

Get started with ESPDUINO

Guidelines to startup your ARDUINO IDE + ESPDUINO

About the ESP32

The ESP32 is a powerful microcontroller that has gained a lot of popularity for its flexibility and features. There are many sources available online that cover the ESP32 microcontroller and its use with the Arduino development environment:

1. The official Arduino website ([arduino.cc](https://www.arduino.cc))
2. The official Espressif documentation (docs.espressif.com)
3. Espressif github: github.com/espressif/arduino-esp32
4. Websites like Adafruit (adafruit.com) and Sparkfun (sparkfun.com) that offer a range of tutorials and guides for using the ESP32 in various projects.

Install Arduino IDE in your laptop:

Download Arduino IDE (Integrated Development Environment) from the official website:

<https://www.arduino.cc/en/software>

Use these videos to help you in the process:

[Video 1. Download Arduino IDE](#)

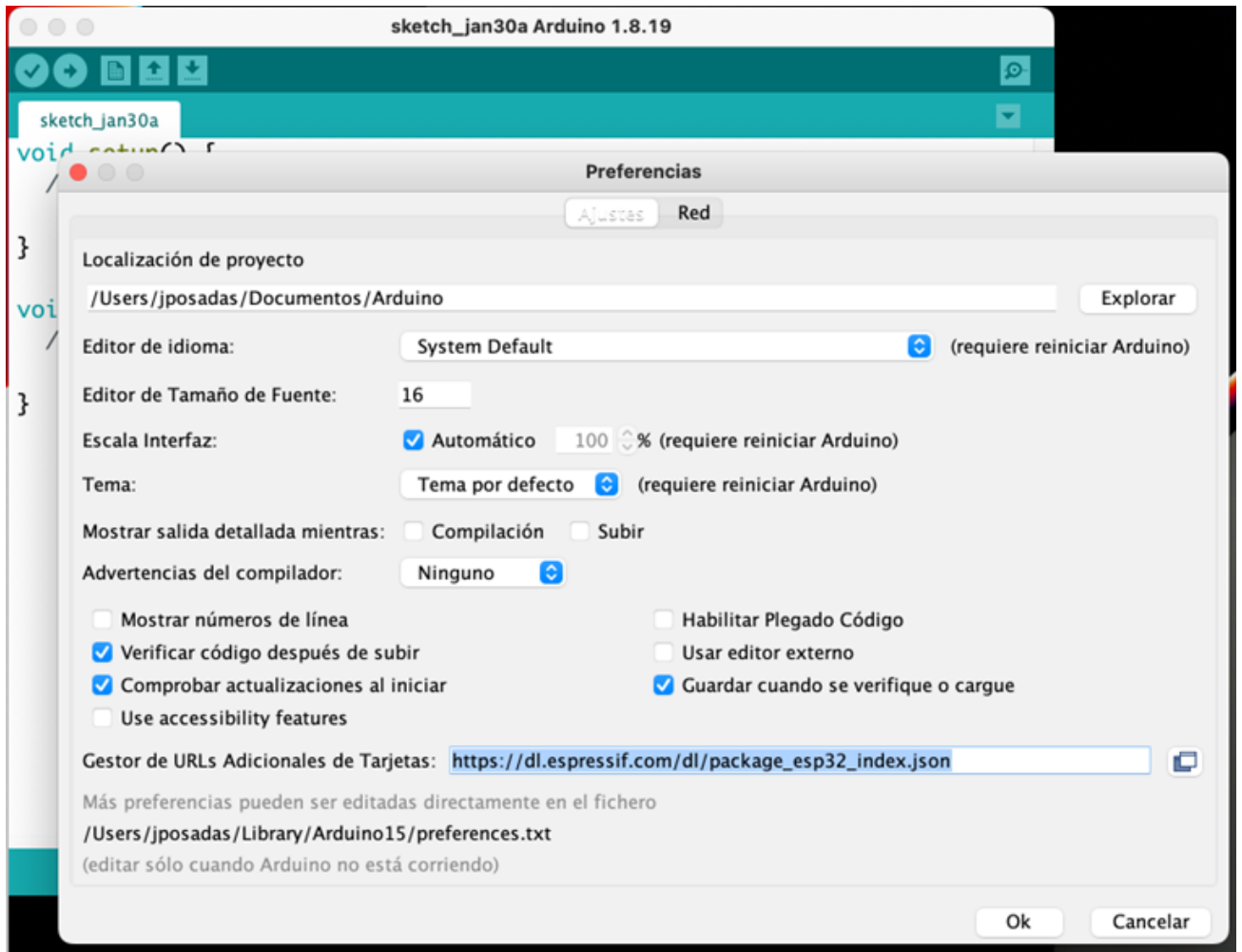
[Video 2. Use Arduino IDE web version](#)

[Video 3. Install the plugging](#)

