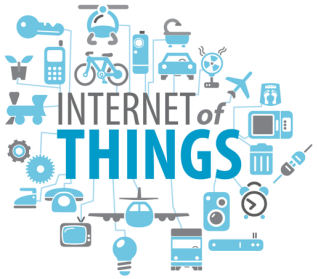
UNIVERSITY OF SCIENCE - VNUHCM
Faculty of Information Technology

INTERNET OF THINGS

3.1

INTRODUCE TO THE ESP8266



ESP01 

 ESP02

ESP03 

 ESP04

ESP05 

 ESP06

ESP07 

 ESP08

ESP09 

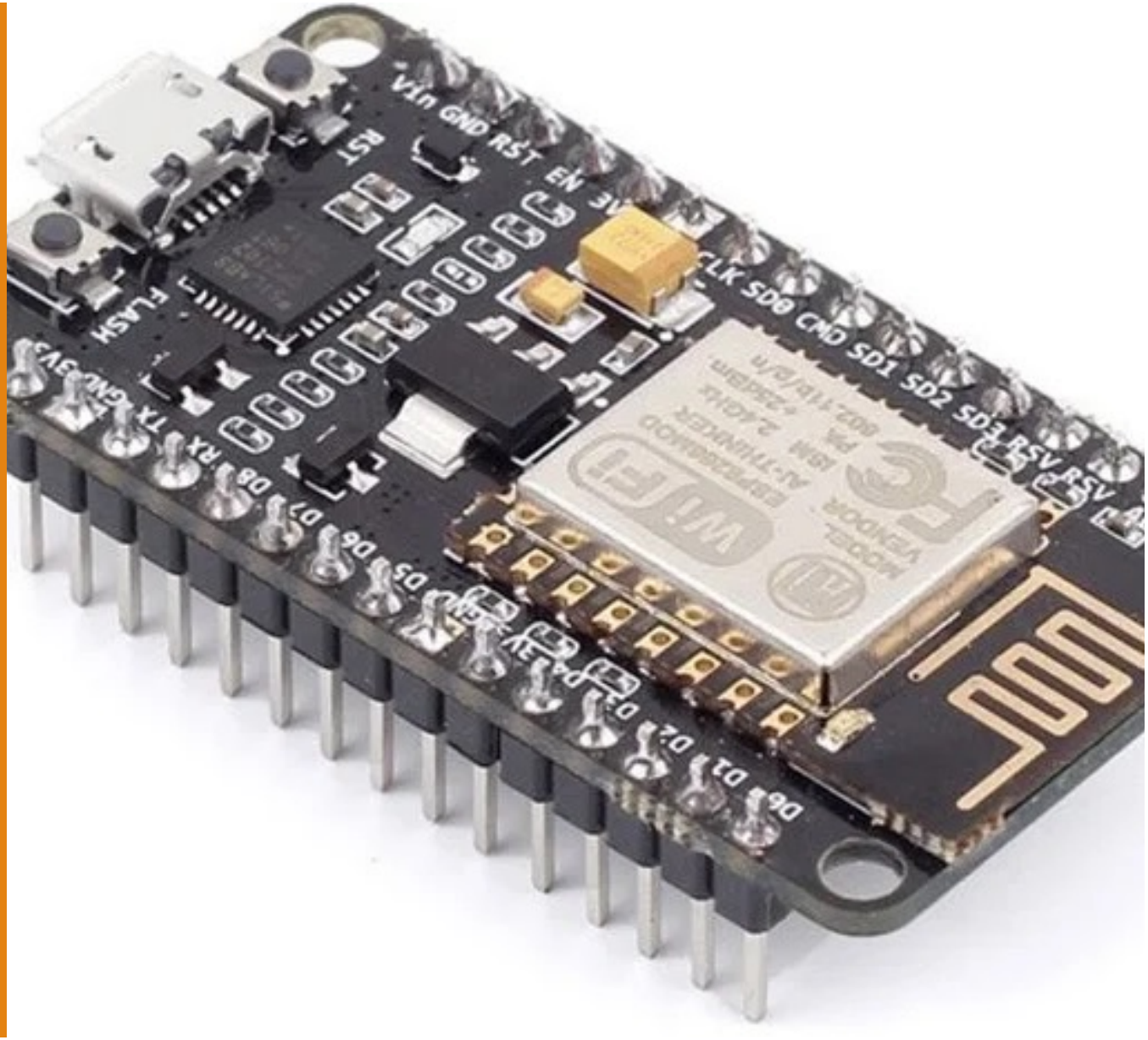
 ESP10

ESP11 

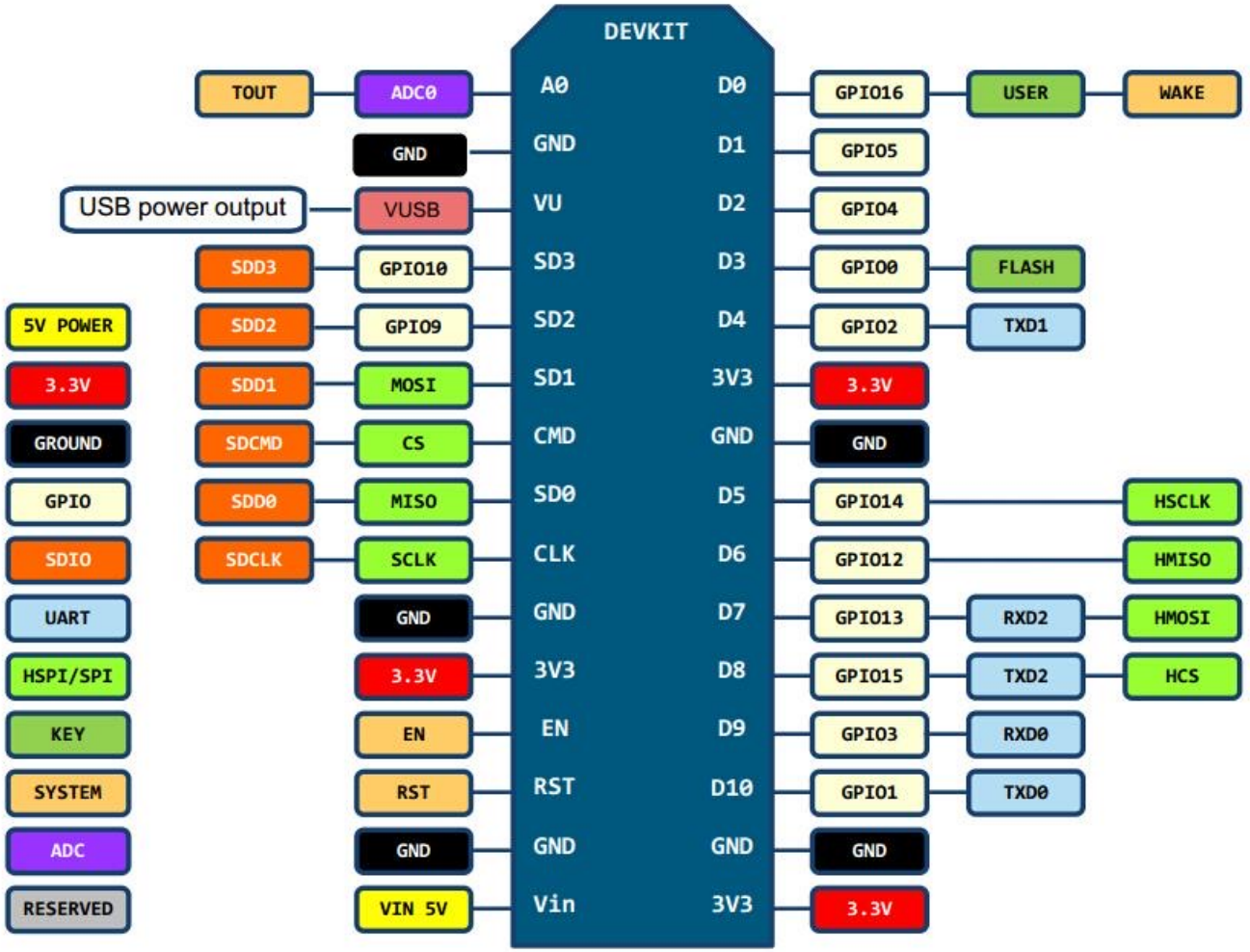
 ESP12

ESP8266 Types

