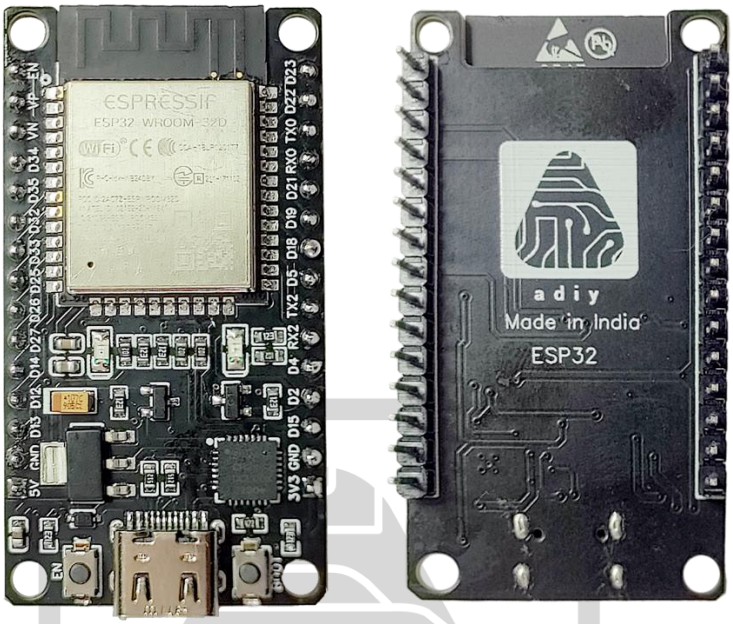


ADIY Nodemcu ESP32:

ESP-32 series contains varies sub-boards like ESP32E, ESP32U etc. Supporting 2.4 GHz Wi-Fi + Bluetooth® + Bluetooth LE module. Built around ESP32 series of SoCs, Xtensa® dual-core 32-bit LX6 microprocessor. 4MB flash memory.

Installing the Arduino IDE Software

Here, will start with the basic program which will be blink LED. Firstly we need to install Arduino IDE software in our system to upload the code in ADIY ESP Board. You can install this software by clicking on below link:-

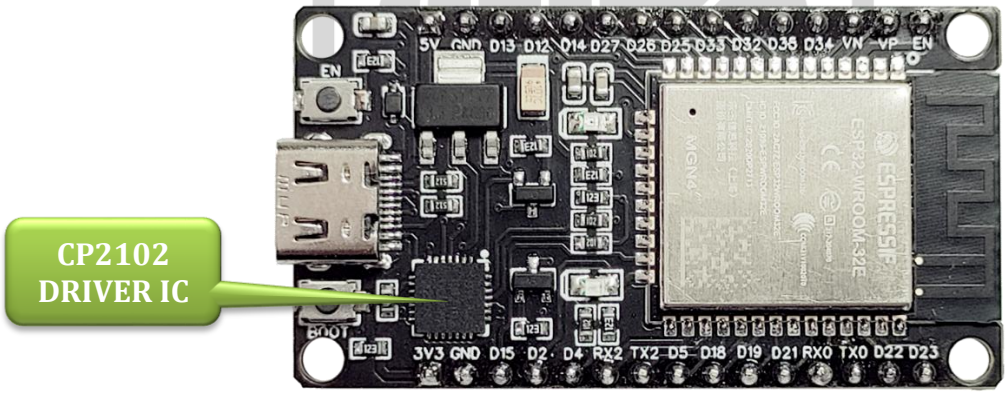
https://www.arduino.cc/en/software

According to your operating system you can select OS from given options. In my case its Windows 10.

Installing the USB-to-Serial Bridge Driver:

Depending on the design, you need to install additional drivers for your USB-to-serial converter before you can upload code to your ADIY ESP32.

For example, the ADIY Nodemcu ESP32 CP2102 uses the CP2102 to convert USB signals to UART signals, whereas ADIY Nodemcu ESP32 CH340C uses the CH340C.



Make sure to inspect your board carefully to identify the USB-to-serial converter that is present. You'll probably have either CP2102 or CH340 populated on the board.

If you've never installed drivers for these USB-to-serial converters on your computer before, you should do so right now.

