

IoT projects
Design and Technology
Junior high school students

INS Príncep de Viana. Barcelona

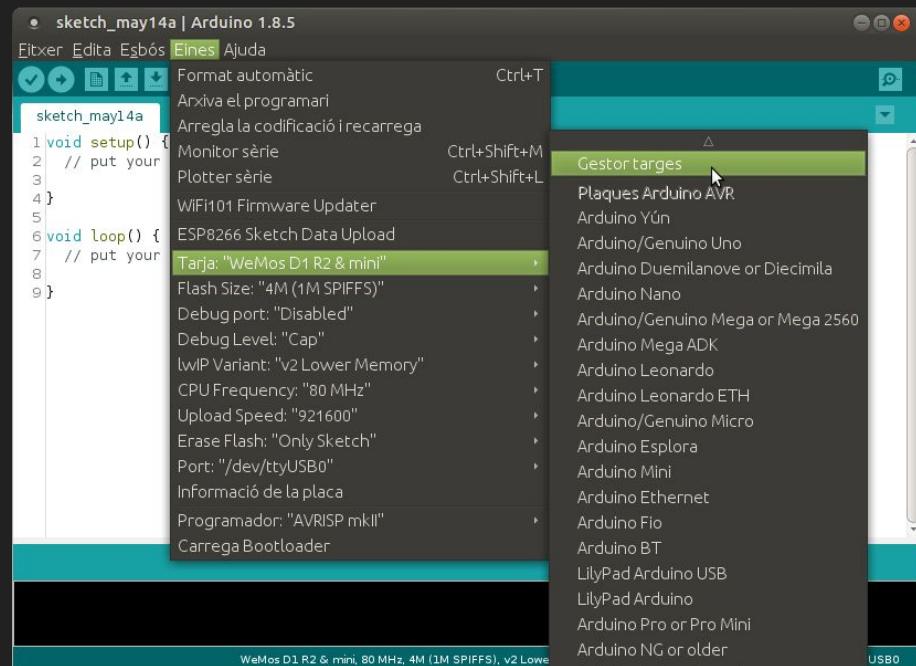
development kit



- designed around D1 mini
- lots of devices
- easy to join
- very flexible
- very cheap
- VHS video size

arduino IDE framework

The D1 mini, as the other ESP8266, can be programmed with the arduino IDE framework, once you have installed the specific plugin for these microcontrollers



github documentation

lots of examples and kit documentation (catalan)

The screenshot shows a GitHub repository page for 'jorts64/kit-D1-mini'. The main content is a 'Home' page for the 'kit-D1-mini' project. It includes a brief description in Catalan about the kit's components and how to set up the Arduino IDE. Below this is a 'Contingut' (Content) section with a list of shield projects. To the right, a sidebar titled 'Pages' lists several shield projects: Home, 1 button shield, Buzzer shield, D1 mini, Datalogger shield, DHT shield, instal·lació de l'Arduino IDE amb l'estensió per treballar amb els xips ESP8266, interficie web HTMLs, Matrix led shield, OLED Shield, protoboard shield, Relay shield, semàfor 2 leds, tripler base, and WS2812B RGB Shield. At the bottom of the sidebar is a link to 'Clone this wiki locally'.



PDF CC Book



ots of exemples and kit
documentation
(catalan)



