




IoT with ESP32 board

In this tutorial you will learn how to connect your ESP32 board to the internet and send live values recorded by a light sensor attached to the board, on-line on adafruit.io.

 Difficulty **Medium**

 Duration **1 hour(s)**

 Categories **Electronics, Machines & Tools, Robotics**

 Cost **25 EUR (€)**

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Introduction

In this tutorial you will learn how to connect your ESP32 to the internet and send live values recorded by a light sensor attached to the board, on-line on adafruit.io.

Materials

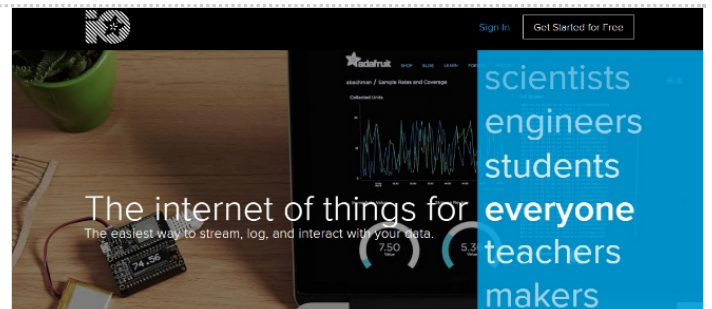
1 x ESP32 board + Micro USB cable
1 x light sensor
About 5 jumper wires
1 x 1Kohm resistor

Tools

Computer with internet connection and Arduino IDE installed

Step 1 - Set up an account on adafruit.io

Once you have set up an account on adafruit.io, go ahead creating a new Feed. Create a new feed and name it, for example "lightsensorvalue".



Step 2 - Install Arduino IDE

You can download the software here.

Step 3 - Prepare the ESP32 board on your computer

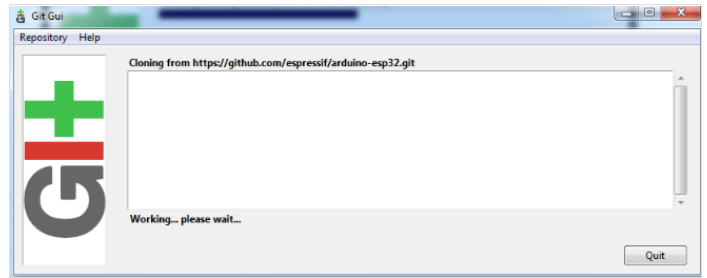
Follow the instructions provided on github for your OS.

For Windows

If you have troubles following the instructions for windows, you may find some help below

To find the Sketch directory, click File > Preferences, on arduino IDE.

The process of cloning existing repository may take a while...



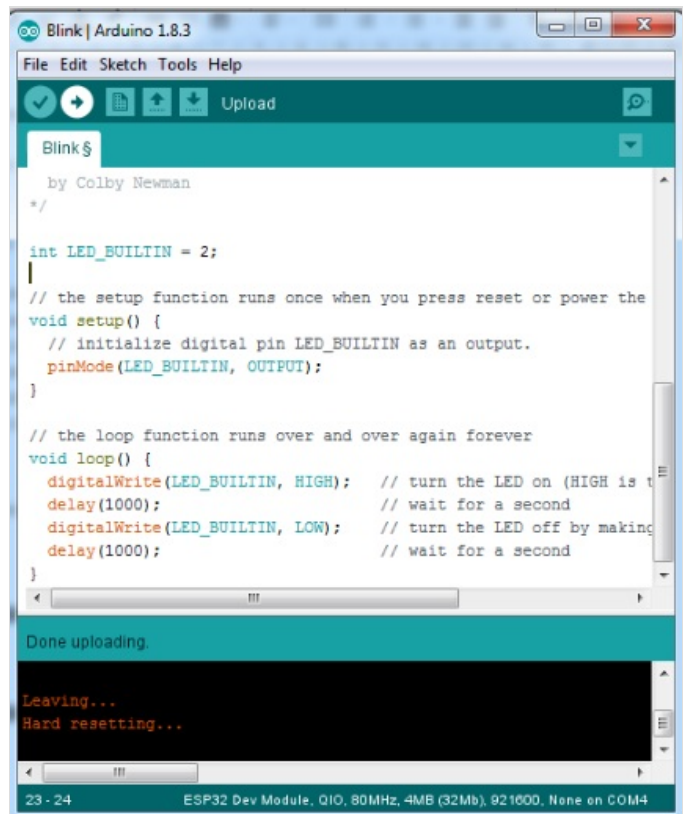
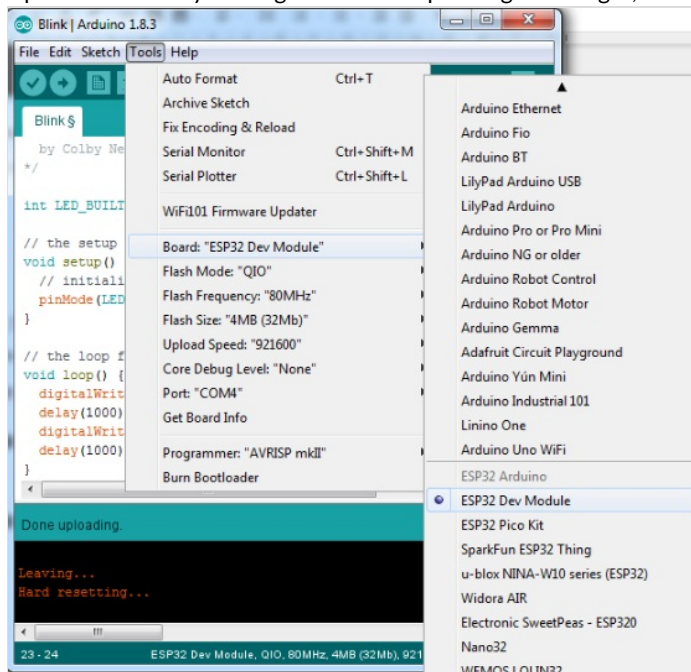
Step 4 - Check that the board is correctly configured