Link for CP2102:

https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers?tab=downloads

Link for CH340C:

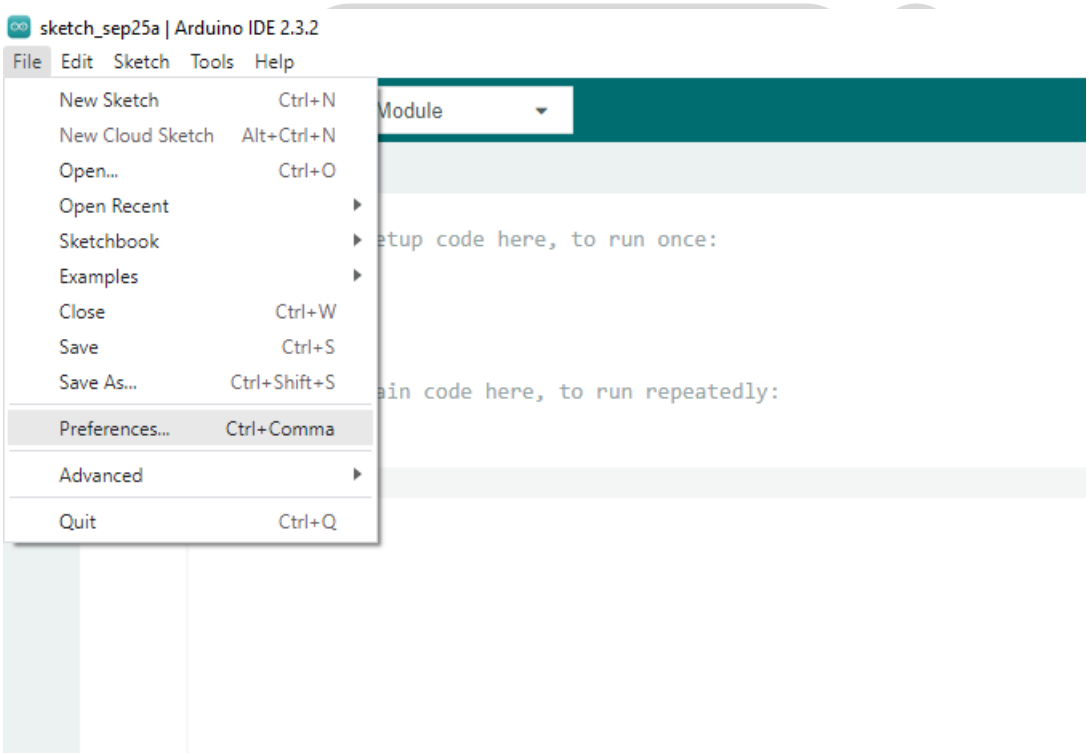
https://learn.sparkfun.com/tutorials/how-to-install-ch340-drivers/all

Accordingly, to your system select OS.

Installing the ESP32 board Library in Arduino IDE software

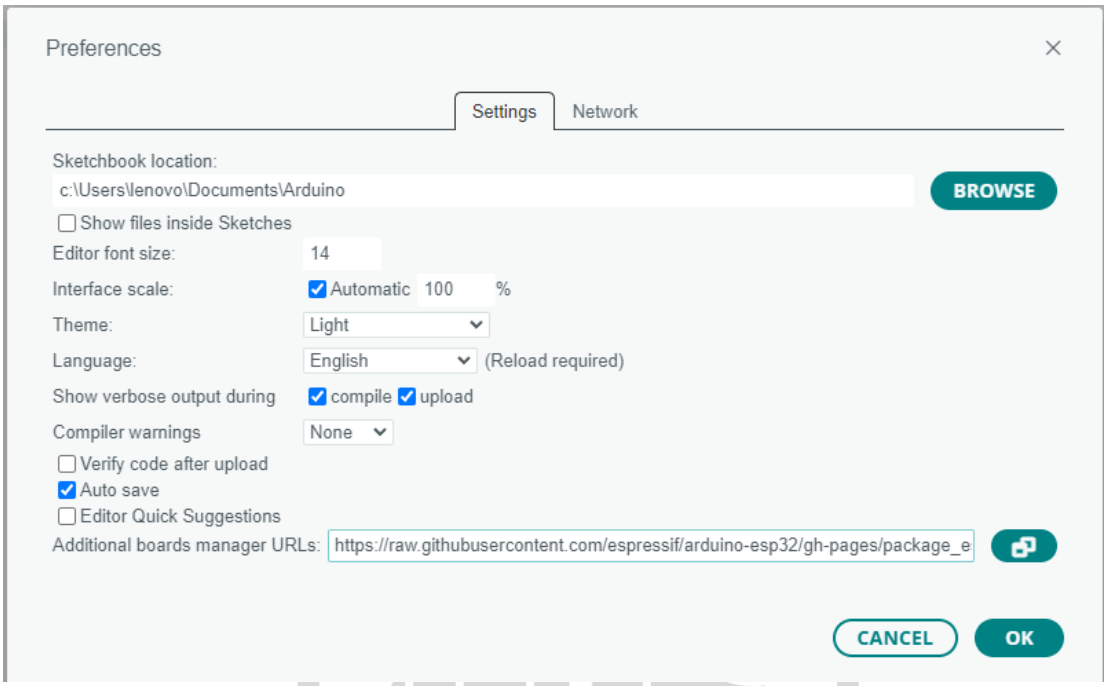
To see ESP32 board name in list of board, first you need to save URL in Arduino IDE.

