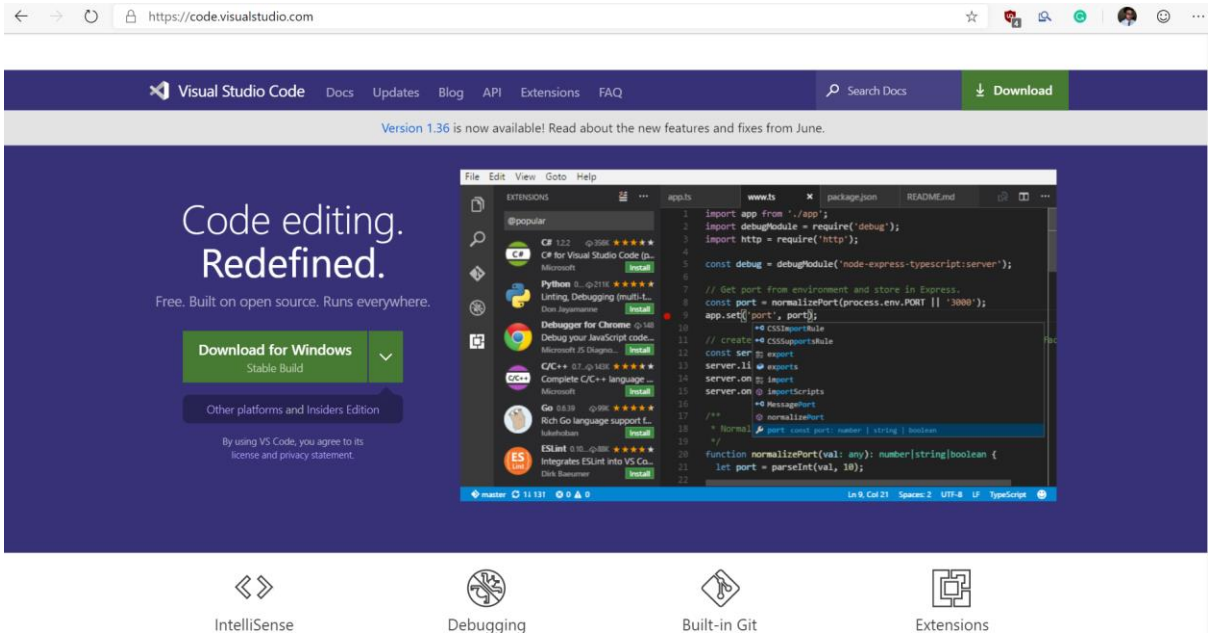
Hardware programming platform setup

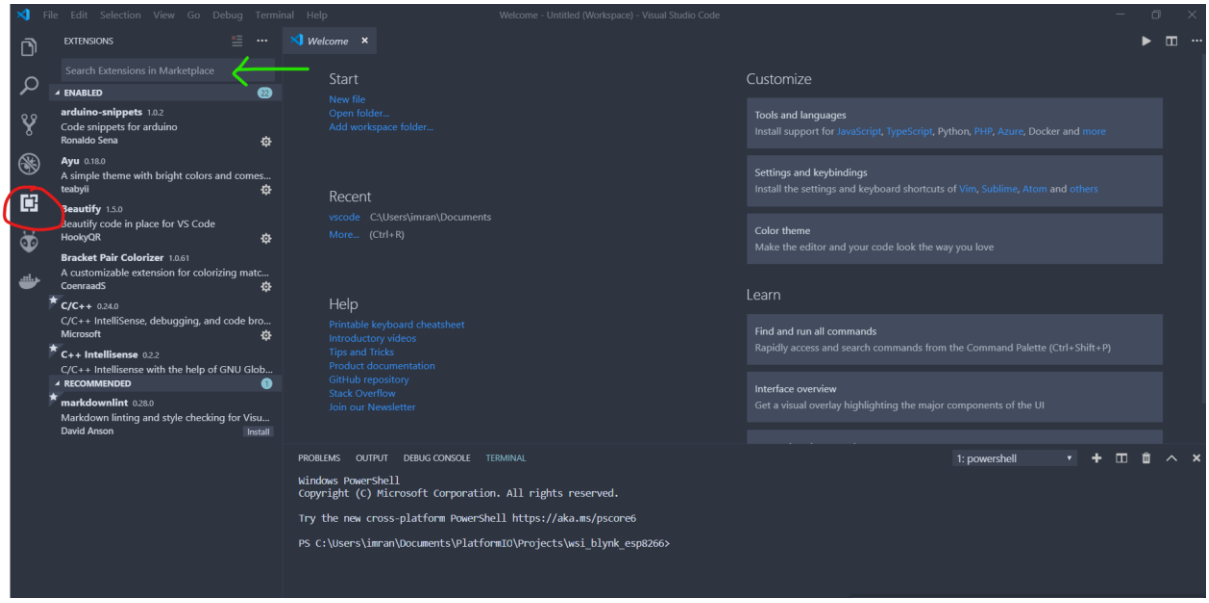
Most of us are working with multiple embedded system boards and we need to switch between those. Here is an easy setup to work with multiple platform. The following setup can work as alternative to Arduino ide.

