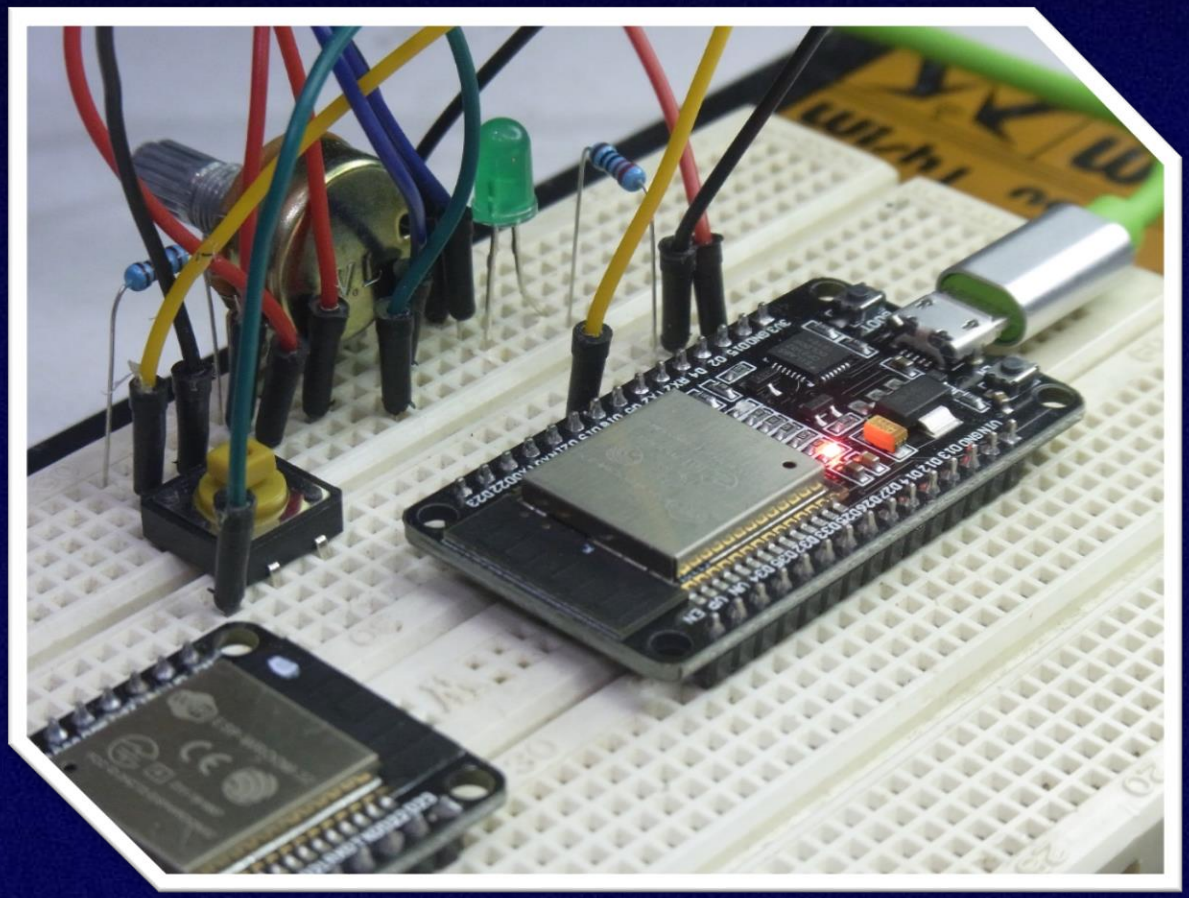


การใช้งาน Internet of Things (IoT)

THAIFIRMWARE.COM
EMBEDDED SYSTEM & IOT TECHNOLOGY

กฤตินันท์ ชอบตรง
Thaifirmware.com

Game

https://kahoot.it

Document

***** Download code&document *****

https://github.com/krittinunt/ESP32

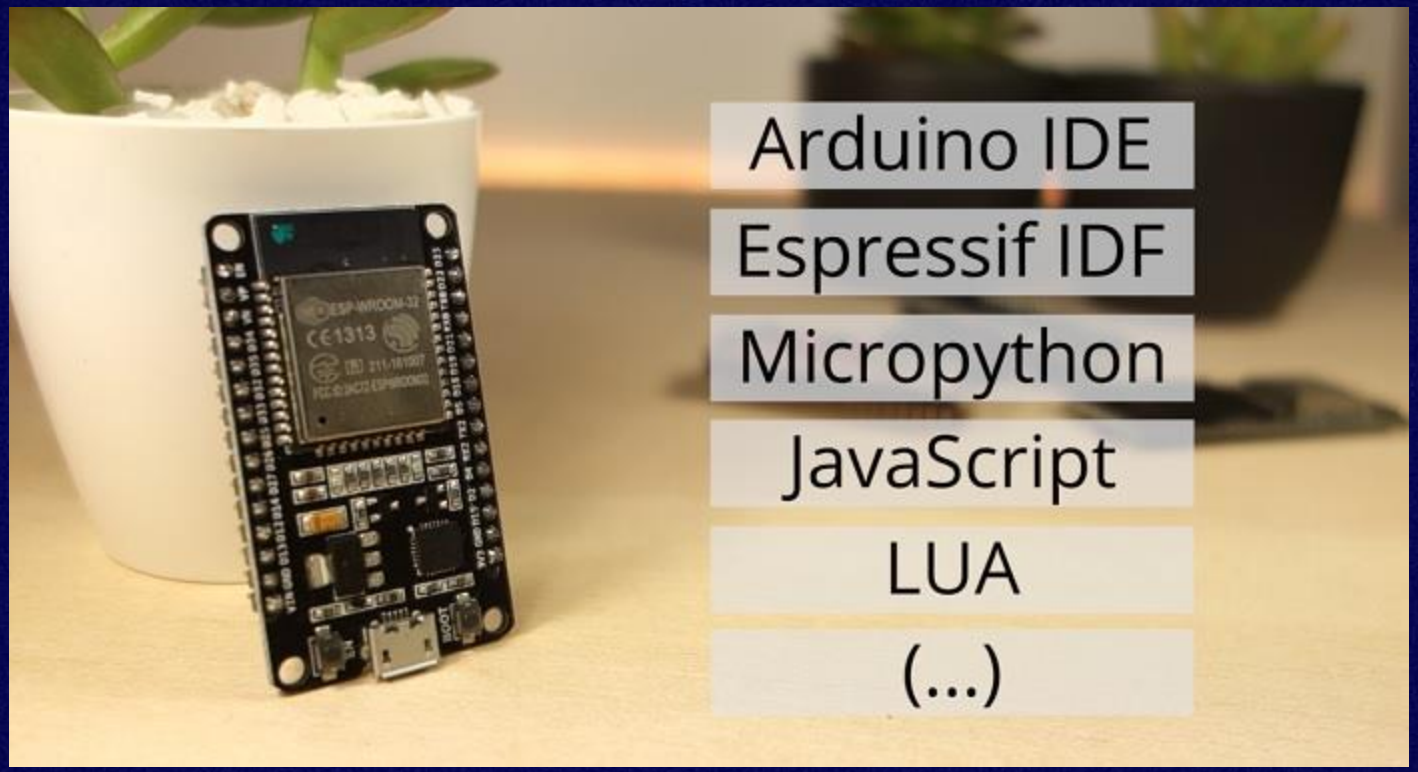
Overview

- ESP32 ทำงานแบบ Dual Core มี โปรเซสเซอร์ 2 ตัวทำงานได้พร้อมกัน
- มี Wi-Fi และ Bluetooth 4.0
- ทำงานแบบ 32 บิต
- ความถี่ Clock ความเร็วสูงสุดถึง 240 Mhz
- หน่วยความจำ RAM 512 kB
- มีขาทั้งหมด 30 ขา ข้างละ 15 ขา
- มีความสามารถอีกหลายหลาย เช่น Capacitive Touch , Hall Sensor, ADCs , DAC , UART , SPI ,I2C และอื่น ๆ

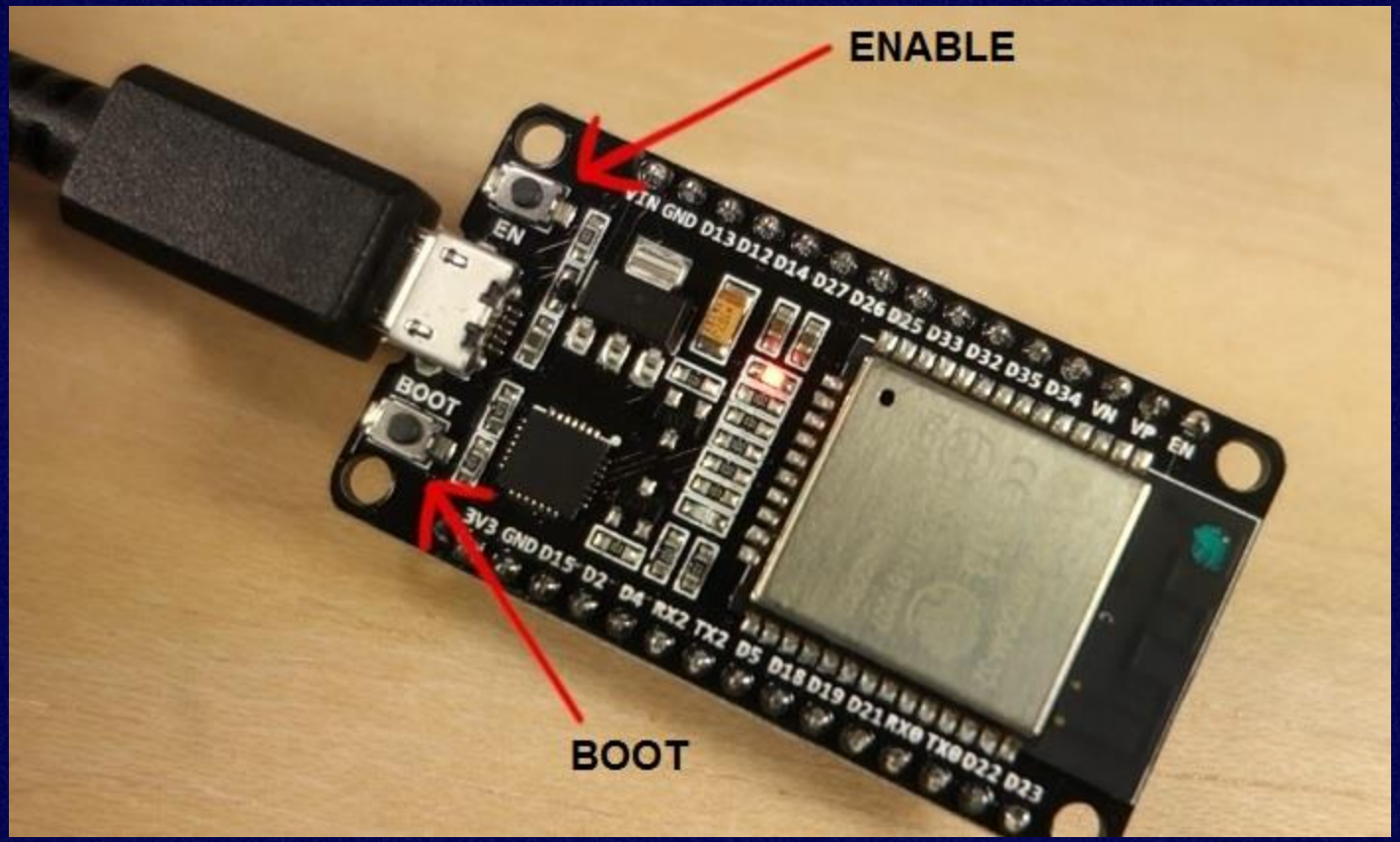
Overview

	ESP8266	ESP32
		
MCU	Xtensa Single-core 32-bit L106	Xtensa Dual-Core 32-bit LX6 with 600 DMIPS
802.11 b/g/n Wi-Fi	HT20	HT40
Bluetooth	X	Bluetooth 4.2 and BLE
Typical Frequency	80 MHz	160 MHz
SRAM	X	✓
Flash	X	✓
GPIO	17	36
Hardware /Software PWM	None / 8 channels	None / 16 channels
SPI/I2C/I2S/UART	2/1/2/2	4/2/2/2
ADC	10-bit	12-bit
CAN	X	✓
Ethernet MAC Interface	X	✓
Touch Sensor	X	✓
Temperature Sensor	X	✓
Hall effect sensor	X	✓
Working Temperature	-40°C to 125°C	-40°C to 125°C

