Install ArduinoIDE and PlatformIO

List of Topics:

▶ Blue header for ArduinoIDE document

▶ Orange header for PlatformIO document

Each document will contain:

- how to install each program
- setup uploading sketch
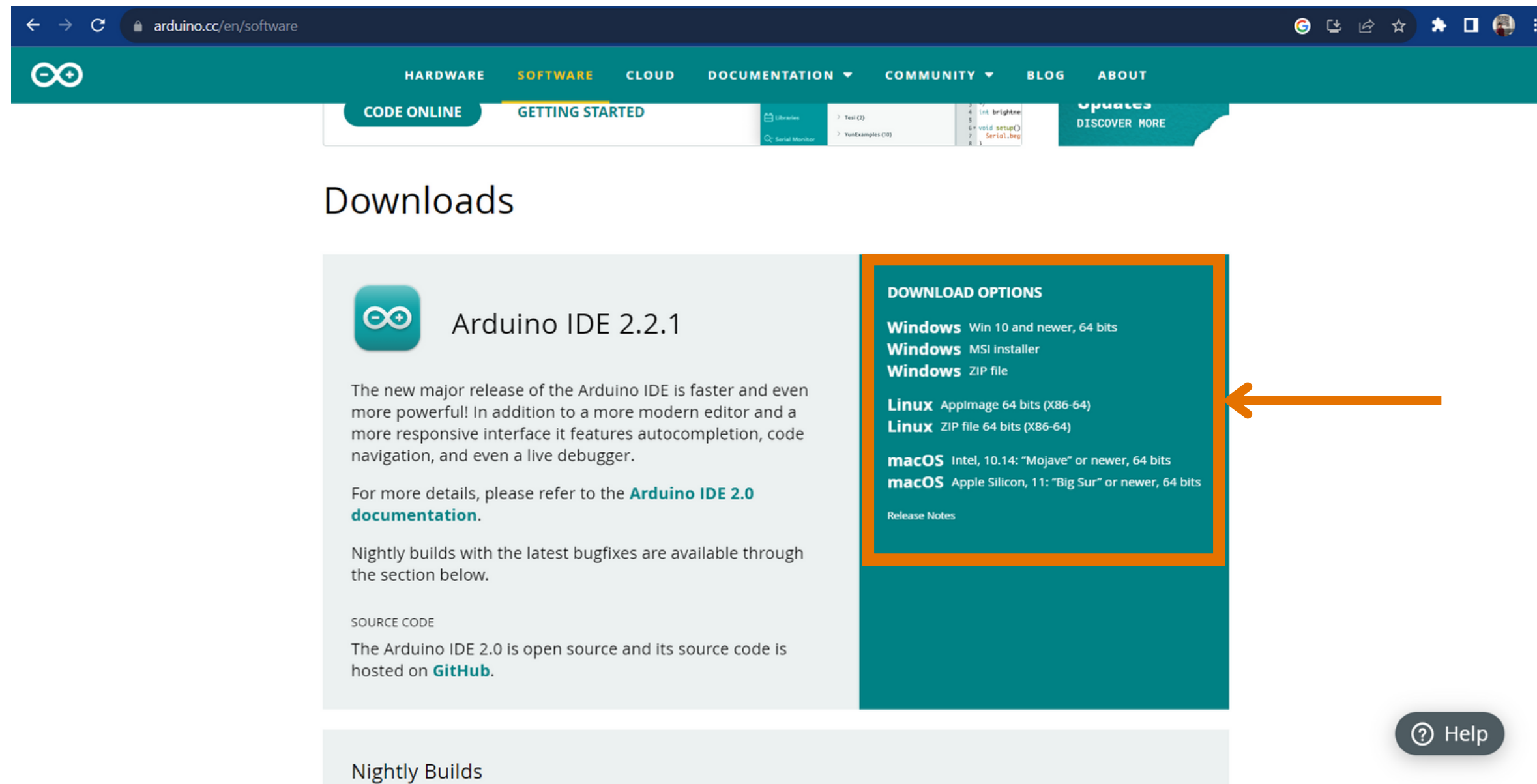- libraries installation

ArduinoIDE

The Arduino IDE (Integrated Development Environment) is a software application that is used for programming Arduino boards. Arduino is an open-source hardware and software platform that allows users to create interactive electronic projects.

Starting install ArduinoIDE

Visit https://www.arduino.cc/en/software
and choose the appropriate download option for your OS from the picture below.

Starting install ArduinoIDE

Click "Just Download". This slide will serve as an example of free download. If you'd like, you can donate.
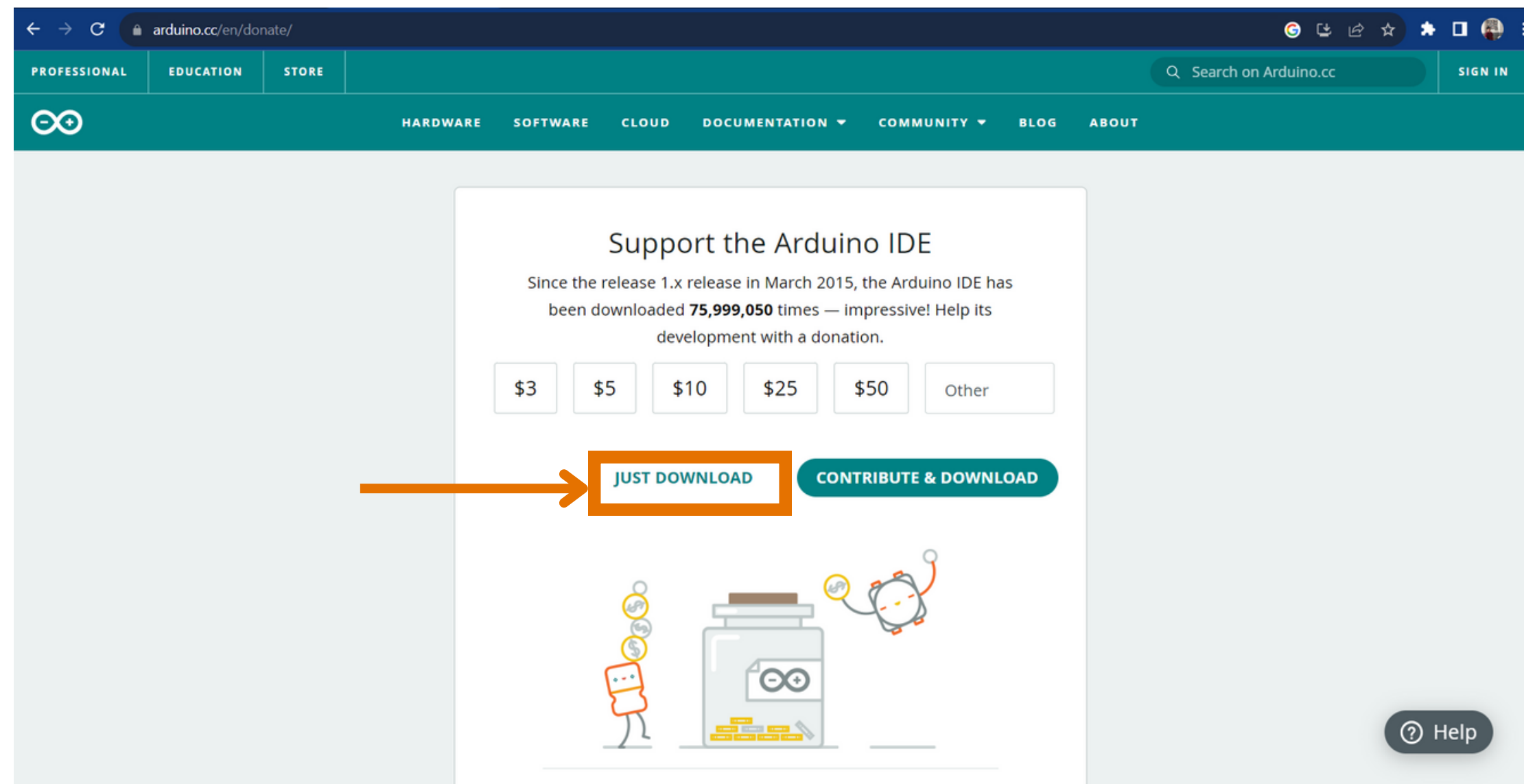
Install ArduinoIDE For Windows/MacOS