ESP8266 NodeMCU

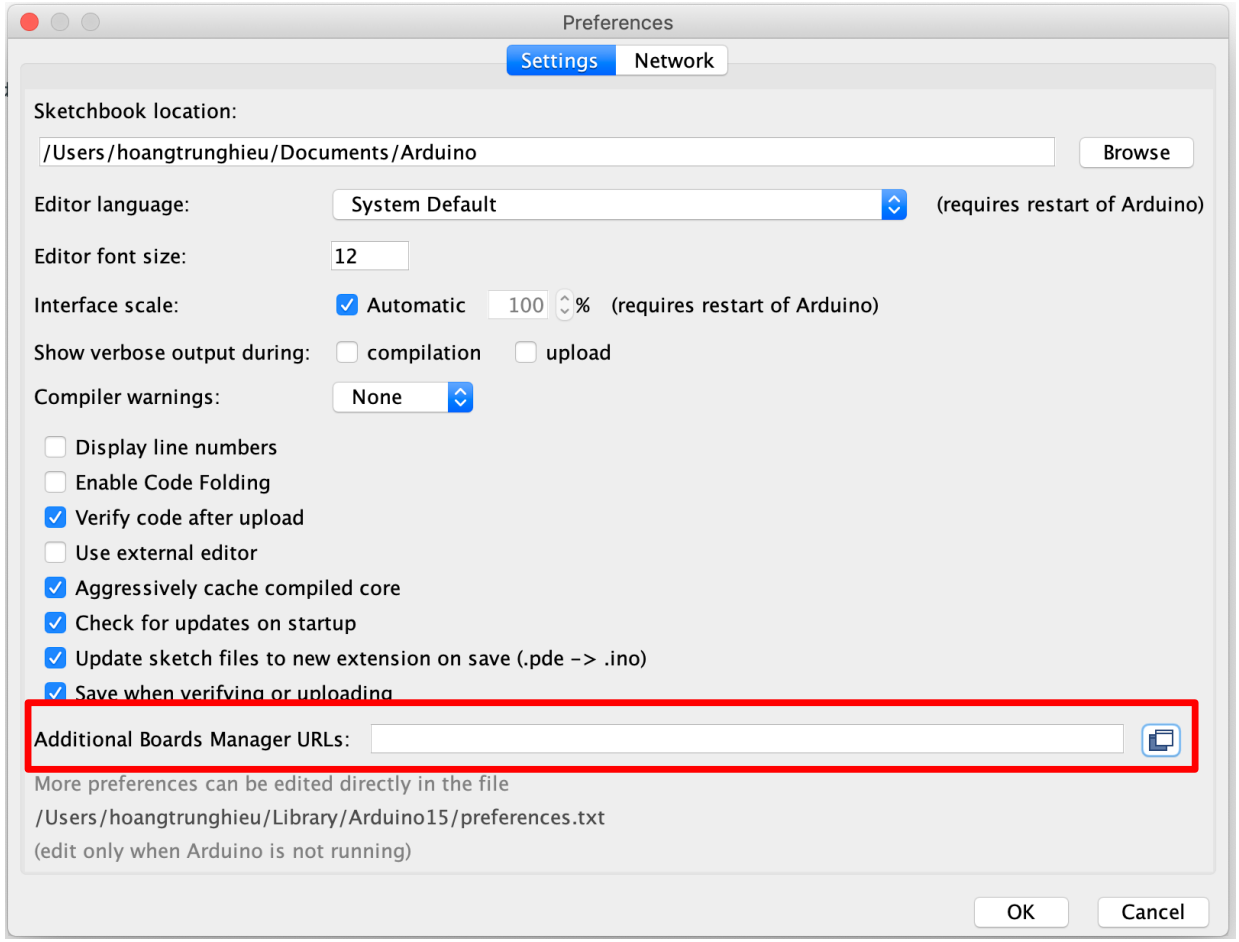


PIN DEFINITION



D0(GPIO16) can only be used as gpio read/write, no interrupt supported, no pwm/i2c/ow supported.