Launch Arduino IDE

Go to Tools > Board and select "ESP32 Dev Module".

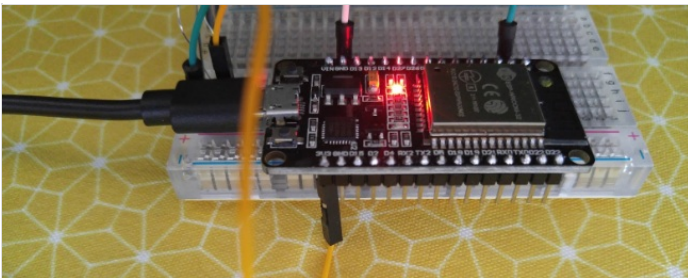
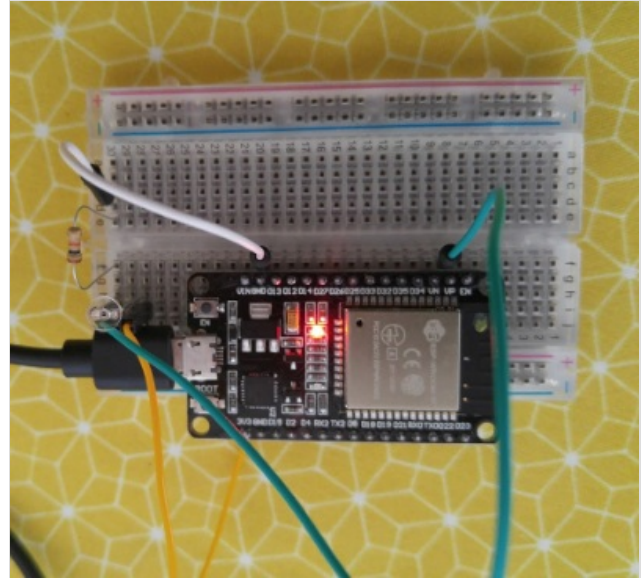
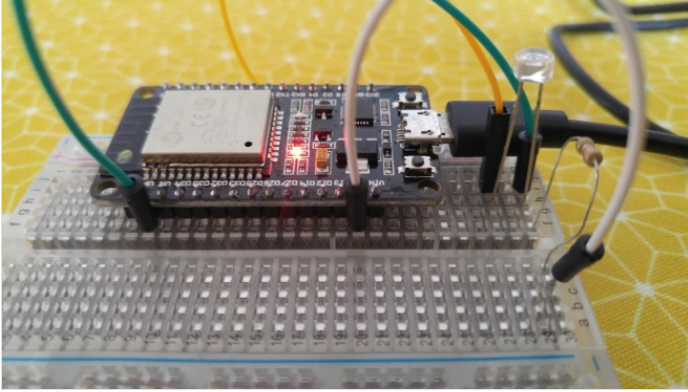
Fetch the Blink example on File > Examples > Basics > Blink.

Upload the code by clicking on the arrow pointing to the right, on the top left of the arduino IDE window.



Step 5 - Wiring the photoresistor to the ESP32

The shorter leg of the photoresistor is connected to 3V on the ESP32. The other leg is connected to pin VP (or 36) and at the same time to a 1kohm resistor, which in turn is connected to GND on the ESP32.



Step 6 - Programming on tuniot

On tuniot, we will use the blocks available to create a code for the ESP32.

complete the fields "ssid" and "password" with the name of your wi-fi connection and its password respectively.

The "User Name" and "Key" are available on your adafruit.io account (see image below)

```
Setup
  Declare type int Value
  Adafuit MQTT Setup
  User Name "PaulDigeunes"
  Key "0d29b38e2ac745a78f686774282f2349"
  Port 1883
  Delay Ms 3000
  Print on new line "START"
  Connect Network ssid "G4-8888" password "0046cd565b76"
  repeat while not Is Connected?
  do
  Delay Ms 300
  Print on same line ""
  Print on new line "Connected"
  Print on new line "Your IP is"
  Print on new line Local IP
  Main loop
  set to AnalogRead PIN# D33
  if Adafuit MQTT is connected?
  do
  if Adafuit MQTT Publish feed name "lightsensorvalue" Data
  do
  Print on new line "the value recorded by the light sensor is"
  Print on new line
  else
  Print on new line "problem"
  else
  Print on new line "problem"
  Delay Ms 10000
```