while downloaded from a website. Follow the instructions in the installation guide. The installation may take several minutes.
more detial: https://docs.arduino.cc/software/ide-v2/tutorials/getting-started/ide-v2-downloading-and-installing#installation
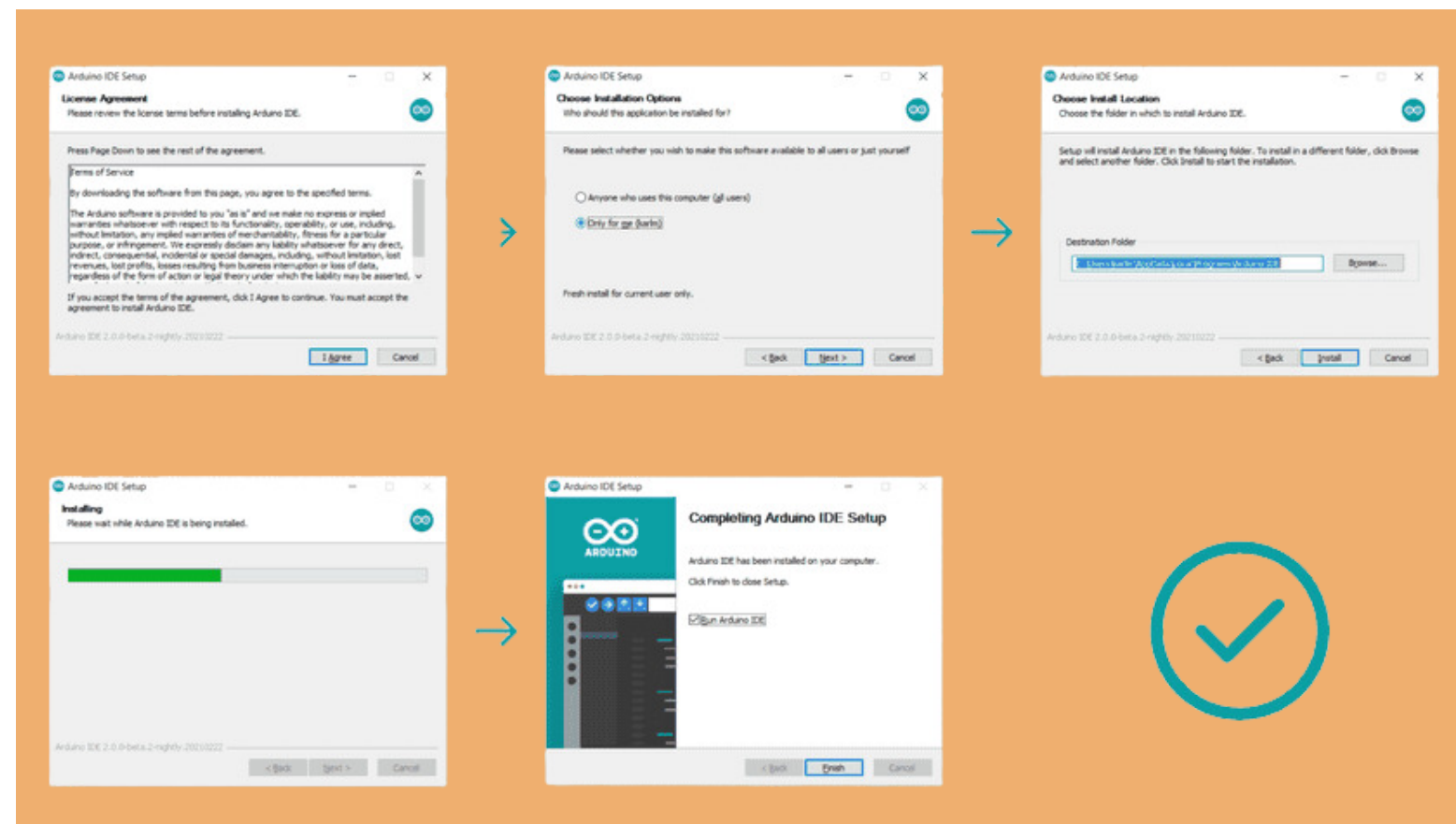
Windows

MacOS

Installing ESP32 Board in ArduinoIDE

sensornode
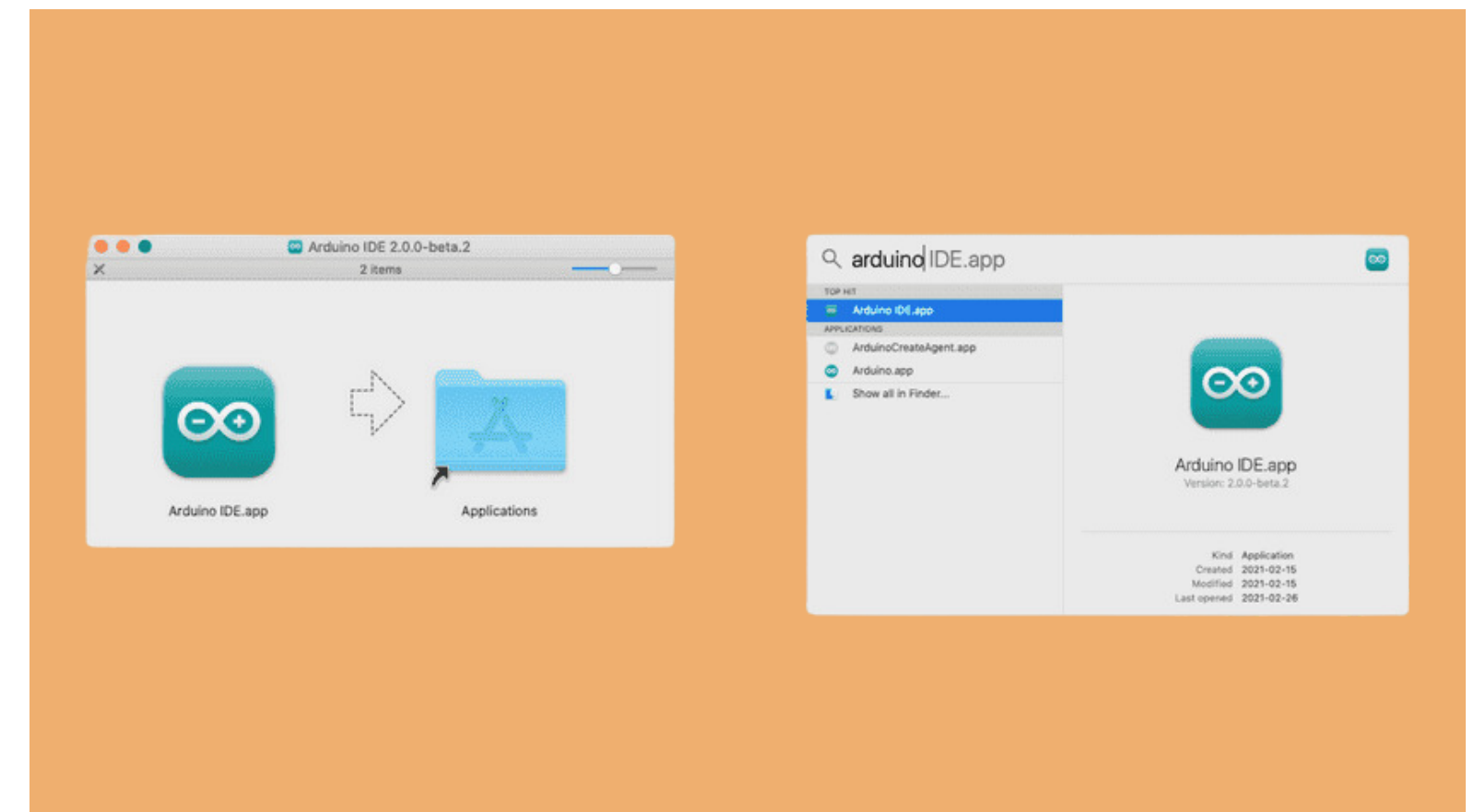IOT TECHNOLOGY

To install the ESP32 board in your Arduino IDE, follow these next instructions:

1. In your Arduino IDE 2.0, go to File > Preferences.
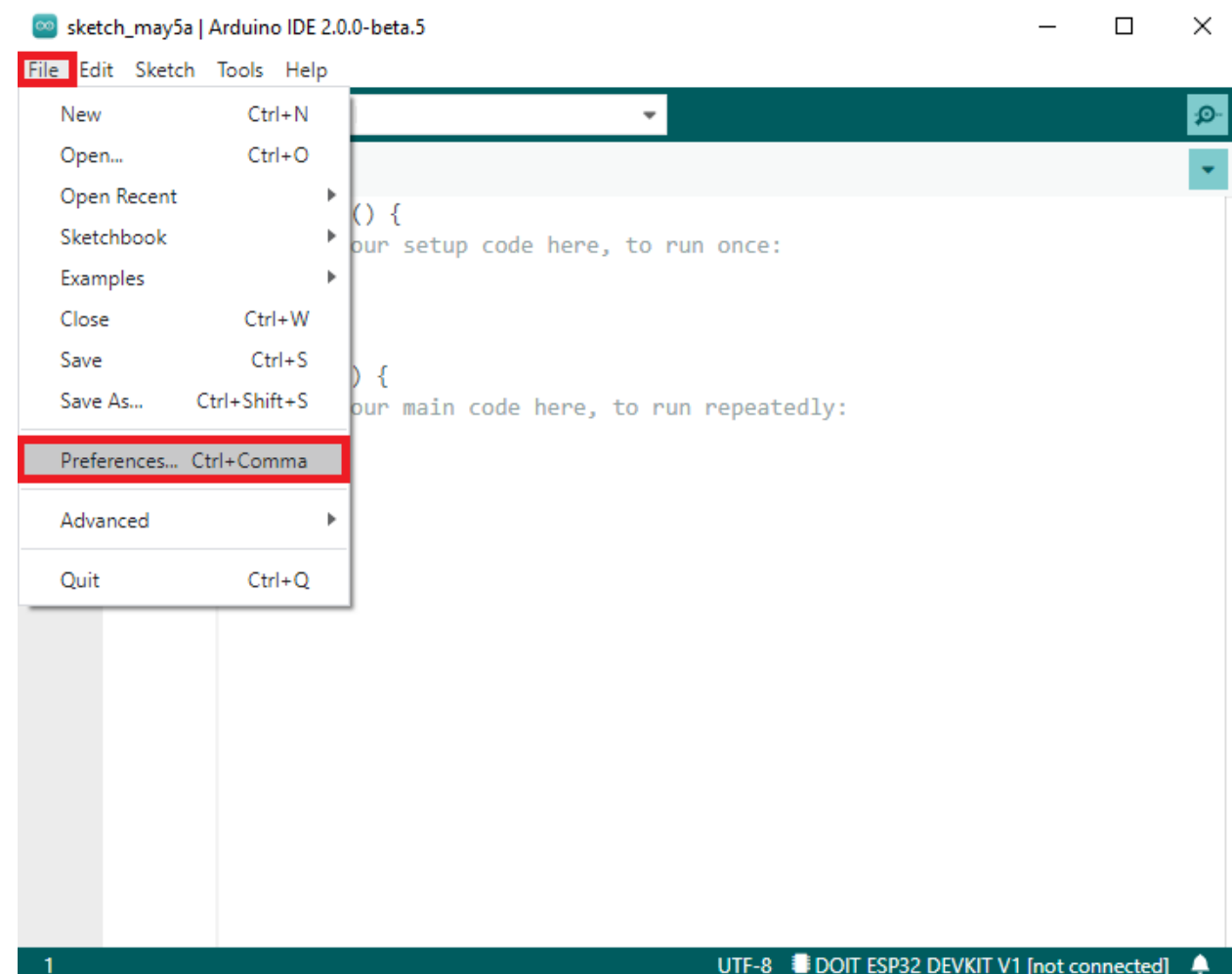
2. Copy and paste the following line to the Additional Boards Manager URLs field.