IoT: Color effects for fountains

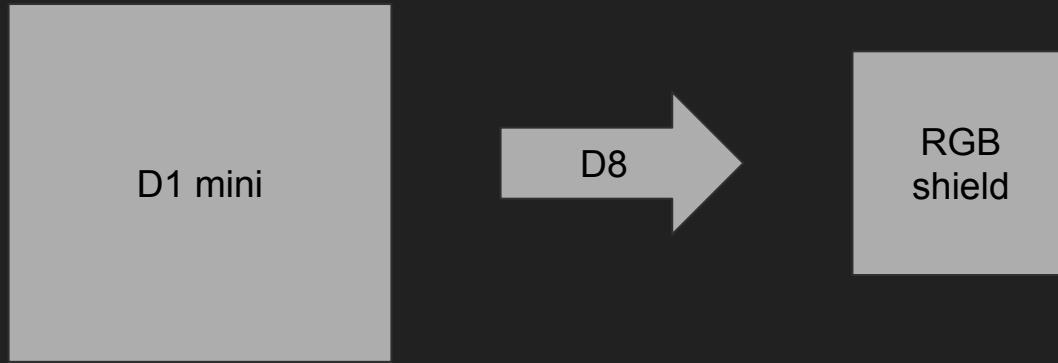


Marta Oliveras
Adrià Rodes

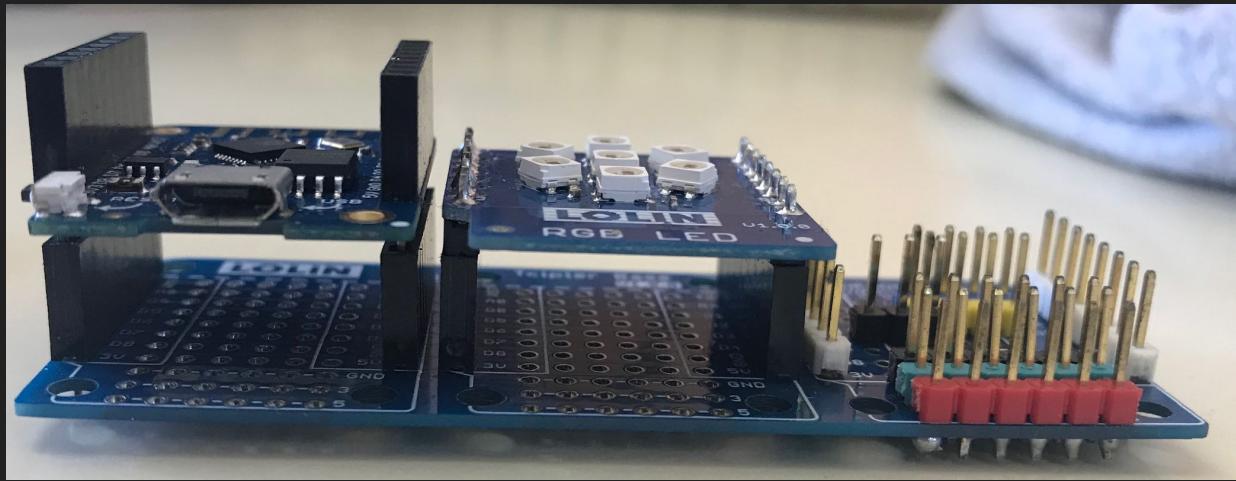
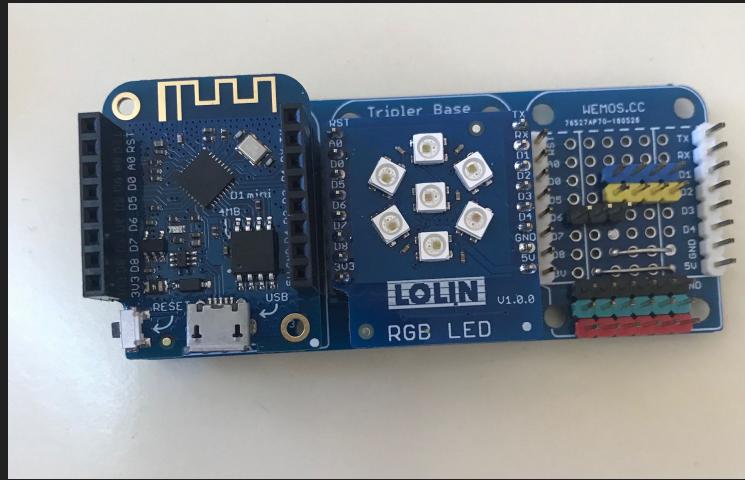
Objective

Accomplish to make a light effect system in a proper and comfortable way to illuminate a “fountain” made with a 3D printer in a economical and intuitive way.

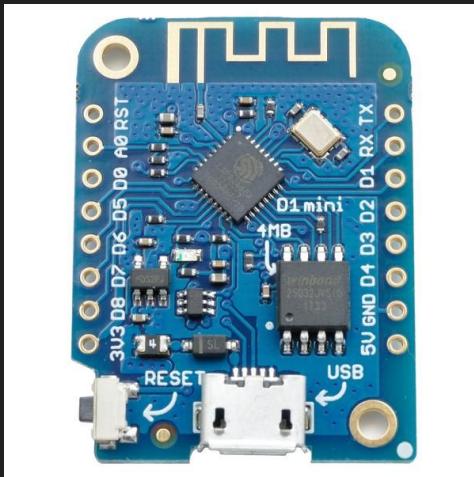
Design



Prototype



Hardware



D1 mini



RGB LED shield

Plate:	Price:
D1 mini	3,13€
RGB LED shield	1,61€
TOTAL: 4,74€	

Conclusion:

With this project we accomplished to design and build a wide lights system to change the colors easily and economical. Furthermore, with the advantage of using it from a mobile device , which makes it more intuitive.