1. **Download and install Vs Code.**

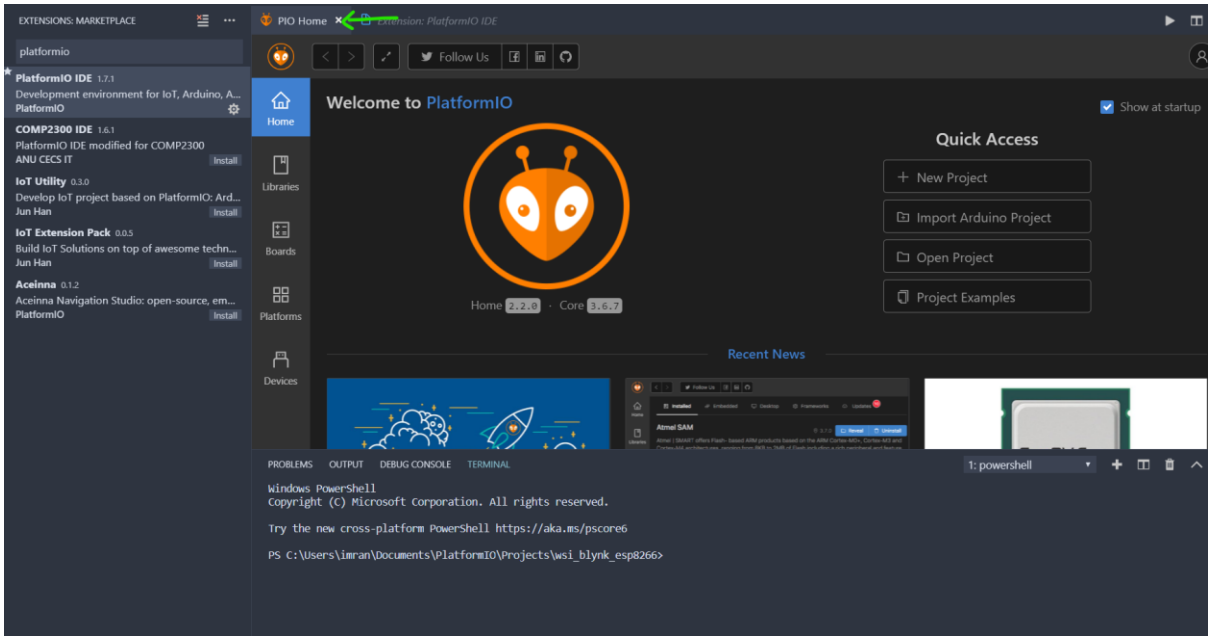
https://code.visualstudio.com/



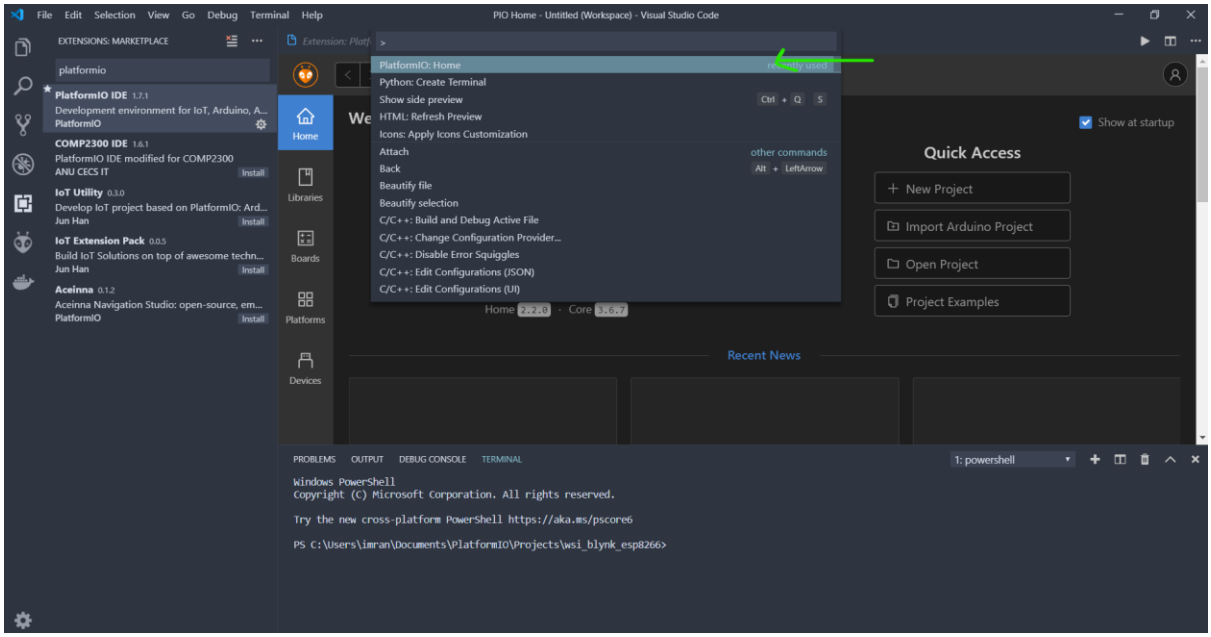
2. Open Vs code after installation.