Copy this

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

Paste here

# Installing ESP32 Board in ArduinoIDE

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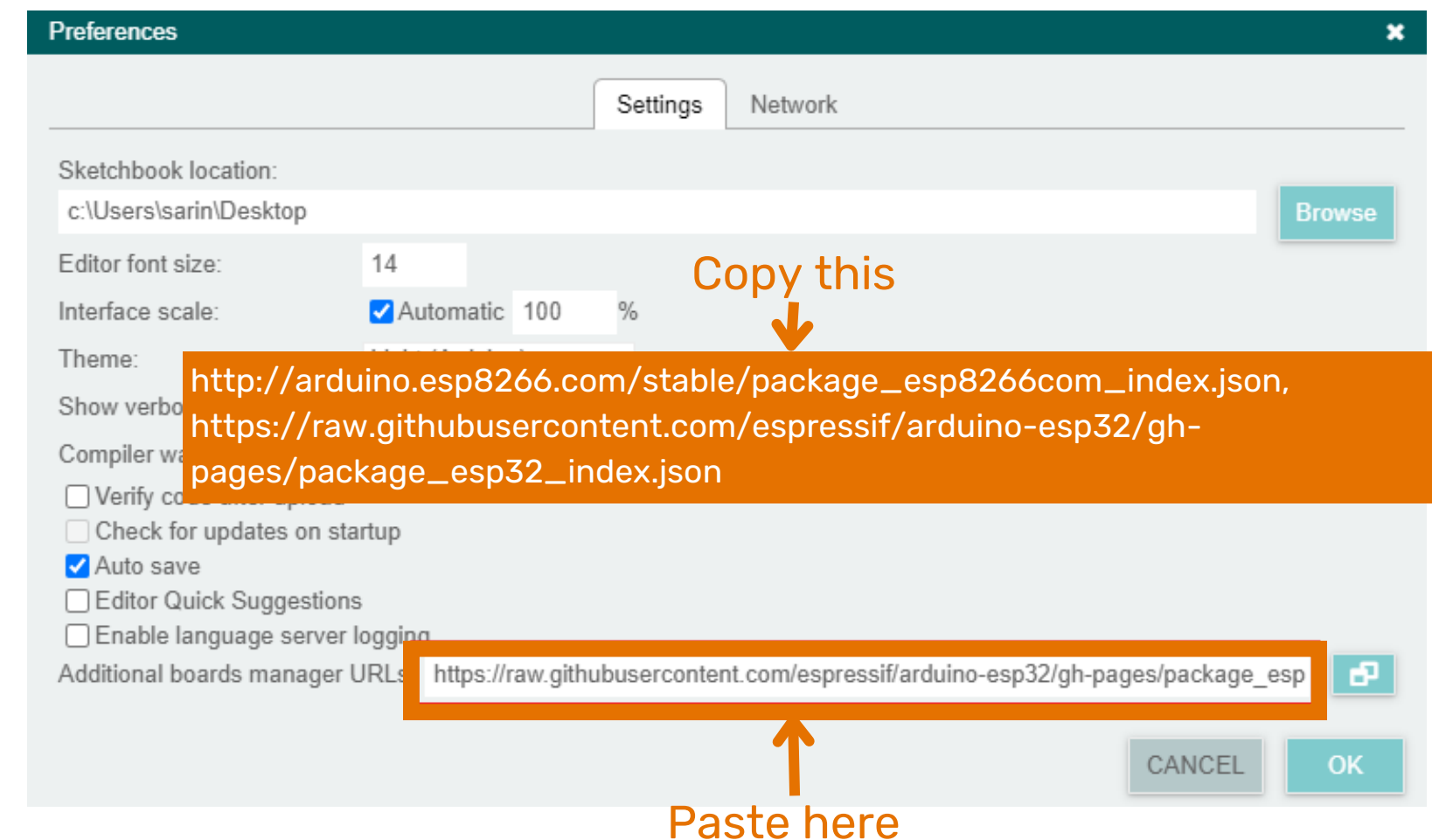
3. Open the Boards Manager. You can go to Tools > Board > Boards Manager… or you can simply click the Boards Manager icon in the left-side corner.

4. Search for ESP32 and press the install button for esp32 by Espressif Systems.
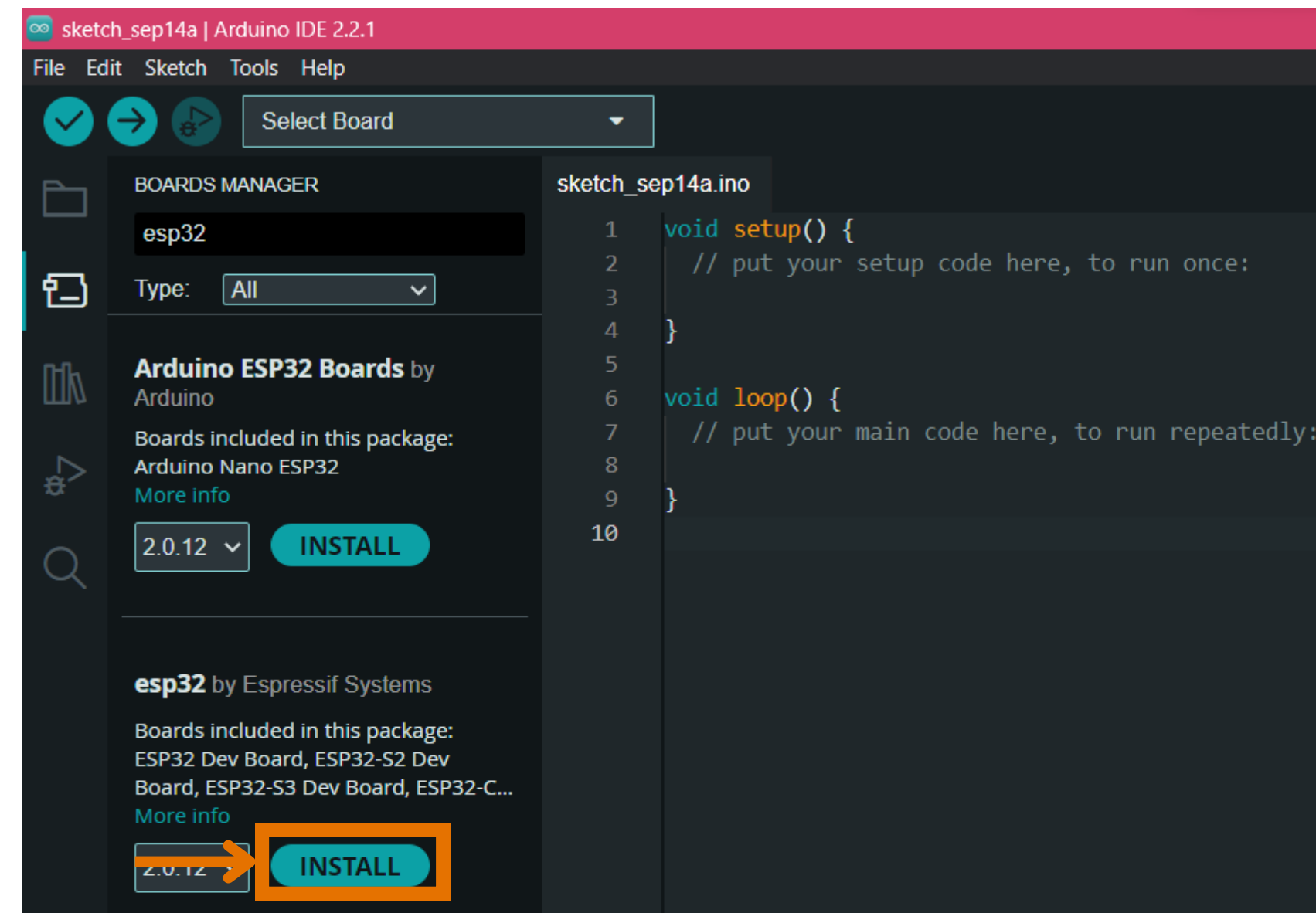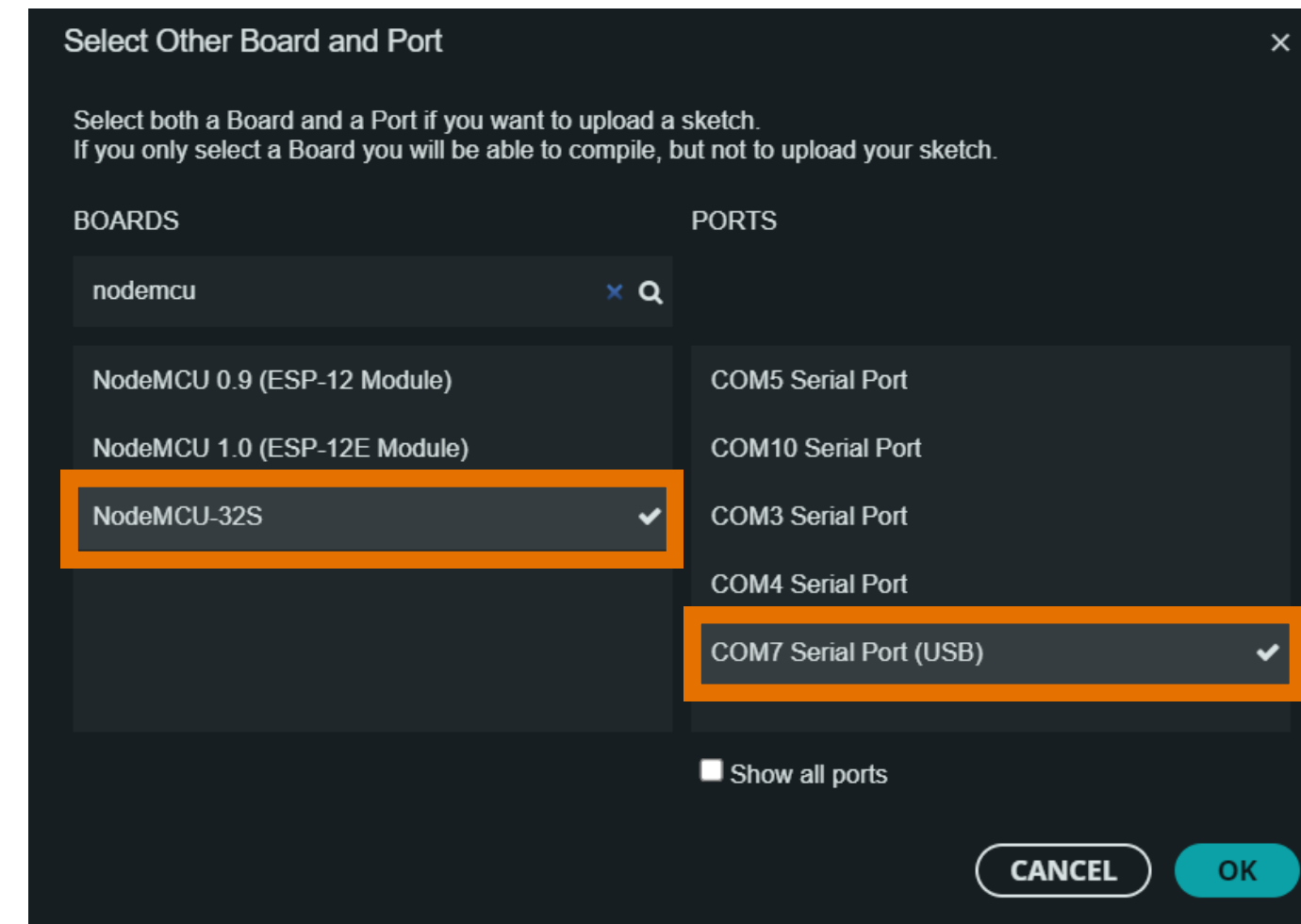
Uploading the Sketch