Step 1: Open Arduino IDE software, Go to File -> Preferences



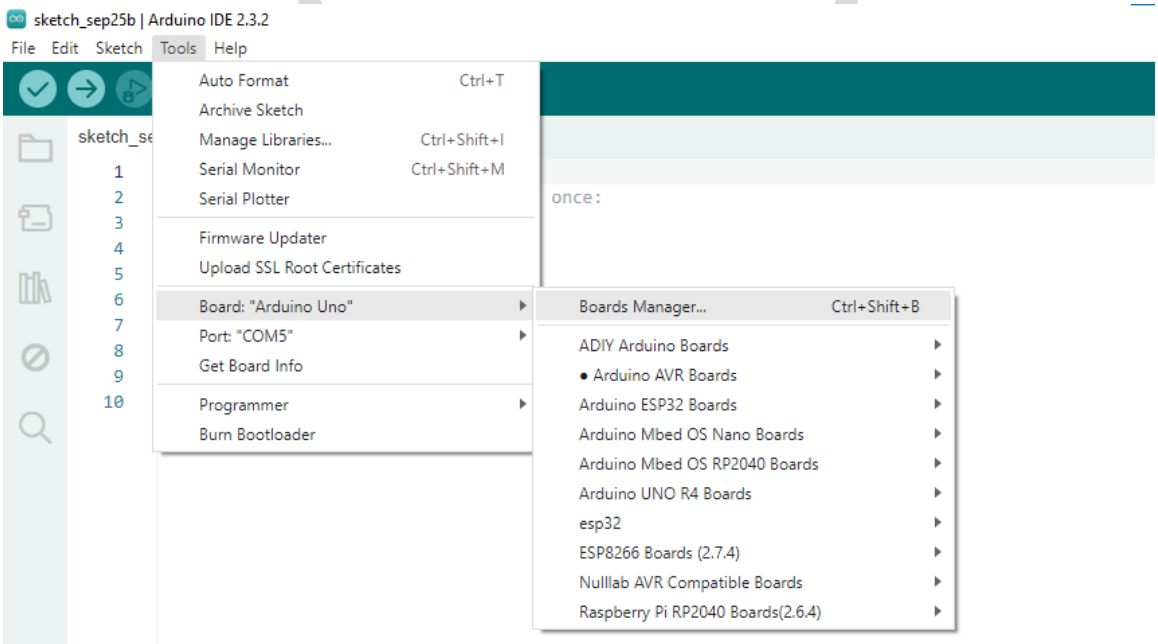
Fill in the “Additional Board Manager URLs” field with the following.