3. And click on extension icon highlighted in red in the image below.



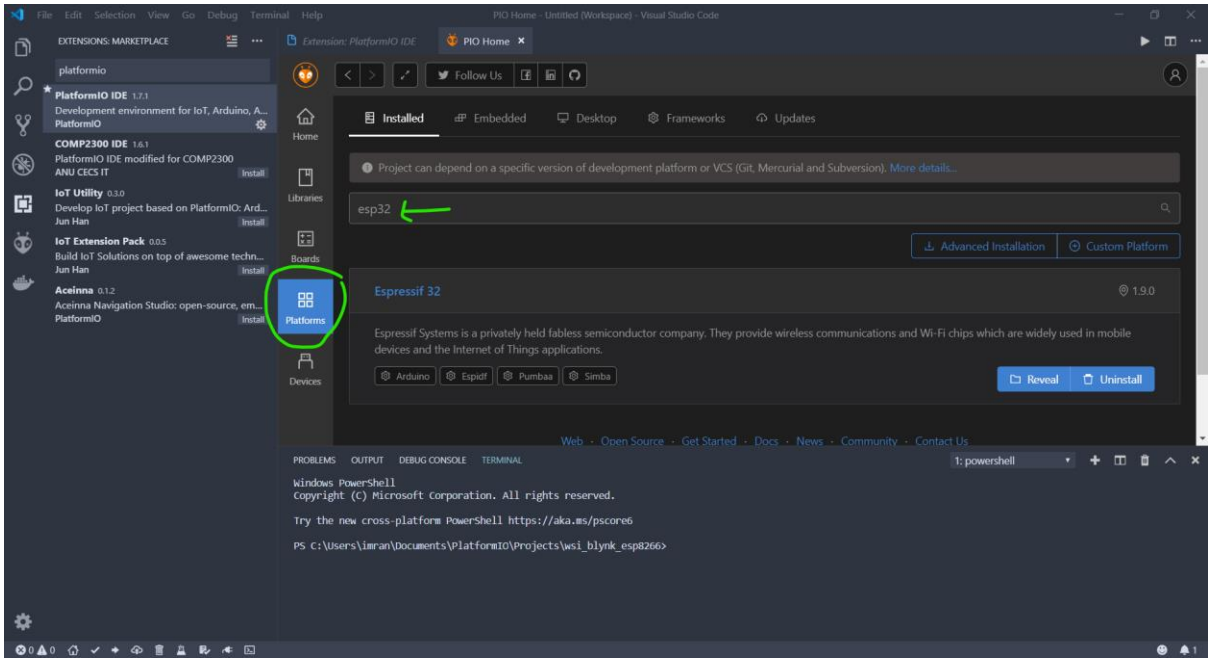
4. Click on the search box highlighted in green and type “platformio”.
5. Select the platformio ide and click install.



