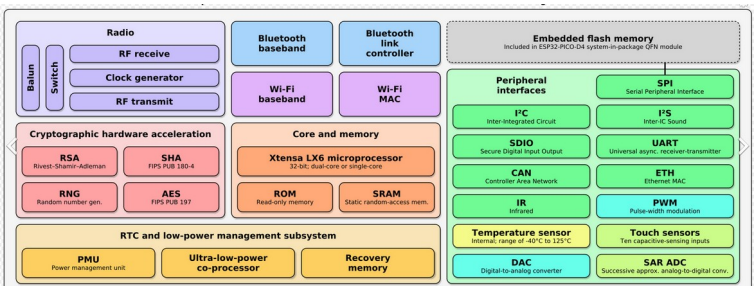
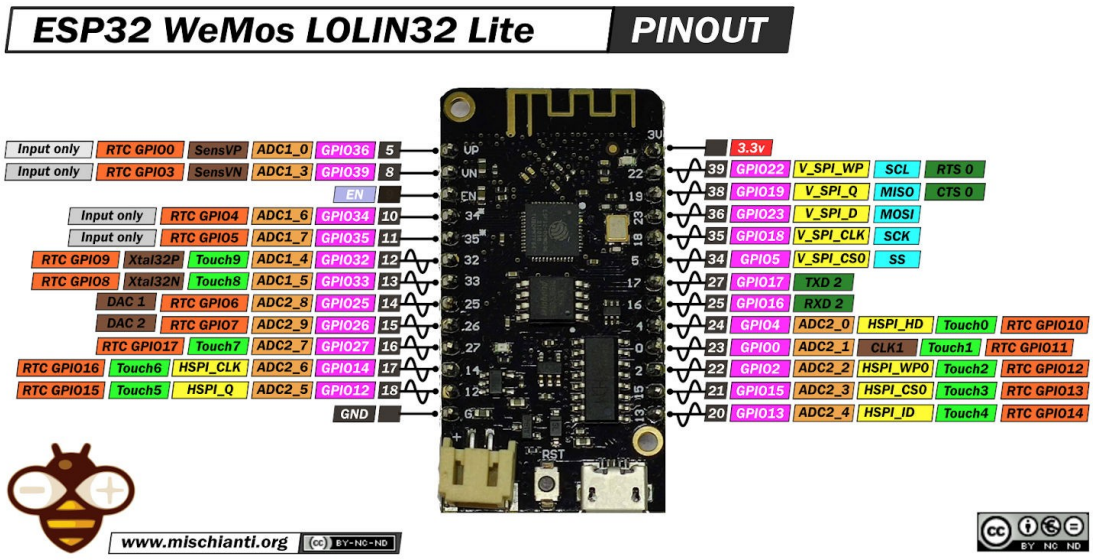
IoT Labs with PYCOM-X: SmartComputerLab

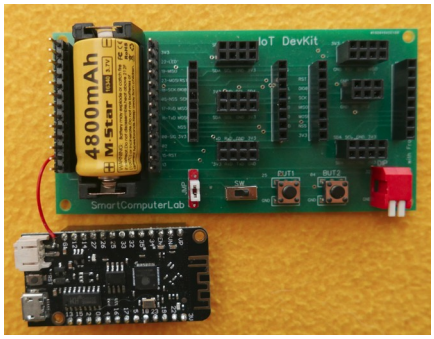
0.1 ESP32 Soc – an advanced unit for IoT architectures

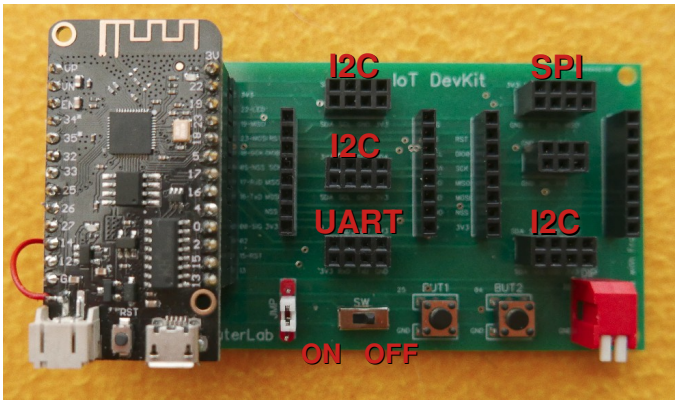




As we can see in the figure above, the board exposes 2x13 pins. These pins carry the **I2C** (**SDA**-12,**SCL**-14), **UART** (**RX**-16,**TX**-17), **SPI** (**SCK**-18,**MISO**-19,**MOSI**-23) busses, plus control signals (**NSS**- 5,**RST**-15,**INT**-26,..). The **LED** is connected to pin 22.