To install the required drivers for the ESP32 board, follow these steps:

- Open the Arduino IDE and go to the "File" menu, then "Preferences".
- In the "Additional Board Manager URLs" field, paste the following URL:

https://dl.espressif.com/dl/package_esp32_index.json



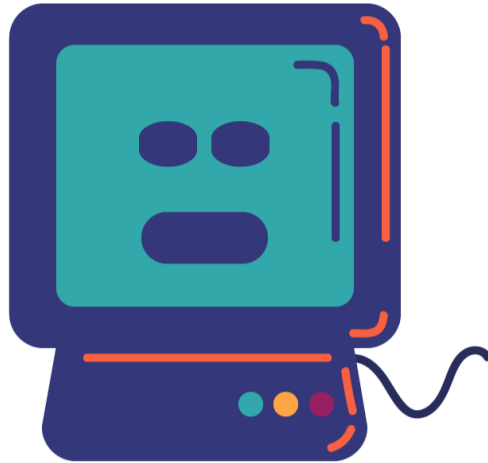
- Close Arduino IDE and restart it.
- Go to the "Tools" menu, then "Board: ..." and click on "Boards Manager".
- In the search bar, type "esp32" and select the "esp32 by Espressif Systems" package.



- Click on the "Install" button and wait for the installation to finish.
- Connect the ESP32 board to your computer via a USB cable.
- Go to *Tools > Port* and select the port that the ESP32 is connected to.
- Go to *Tools > Board* and select "ESP32 Dev Module" o "DOIT ESP32 DEVKIT V1".
- Go to *Tools > Upload Speed* and select "**115200**".



We will need to have Python installed on our system to compile sketches for the ESP32 in the Arduino IDE. The Arduino IDE uses a set of tools called "ESP-IDF" to compile and upload code to the ESP32 that it requires Python. When you install the Arduino IDE, a customized version of Python 3.x will be installed along with the IDE software package. Therefore, you may not need to install Python on your system independently, as the Arduino IDE will take care of providing the necessary version of Python.



Plug the board with the USB cable and choose the correct port:

[Video 4. Port selection](#)

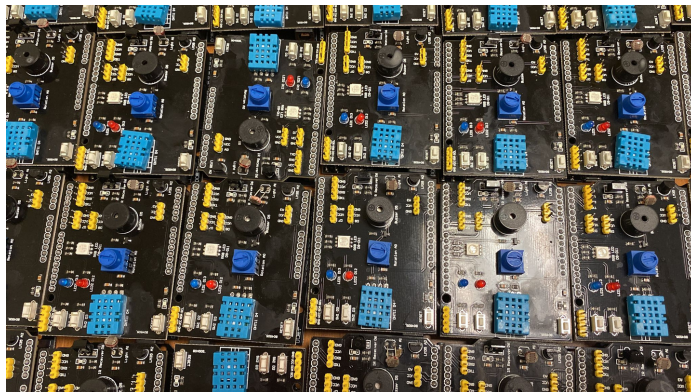
Does it work?



Basic examples

Let's check the board with two simple examples with the ESPDUINO and the multisensor boards:

1. Blinking the RGB Led
2. Press button and switch on the Red Led



You must identify the correlation between the ESPDUINO pins and the multisensor board pins. In the Arduino IDE C program, the column on the left should be used, while the column on the right writes the chosen pin on the multisensor board.

ESPDUINO	MULTISENSOR BOARD
26	D2
25	D3
17	D4
16	D5
27	D6
14	D7
12	D8
13	D9
5	D10
23	D11
19	D12
18	D13
2	A0
4	A1
35	A2
34	A3
36	A4
39	A5

Blinking the RGB led

- Open a new project in Arduino IDE
- Save the project with a name
- Configure in Tools the parameters (board, speed and port)

Code:

```
void setup() {  
  
  // initialize digital pin D9 as an output (RGBred).  
  
  pinMode(13, OUTPUT); }  
  
  // the loop function runs over and over again forever  
  
void loop() {  
  
  digitalWrite(13, HIGH);      //turn the LED on (HIGH is the voltage level)  
  
  delay(1000);                // wait for a second  
  
  digitalWrite(13, LOW);     //turn the LED off by making the voltage LOW  
  
  delay(1000);                // wait for a second  
  
}
```

Press button and switch on the Red Led

- Open a new project in Arduino IDE
- Save the project with a name
- Configure in Tools the parameters (board, speed and port)

Code:

```
void setup()  
  
{ pinMode(19, OUTPUT);  
  
  digitalWrite(19, HIGH);  
  
  pinMode(26,INPUT); }  
  
void loop()  
  
{ digitalWrite(19, digitalRead(26));  
  
  delay(100); }
```

More EXERCISES in

<https://roboticafacil.es/facilino/blockly/FacilinoTutorial.html#menu>