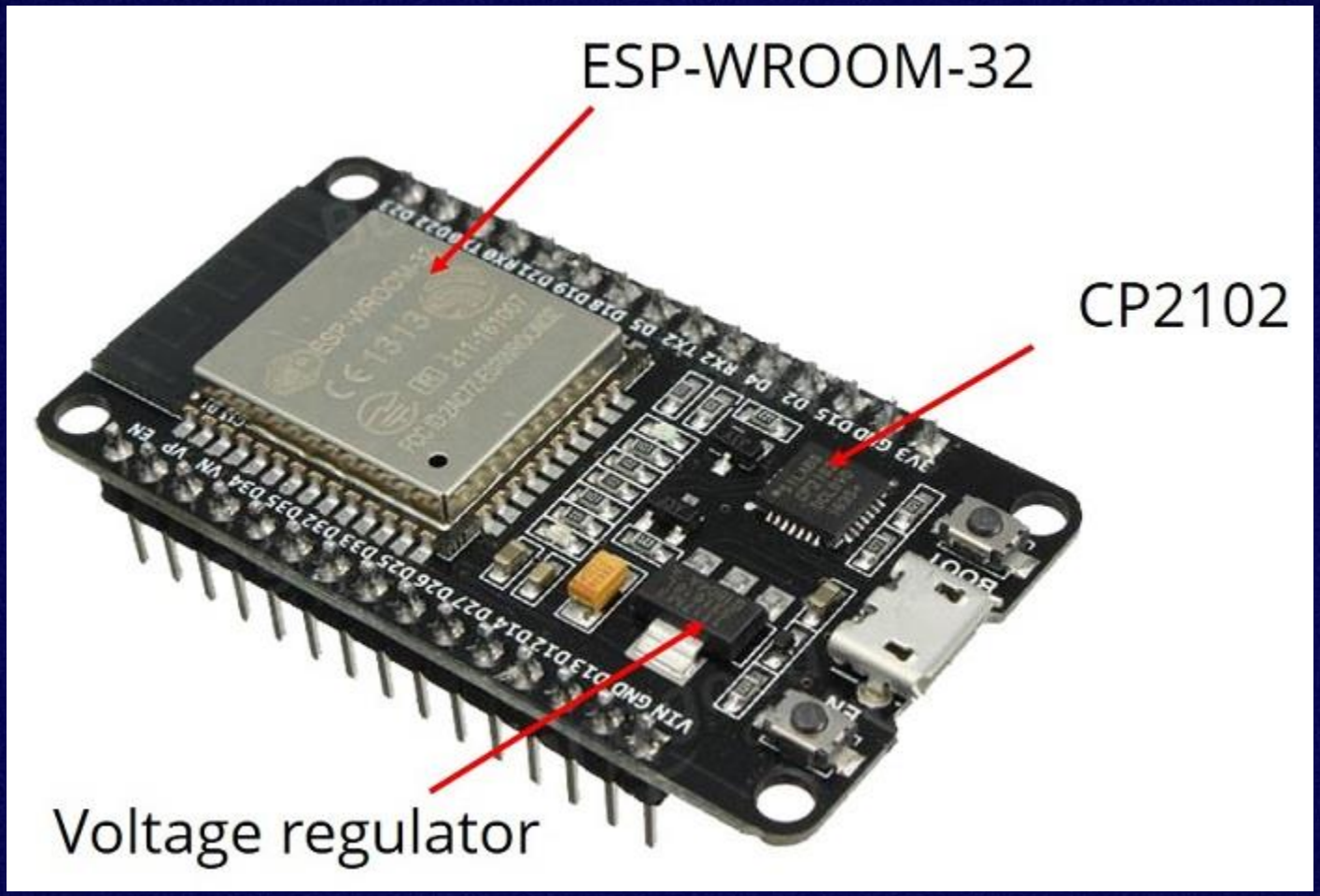
Overview



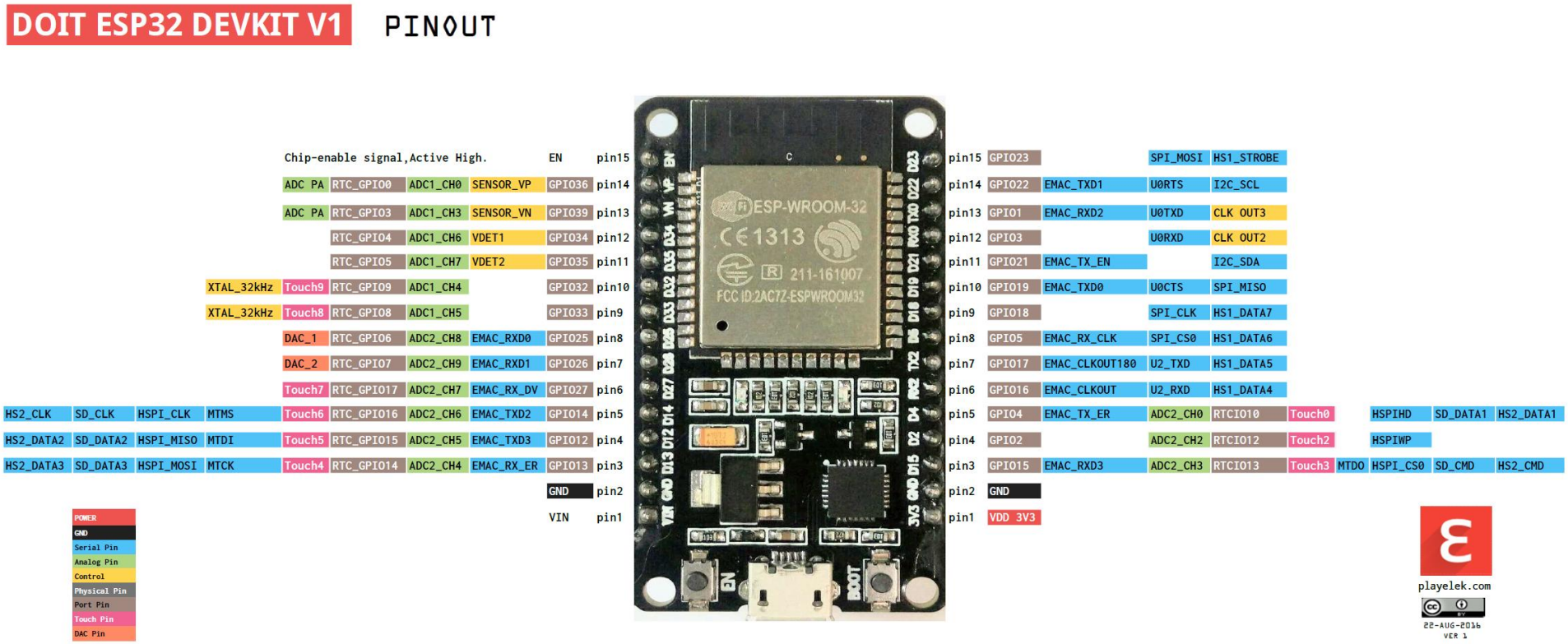
Overview


ENABLE
EN
BOOT
VIN GND D13 D12 D14 D27 D26 D25 D33 D32 D35 D34 VN VP EN
3V3 GND D15 D2 D4 RX2 TX2 D5 D18 D19 D21 RX0 TX0 D22 D23
BOOT

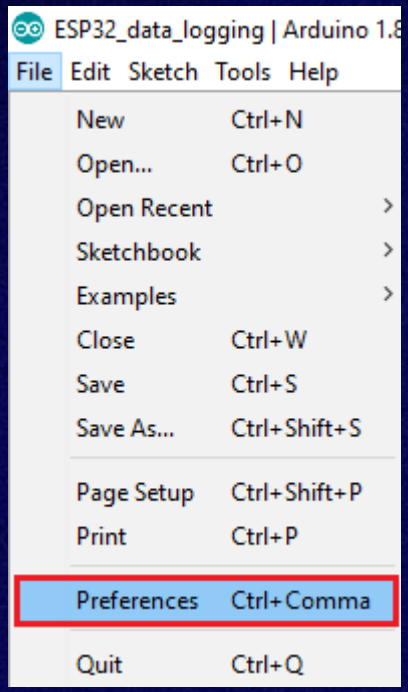
Overview

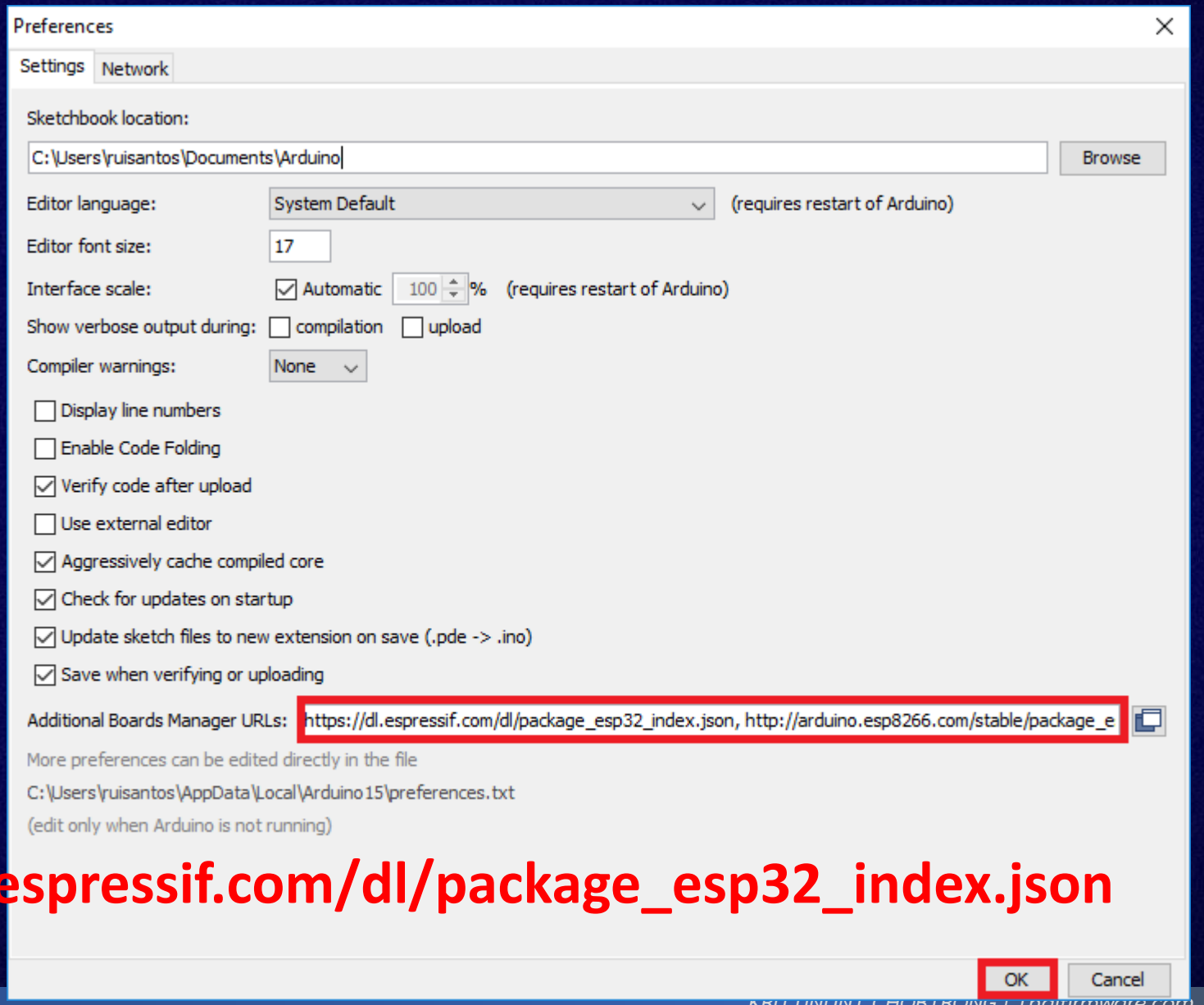


Overview


DOIT ESP32 DEVKIT V1
PINOUT
Chip-enable signal,Active High. EN pin15
ADC PA RTC_GPIO0 ADC1_CH0 SENSOR_VP GPIO36 pin14
ADC PA RTC_GPIO3 ADC1_CH3 SENSOR_VN GPIO39 pin13
RTC_GPIO4 ADC1_CH6 VDET1 GPIO34 pin12
RTC_GPIO5 ADC1_CH7 VDET2 GPIO35 pin11
XTAL_32kHz Touch9 RTC_GPIO9 ADC1_CH4 GPIO32 pin10
XTAL_32kHz Touch8 RTC_GPIO8 ADC1_CH5 GPIO33 pin9
DAC_1 RTC_GPIO6 ADC2_CH8 EMAC_RXD0 GPIO25 pin8
DAC_2 RTC_GPIO7 ADC2_CH9 EMAC_RXD1 GPIO26 pin7
Touch7 RTC_GPIO17 ADC2_CH7 EMAC_RX_DV GPIO27 pin6
HS2_CLK SD_CLK HSPI_CLK MTMS Touch6 RTC_GPIO16 ADC2_CH6 EMAC_TXD2 GPIO14 pin5
HS2_DATA2 SD_DATA2 HSPI_MISO MTDI Touch5 RTC_GPIO15 ADC2_CH5 EMAC_TXD3 GPIO12 pin4
HS2_DATA3 SD_DATA3 HSPI_MOSI MTCK Touch4 RTC_GPIO14 ADC2_CH4 EMAC_RX_ER GPIO13 pin3
GND pin2
VIN pin1
pin15 GPIO23 SPI_MOSI HS1_STROBE
pin14 GPIO22 EMAC_TXD1 U0RTS I2C_SCL
pin13 GPIO1 EMAC_RXD2 U0TXD CLK OUT3
pin12 GPIO3 U0RXD CLK OUT2
pin11 GPIO21 EMAC_TX_EN I2C_SDA
pin10 GPIO19 EMAC_TXD0 U0CTS SPI_MISO
pin9 GPIO18 SPI_CLK HS1_DATA7
pin8 GPIO5 EMAC_RX_CLK SPI_CS0 HS1_DATA6
pin7 GPIO17 EMAC_CLKOUT180 U2_TXD HS1_DATA5
pin6 GPIO16 EMAC_CLKOUT U2_RXD HS1_DATA4
pin5 GPIO4 EMAC_TX_ER ADC2_CH0 RTCIO10 Touch0 HSPIHD SD_DATA1 HS2_DATA1
pin4 GPIO2 ADC2_CH2 RTCIO12 Touch2 HSPIWP
pin3 GPIO15 EMAC_RXD3 ADC2_CH3 RTCIO13 Touch3 MTDO HSPI_CS0 SD_CMD HS2_CMD
pin2 GND
pin1 VDD 3V3
ESP-WROOM-32
211-161007
FCC ID:2AC7Z-ESPWROOM32
POWER
GND
Serial Pin
Analog Pin
Control
Physical Pin
Port Pin
Touch Pin
DAC Pin
playelek.com
22-AUG-2016
VER 1

