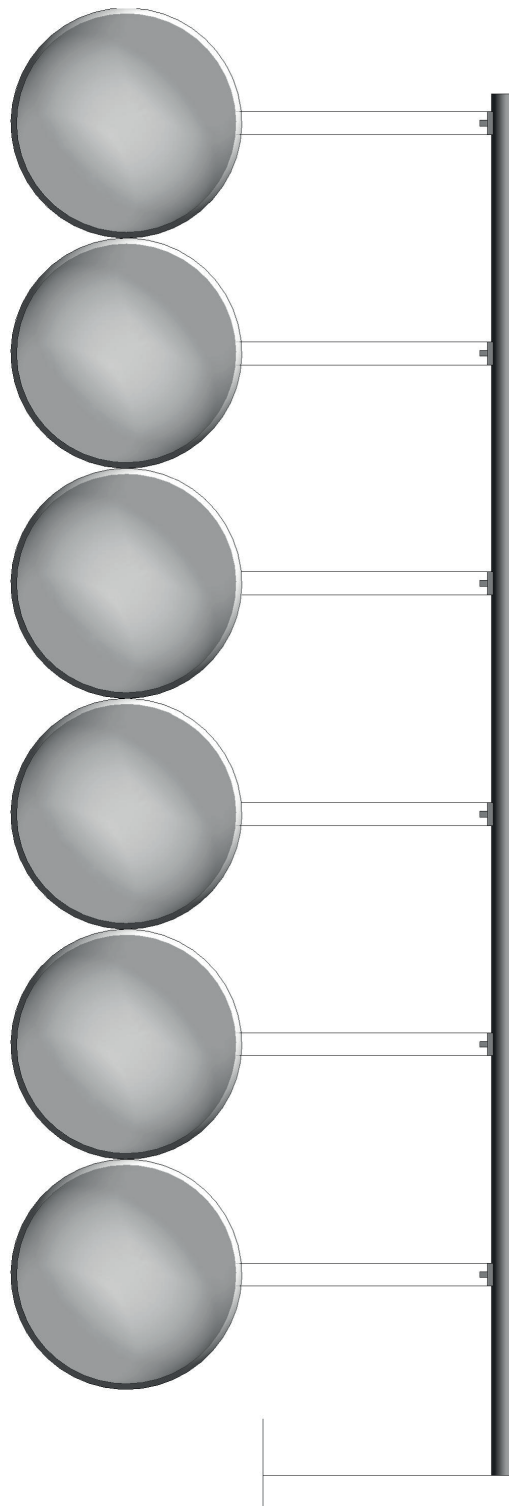
microphone sensor  
AVR PIC sensitivity sound detection module