When you coding in Lab1. Before uploading code, On the top drop-down menu, select the "unknown" board. A new window, as shown below, will open.
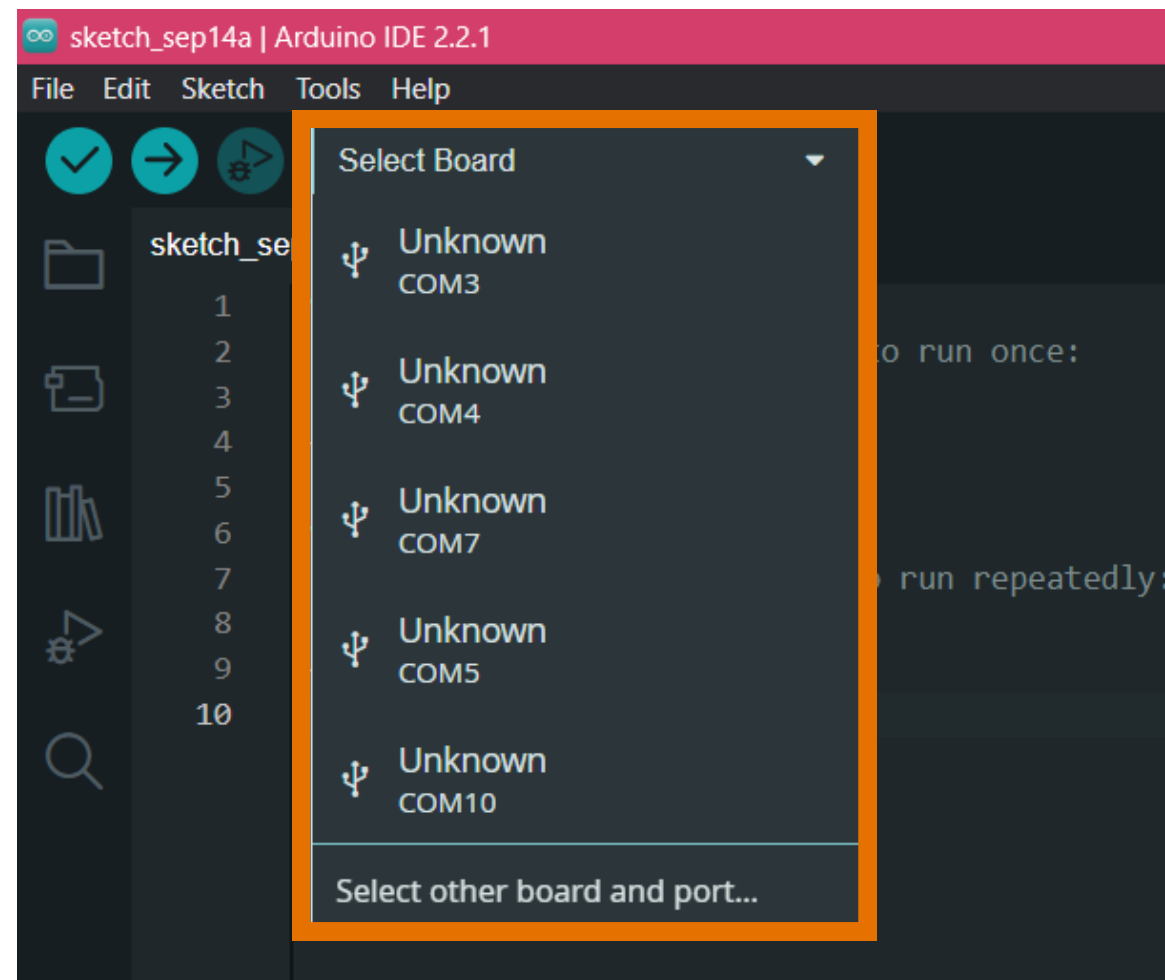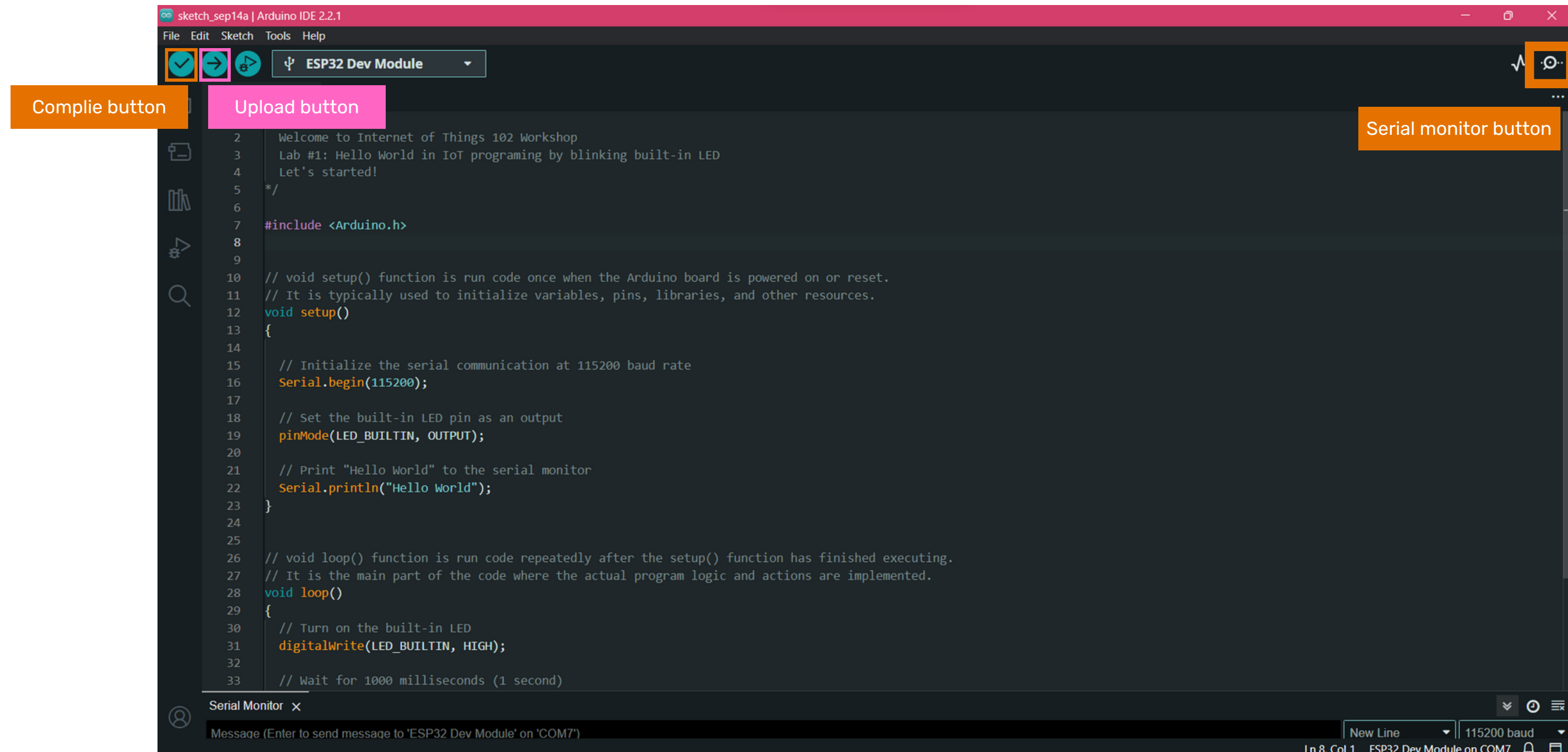

Select which one

Search "NodeMCU-32S" and select it.
(If you connected esp32 with USB cable).
It'll show Serial port in following picture.