https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json

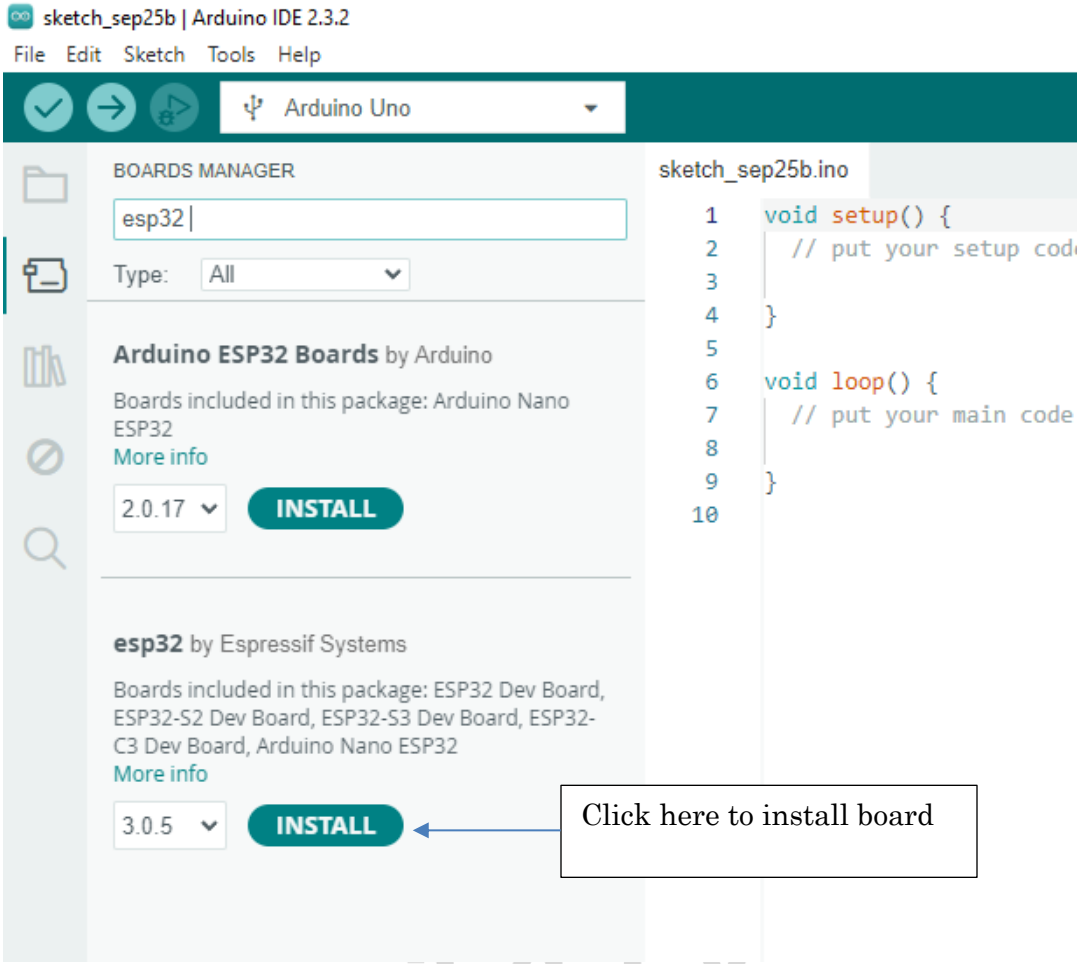


Then, click the “OK” button.

Step 2: Now navigate to Tools -> Board -> Boards Manager



Filter your search by entering ‘esp32‘. Look for ESP32 by Espressif Systems. Click on that entry, and then choose Install.



After installing the board library.

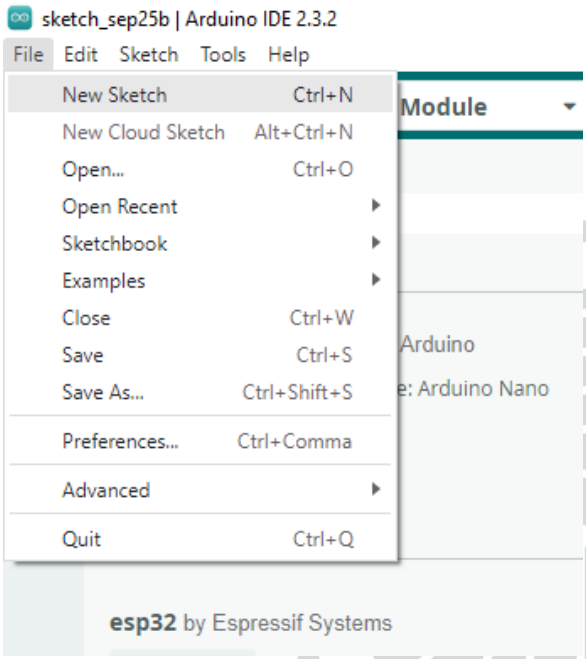
Congratulations!!! Now you can write a code.

Testing the Installation

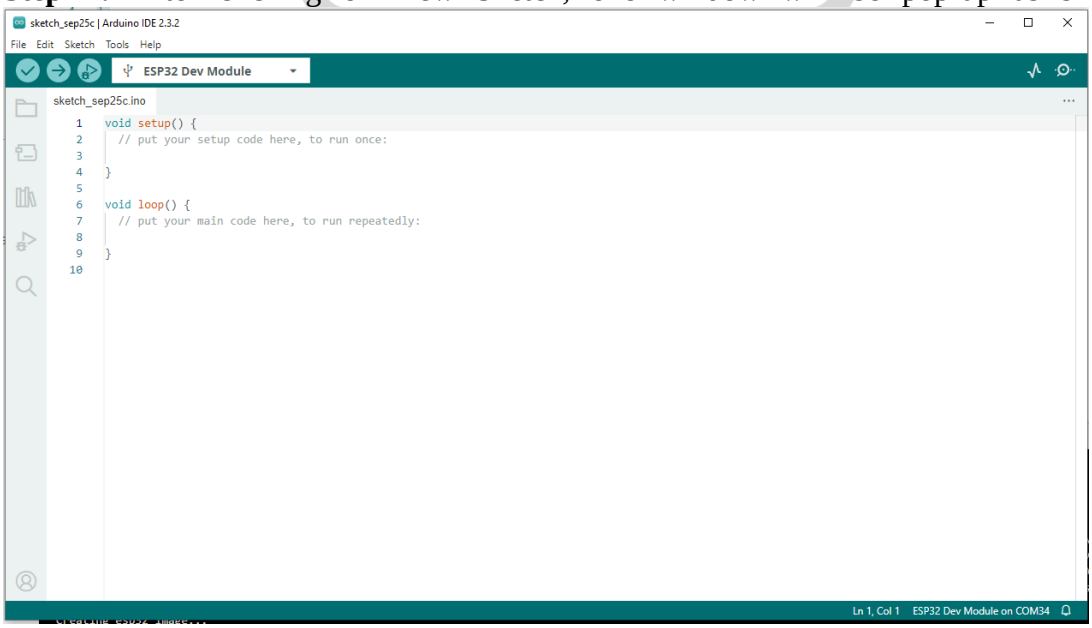
As discussed in the beginning, will start with the basic code. i.e. Blink LED.