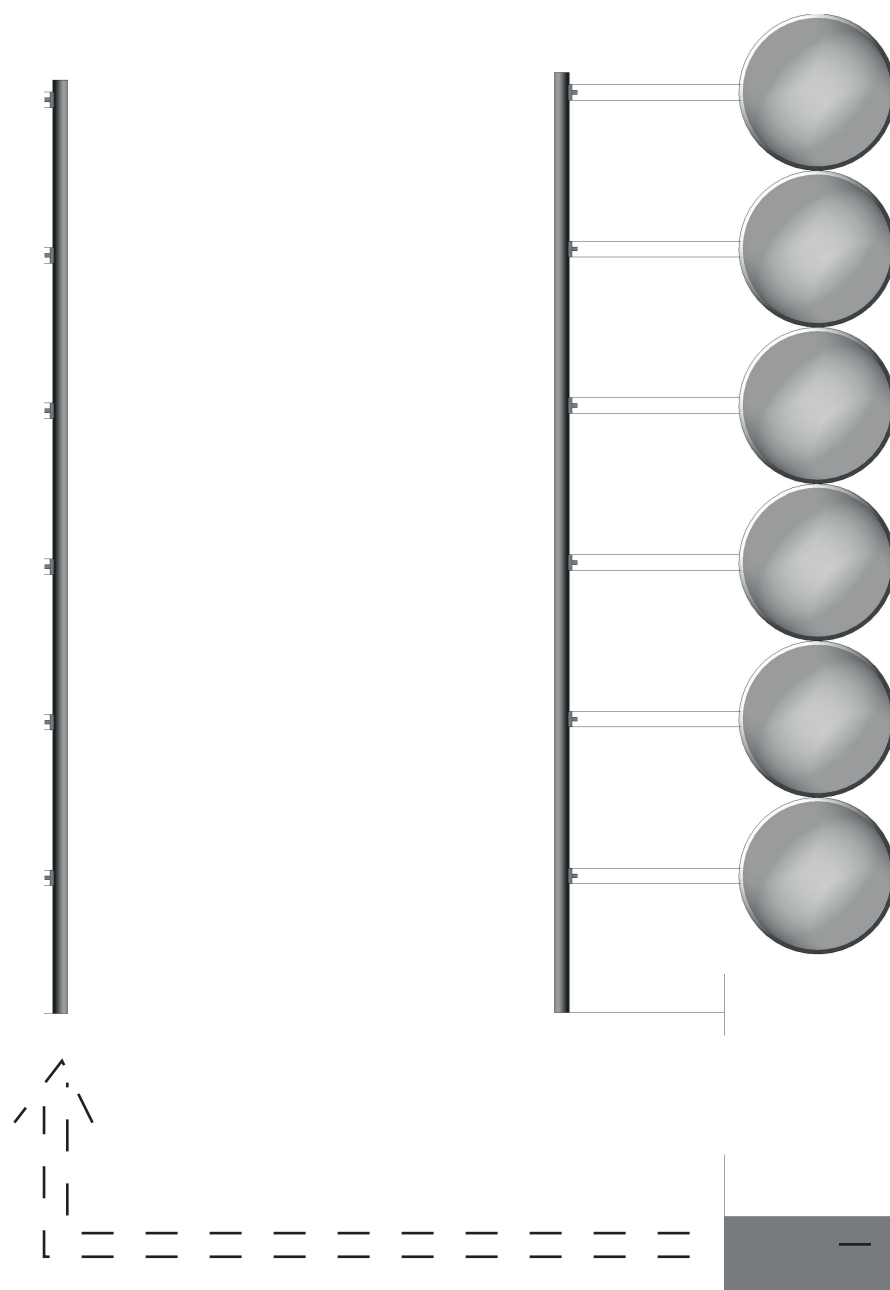
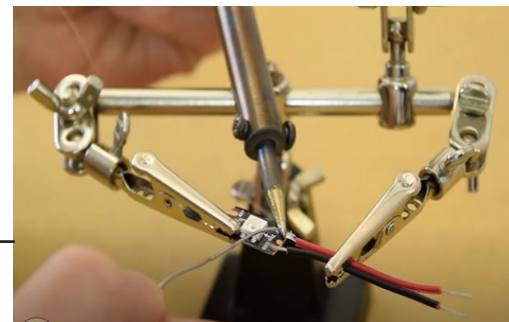
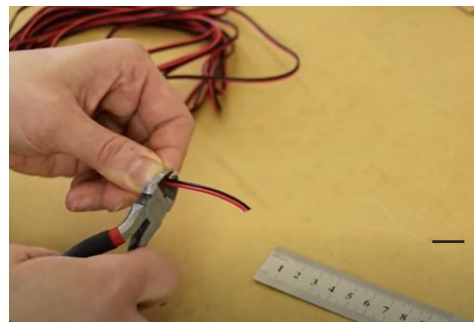
5V 6A DC Power