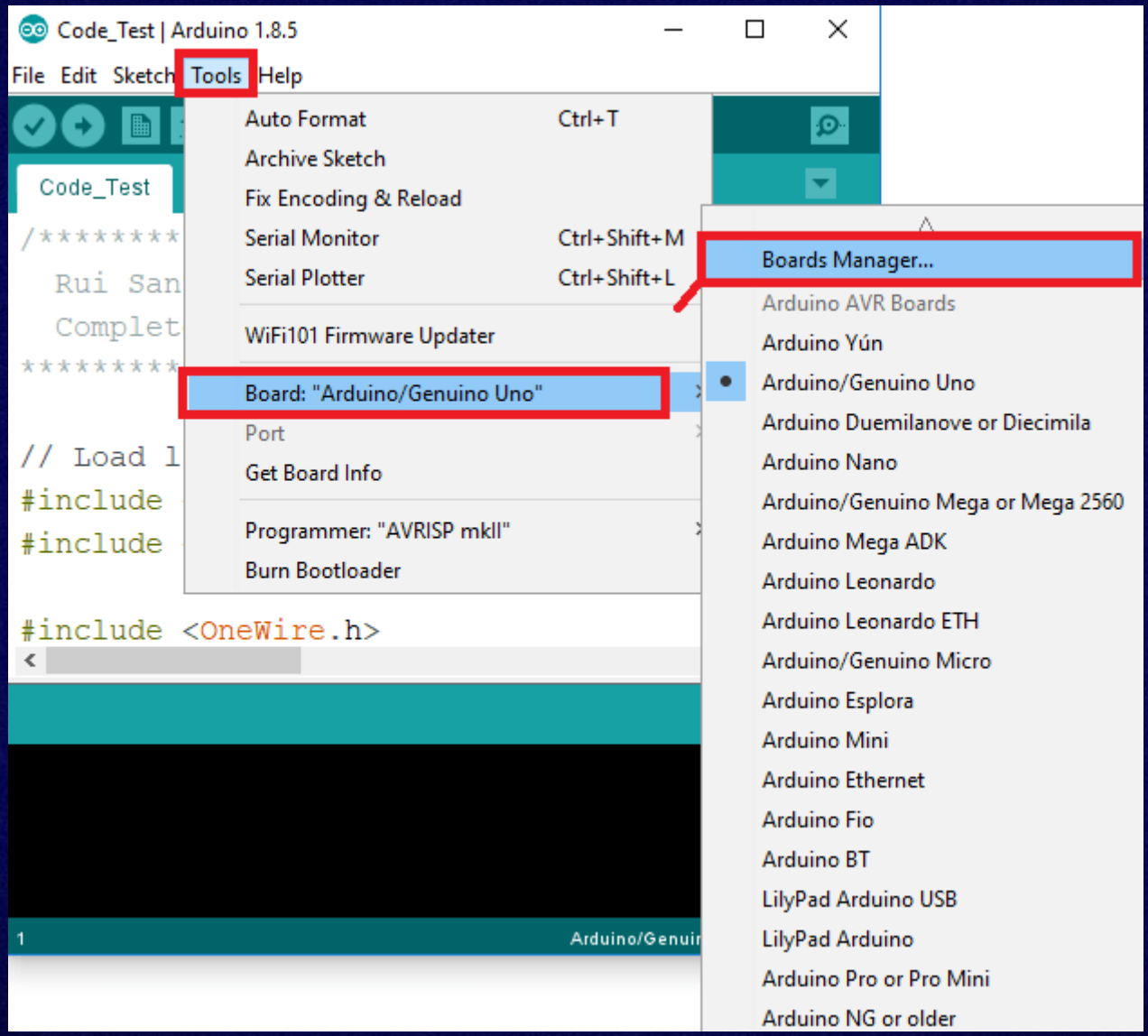
Install software



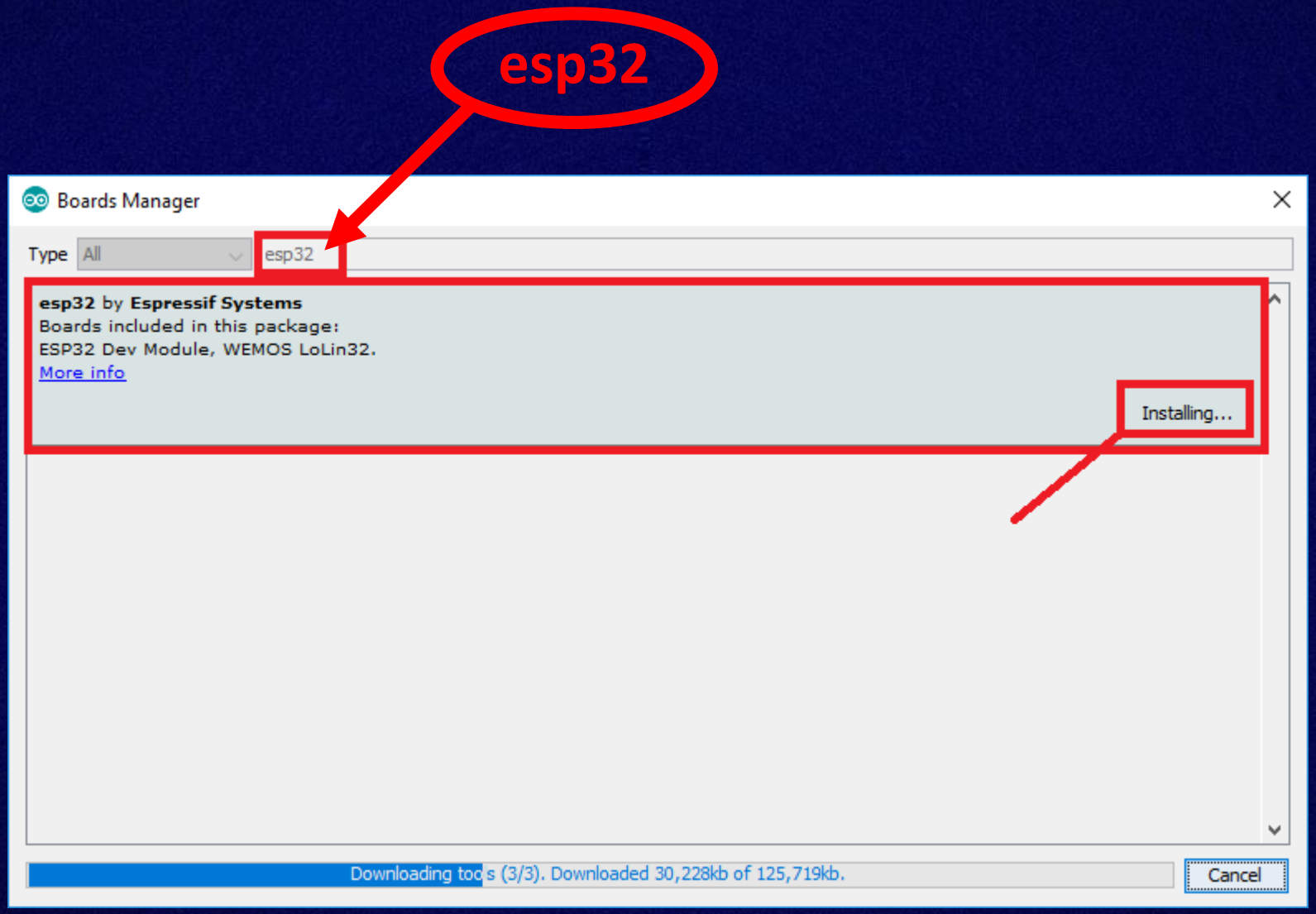


https://dl.espressif.com/dl/package_esp32_index.json

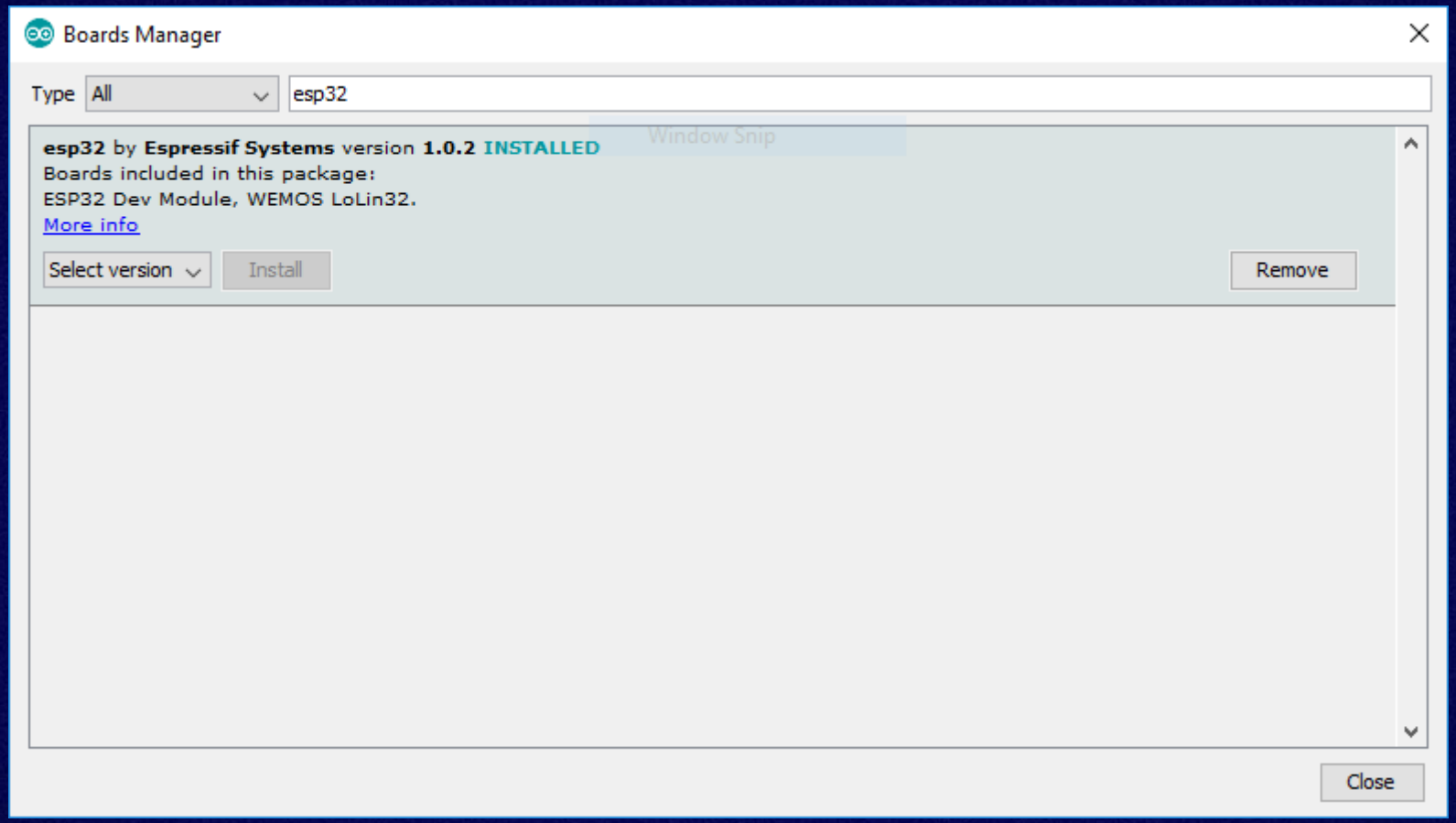
Install software



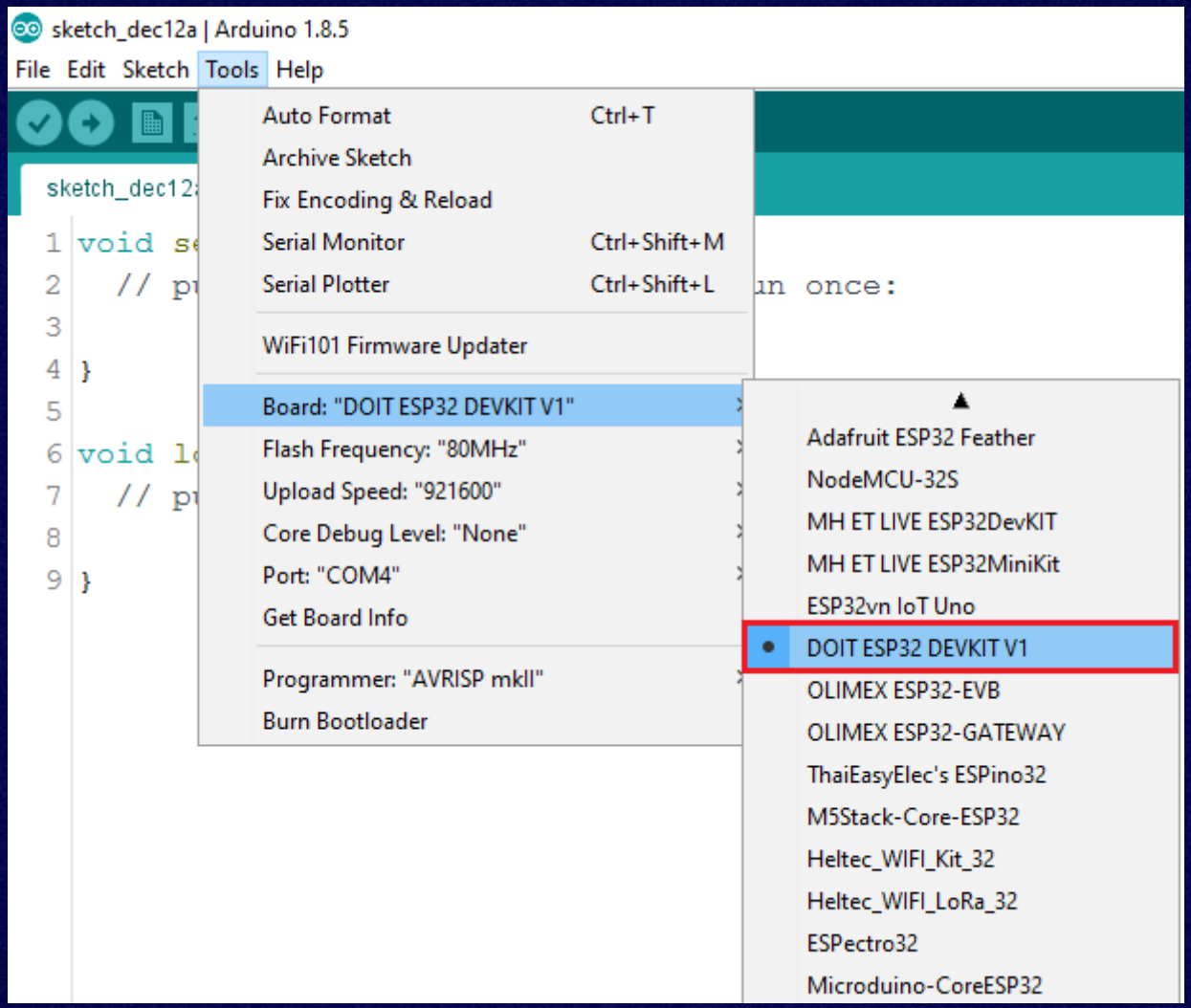
Install software



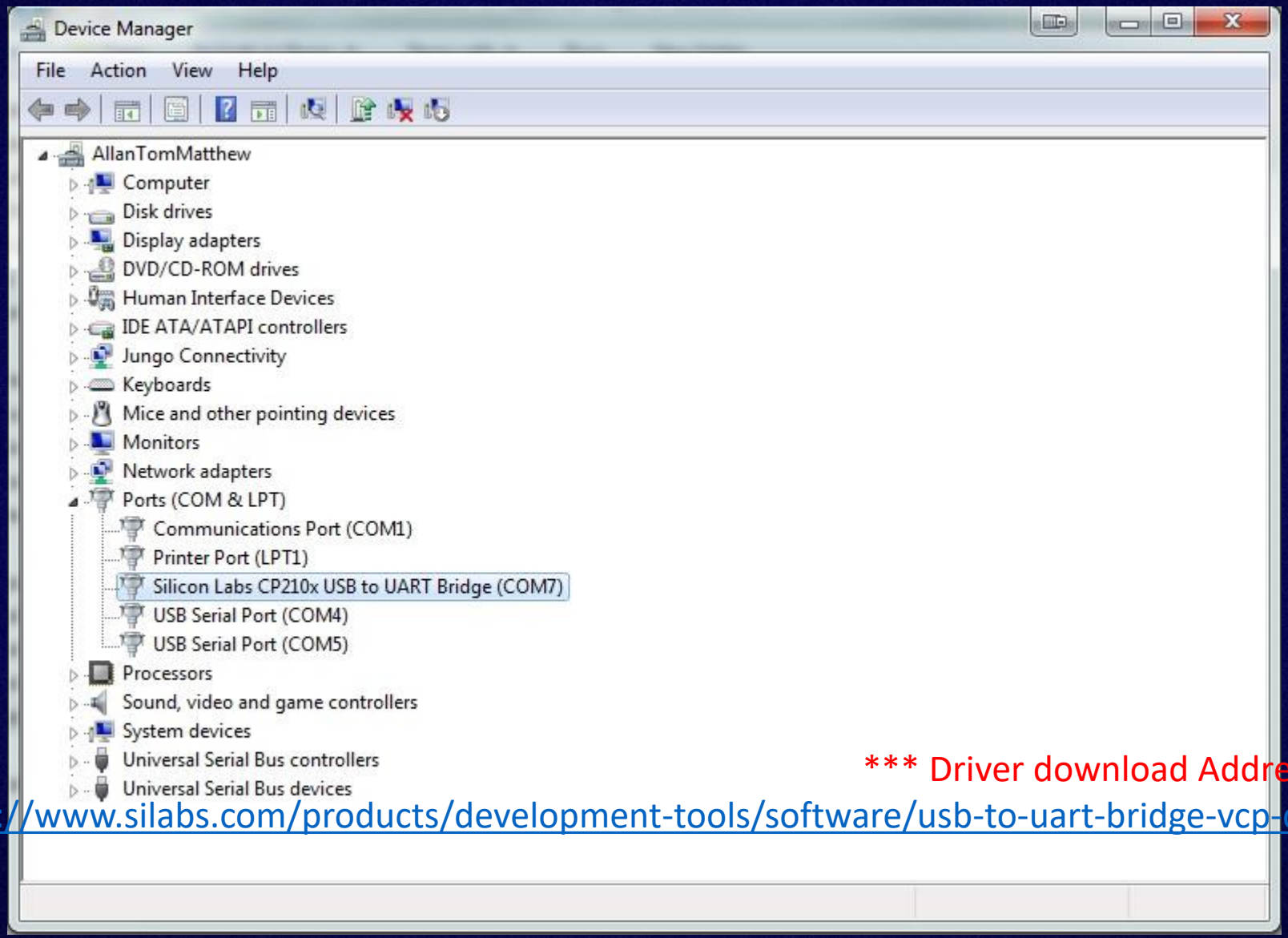
Install software



Install software



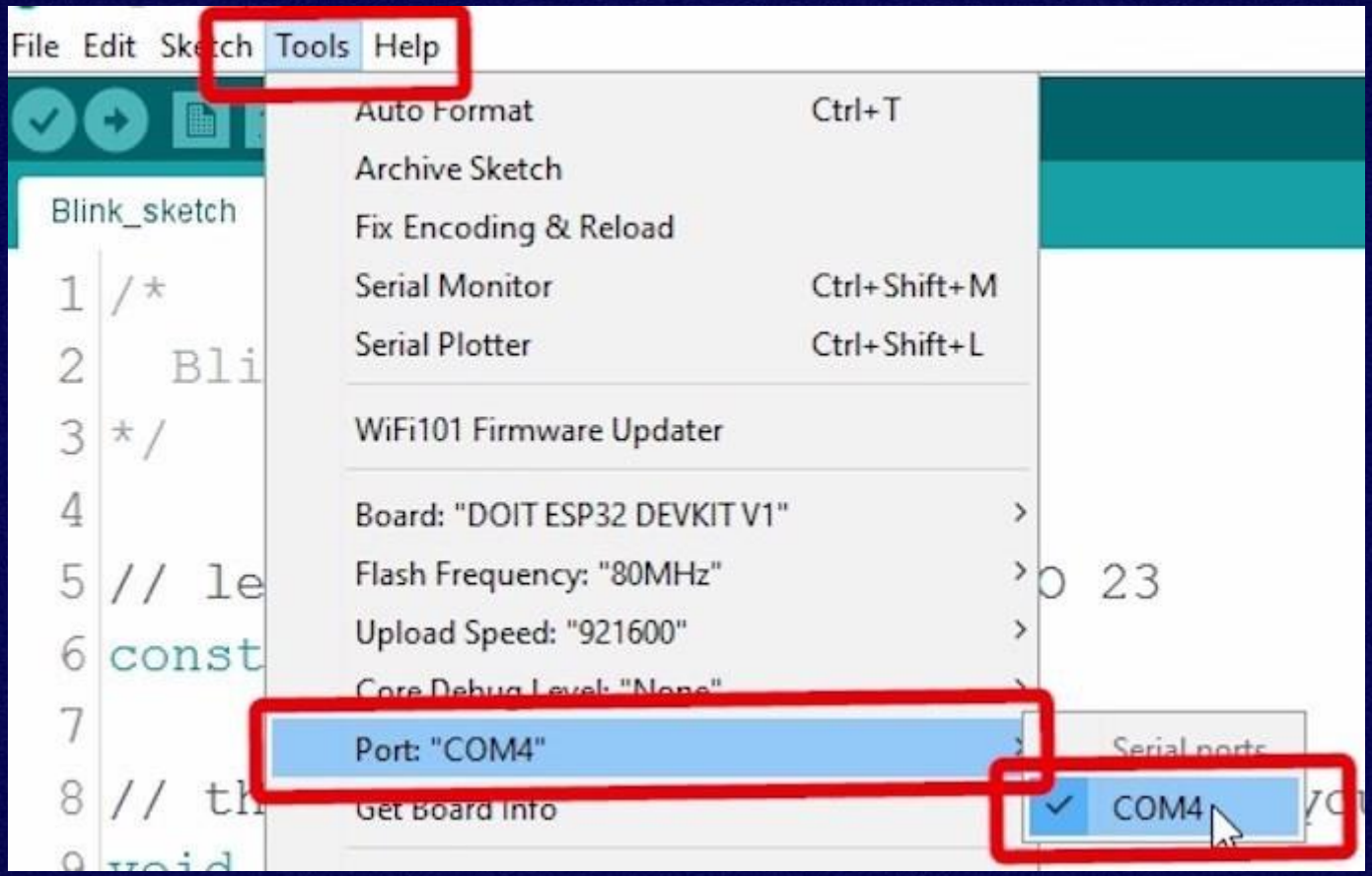
Install software



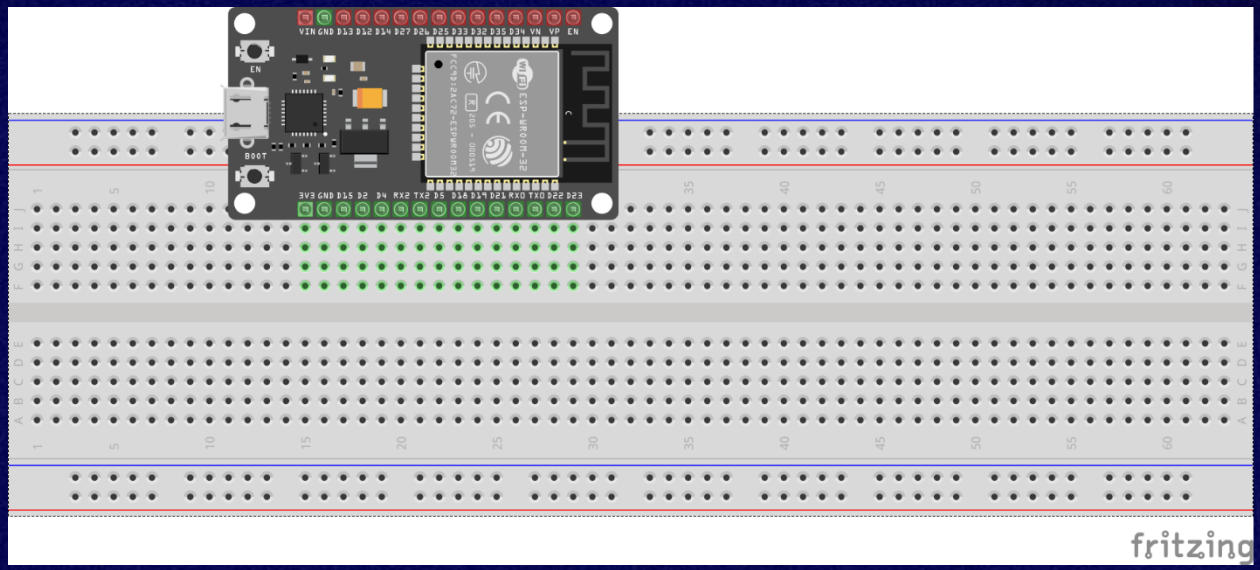
*** Driver download Address ***

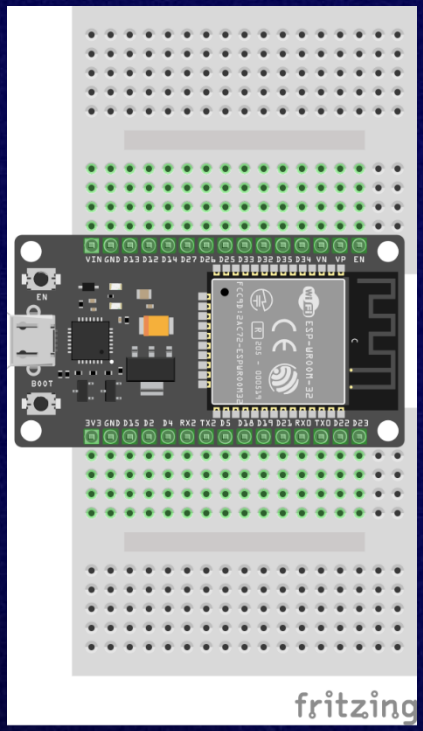
