

Introduction to IoT

1. Whirlwind Tour Of IoT

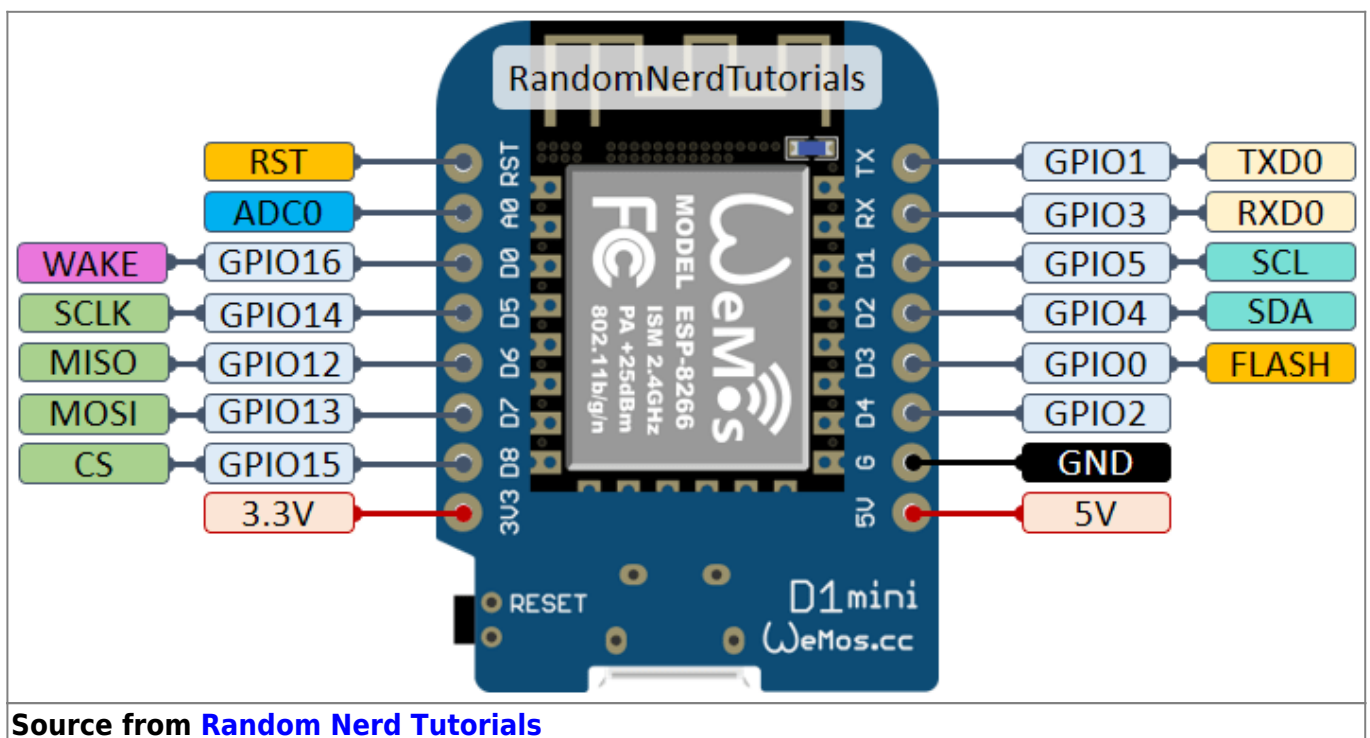
2. Setup Development Environment

1. Download and Install Arduino IDE from the [Download Page of Arduino](#) and follow the official [Installation instructions](#).
2. Our board is the [WEMOS D1 Mini](#) and it is based on the **ESP8266** microcontroller from Espressif. Since the board is not produced by Arduino (company) it is not pre-installed in the Arduino IDE (software), however it is possible to install the add-on that allows us to program it using the entire Arduino ecosystem. To do so follow the instruction on the section "[Install ESP8266 NodeMCU Add-on in Arduino IDE 2](#)"
3. [How to install CH340 driver - Driver Download Section](#)

```
http://arduino.esp8266.com/stable/package_esp8266com_index.json,
https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json
```

3. Hardware Review

- Dev-Kit: [WEMOS D1 Mini](#)
- Microcontroller: ESP8266 12-E Chip. For more details of the microcontroller and board check the link [ESP8266 hardware review](#)



Source from [Random Nerd Tutorials](#)

4. Soldering

Here it gets practical! You need to solder the microcontroller and some of the sensors, which you will need in the next session.



Fig. 1: In Action at UNICAES

5. Coding Warm-up

Now let's check if your Microcontroller works. Also, you will learn how to upload your first sketch. Basic Blink example:

[Blink.ino](#)

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

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