Uploading the Sketch

Complie button: To verify your code and check error code.

Upload button: To run your code.

Serial monitor: To display your output. (If you coding for begin serial monitor).
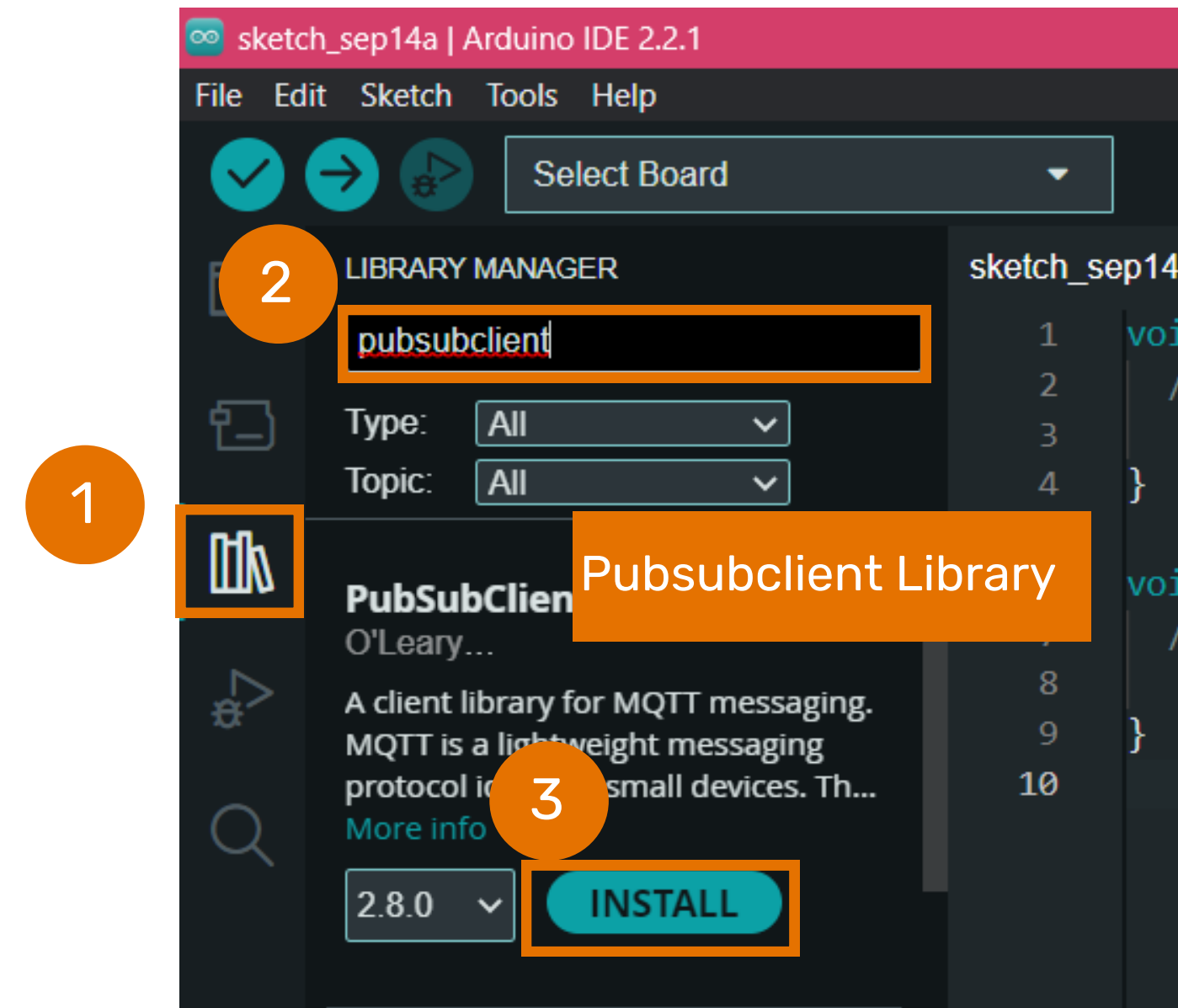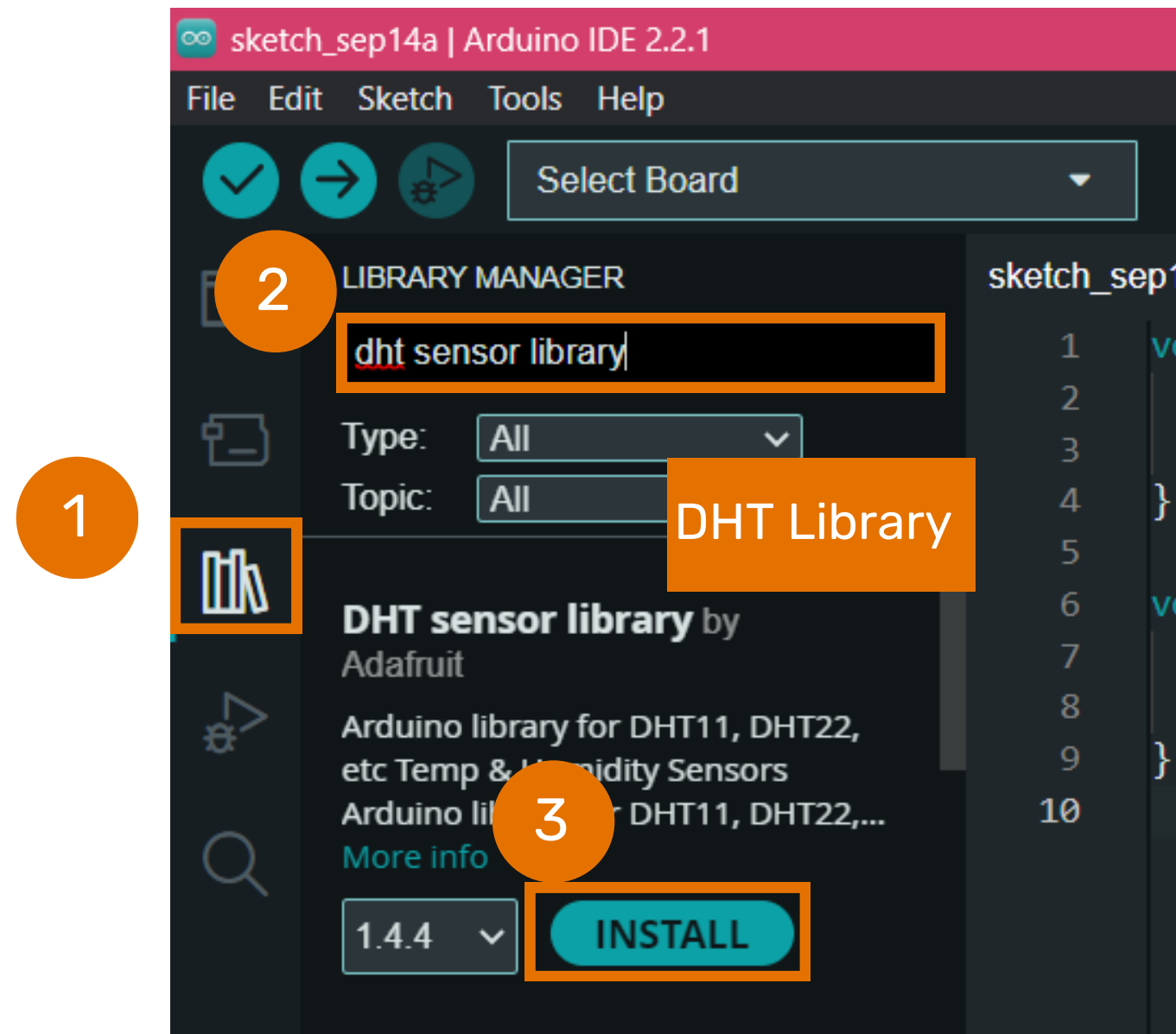
Install
Dht.h and PubSubclient.h libraries

In our workshop use 2 libraries: dht and pubsubclient. Following this instruction to install:
1. Go to Library icon
2. Search "DHT sensor library" for dht.h and PubSubClient for PubSubClient.h
3. Click install.