https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

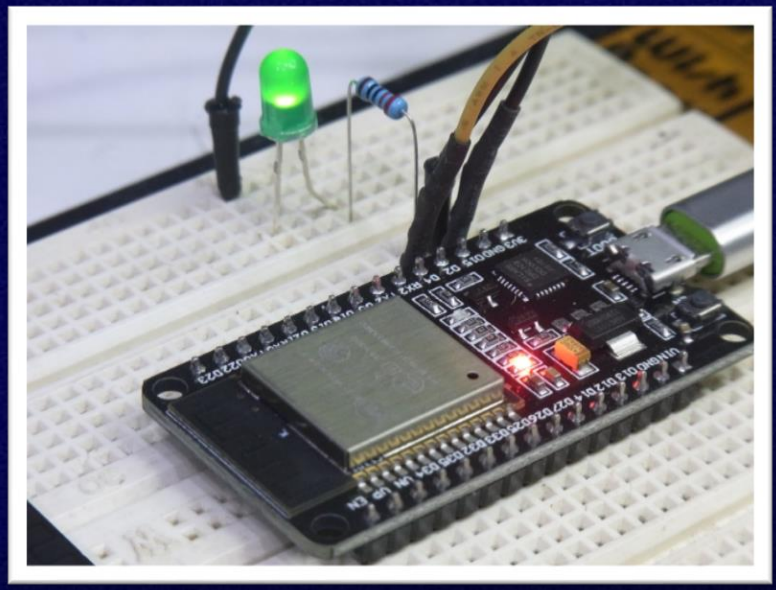
Install software



LAB01-LED_Builtin Blink







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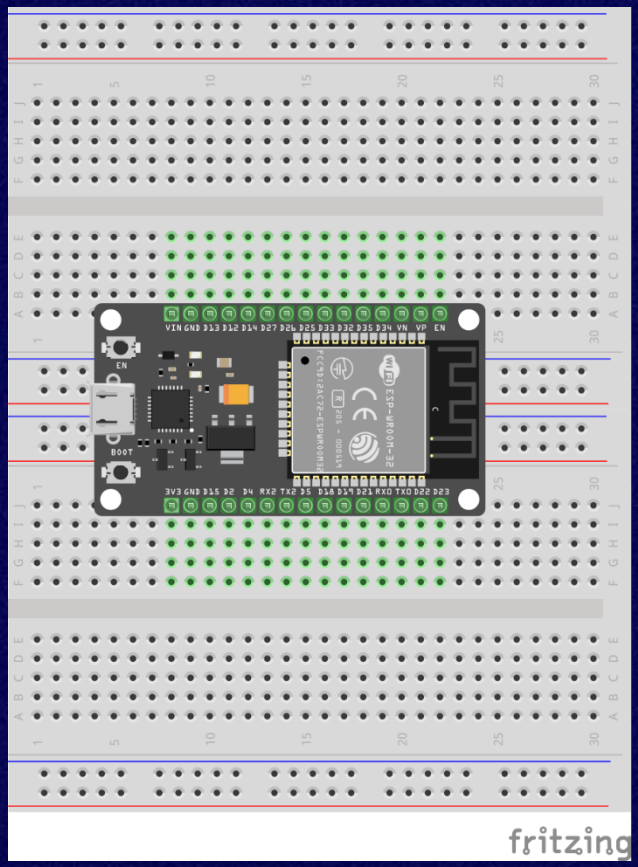

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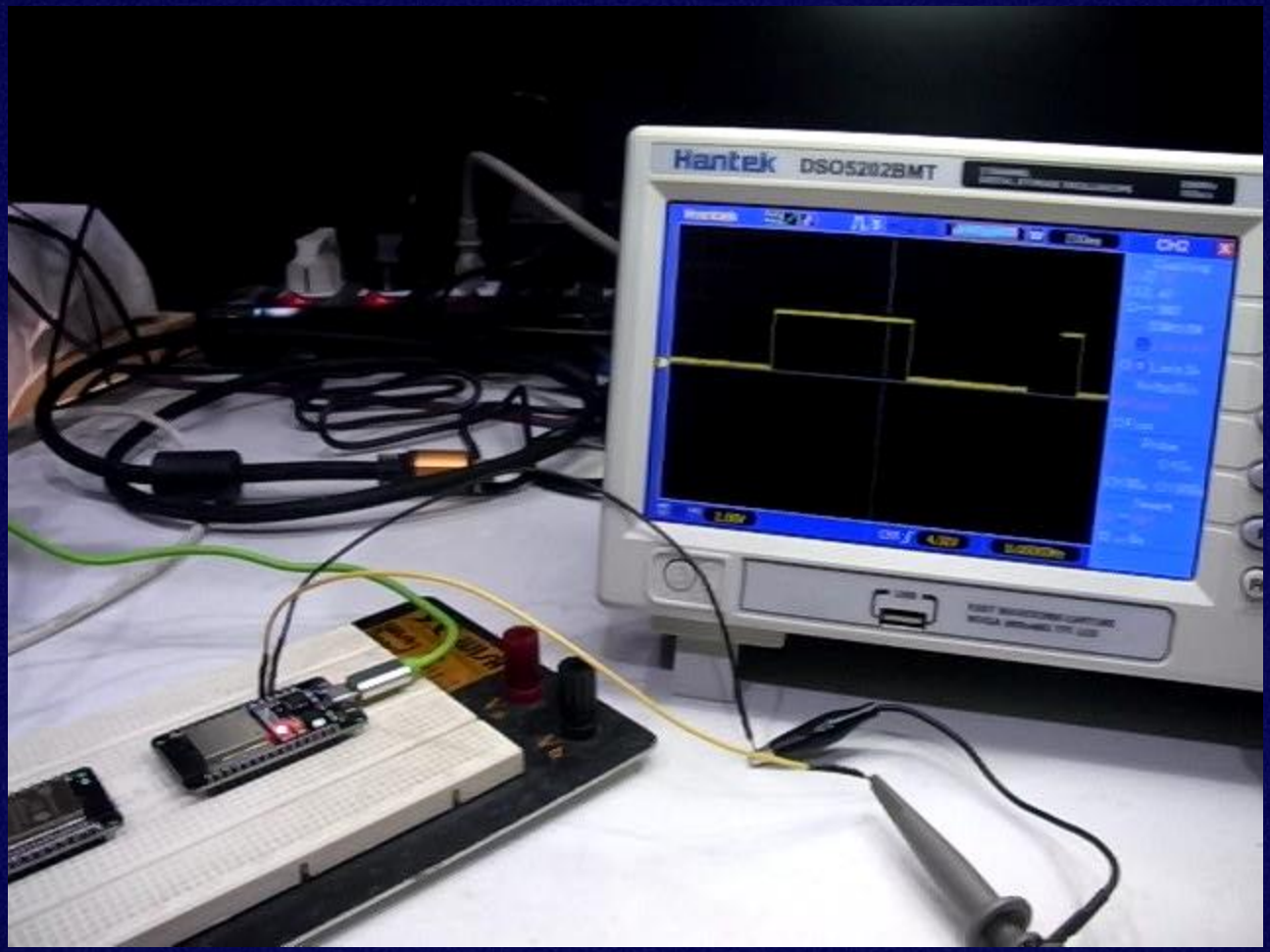
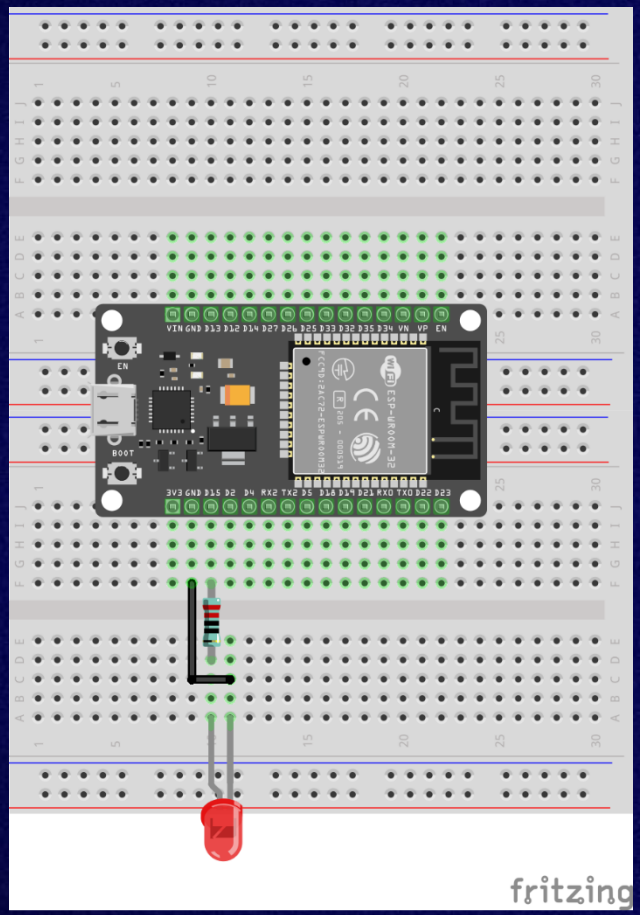
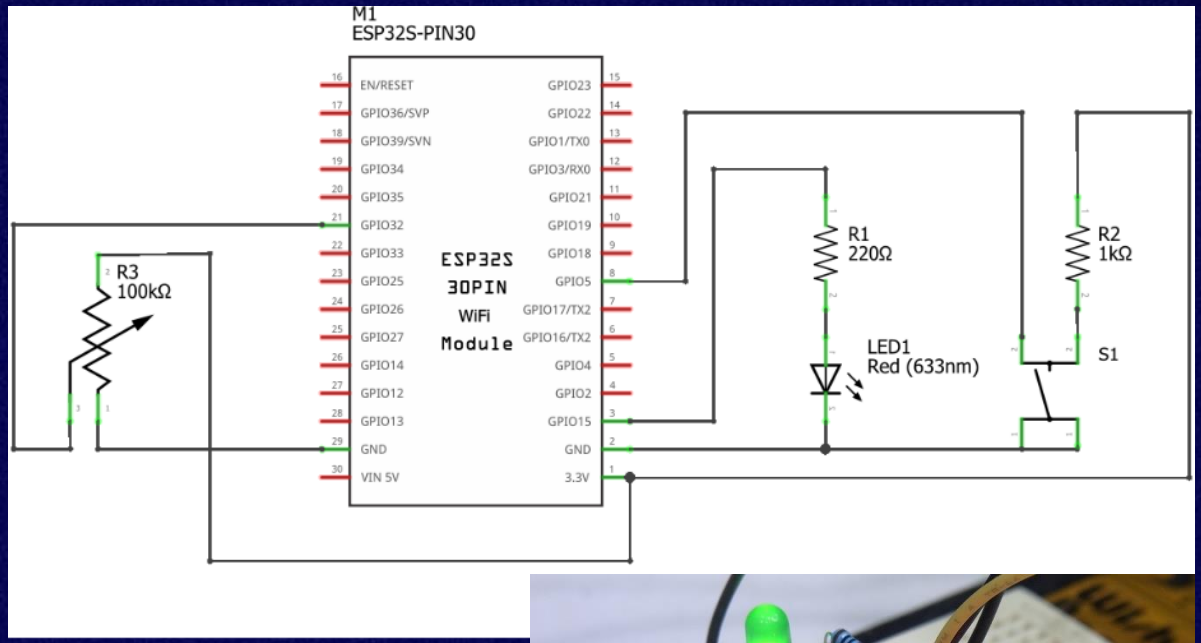
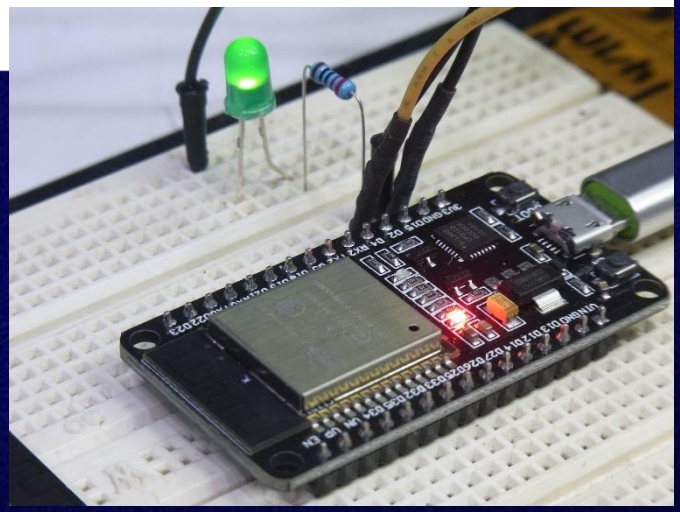