Arduino Board



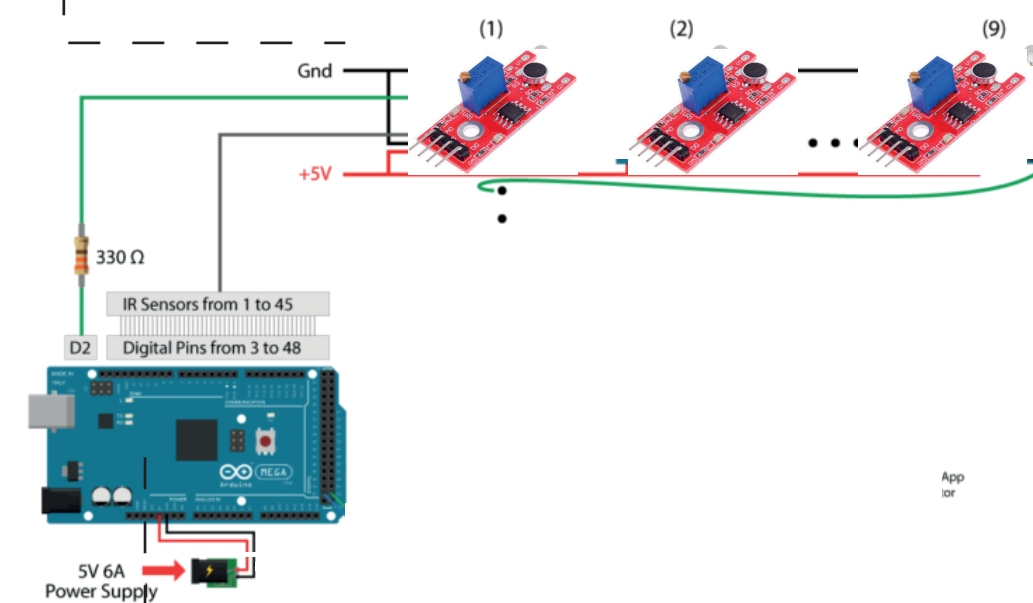
# Installation



Cutting the LED strip to elongate the wire from the ballons to the Arduino

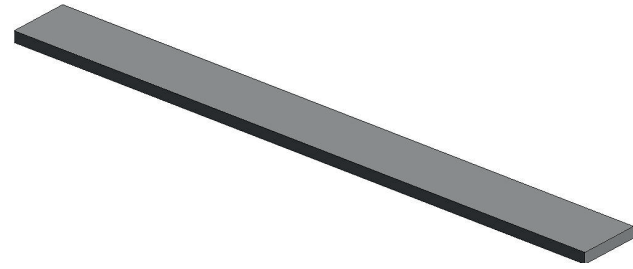
Connecting all the LEDs and proximity sensors using two cables

Soldering the power cable, proximity sensor and The LED cable



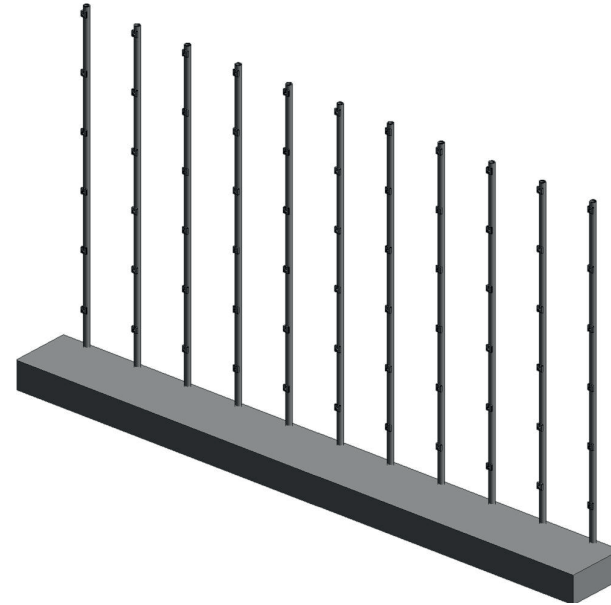
# Site installation

1



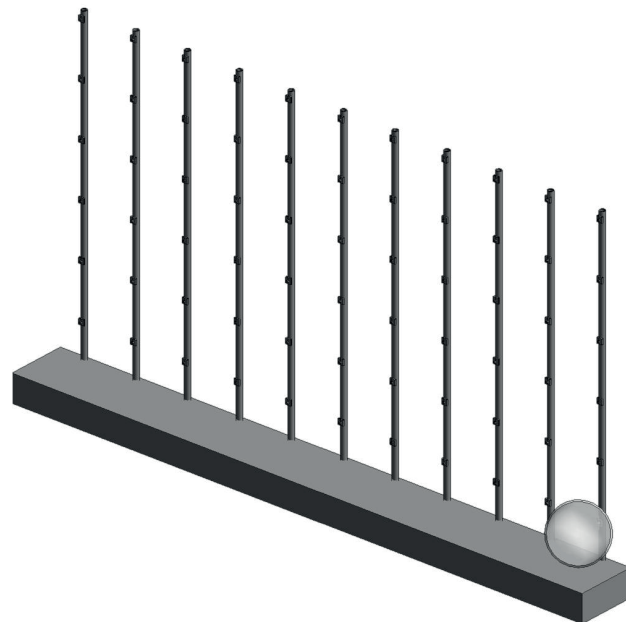
Installation of the base, for power supply and Arduino mounting

