MQTT on ESP32

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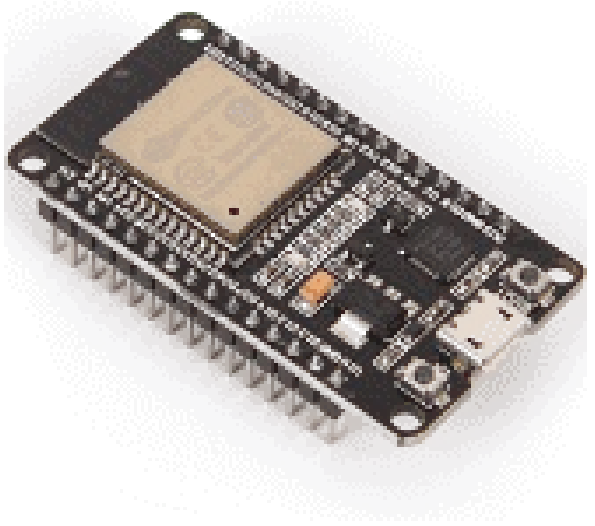
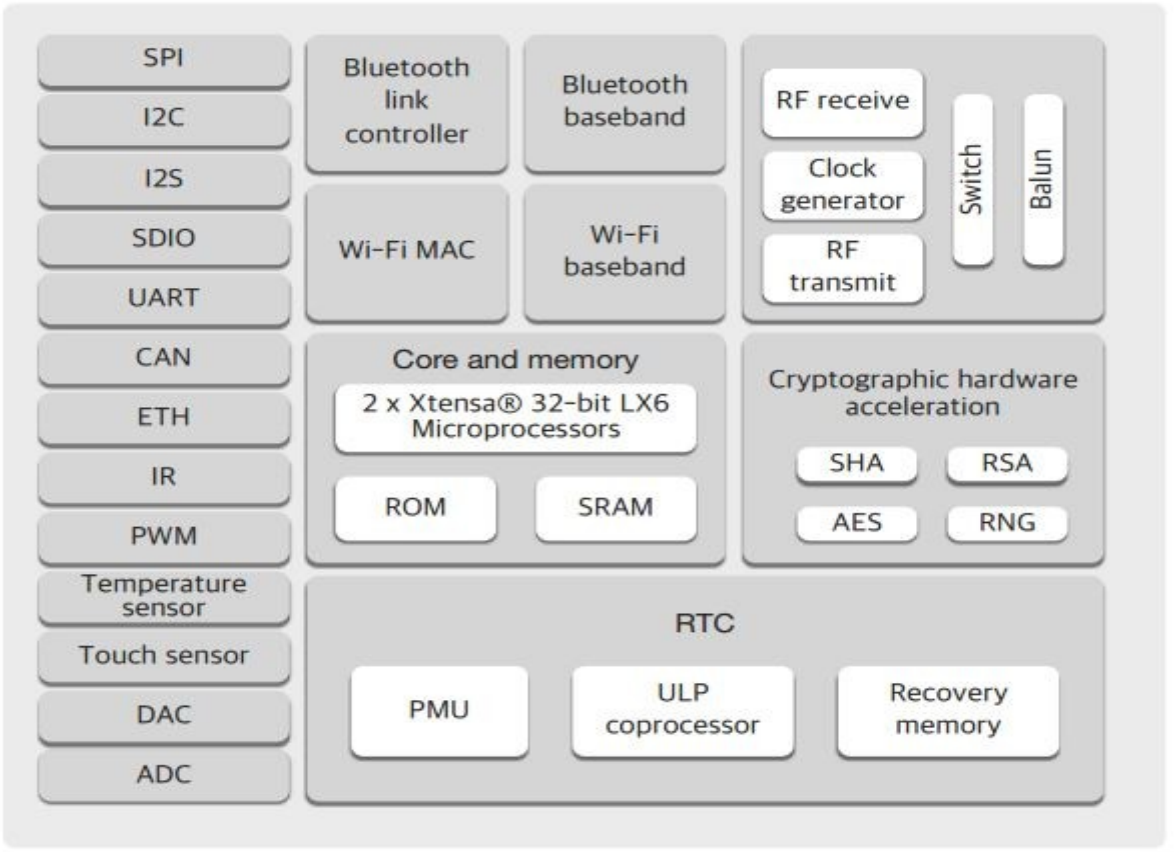
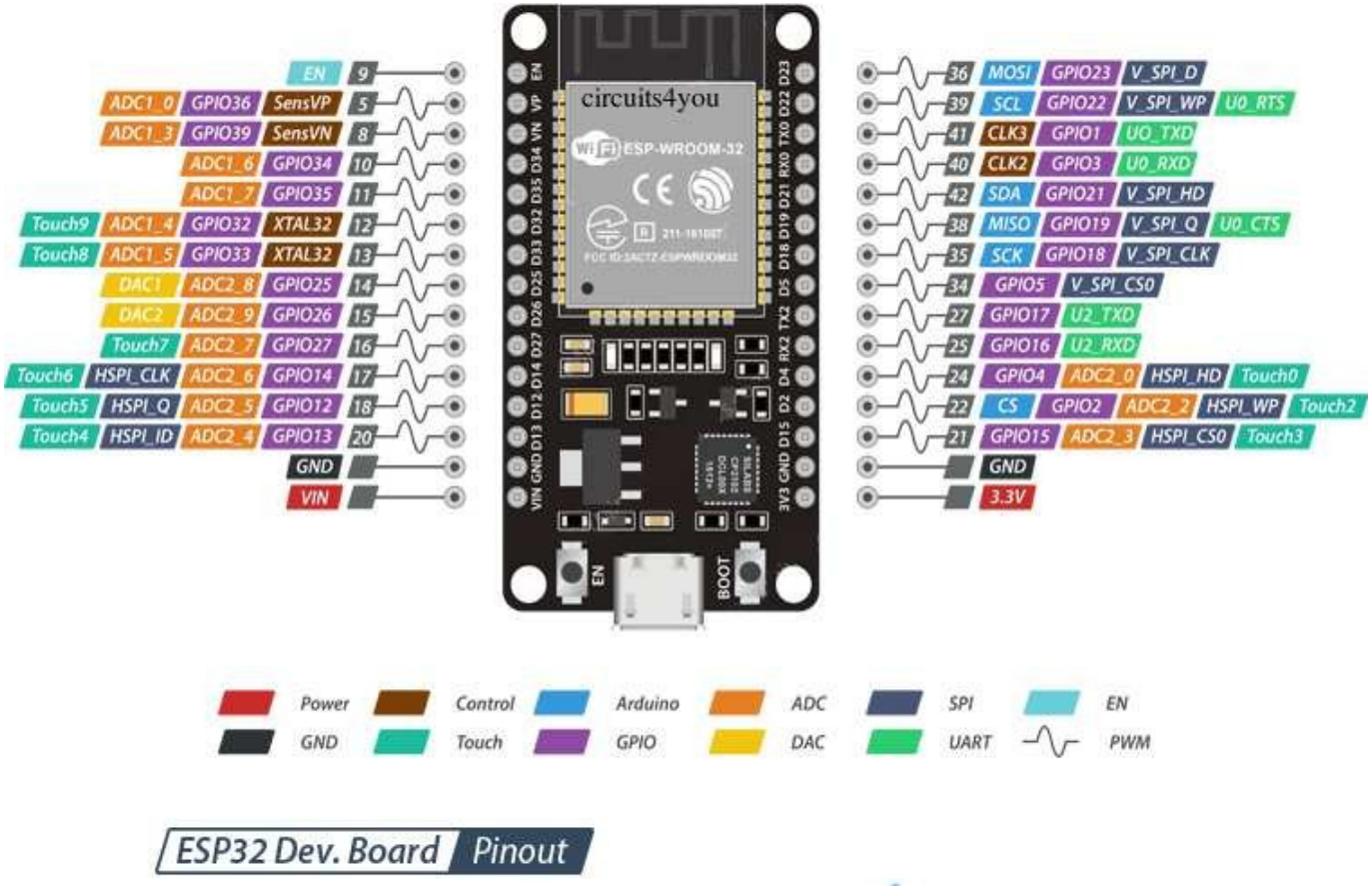
What is ESP32