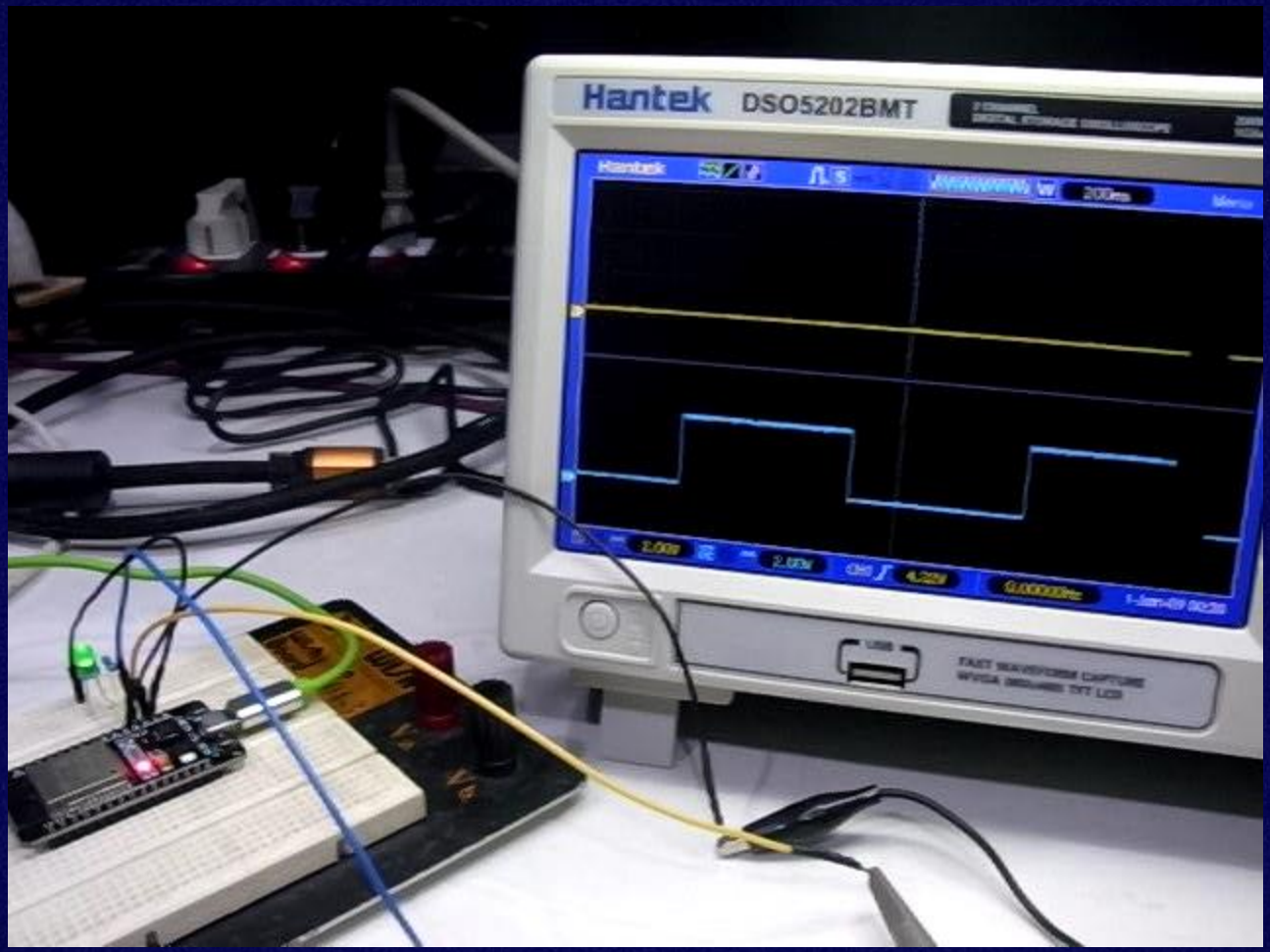
LAB02-LED_Ext_Blink



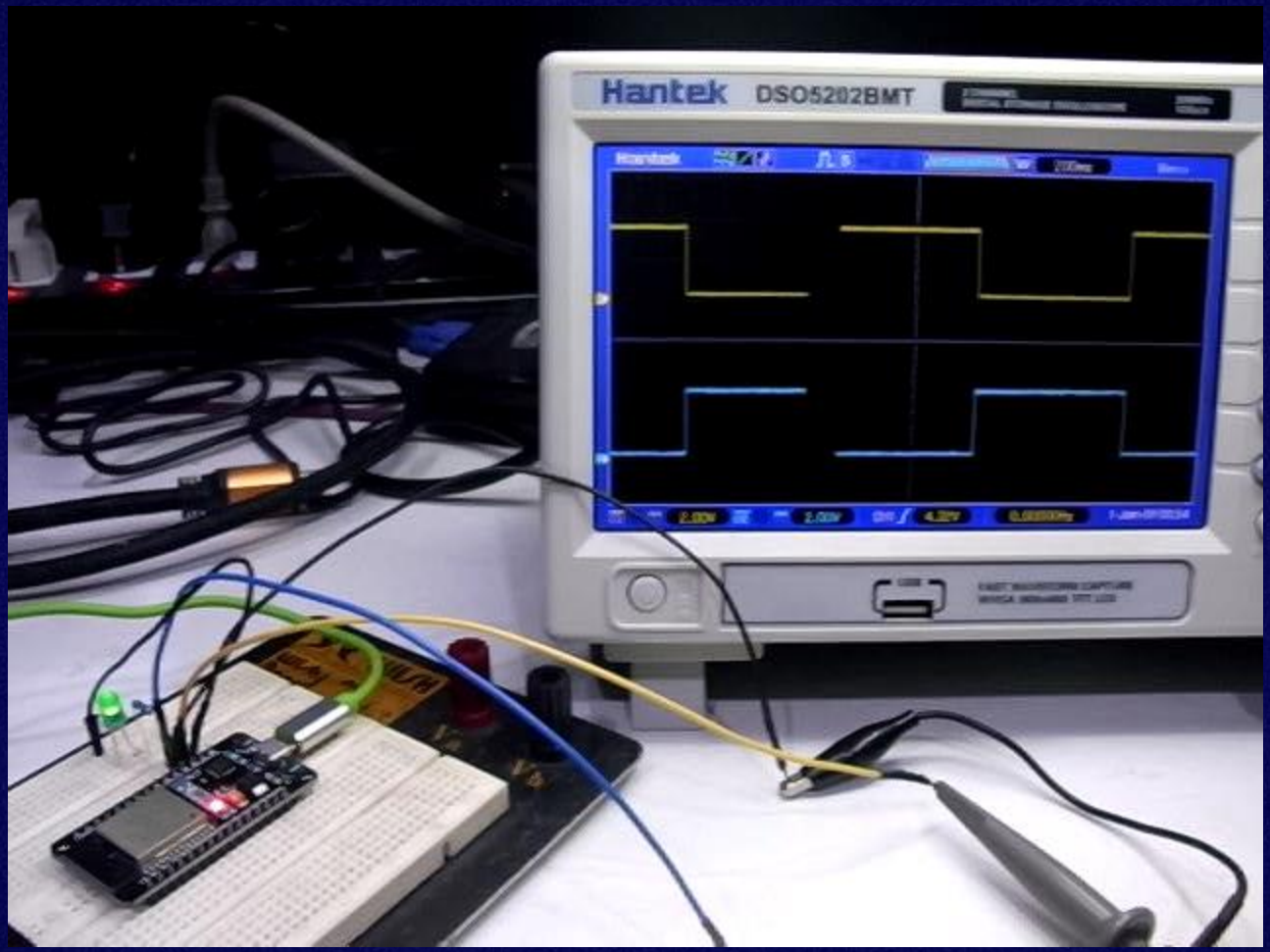




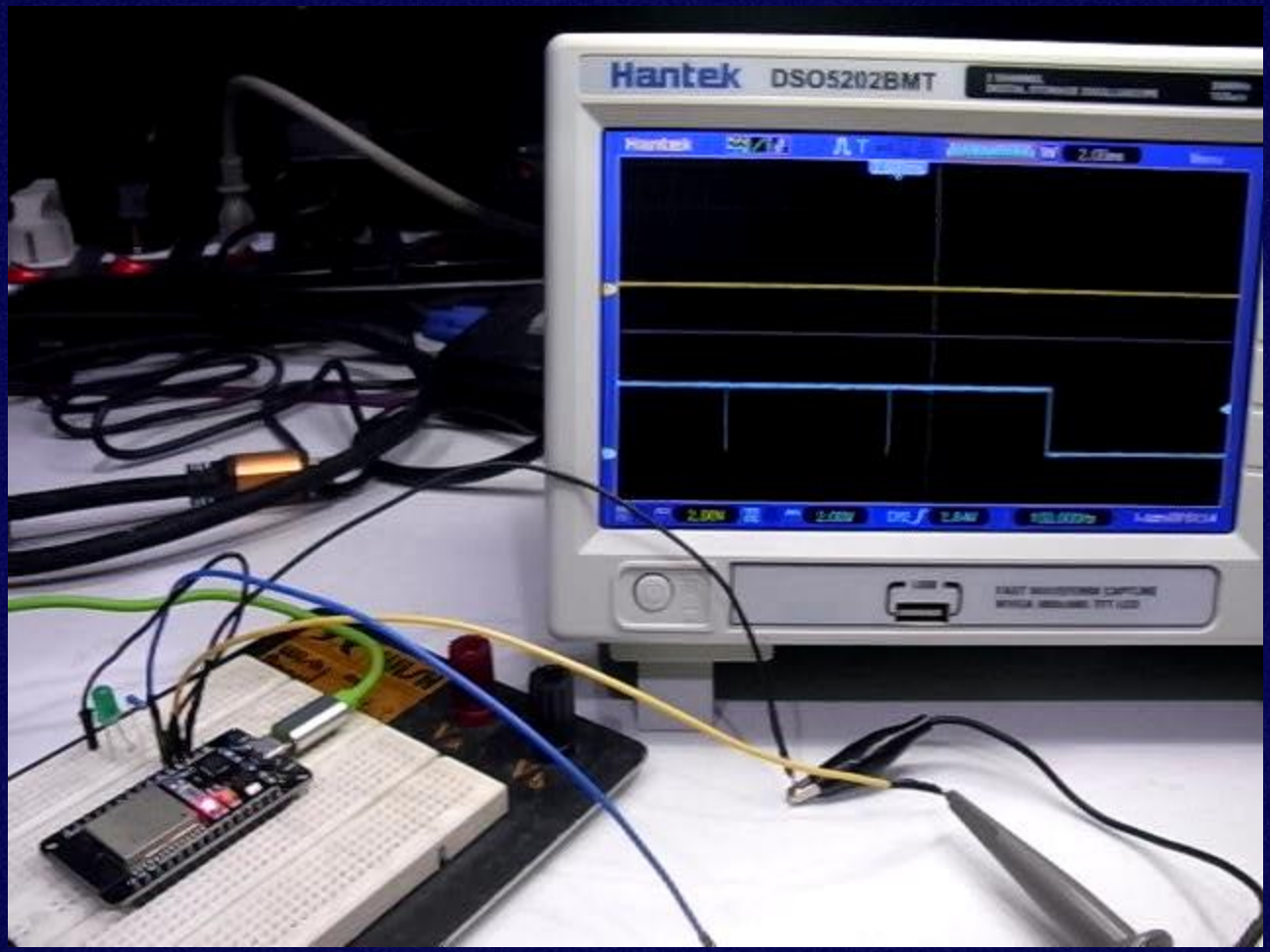
LAB02-LED_Ext_Blink



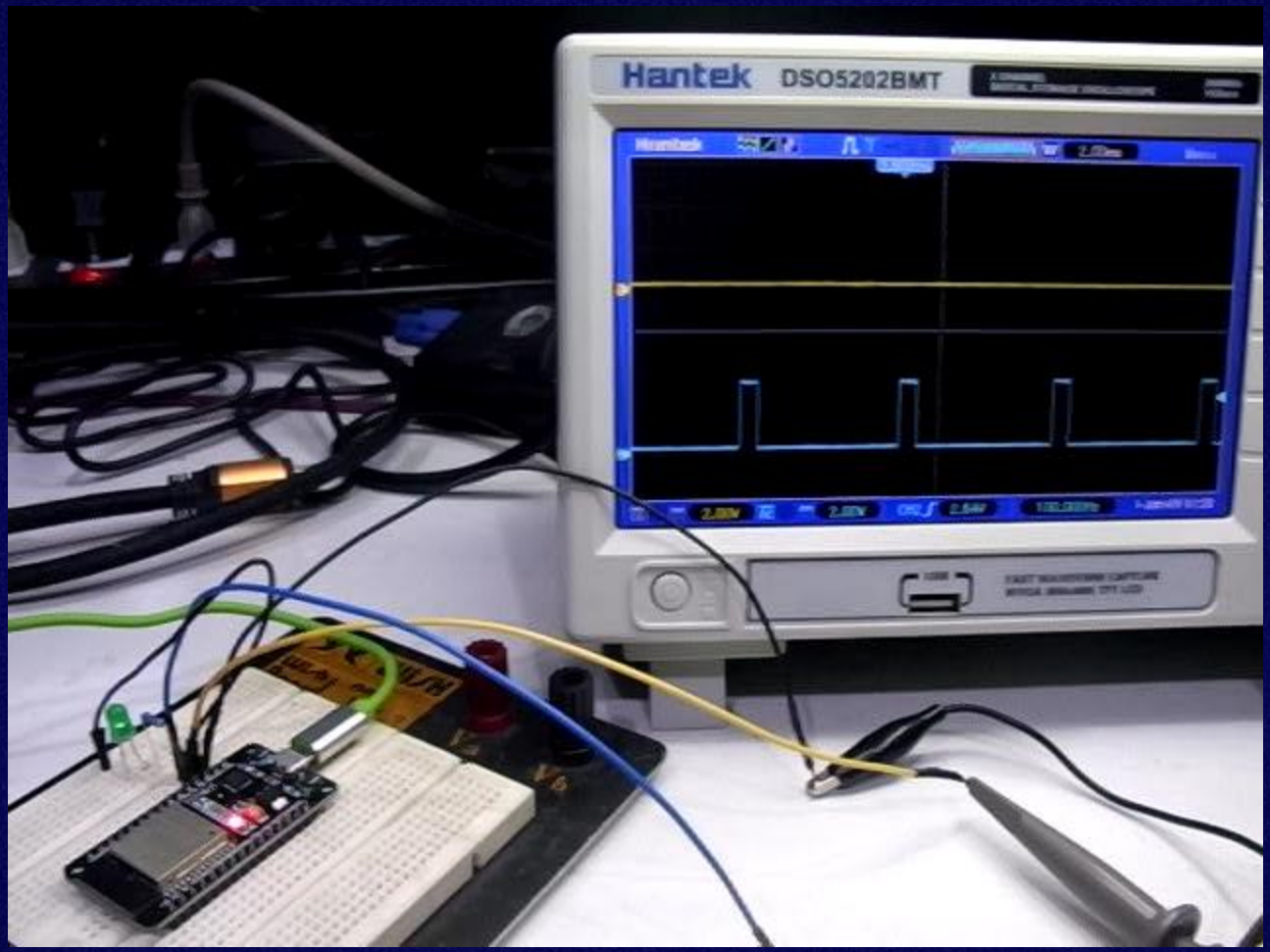
TEST01-LED_Blink



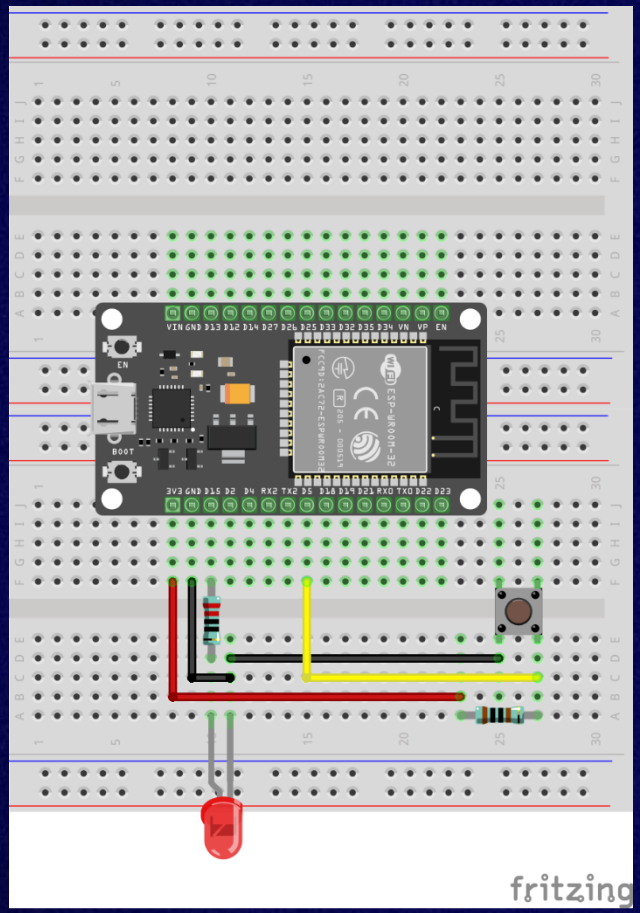
LAB03-LED_PWM

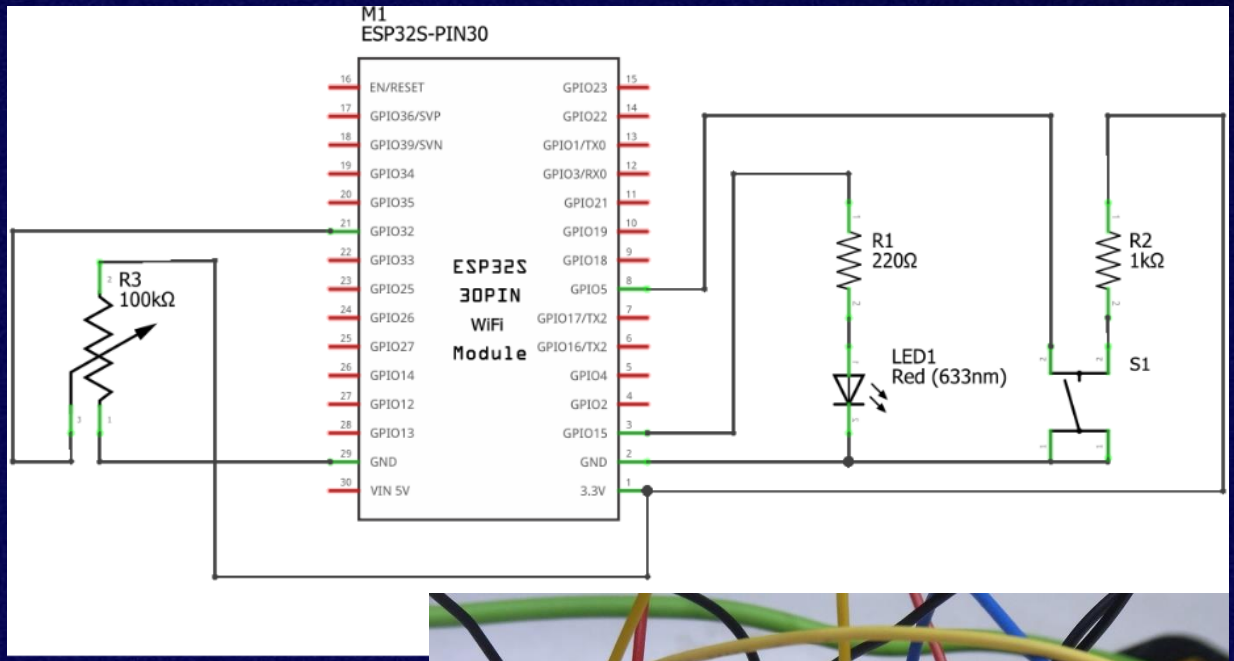


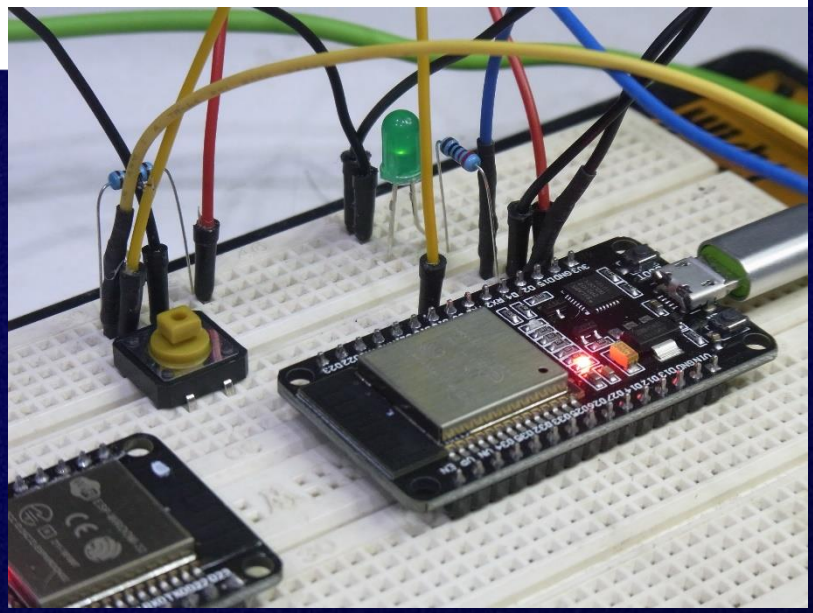
TEST02-LED_PWM



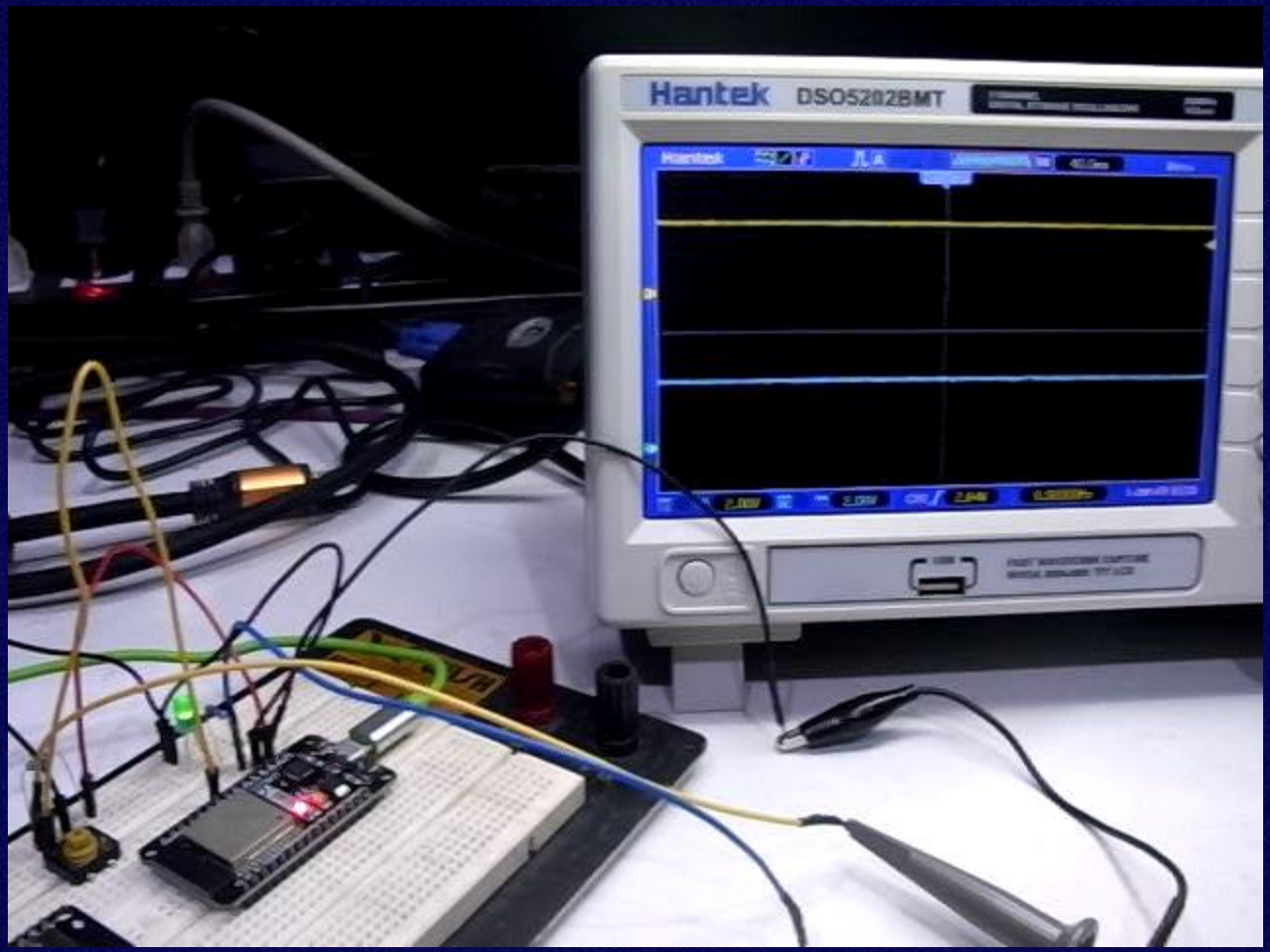
LAB04-Switch_Input



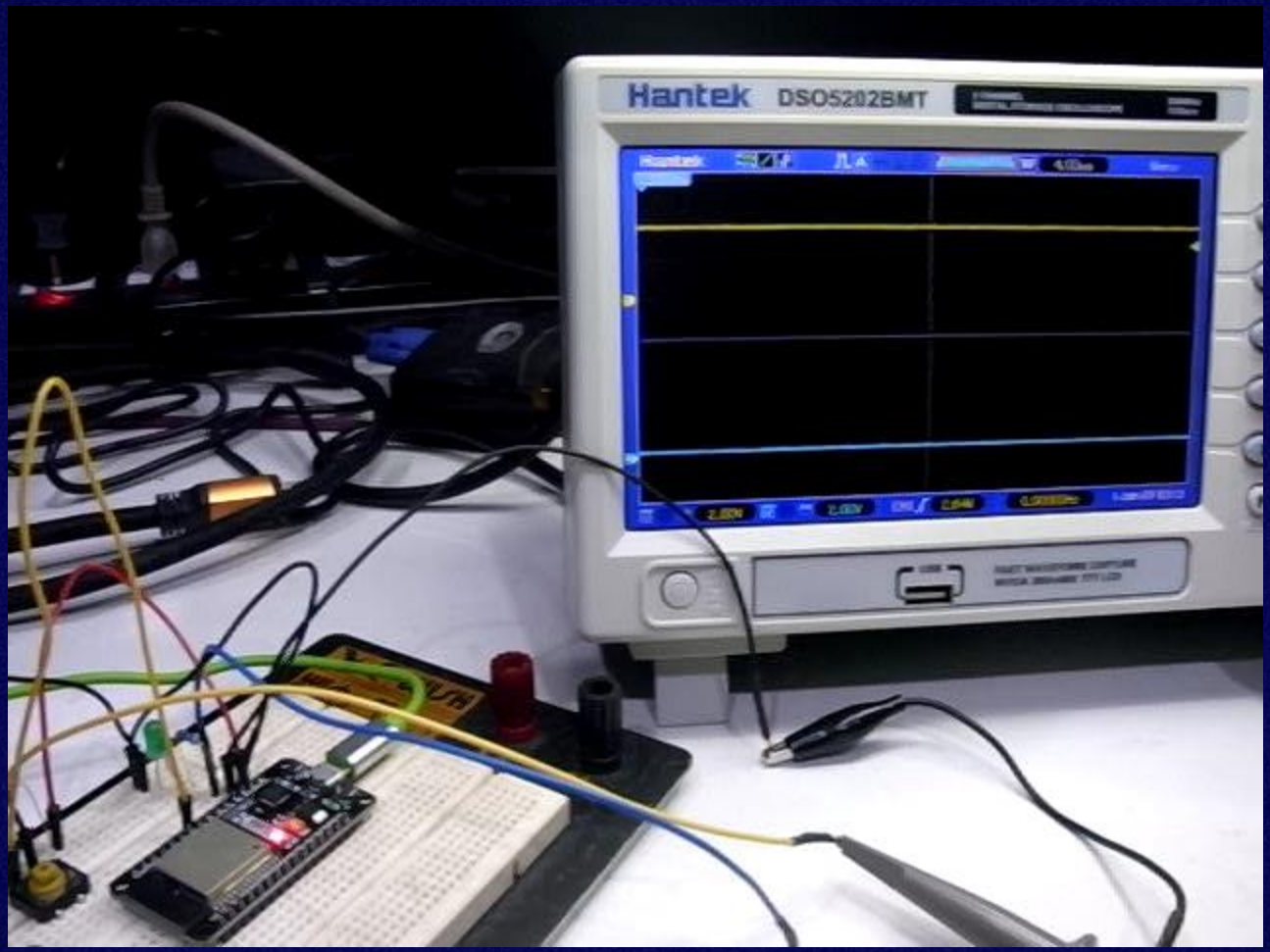




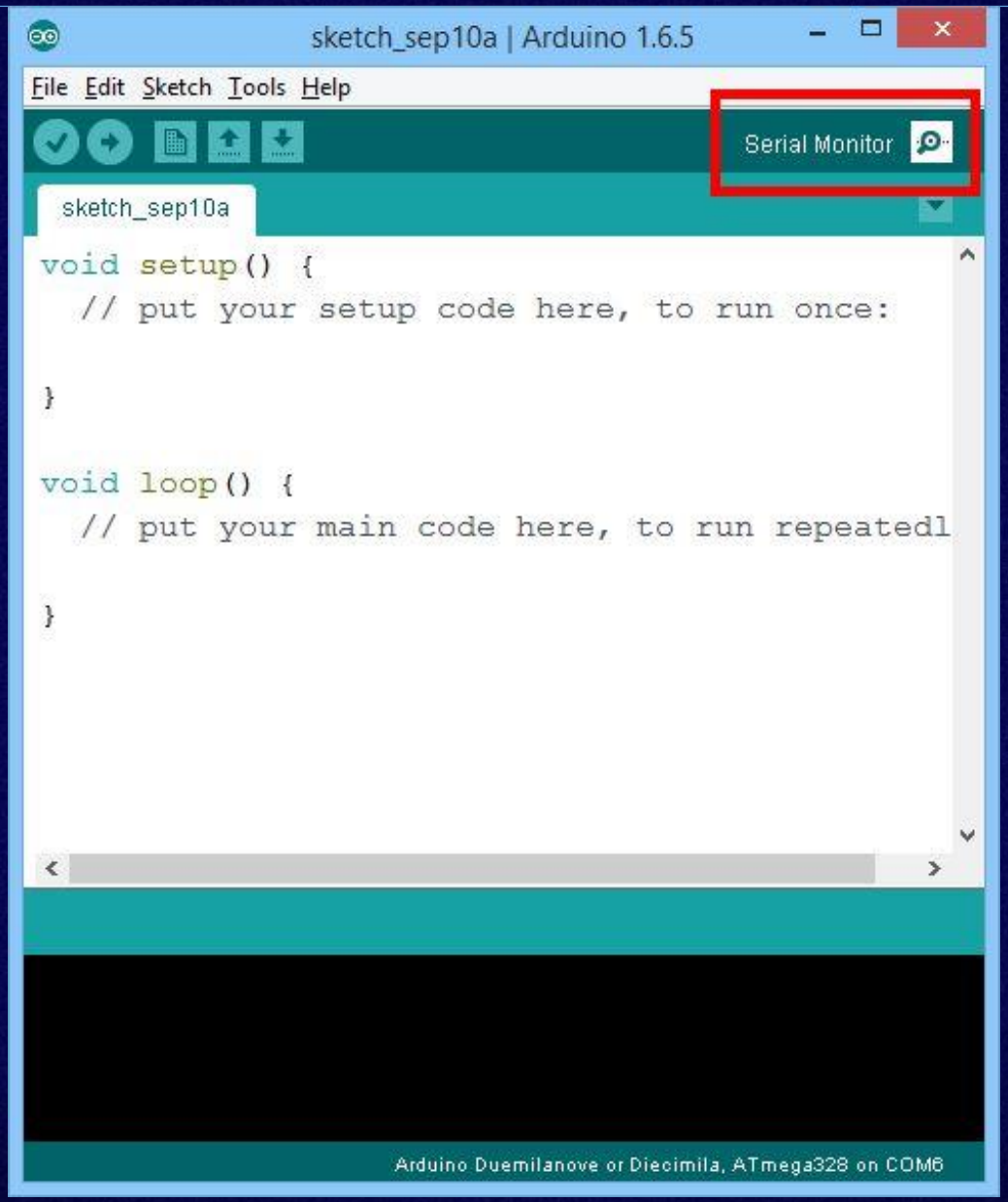
LAB04-Switch_Input



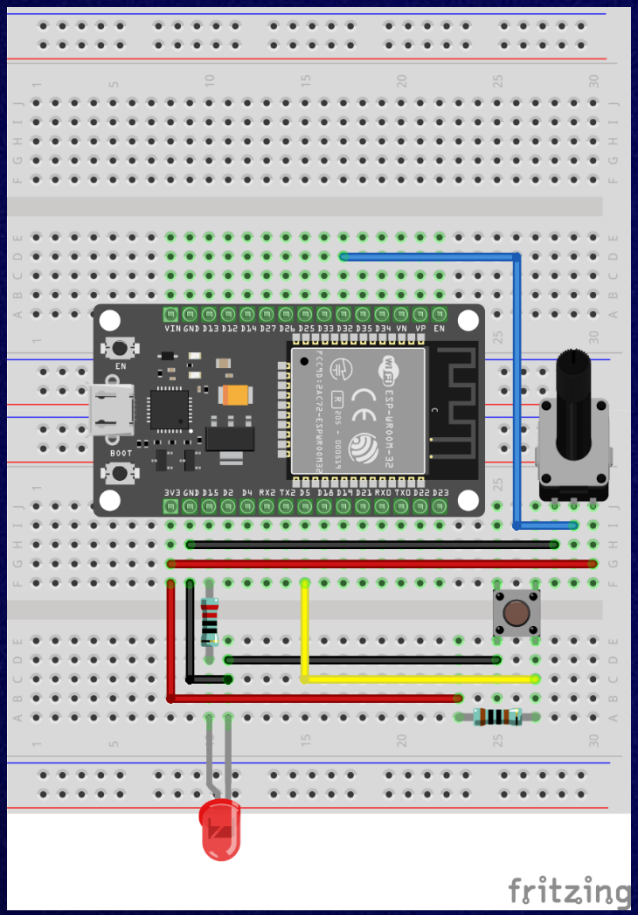
LAB05-Switch_Input_Debounce

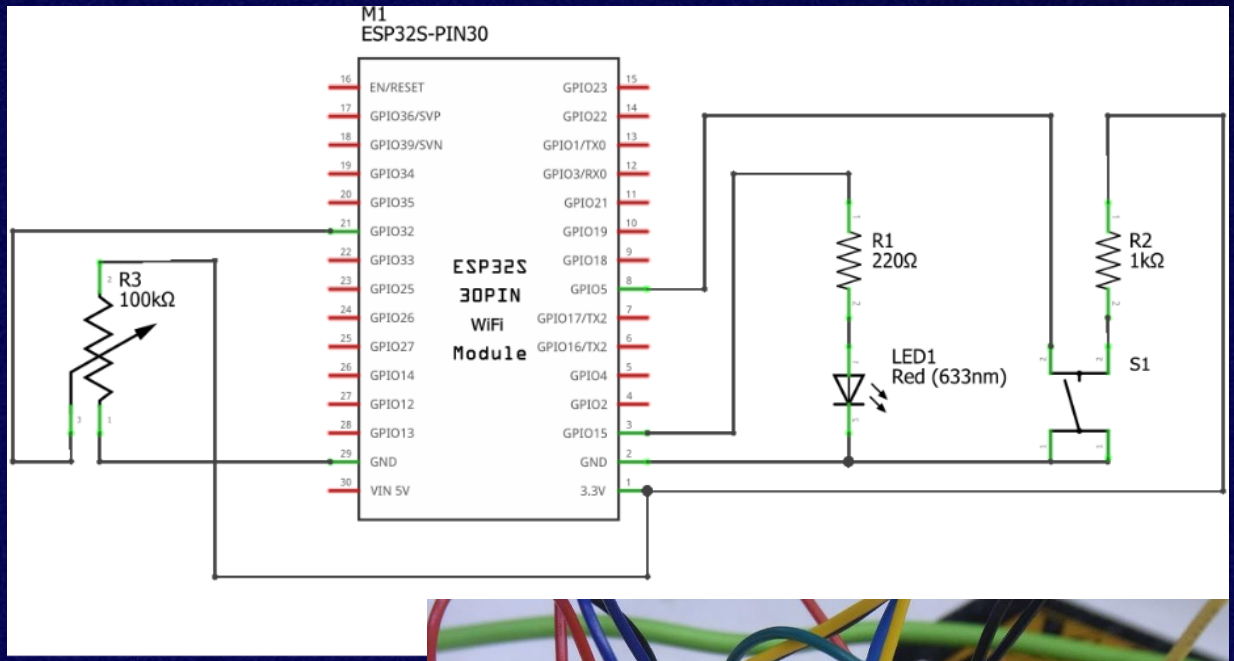


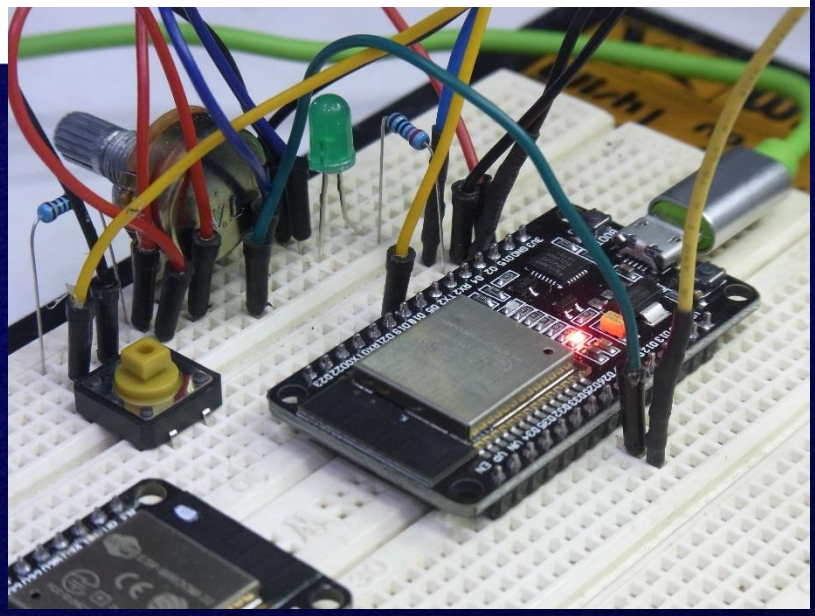
LAB06-Serial Monitor



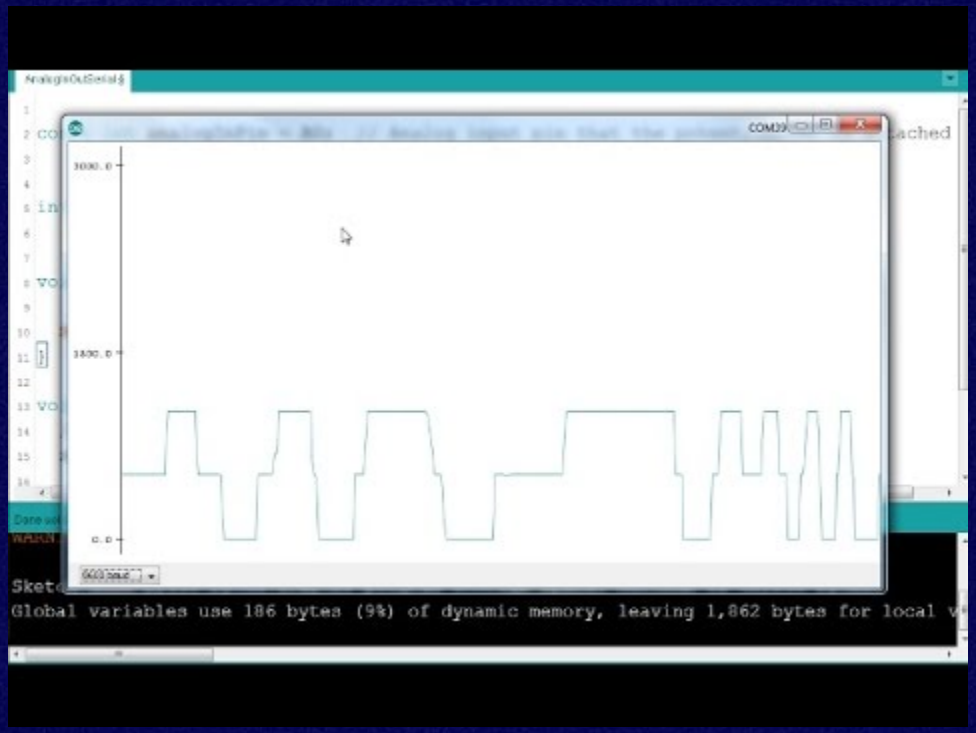