IoT: Musical alarm clock

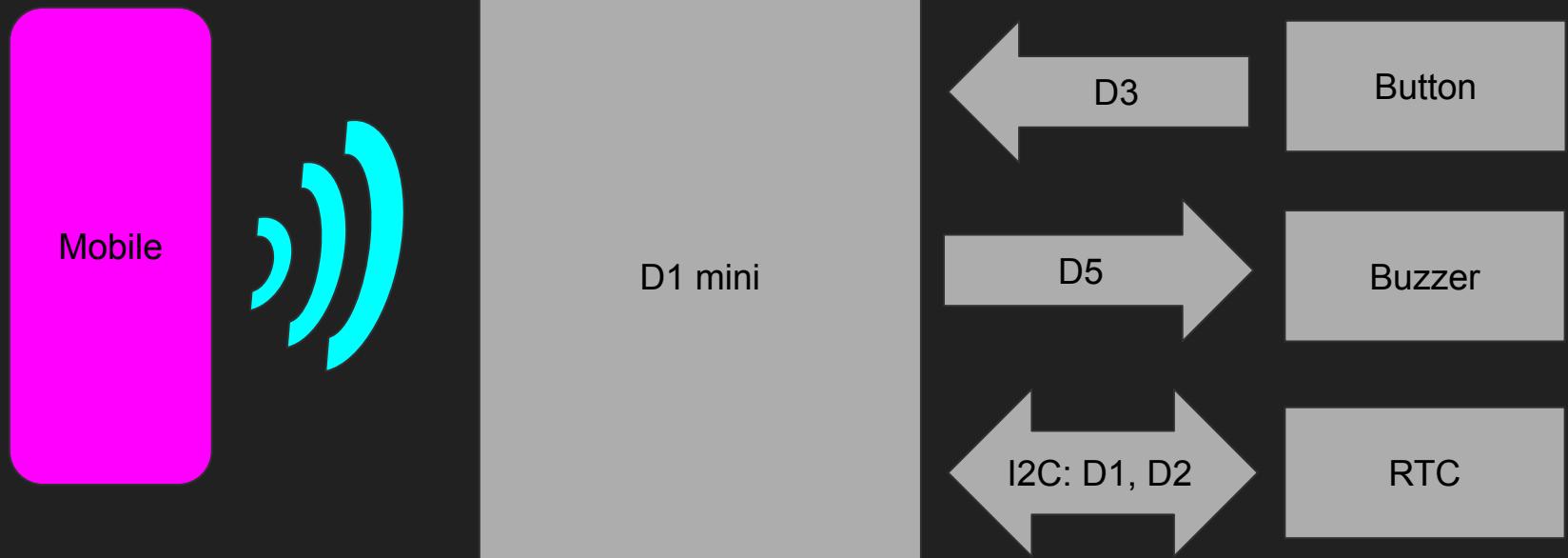


Laura Martín
Pol Calvo
Adrián Reyes

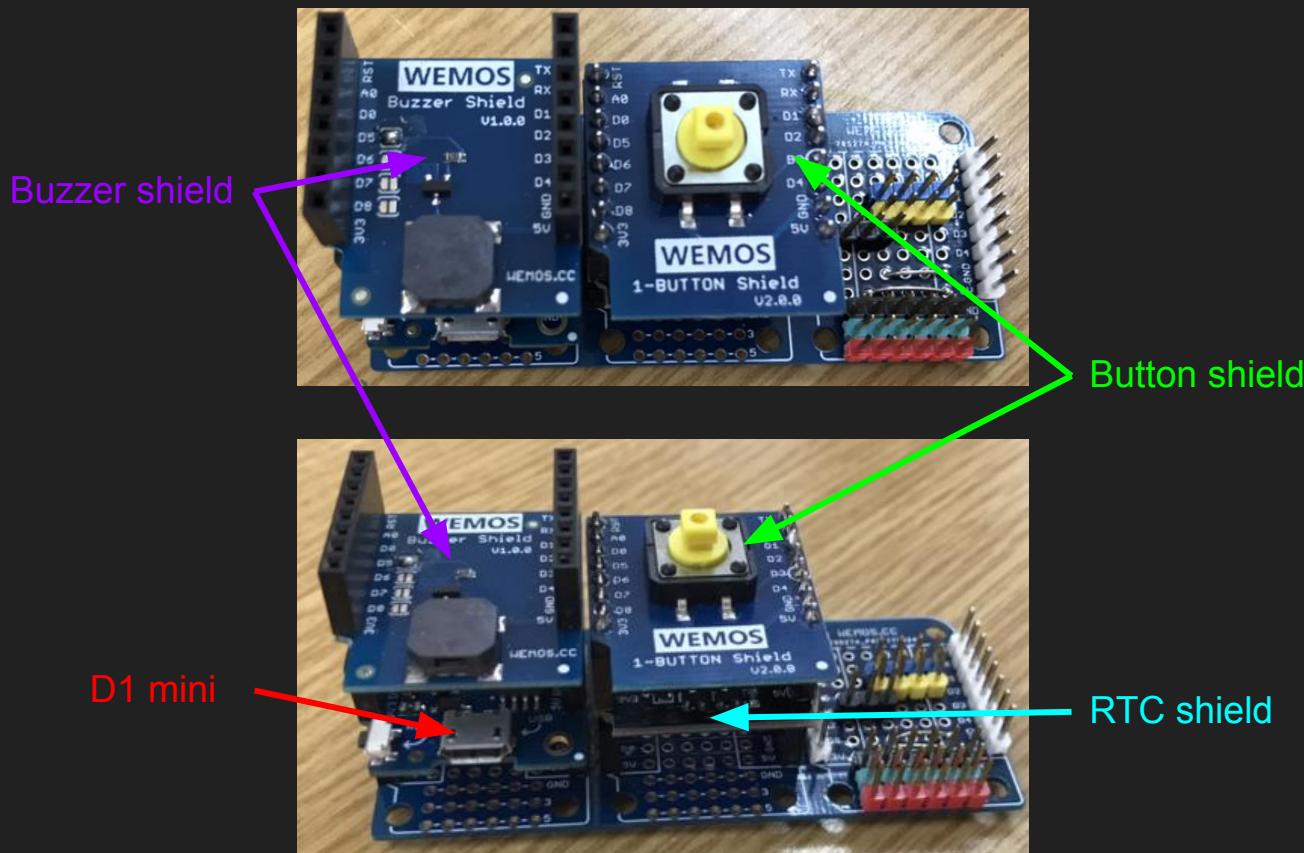
Objective:

Make an alarm clock controlled by Wi-Fi from a mobile device. The idea is that you, from the mobile, can program the alarm clock and select the desired melody.