In following Sketch we are using onboard led which is connected to digital pin D2 .

Step 1: Go to File -> New Sketch



Step 2: After clicking on New Sketch, one window will be pop-up as shown below,

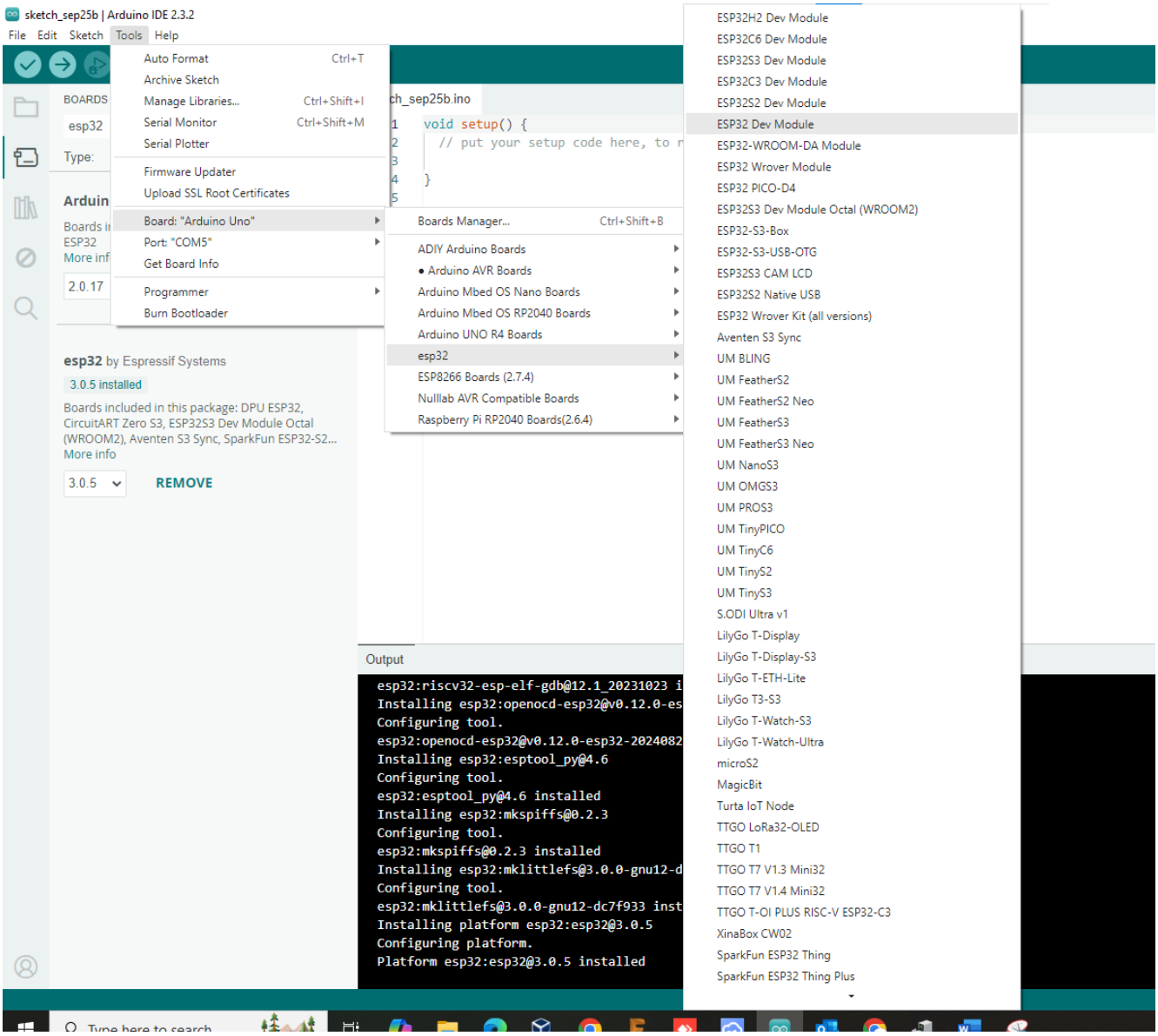


Clear the existing code (Blank code) and write your code.

```
int ledPin = 2;

void setup() {

        pinMode(ledPin, OUTPUT);

}

void loop() {

        digitalWrite(ledPin, HIGH);

        delay(500);

        digitalWrite(ledPin, LOW);

        delay(500);

}
```