LAB07-Analog_Read



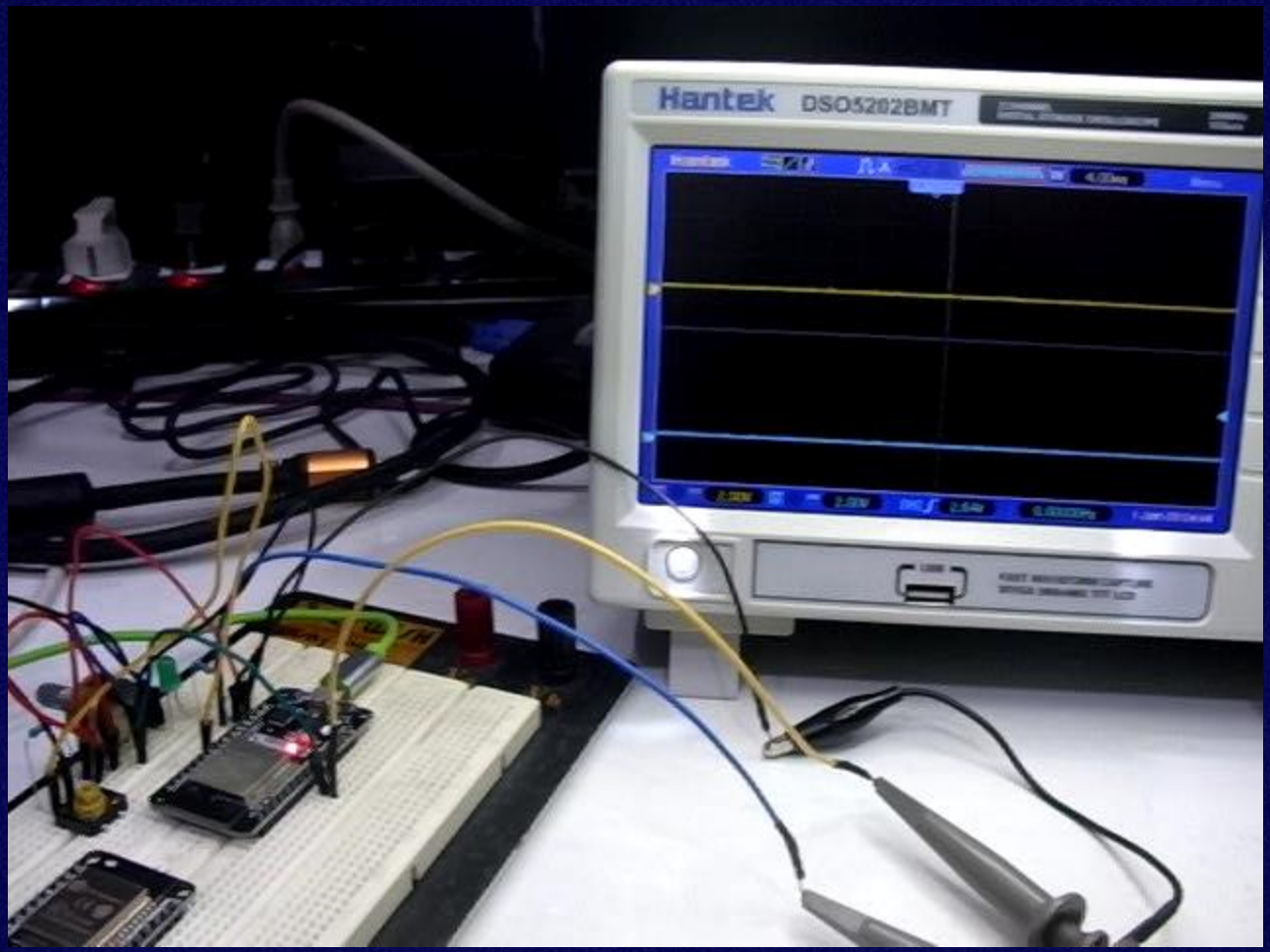




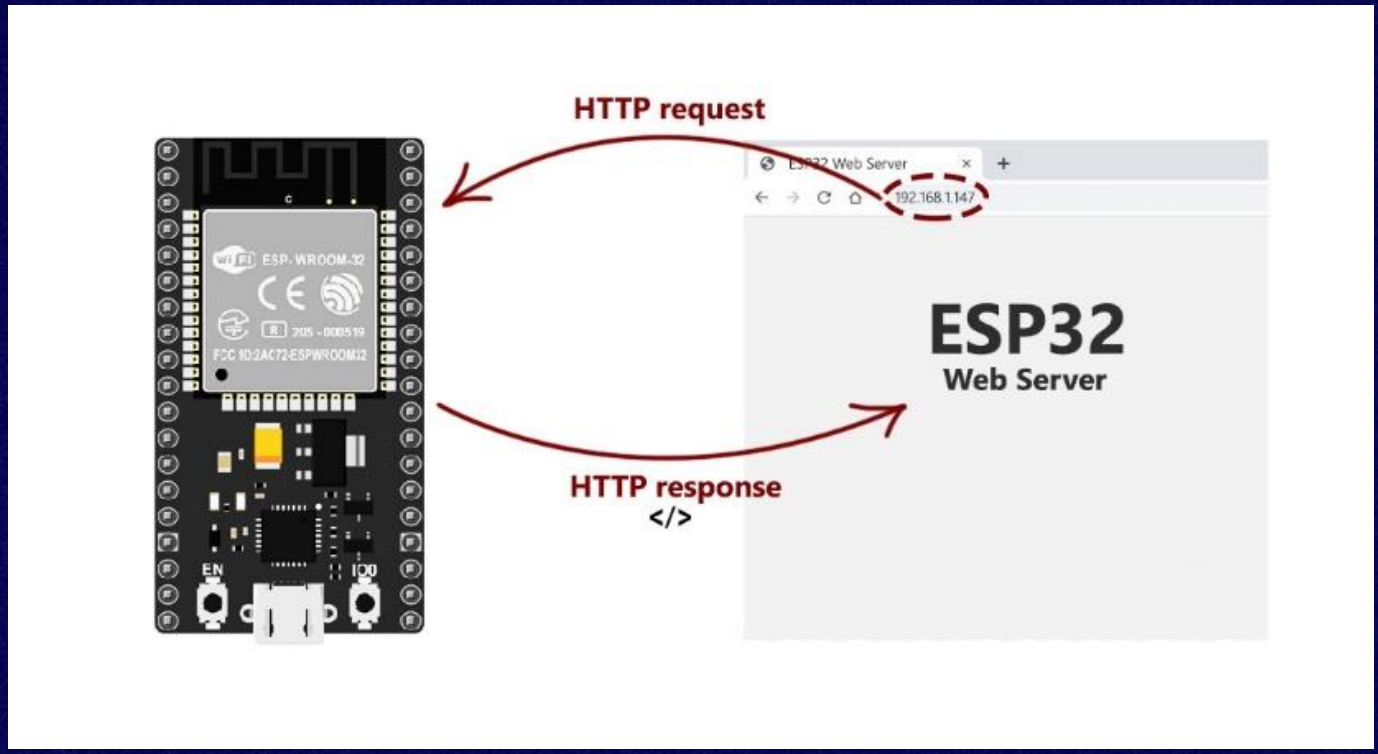
LAB08-Analog_SerialPolt



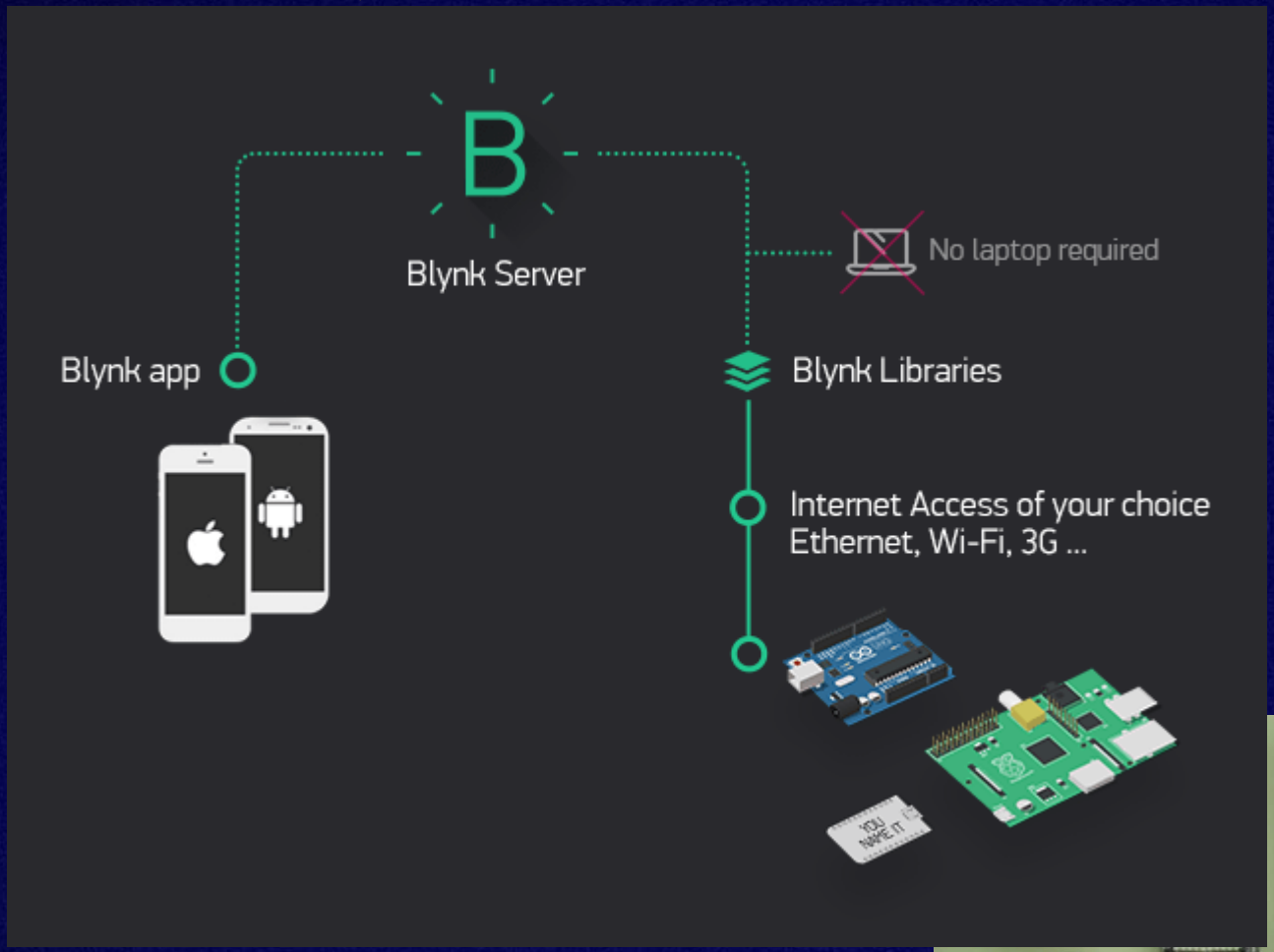
TEST03-LED_Control

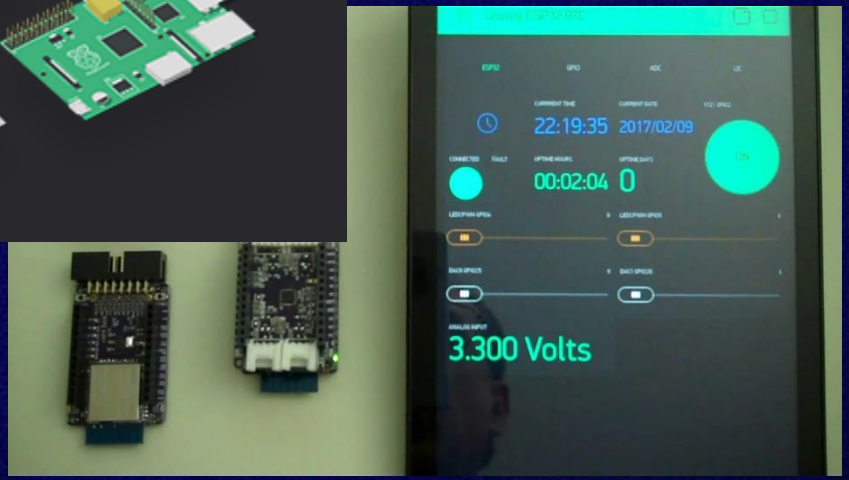


Webserver

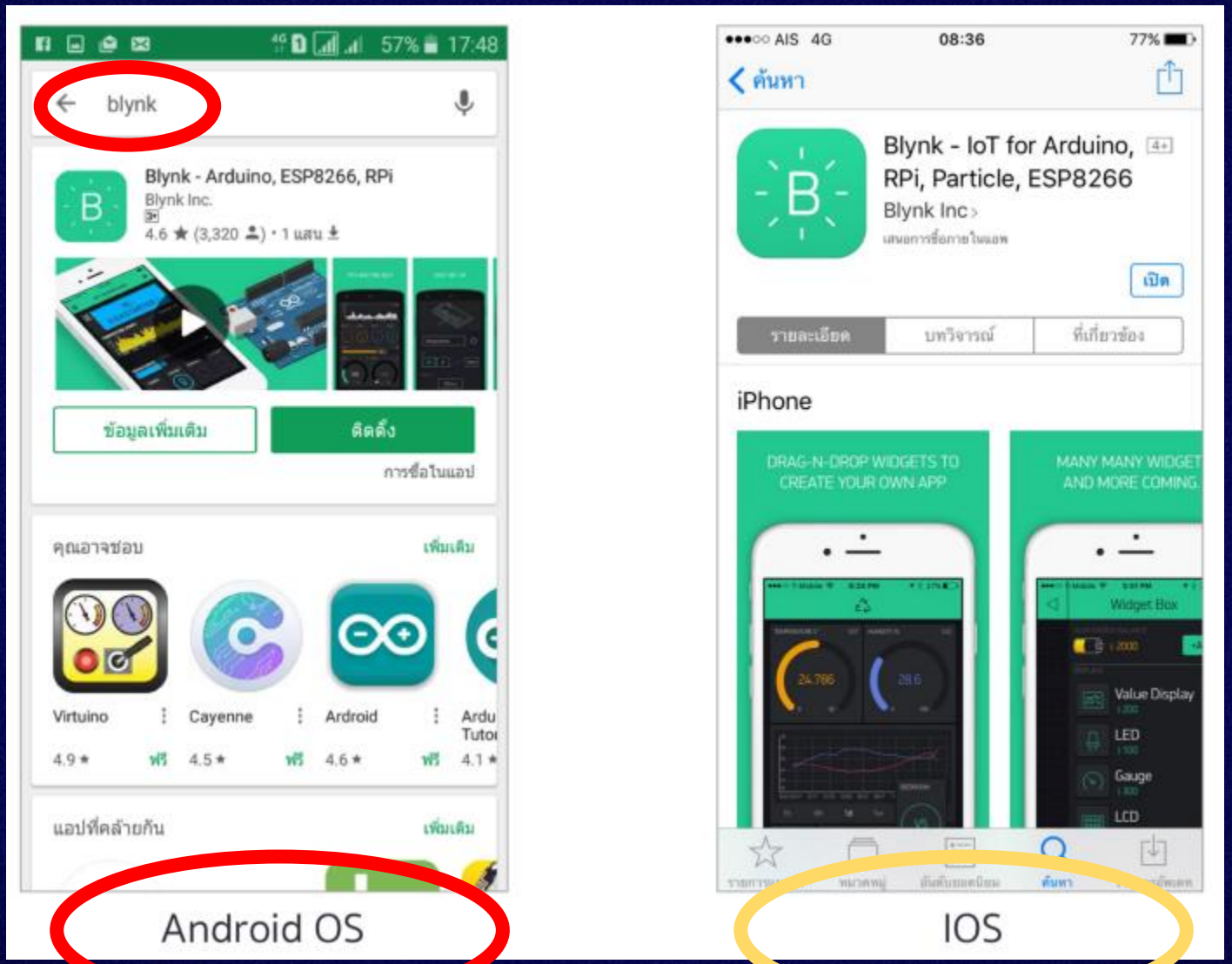


MQTT-Blynk

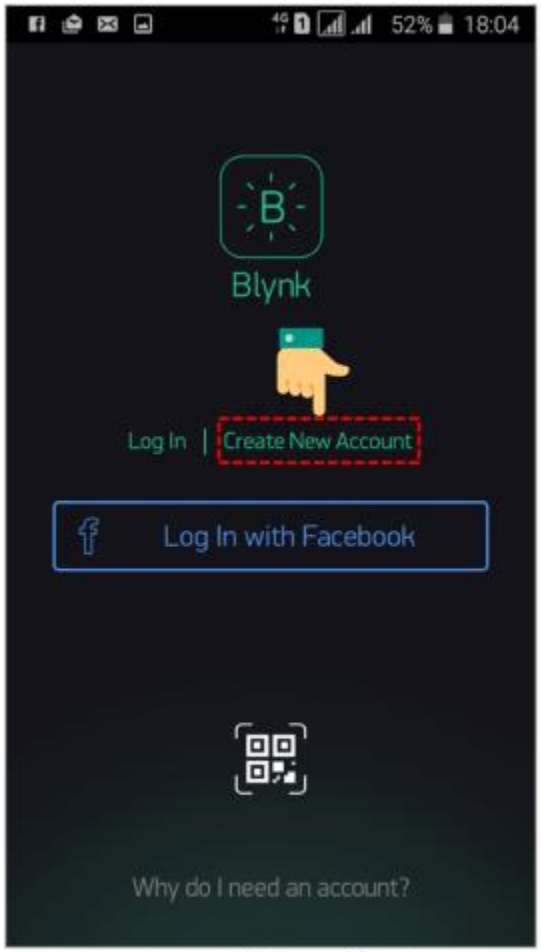

Blynk Server
No laptop required
Blynk app
Blynk Libraries
Internet Access of your choice
Ethernet, Wi-Fi, 3G ...


22:19:35
2017/02/09
00:02:04
0
3.300 Volts

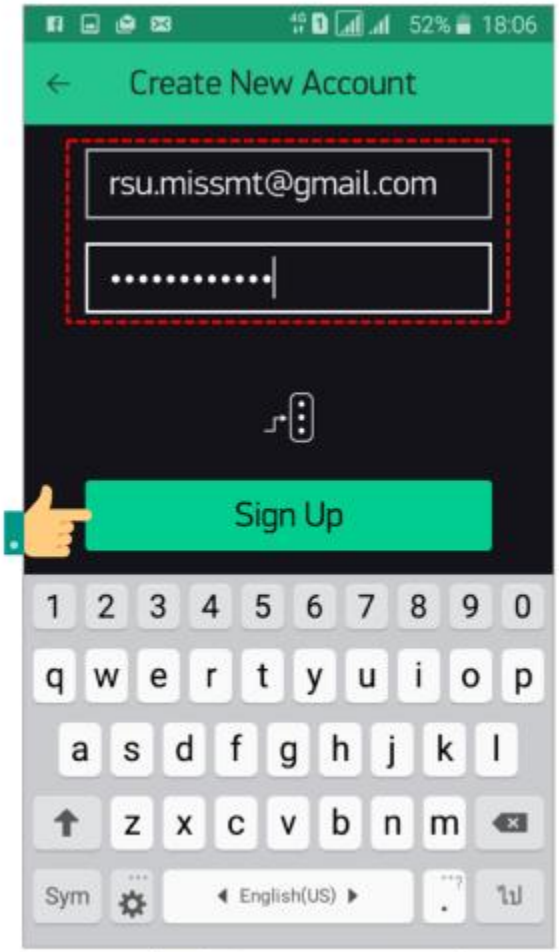
MQTT-Blynk


blynk
Blynk - Arduino, ESP8266, RPi
Blynk Inc.
4.6 ★ (3,320) • 1 แสน
ข้อมูลเพิ่มเติม
ติดตั้ง
การซื้อในแอป
คุณอาจชอบ
เพิ่มเติม
Virtuino
Cayenne
Ardroid
4.9 ★
4.5 ★
4.6 ★
แอปที่คล้ายกัน
เพิ่มเติม
Android OS
AIS 4G
08:36
77%
ค้นหา