DHT Library

Pubsubclient Library

PlatformIO

PlatformIO is a cross-platform, cross-architecture, multiple framework, professional tool for embedded systems engineers and for software developers who write applications for embedded products.
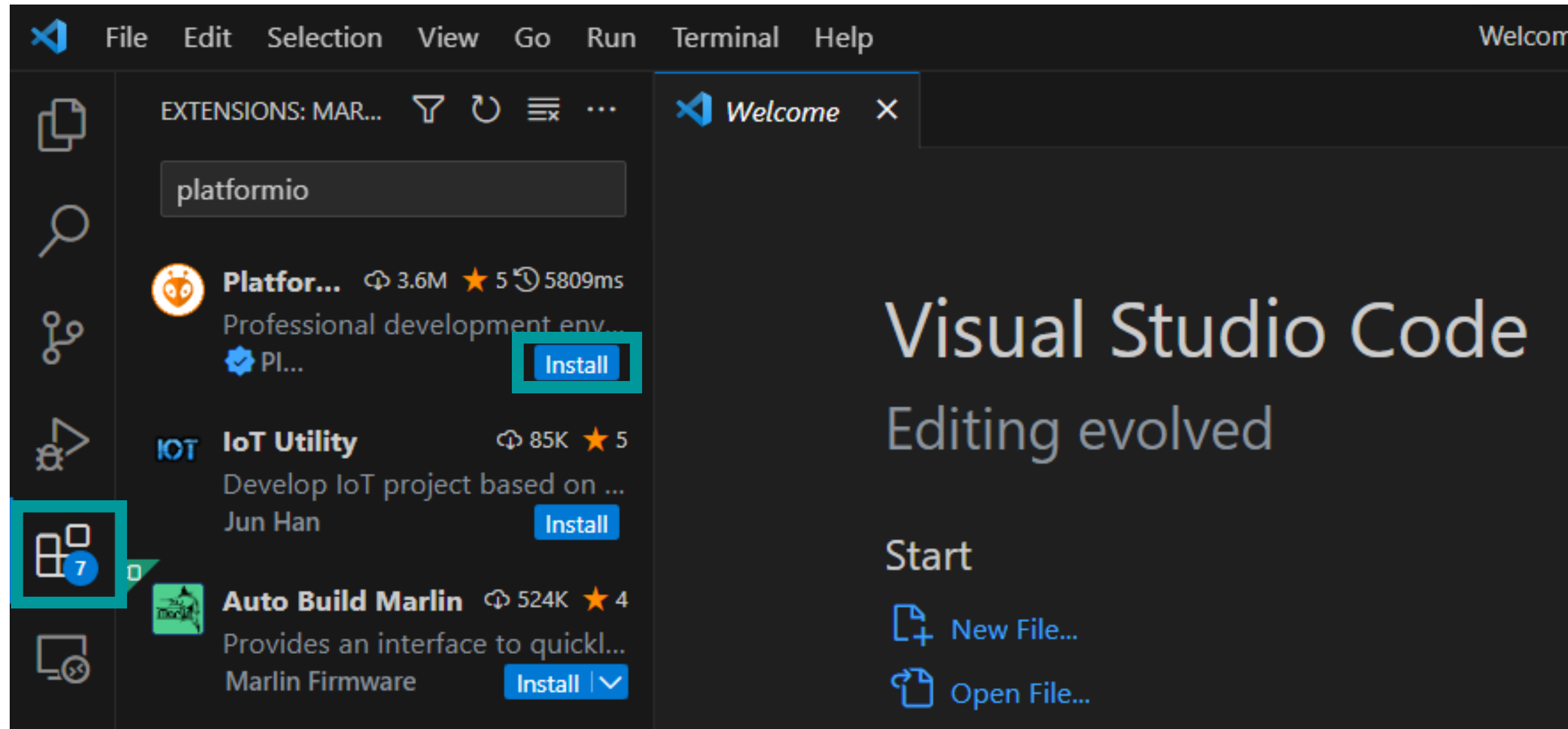
Starting install Visual Studio

Visit https://code.visualstudio.com/download
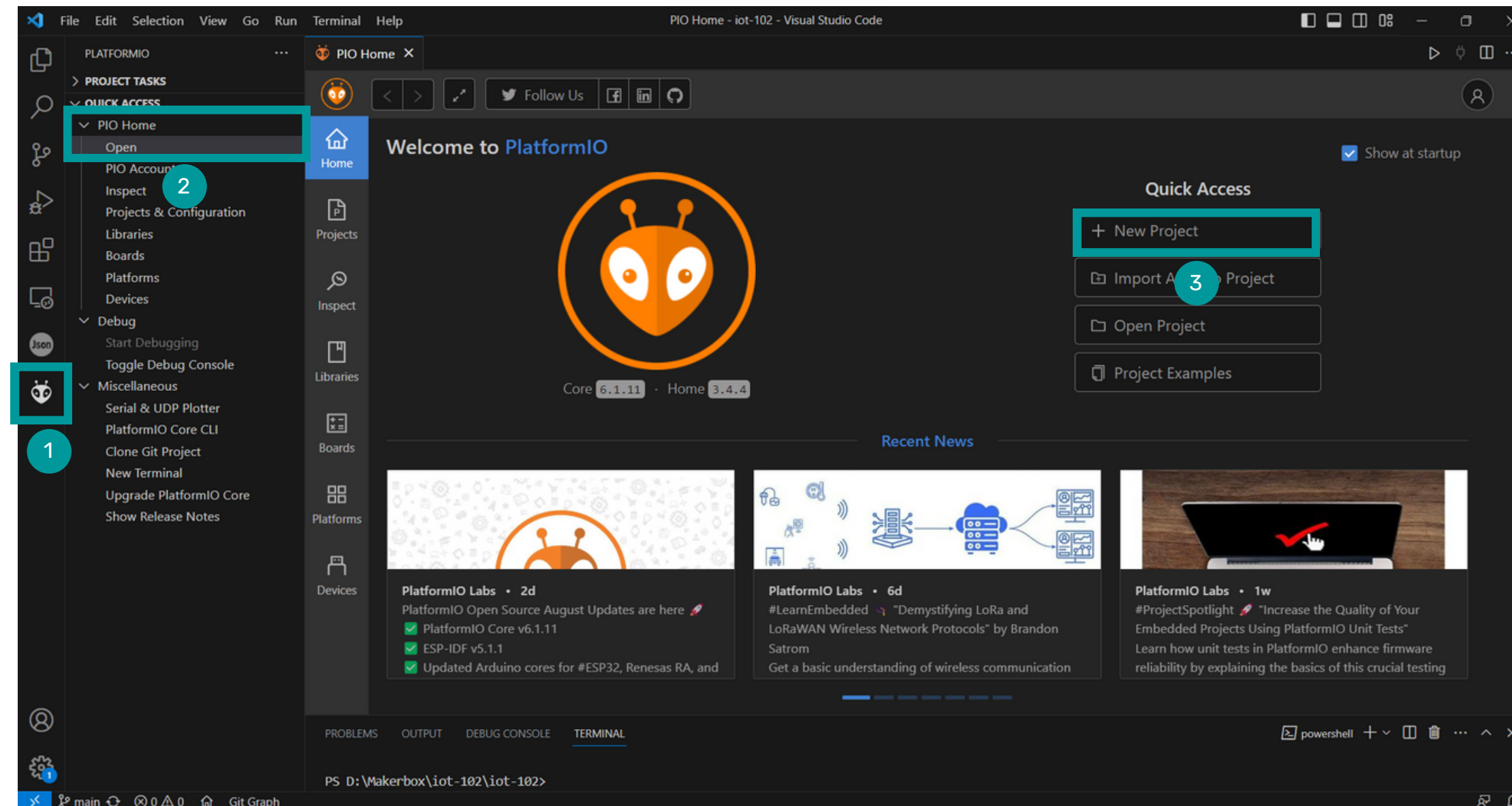and choose the appropriate download option for your OS from the picture below.
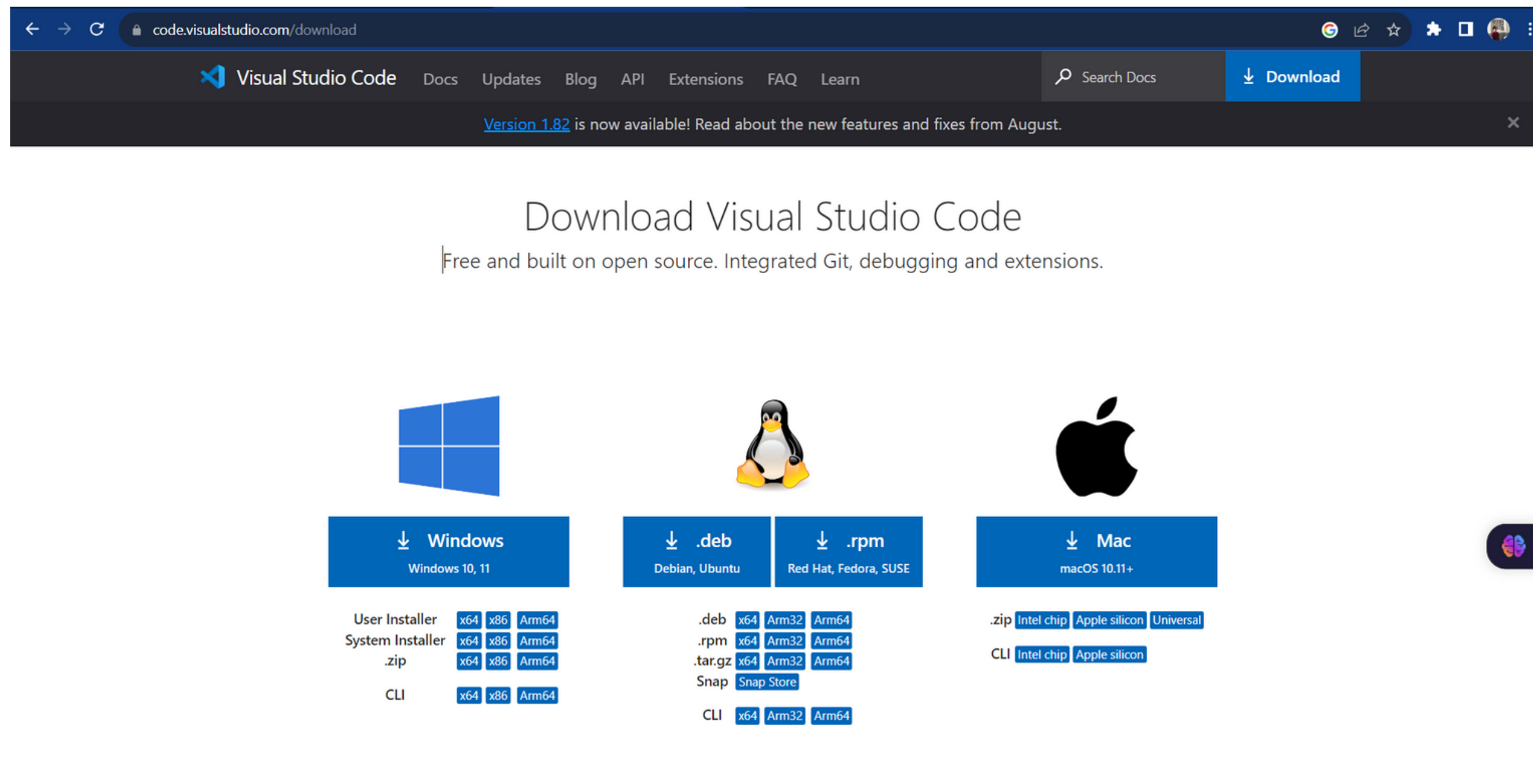
Starting install PlatformIO