Design



Prototype



Hardware

Mòdul	Price	Image
Button shield	0,54 €	
Buzzer shield	0,81 €	
RTC shield	1,60 €	
* Base	*0,81 €	
D1 mini	3,13 €	
Total	* 6,89 € 6,08 €	

*La base realment no és necessària, ja que podem soldar directament femelles a la placa D1 mini.

Conclusion

This project has advantages such as the price, it has a lower price than most of the alarm clocks you can buy, in addition to that you can program it from a mobile device. We can use it to wake up another person without needing to be close or changing the melody whenever you want.

IoT: Temperature control



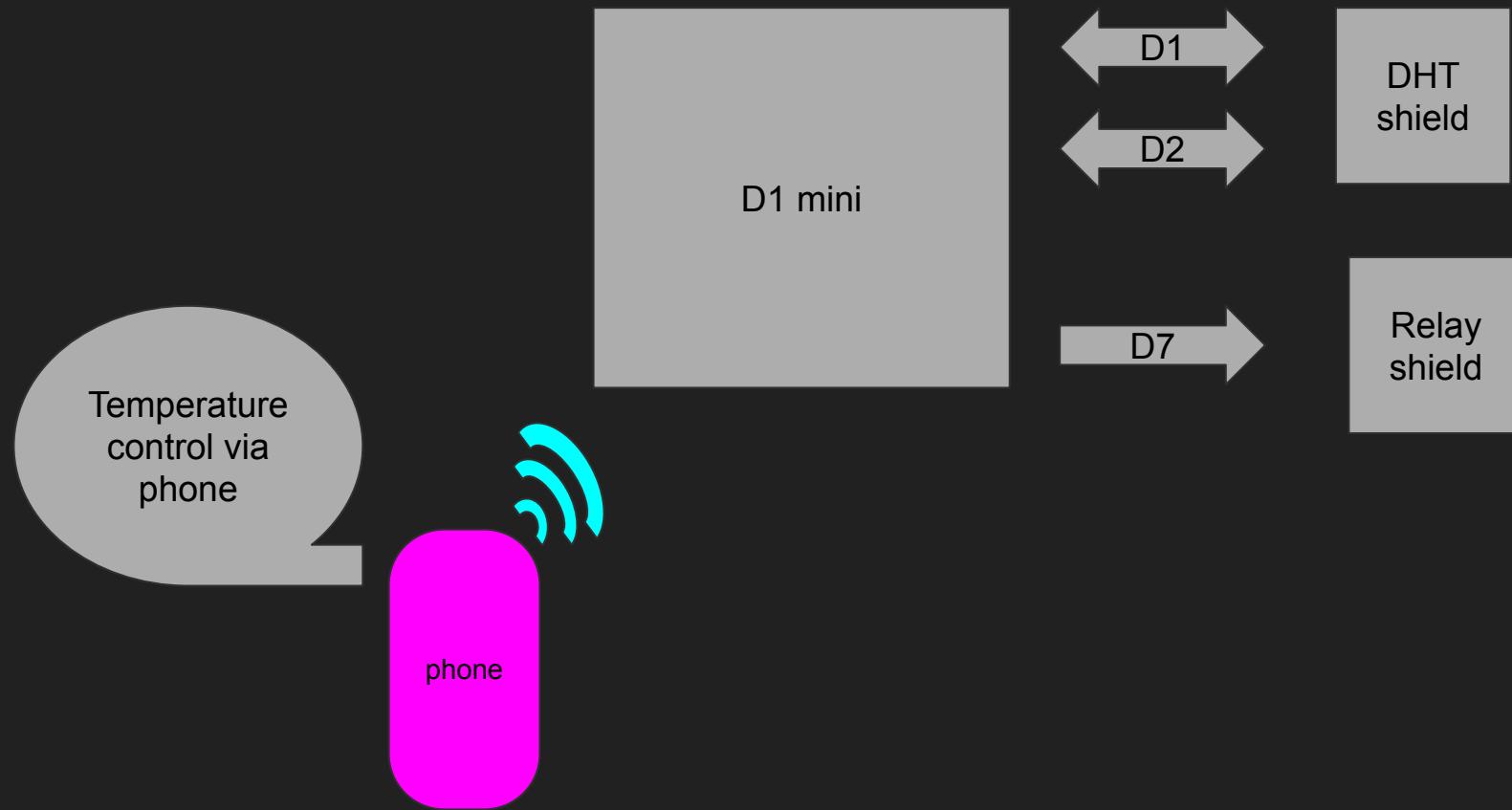
Alba Rosell
Toni López
Karan Jassal

Objective

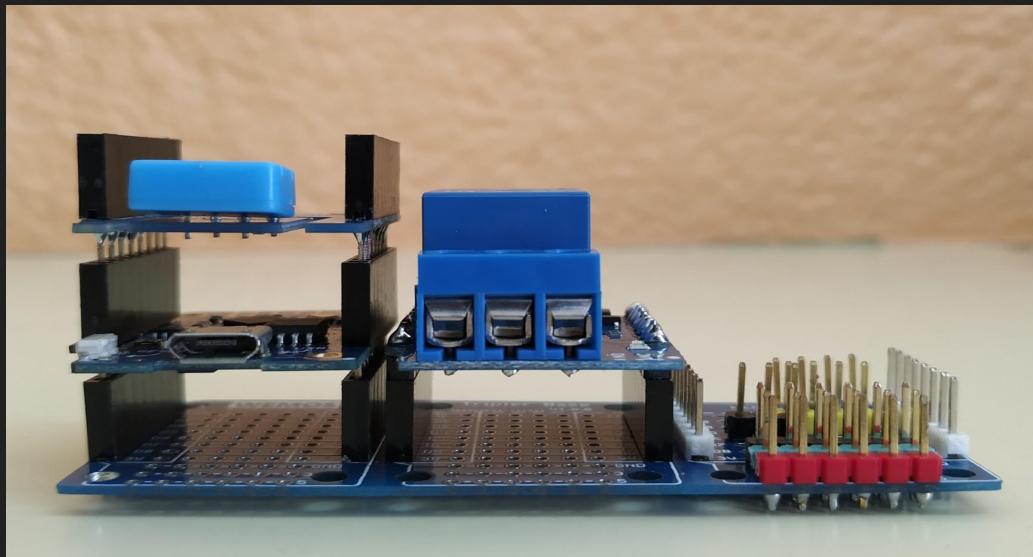
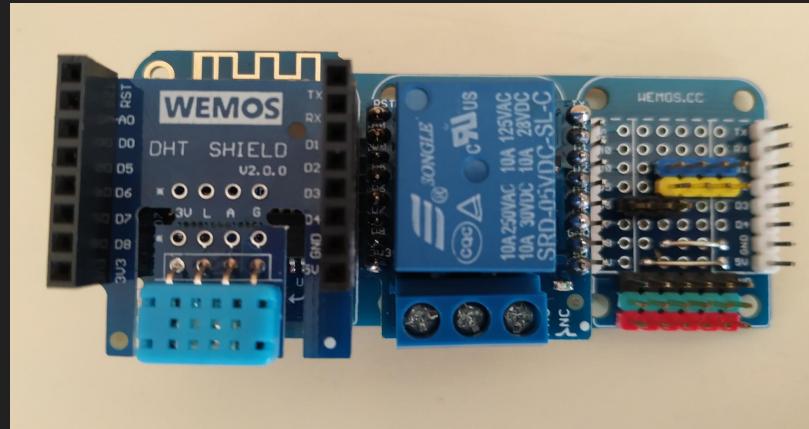
The main goal of our project is to make home temperature control systems easier to use by means of a mobile device.