2



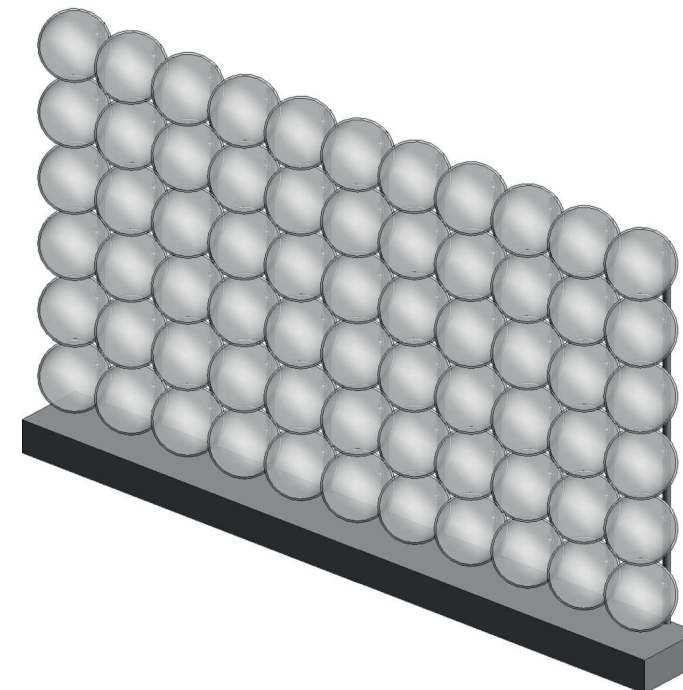
Installation of vertical strips

3



installation of sensors in each individual lighting LEDs

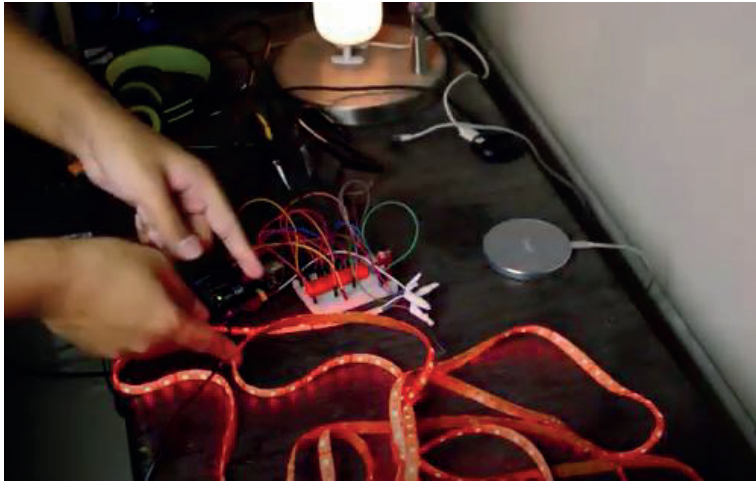
4



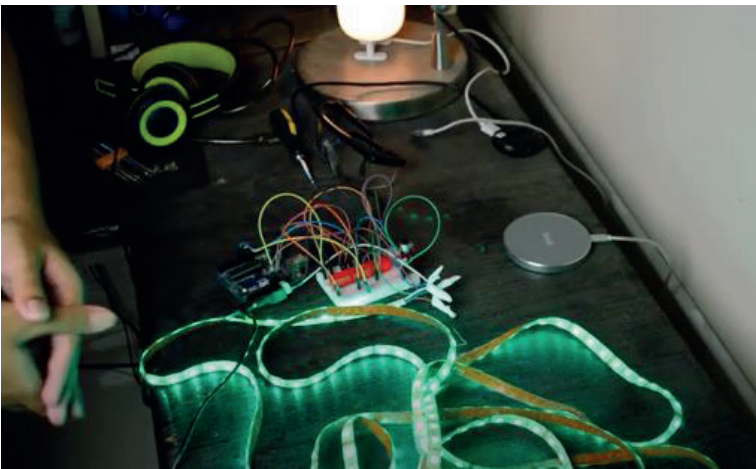
Attaching Individual ballons following the sensor and LED points



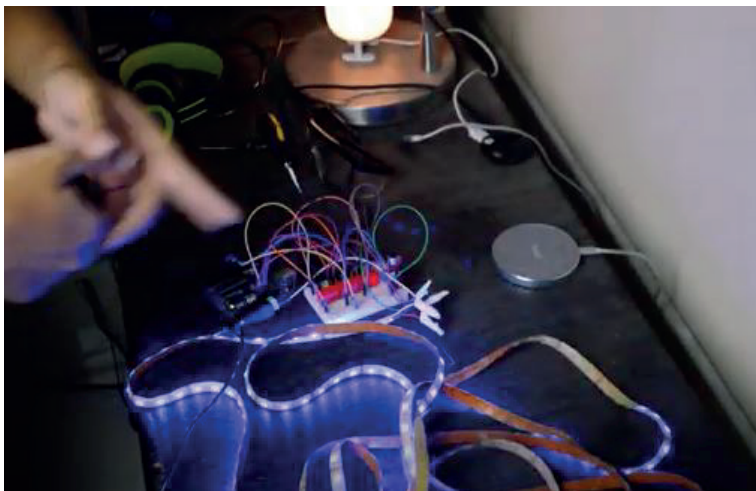
# Prototypical model



The LED prototype showed, The first two clap of the hand will make the RGB LEDs to glow red.



The third clap of the hand will make the RGB LEDs to glow Green



The third clap of the hand will make the RGB LEDs to glow Blue

# Material and cost

	WS2812B LED Strip	* 1	17,96 €	
	Microphone Sensor	11,99 * 40	480,00 €	
	5V 6A DC Power	* 1	€10.45	* 1
	Arduino Board/Arduino	* 1	€33.93	

Material and cost

	hollow Steel Strip	2.5* 10*250cm	25€	
	polyethylene ballons	1.95*50	97,5 €	
	10cm815 hollow steel box	11.45*1	€11,45	
Total cost			676.29€	

# Arduino Application

## Sketch code:

```
int data = digitalRead(sensor); //Reading data from sensor and storing in variable
```

```
    if (data == 1) { // 1 is sent from sensor when loud noise is detected
```

```
    if (pos ==1){
```