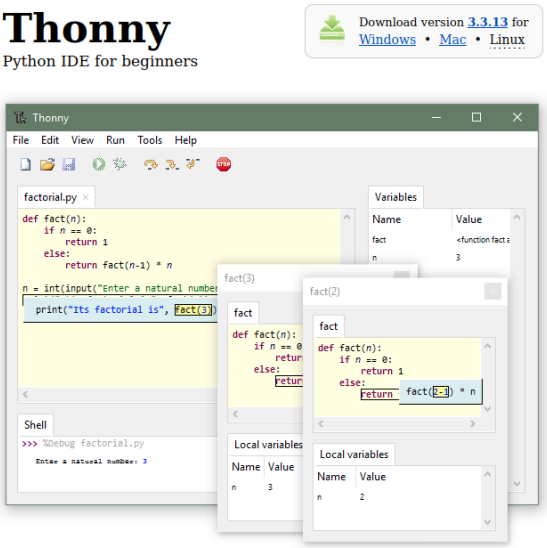
0.3 IoT DevKit PYCOM-V and IoT development platform





Display, sensors and modems: **OLED – SSD1306, T/H – SHT21, L – BH1750, PIR – SR604; LoRa-RA-01**

0.4 Software – Thonny IDE – `thonny.org`



The installation of Thonny IDE includes the installation of Python 3.7 (built in).

After this installation, we are therefore ready to program in Python with the Python version 3 interpreter installed on your PC.

Preparing the ESP32 LOLIN32 board

In the interpreter installation phase, you must **connect** your card to the PC and choose the **USB interface**.
Then you have to **download the binary code** of the interpreter on the page:

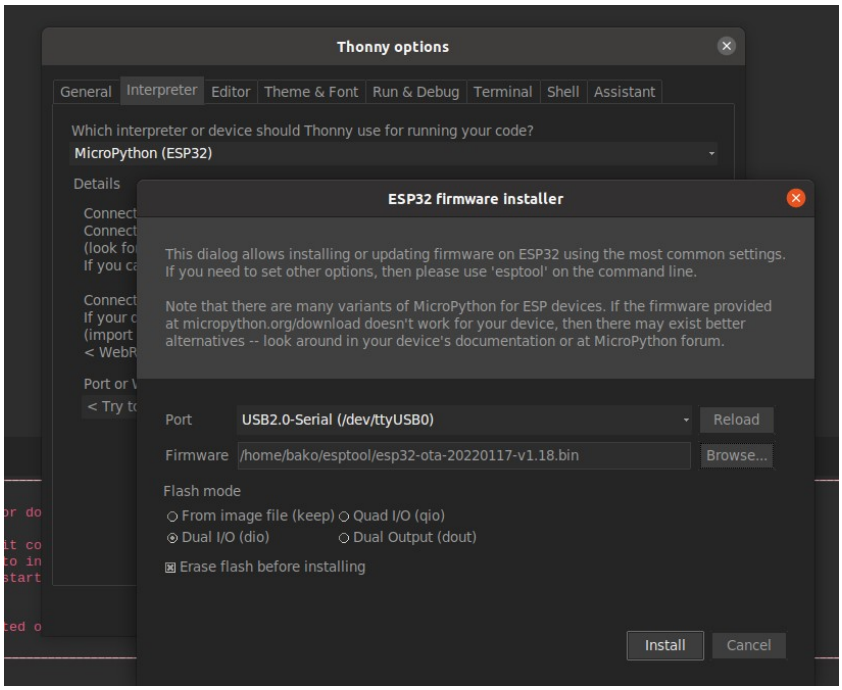
`https://micropython.org/download/.`

For our card we choose MCU and esp32:

`https://micropython.org/download/?mcu=esp32.`

On this page we will select: ESP32 with **OTA** support:

`https://micropython.org/download/esp32-ota/`



After loading the MicroPython interpreter on the ESP32 board we can connect our board with the USB cable to our PC and launch Thonny IDE again.

This time we go to **Tools->Options** to look for **Interpreter** and we will choose **MicroPython (ESP32)**.