Open visual studio -> Go to extension -> Search platformIO -> Click Install
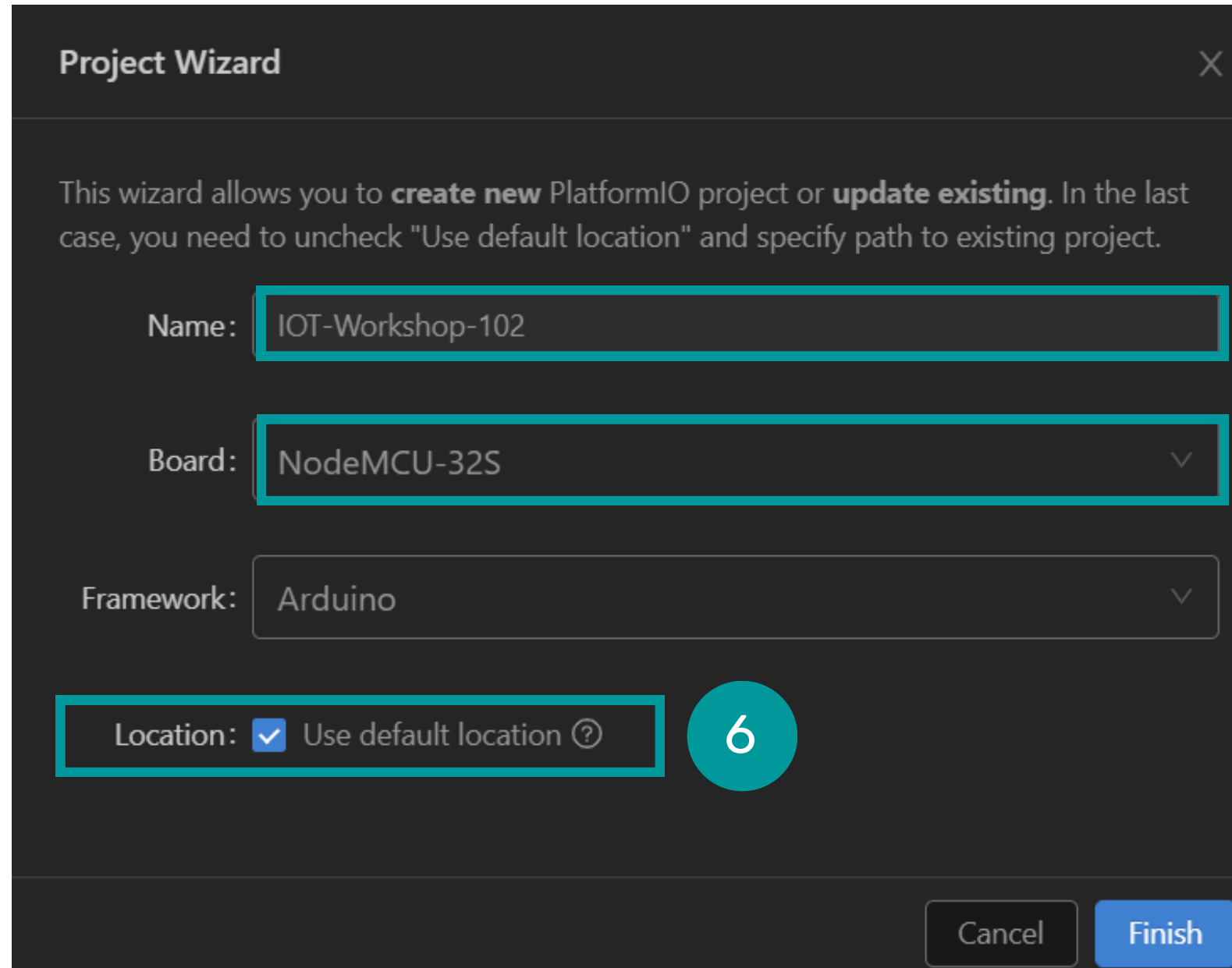
Starting project in PlatformIO

1. Go to platformIO extension.
2. Go to PIO Home -> Open.
3. Click "New Project".

Starting project in PlatformIO

4. Fill in project name.
5. Select board (The NodeMCU-32S will be used in our workshop).
6. Select your location of project file. (If you want to customize your location. remove tik).
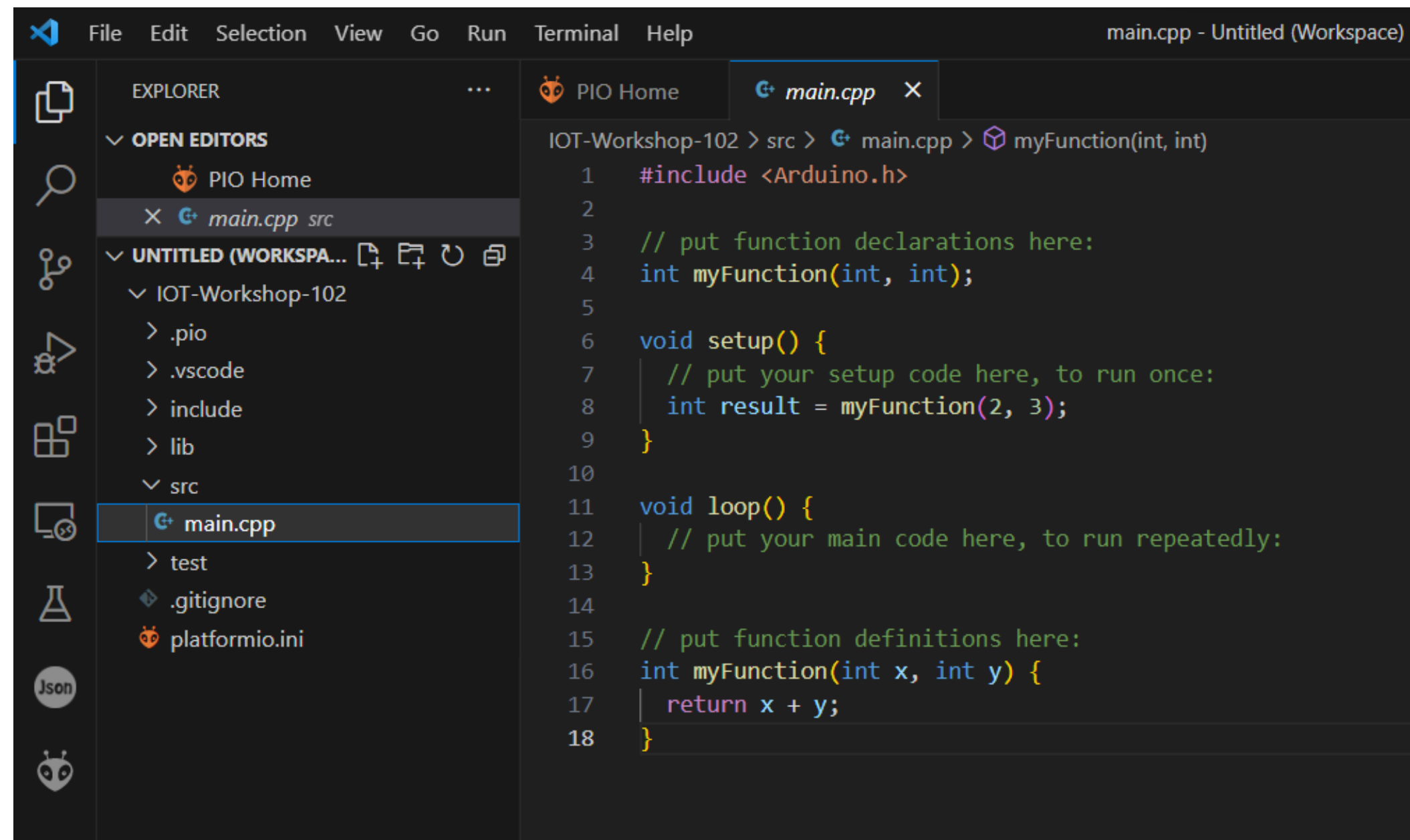
If you finish the setup. Clicking the finish button.