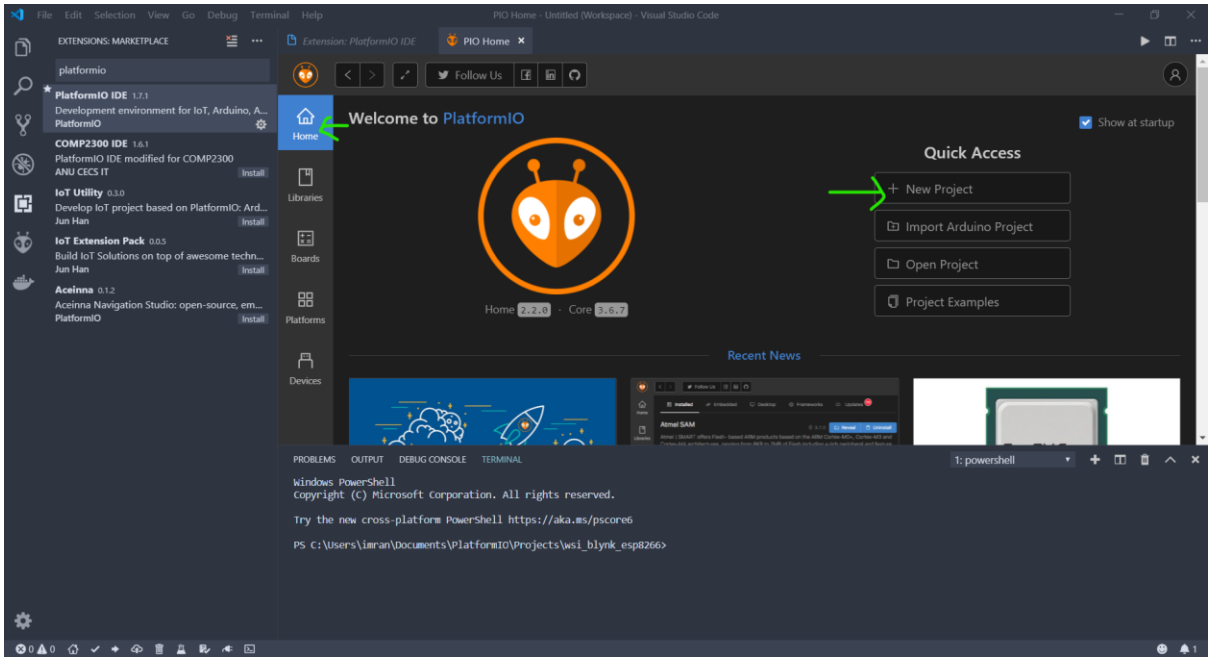
6. After installation restart the vscode program.
7. After restart, PIO home tab will automatically launch shown in the image below. (if PIO home doesn’t start automatically, press ctrl+shift+p and type platformio home.)