Using the Internet, we could see temperature in our place while we are not there and turn on the heating to warm it up. But we could also do this automatically by setting a minimum and a maximum temperature, in which the system would turn on and off.

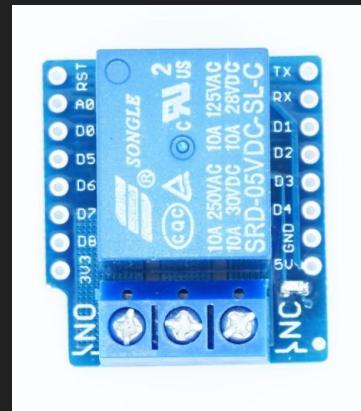
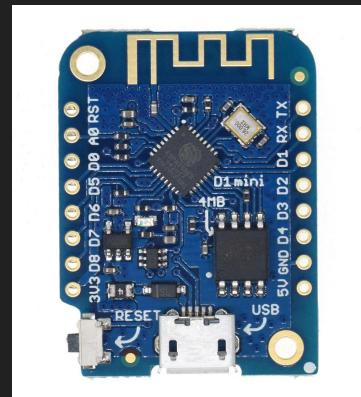
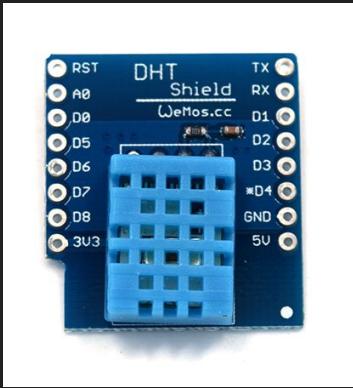
Design



Prototype



Hardware



DHT shield	D1 mini	Relay Shield
1,79€	3,13€	1,08€

Total Price = 6,00€

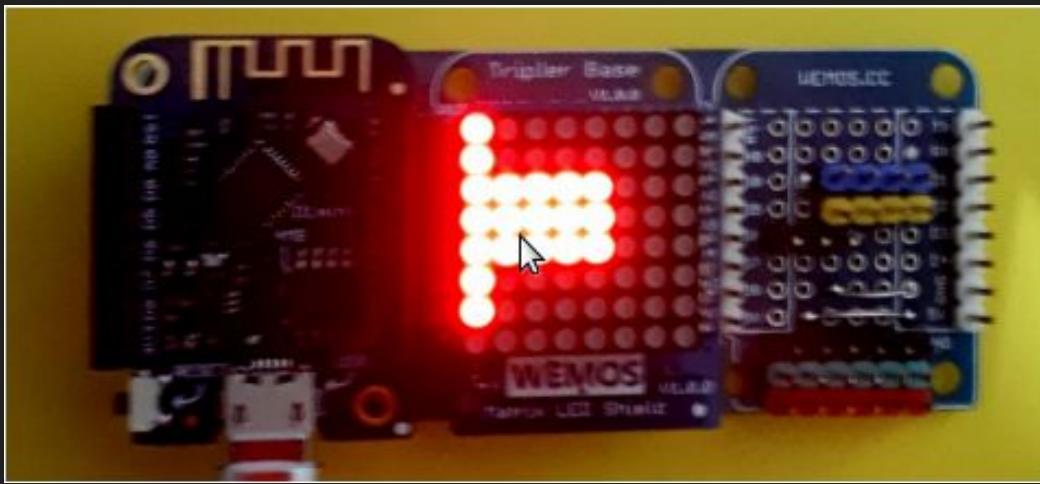
Web Interface



Conclusion

This project has plenty of advantages, not just in an economic way but in an environmental one, since we can know when the system is on or off and we can also control it with our phone, achieving a great comfort as well as energetic efficiency.