Step 3: Selecting the Board and Port

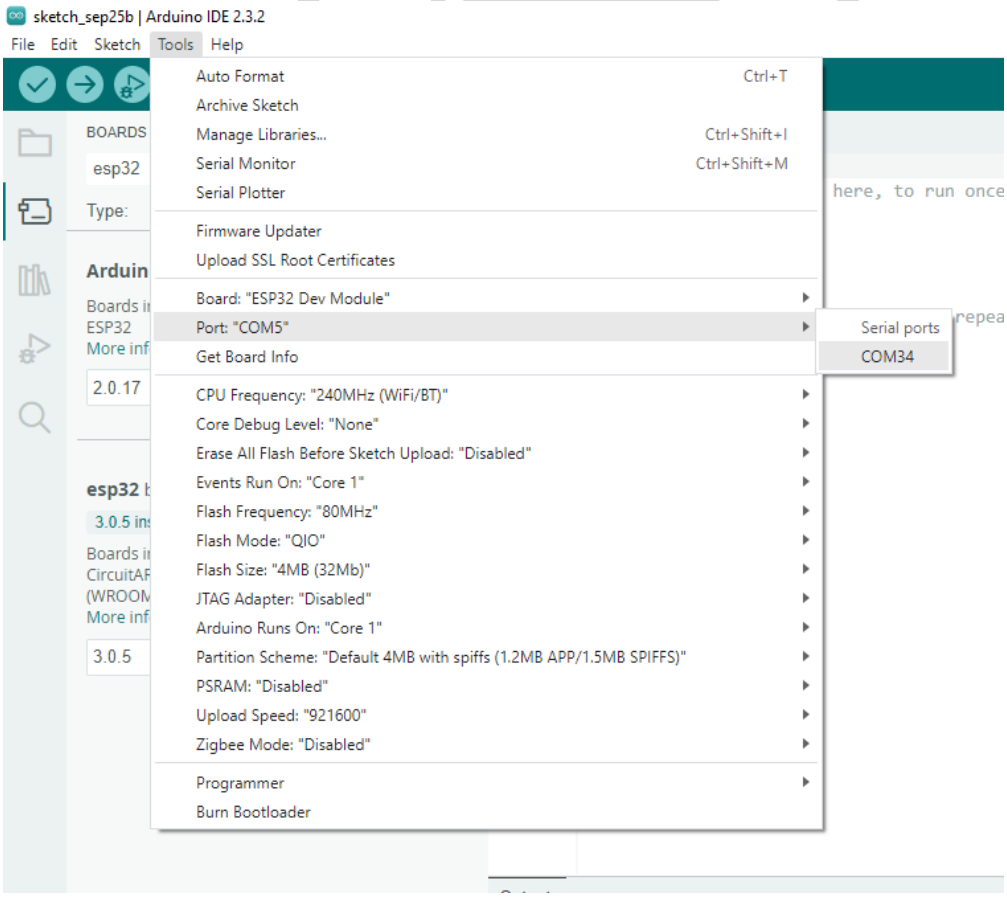
After installing the ESP32 board, restart your Arduino IDE and navigate to Tools > Board, to ensure you have ESP32 boards available.