Starting project in PlatformIO

When you setup completely. Go to src folder -> main.cpp -> Put your code in this file
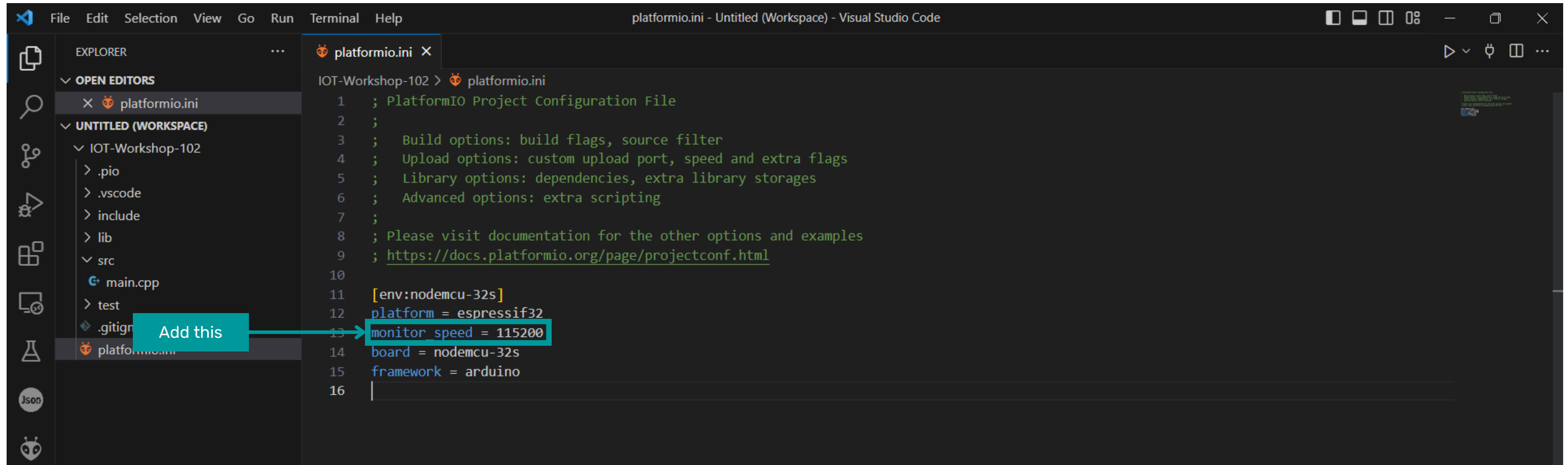
platformIO.ini

platformIO.ini: This file is a configuration file (select board, framework, libraries, etc.)
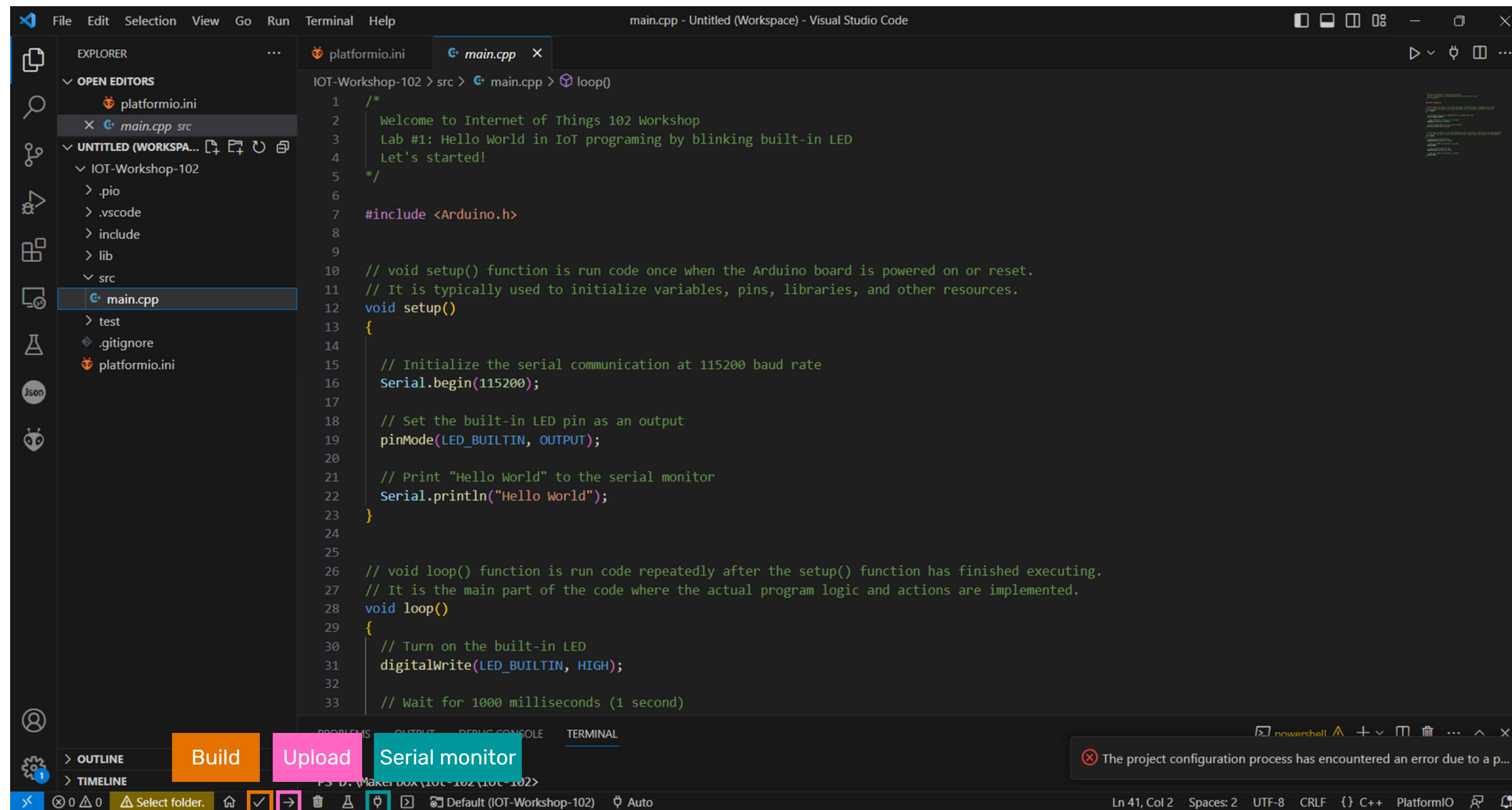In our workshop will add monitor speed to initialize serial monitor.

Uploading the Sketch

Build: To verify your code and check error code.

Upload: To run your code.

Serial monitor: To display your output. (If you coding for begin serial monitor).
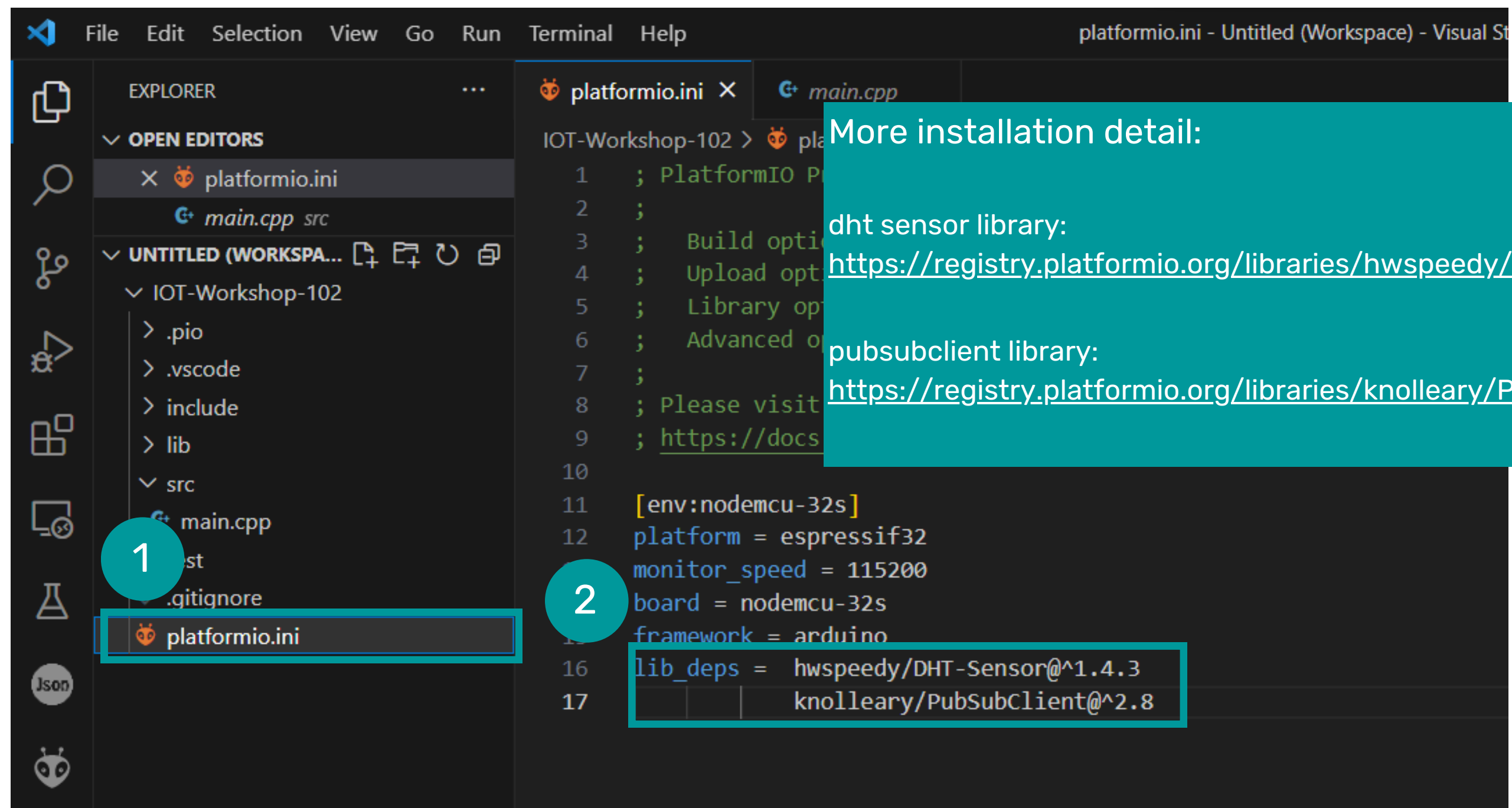
Install
Dht.h and PubSubclient.h libraries

In our workshop use 2 libraries: dht and pubsubclient. Following this instruction to install:
1. Go to platformIO.ini
2. add lip_deps

More installation detail:

dht sensor library:
https://registry.platformio.org/libraries/hwspeedy/DHT-Sensor/installation

pubsubclient library:
https://registry.platformio.org/libraries/knolleary/PubSubClient/installation

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Thank You