IoT: Light Signals



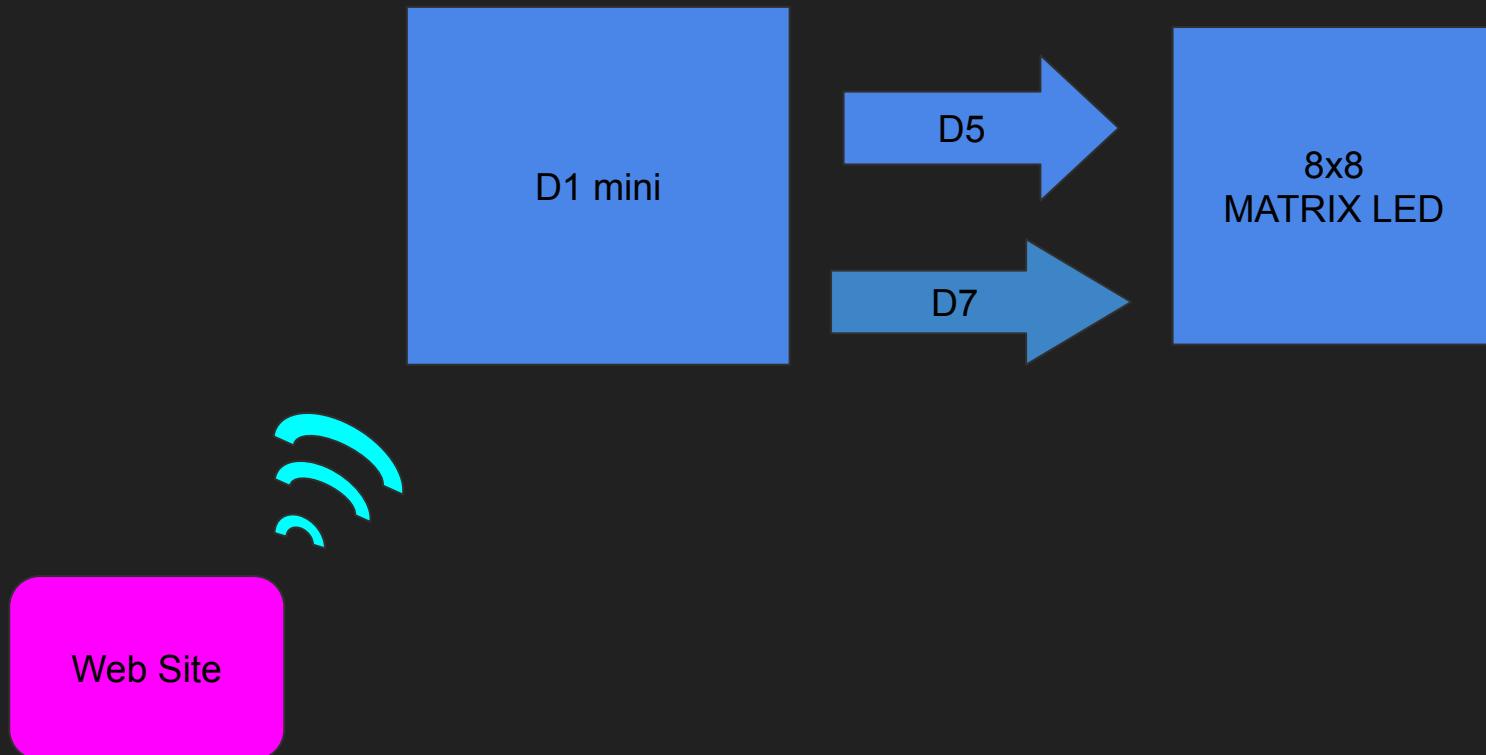
Nora Bolívar
Moisés Sánchez
Biel Calvo

Objective

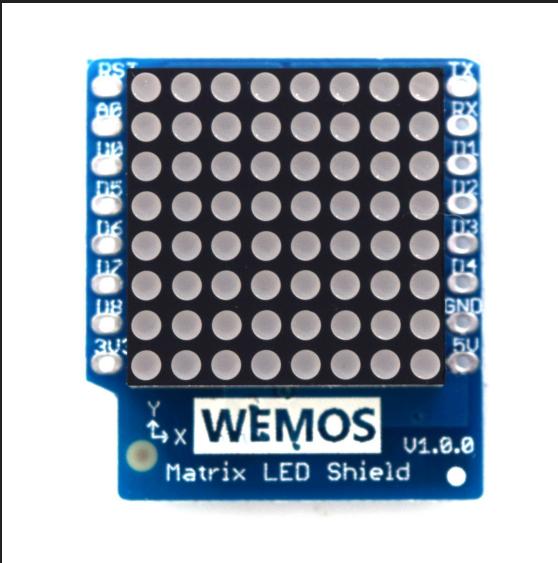
Make a panel capable of generating light signals being manageable through an app capable of choosing image

In the process of this project, we have focused on dynamic traffic signals, with the objective of showing to the drivers which way to take, in any circumstances.