Programming ESP8266 in the Arduino IDE



Setup ESP8266 Programming Environment

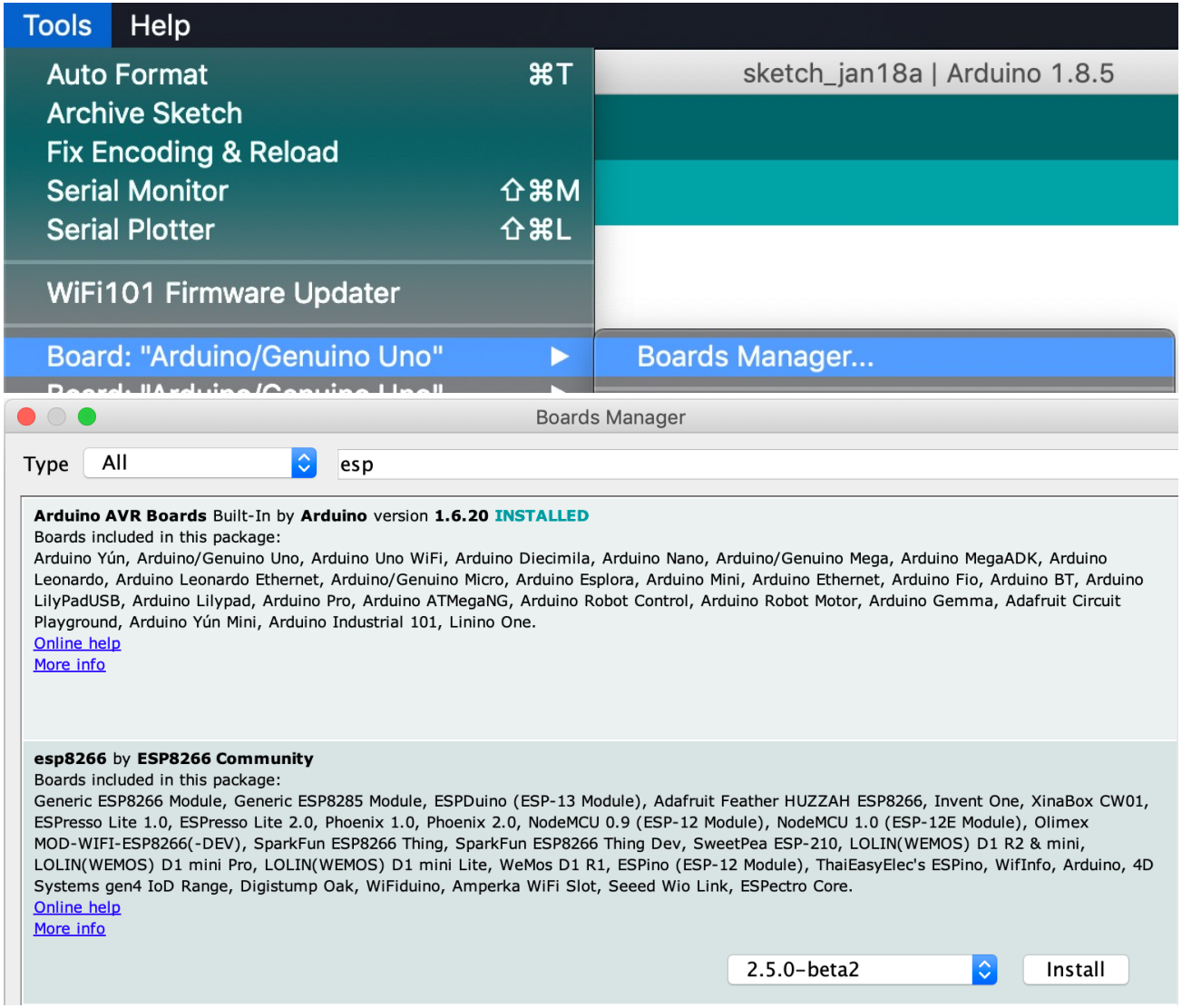
Step 1

- Go to ***File > Preferences***

- Enter *https://arduino.esp8266.com/stable/package_esp8266com_index.json*

into Additional Boards Manager URLs textbox

- *Ok*



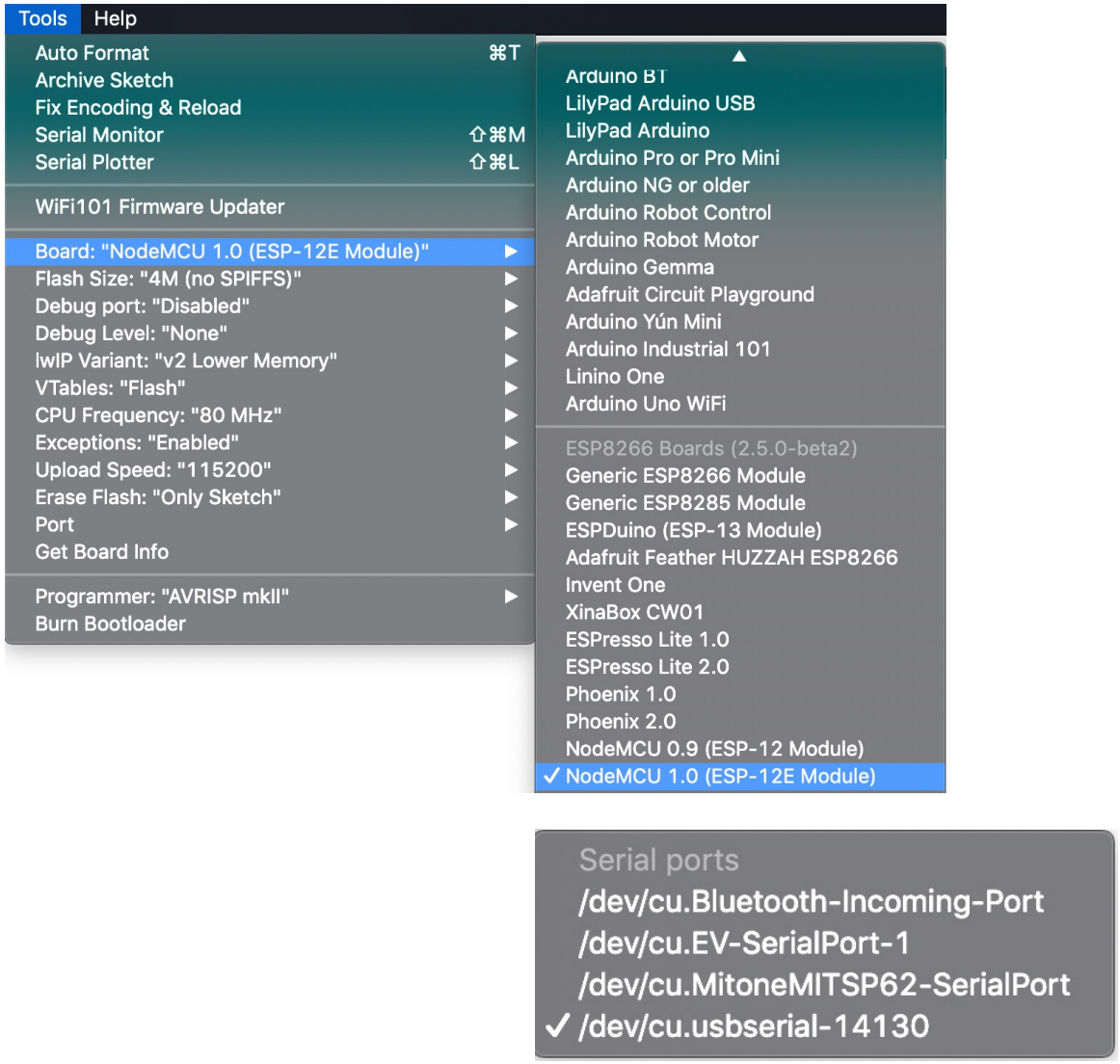
Setup ESP8266 Programming Environment

Step 2

- Open Boards Manager: ***Tools > Board > Boards Manager…***

- Enter ***“esp8266”*** into Search box

- *Install package* **“esp8266 by ESP8266 Community”**



Setup ESP8266 Programming Environment

Step 3

- Plug the ESP8266 NodeMCU board into the computer via USB port

- Select ***Tools > Board > NodeMCU 1.0 (ESP-12E Module)***

- Select ***Tools > Port > [Select suitable port]***

Important!!!