sketch_sep25b | Arduino IDE 2.3.2
File Edit Sketch Tools Help
Auto Format Ctrl+T
Archive Sketch
Manage Libraries... Ctrl+Shift+I
Serial Monitor Ctrl+Shift+M
Serial Plotter
Firmware Updater
Upload SSL Root Certificates
Board: "Arduino Uno"
Port: "COM5"
Get Board Info
Programmer
Burn Bootloader
Boards Manager... Ctrl+Shift+B
ADIY Arduino Boards
Arduino AVR Boards
Arduino Mbed OS Nano Boards
Arduino Mbed OS RP2040 Boards
Arduino UNO R4 Boards
esp32
ESP8266 Boards (2.7.4)
Nulllab AVR Compatible Boards
Raspberry Pi RP2040 Boards(2.6.4)
ESP32H2 Dev Module
ESP32C6 Dev Module
ESP32S3 Dev Module
ESP32C3 Dev Module
ESP32S2 Dev Module
ESP32 Dev Module
ESP32-WROOM-DA Module
ESP32 Wrover Module
ESP32 PICO-D4
ESP32S3 Dev Module Octal (WROOM2)
ESP32-S3-Box
ESP32-S3-USB-OTG
ESP32S3 CAM LCD
ESP32S2 Native USB
ESP32 Wrover Kit (all versions)
Aventen S3 Sync
UM BLING
UM FeatherS2
UM FeatherS2 Neo
UM FeatherS3
UM FeatherS3 Neo
UM NanoS3
UM OMGS3
UM PROS3
UM TinyPICO
UM TinyC6
UM TinyS2
UM TinyS3
S.ODI Ultra v1
LilyGo T-Display
LilyGo T-Display-S3
LilyGo T-ETH-Lite
LilyGo T3-S3
LilyGo T-Watch-S3
LilyGo T-Watch-Ultra
microS2
MagicBit
Turta IoT Node
TTGO LoRa32-OLED
TTGO T1
TTGO T7 V1.3 Mini32
TTGO T7 V1.4 Mini32
TTGO T-OI PLUS RISC-V ESP32-C3
XinaBox CW02
SparkFun ESP32 Thing
SparkFun ESP32 Thing Plus
esp32 by Espressif Systems
3.0.5 installed
Boards included in this package: DPU ESP32, CircuitART Zero S3, ESP32S3 Dev Module Octal (WROOM2), Aventen S3 Sync, SparkFun ESP32-S2...
More info
3.0.5
REMOVE
Output
esp32:riscv32-esp-elf-gdb@12.1_20231023 i
Installing esp32:openocd-esp32@v0.12.0-es
Configuring tool.
esp32:openocd-esp32@v0.12.0-esp32-2024082
Installing esp32:esptool_py@4.6
Configuring tool.
esp32:esptool_py@4.6 installed
Installing esp32:mkspiffs@0.2.3
Configuring tool.
esp32:mkspiffs@0.2.3 installed
Installing esp32:mklittlefs@3.0.0-gnu12-d
Configuring tool.
esp32:mklittlefs@3.0.0-gnu12-dc7f933 inst
Installing platform esp32:esp32@3.0.5
Configuring platform.
Platform esp32:esp32@3.0.5 installed

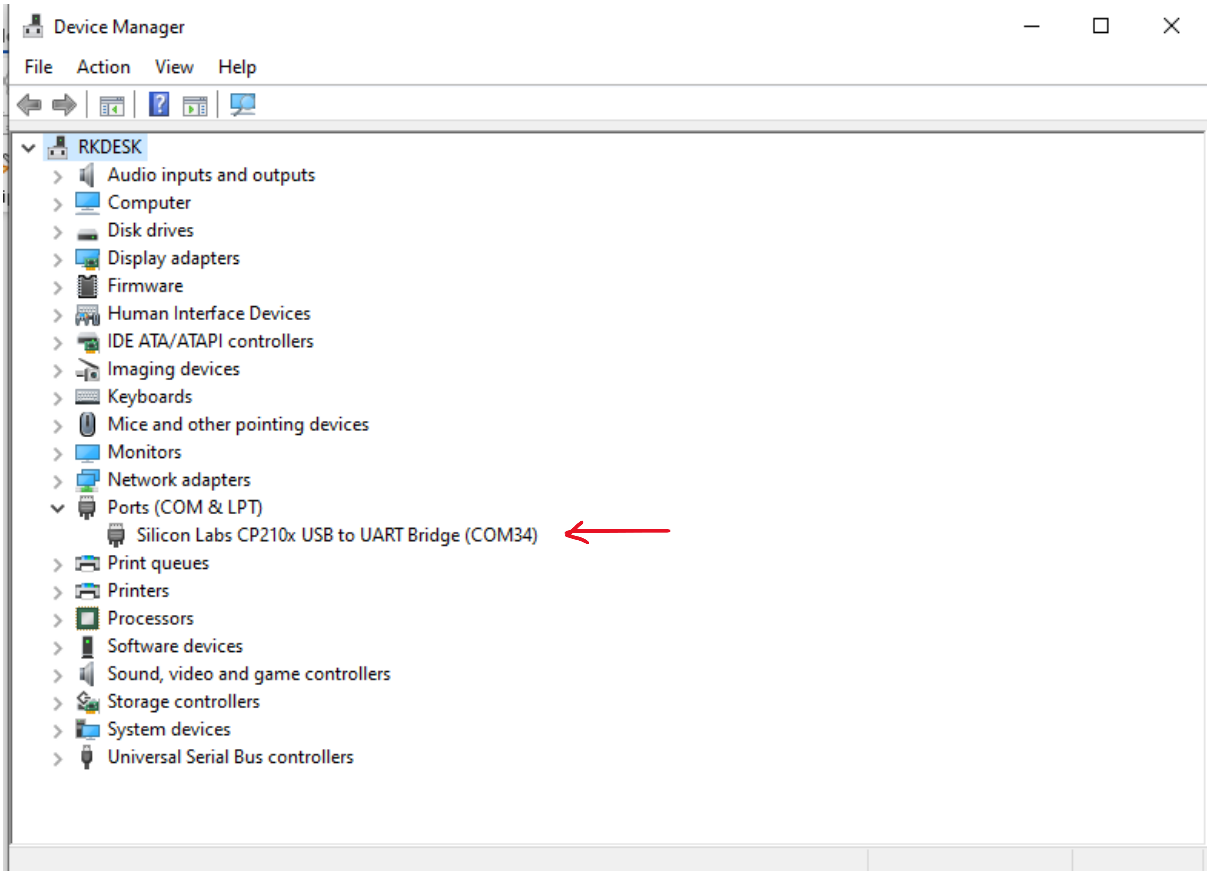
Step 4: Now select your board in the Tools -> Board -> esp32 -> ESP32 Dev Module.