Blynk - IoT for Arduino, RPi, Particle, ESP8266
Blynk Inc
เปิด
รายละเอียด
บทวิจารณ์
ที่เกี่ยวข้อง
iPhone
DRAG-N-DROP WIDGETS TO CREATE YOUR OWN APP
MANY MANY WIDGET AND MORE COMING
Widget Box
Value Display
LED
Gauge
LCD
IOS

MQTT-Blynk

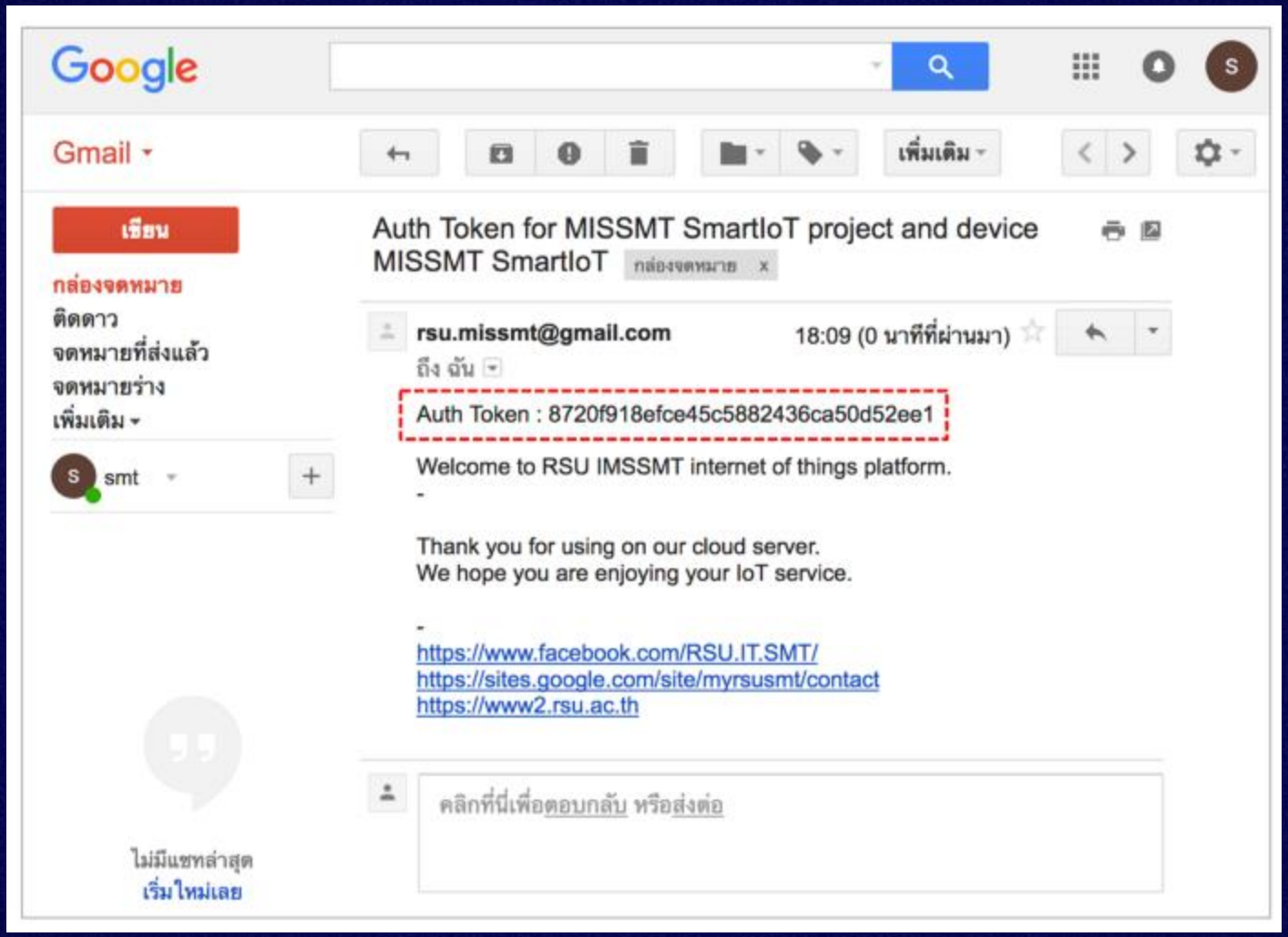


สร้างผู้ใช้งานใหม่



ระบุที่อยู่อีเมล์และรหัสผ่าน

MQTT-Blynk


Google
Gmail
เพิ่มเติม
เขียน
กล่องจดหมาย
ติดดาว
จดหมายที่ส่งแล้ว
จดหมายร่าง
เพิ่มเติม
smt
ไม่มีแชทล่าสุด
เริ่มใหม่เลย
Auth Token for MISSMT SmartIoT project and device
MISSMT SmartIoT
กล่องจดหมาย x
rsu.missmt@gmail.com
18:09 (0 นาทีที่ผ่านมา)
ถึง ฉัน
Auth Token : 8720f918efce45c5882436ca50d52ee1
Welcome to RSU IMSSMT internet of things platform.
-
Thank you for using on our cloud server.
We hope you are enjoying your IoT service.
-