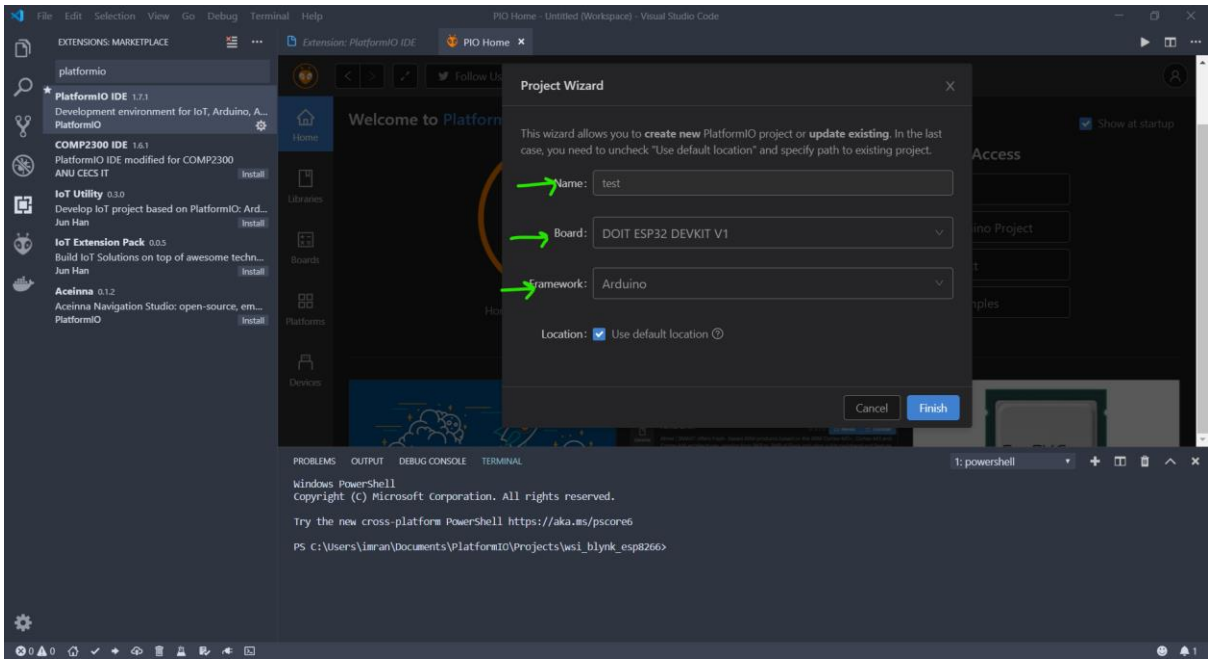
8. Click on the platforms icon highlighted in green below to install the hardware platform, you intend to you (you can install multiple platforms like esp32, esp8266, teensy etc)



9. Once the installation is complete you can create the new project to start coding. Click on PIO home icon and click on the new project.