```
        digitalWrite(red,LOW);
```

```
        digitalWrite(green,LOW);
```

```
        digitalWrite(blue,LOW);
```

```
        pos=2;
```

```
    }
```

```
    else if (pos ==2){
```

```
        digitalWrite(red,HIGH);
```

```
        digitalWrite(green,LOW);
```

```
        digitalWrite(blue,LOW);
```

```
        pos=3;
```

```
    }
```

```
    else if (pos ==3){
```

```
        digitalWrite(red,LOW);
```

```
        digitalWrite(green,HIGH);
```

```
        digitalWrite(blue,LOW);
```

```
        pos=4;
```

```
    }
```

```
    else if (pos ==4){
```

```
        digitalWrite(red,LOW);
```

```
        digitalWrite(green,LOW);
```

```
        digitalWrite(blue,HIGH);
```

```
        pos=1;
```

```
    }
```

```
}
```

**Defining our first clap to initiate no light**

**second clap to initiate red light**

**Third clap to initiate red light**

**we return the loop to one(no light)**



# Image references

[https://www.americansforthearts.org/sites/default/files/PublicArtNetwork\\_GreenPaper.pdf](https://www.americansforthearts.org/sites/default/files/PublicArtNetwork_GreenPaper.pdf)

<https://www.ebay.de>