https://www.facebook.com/RSU.IT.SMT/
https://sites.google.com/site/myrsusmt/contact
https://www2.rsu.ac.th
คลิกที่นี่เพื่อตอบกลับ หรือส่งต่อ

อ้างอิง

- https://medium.com/@visitwnk/%E0%B9%83%E0%B8%AA%E0%B9%88%E0%B9%83%E0%B8%88-7-%E0%B9%80%E0%B8%95%E0%B8%A3%E0%B8%B5%E0%B8%A2%E0%B8%A1%E0%B8%84%E0%B8%A7%E0%B8%B2%E0%B8%A1%E0%B8%9E%E0%B8%A3%E0%B9%89%E0%B8%AD%E0%B8%A1%E0%B8%81%E0%B9%88%E0%B8%AD%E0%B8%99%E0%B8%81%E0%B8%B2%E0%B8%A3%E0%B9%83%E0%B8%8A%E0%B9%89-blynk-app-1ab60aa1b9e9

- https://randomnerdtutorials.com/installing-the-esp32-board-in-arduino-ide-windows-instructions/

- https://www.myarduino.net/product/1149/esp32-nodemcu-esp-wroom-32-wi-fi-and-bluetooth-module-dual-core-consumption?gclid=Cj0KCQjw1qL6BRCmARIsADV9JtbnFczRMy0Yb5cUWN-7rYNM5Tc3ZsLEht2F--GcPTCWQhMsWTT8yUaApsIEALw_wcB