ESP32 Internal



ESP32 Devkit1 Pinout



Micropython on ESP32

- https://pythonforundergradengineers.com/how-to-install-micropython-on-an-esp32.html

Micropython on ESP32

- $pip install esptool
- Connect esp32
- $esptool.py --port /dev/ttyUSB0 erase_flash
- Download .bin file from https://micropython.org/resources/firmware/esp32-20210418-v1.15.bin

Micropython on ESP32

- $esptool.py --port /dev/ttyUSB0 --baud 460800 write_flash --flash_size=detect 0 <binfilename>.bin
- $picocom /dev/ttyUSB0 -b115200
- >>> import machine
- >>> pin = machine.Pin(2, machine.Pin.OUT)
- >>> pin.on()
- >>> pin.off()

Arduino on ESP32

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

Arduino on ESP32 (2)

- Download arduino
  - https://www.arduino.cc/en/software

Arduino on ESP32 (3)

- Add ESP32 Json file in preference
  - Enter https://dl.espressif.com/dl/package_esp32_index.json into the “Additional Board Manager URLs” field as shown in the figure below. Then, click the “OK” button:

Arduino on ESP32 (4)

- Go to board manager
- Search for ESP32 and press install button for the “ESP32 by Espressif Systems“:

Arduino on ESP32 (5)

- Test your installation with example code, wifiscan to scan wifi in your place.
- Compile, run and open serial monitor with baud rate 115200.

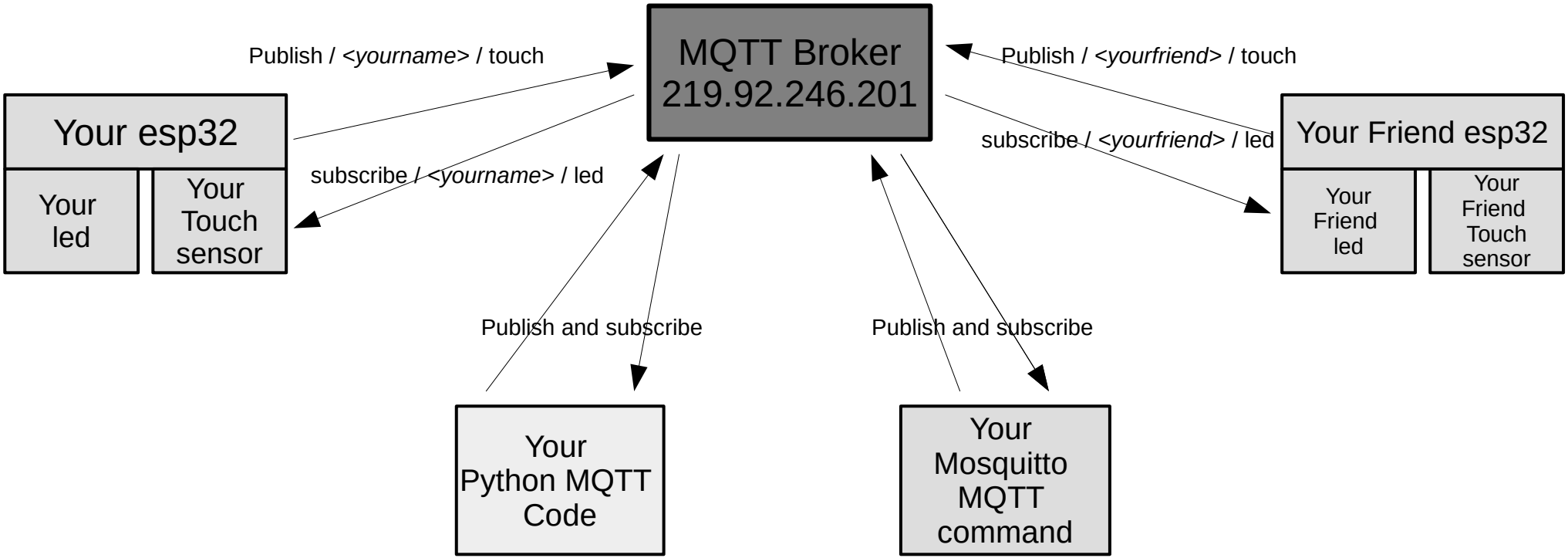
MQTT on ESP32

- Go to Tools > Manage Libraries and search for MQTTPubSubClient
- Look for sample code WiFiMQTT and change wifi ssid,password and broker IP
- The code subscribe to topic /hello and also listen to the same topic.
- Change the subscribed topic and published topic.
- Test your code with broker 219.92.246.201 and prove you get the published message.

MQTT on ESP32

- Change code to switch on LED
- Switch on and off LED based on the value of the topic.
- Add code to read touch sensor 0 and publish a topic on that
- Publish topic : /<*yourname*>/touch
- Subscribe topid : /<*yourname*>/led
- So now you can switch on/off your friend LED from remote

Our IoT Layout



Have Fun!