If your machine does not recognize the ESP8266 NodeMCU port, please follow these steps to install the driver:

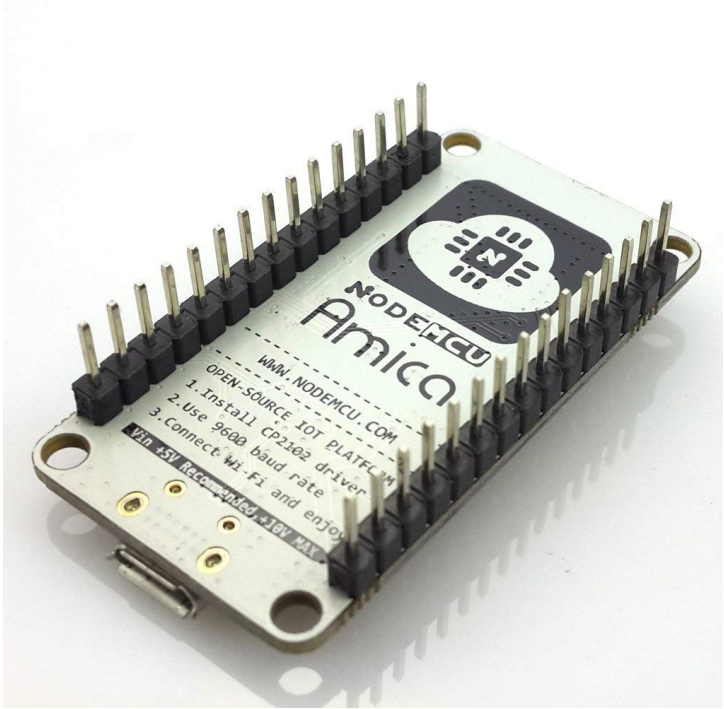
- Looking for the driver's name on the NodeMCU board.

- CH340 or CH340g driver:

https://sparks.gogo.co.nz/ch340.html

- CP2102 driver:

https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers



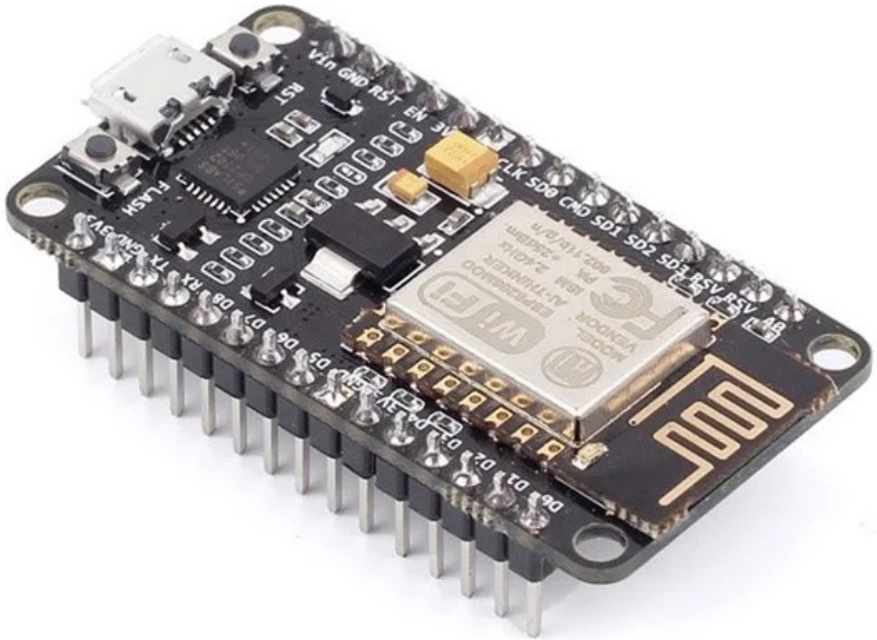
```
void setup() {
  pinMode(LED_BUILTIN, OUTPUT);
}

void loop() {
  digitalWrite(LED_BUILTIN, HIGH);
  delay(1000);
  digitalWrite(LED_BUILTIN, LOW);
  delay(1000);
}
```

Setup ESP8266 Programming Environment

Step 4

- Test your setup



Connect to Wifi

```ino
#include <ESP8266WiFi.h>

const char* ssid     = "your-ssid";
const char* password = "your-password";

void setup() {
  Serial.begin(115200);

  // We start by connecting to a WiFi network
  Serial.println();
  Serial.println();
  Serial.print("Connecting to ");
  Serial.println(ssid);

  WiFi.begin(ssid, password); //Connect to wifi

  //Waiting until the connection is successful
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }

  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
}
```