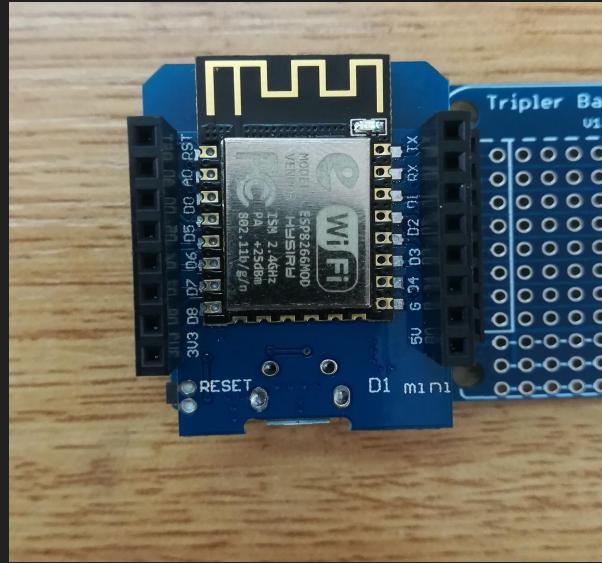
Dissign



Hardware



Matrix LED 8x8



D1 mini

BOM

Material	Price	/u	Total
Matrix LED	1,70€	1u	1,70€
D1 mini	0,81€	1u	0,81€
Total			2,51€

Conclusion

In this first version, we've focused on traffic signals, with pre-established icons.

It could be upgraded by adding more images, even drawing directly from the application, that way it would be much more useful.