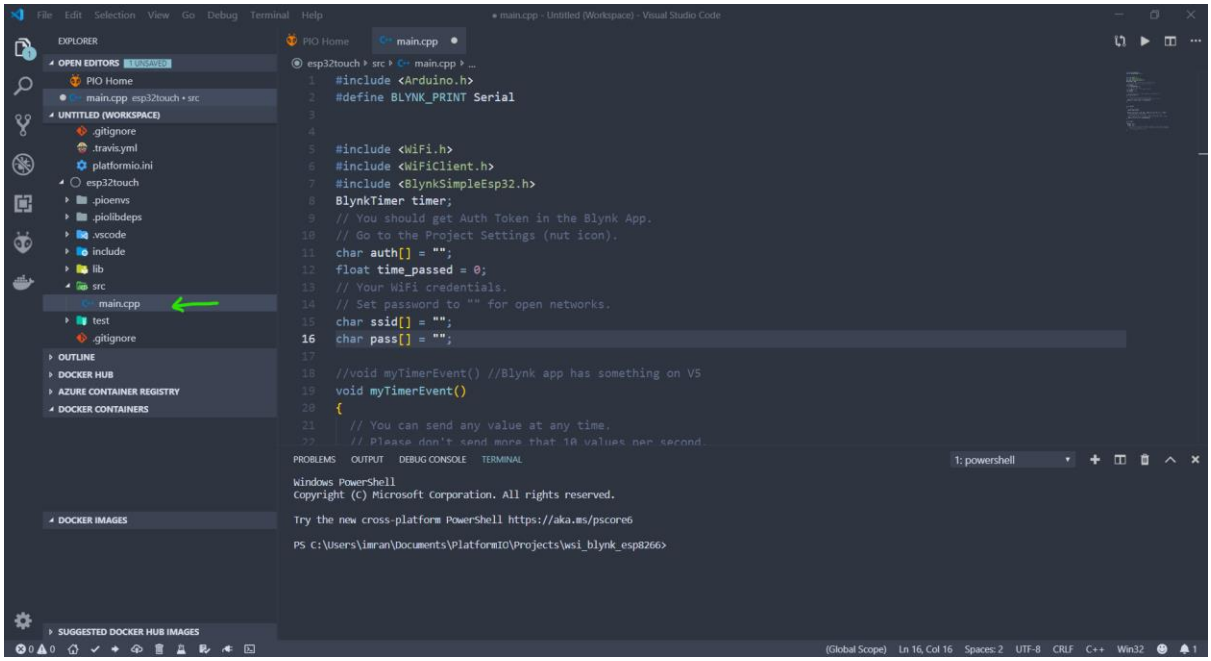
Type the name of the project and choose the hardware board and select framework to Arduino. (The Arduino platform works with esp8266, esp32 etc)
Click Finish.



A directory with the name of the project will be created and will be shown in the explorer tab.

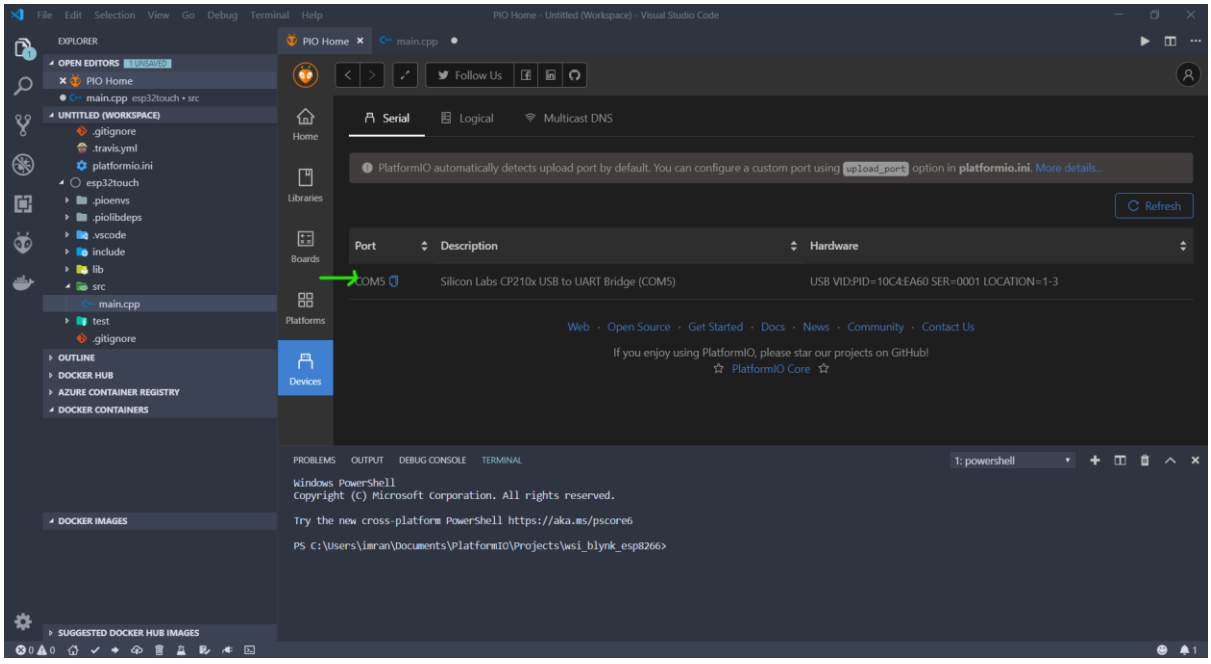
Select the project name folder and select src folder and select main.cpp file.