Connect ADIY ESP32 board to your computer.

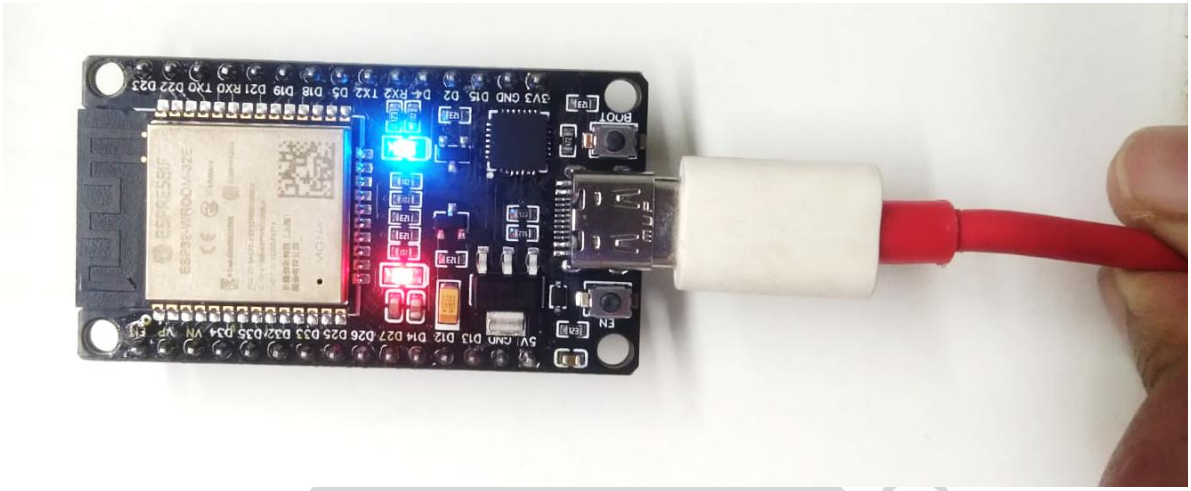
Step 5: Select a port by clicking on Tools -> Port -> COM34 (In my case its COM34, yours will be different)



Note: If shows multiple com ports in your software then you can check exact COM port in device manager.



Step 6: Press and hold the BOOT switch on the ADIY Nodemcu ESP32 board and click on upload icon in software.

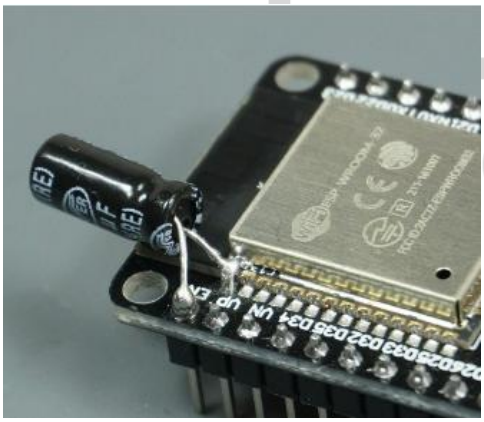


If everything worked, the on-board LED on your ESP32 should now be blinking!

Just like shown in above Image

Note :-

To upload a new code we need to press and hold BOOT switch with this board.
If you want by pass this process you can add one 10uf electrolytic between EN and GND pin.



OR