IoT: Control light from your house

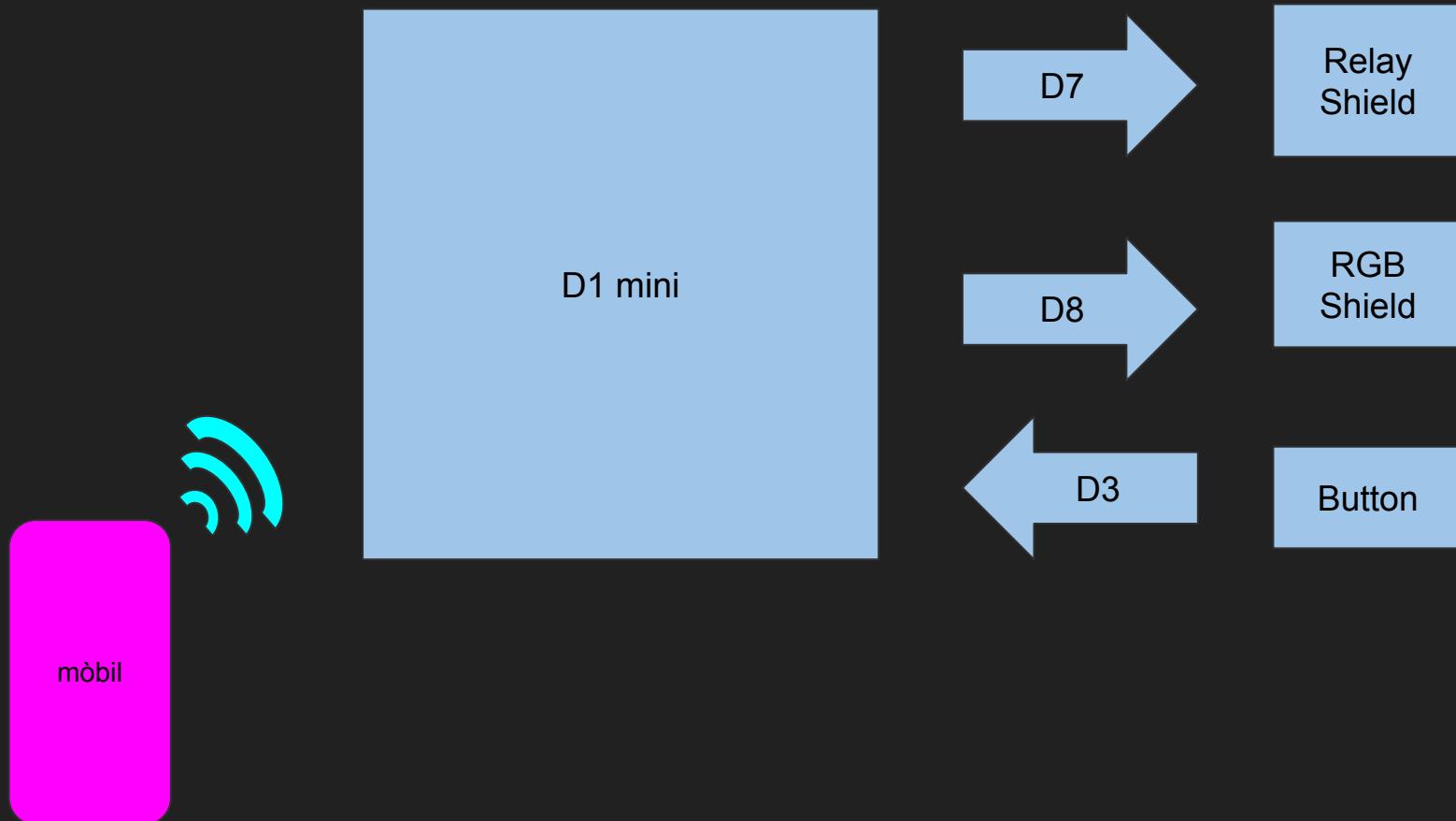


Núria Ribodigo
Alejo Pineda
Eric Ibáñez

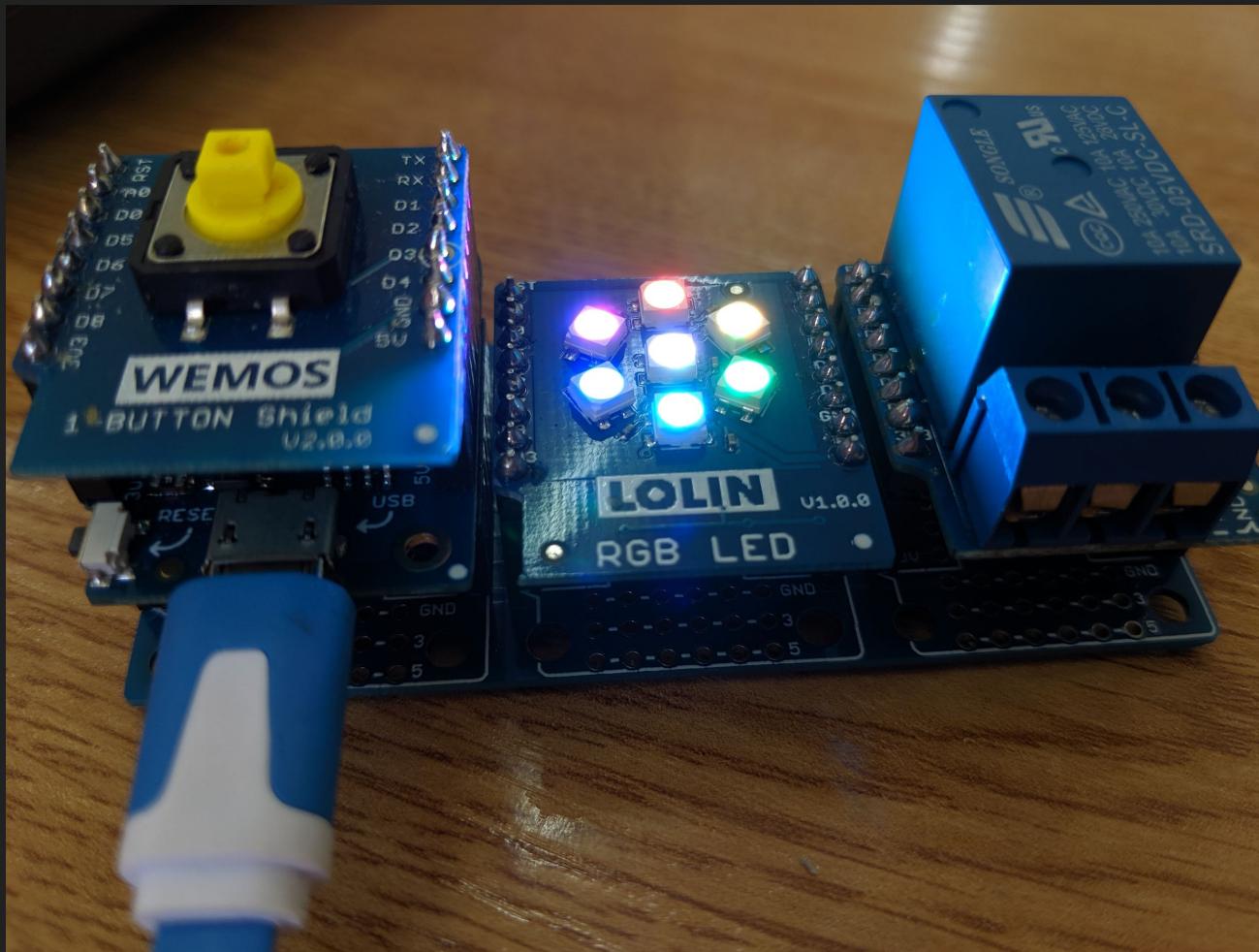
Objectives:

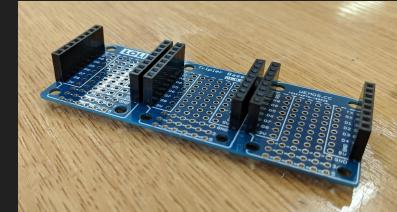
In us project, we want to advise to facilitate the use of light of the house by means of a button, and can use the wifi to control the light by internet network.

Harwer:



Machine:



Components	Price	Photos
Button	0,54€	
Relay Shield	1,08€	
Tripler Base	0,81€	
RGB LED Shield	1,61€	
LOLIN D1 mini	3,13€	

Conclusion:

Its advantages are to control household appliances out of the cell phone and the obvious economic savings.

Later on, it could be used with an App or included to implement it with a virtual assistant to be able to control it with the voice, a distance meter could also be introduced to calculate the economic cost that you get from each device.