Main.cpp file will hold all your code as shown in the image below.

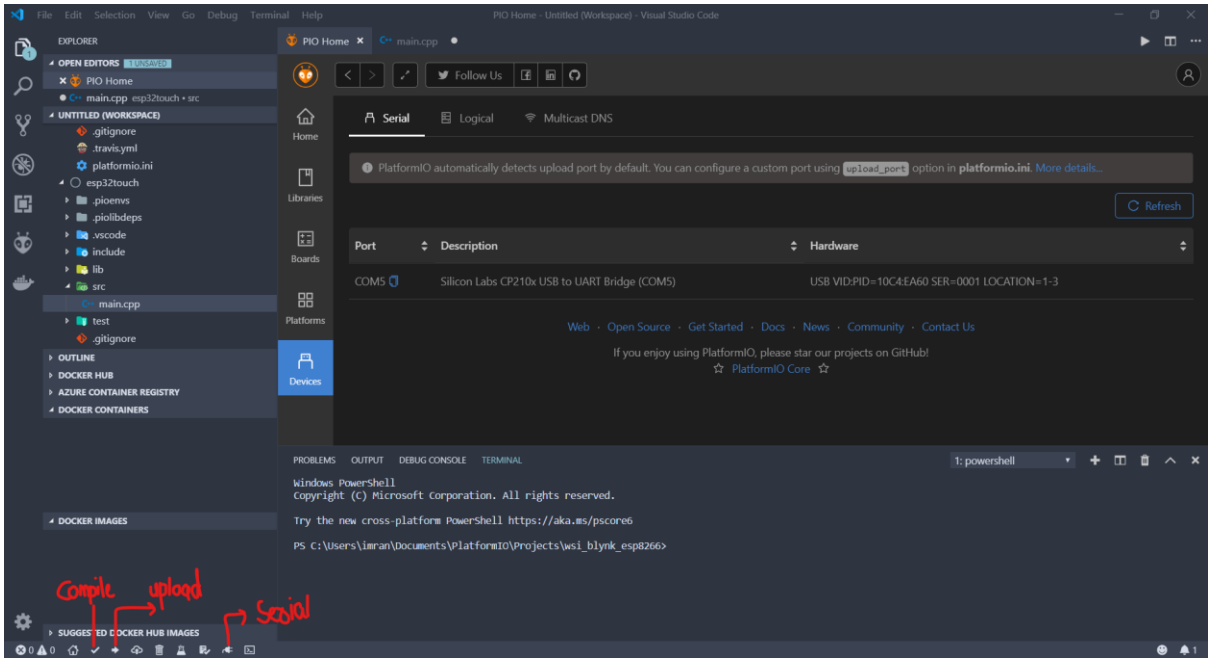


In order to program the hardware, first make sure you have installed the appropriate driver like cp210x (https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers) and the device is visible in pio home devices tab. The required driver name is usually printed on the bottom of the hardware board.

If the driver is installed correctly after plugging in the device, it will be visible in devices tab in PIO > Devices tab.



In order to compile and upload the code use the icons on the bottom left corner (highlighted in red below image).



You can also install the required libraries using the libraries tab in PIO HOME tab.

Note:

In order to change the Serial monitor baud rate and upload rate you need to append the monitor_speed and upload speed arguments in the “platformio.ini” file in the project folder.

```
[env:nodemcuv2]
platform = espressif8266
board = nodemcuv2
framework = arduino
monitor_speed = 115200
upload_speed = 921600
```