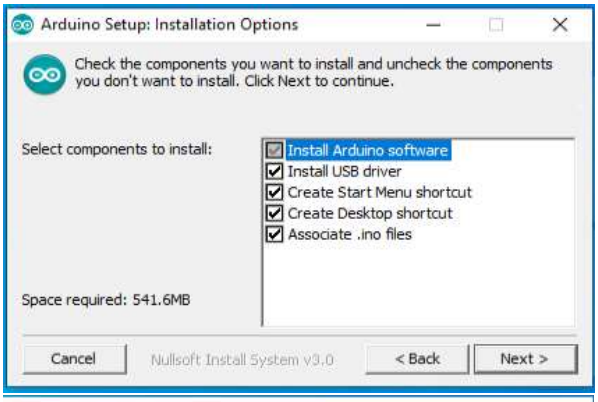
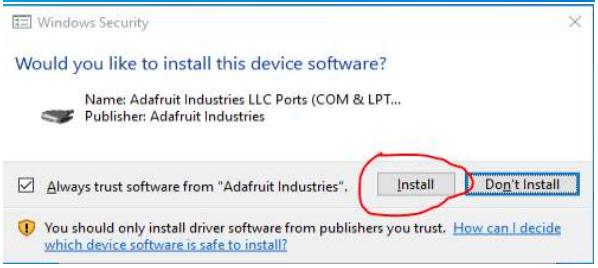
How to setup Arduino IDE environment for ESP32

IDE and driver setup

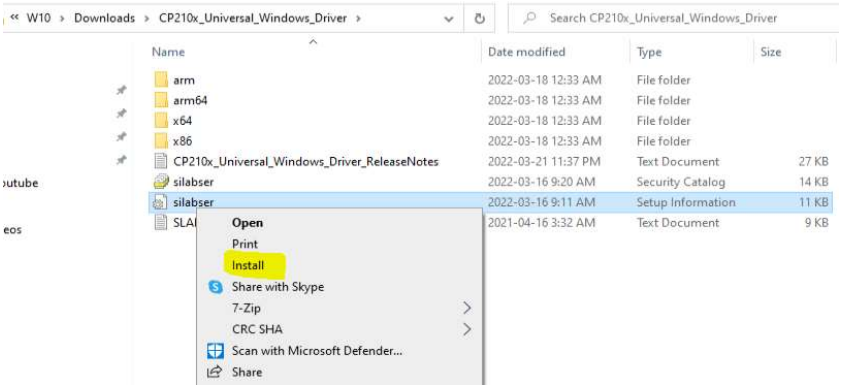
1) Download and install the latest Arduino IDE:
   https://www.arduino.cc/en/software

2) Install with all options/drivers:

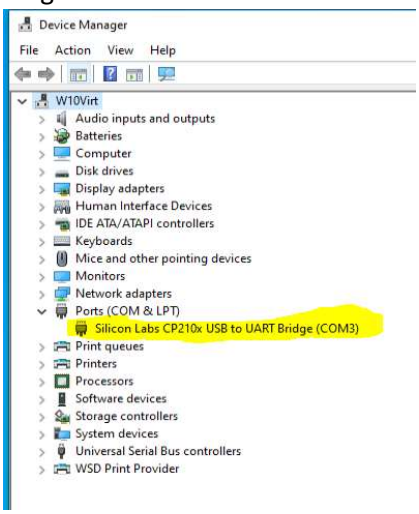




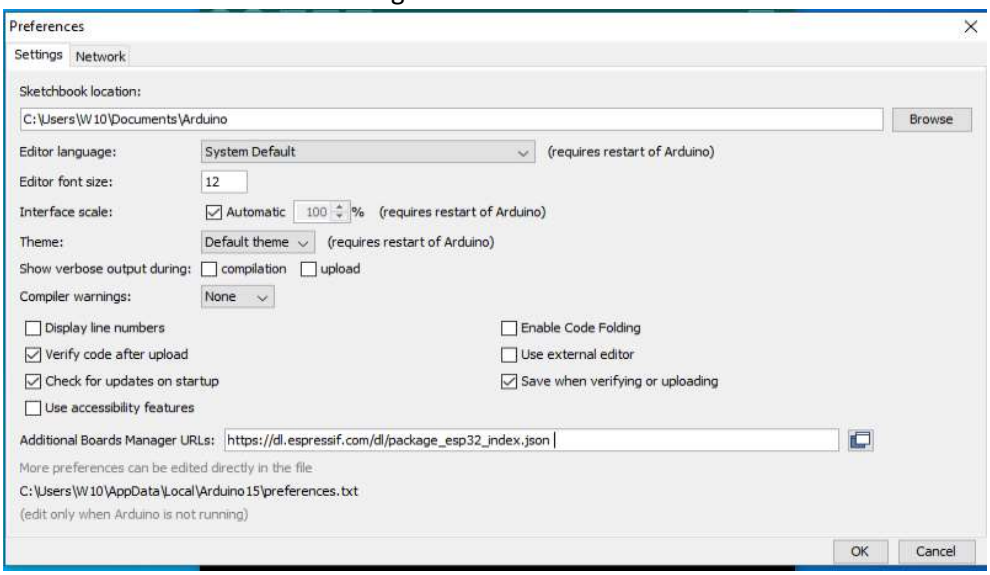
3) Install CP210X driver :
   https://www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers



4) Plug in the device. You should see the COM port mapping in Device manager:

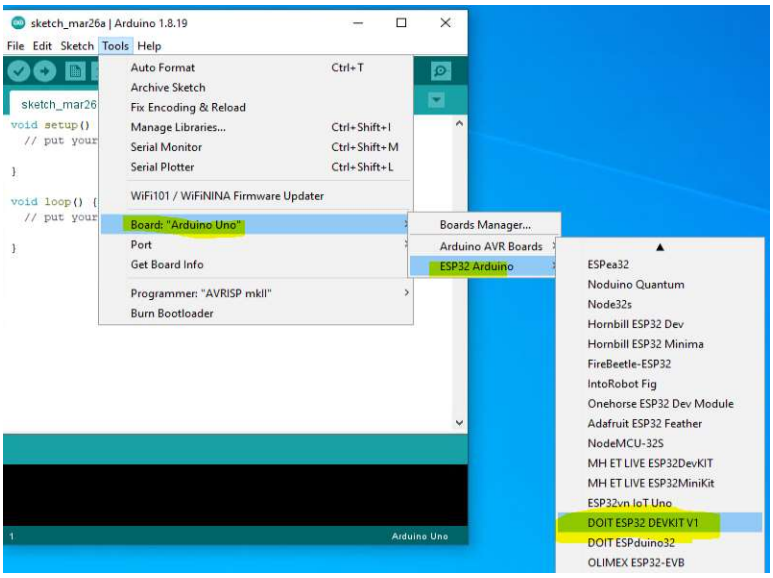


5) Launch Arduino IDE. Click on "File – Preferences". Enter **https://dl.espressif.com/dl/package_esp32_index.json** into the "Additional Board Manager URLs" field:

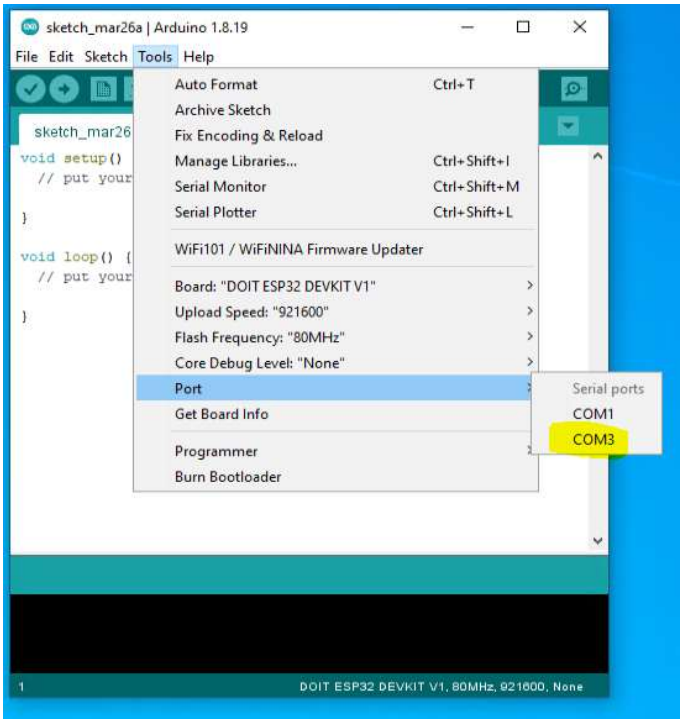


6) Install the ESP32 package in the "**Tools – Board – Boards**" manager:

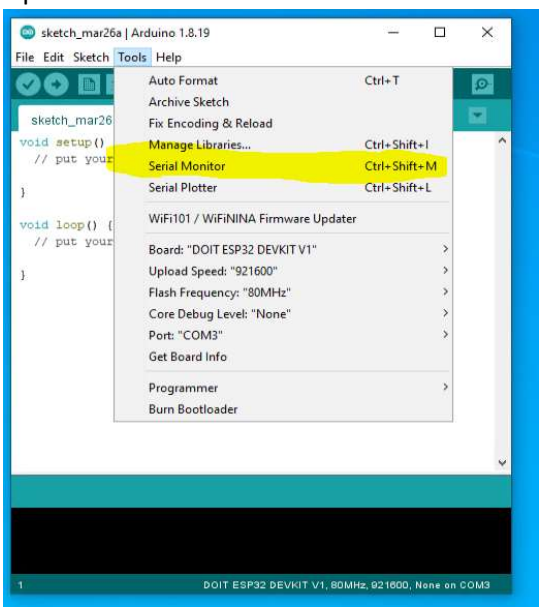
7) Select the board “**DOIT ESP32 DEVKIT 1**”



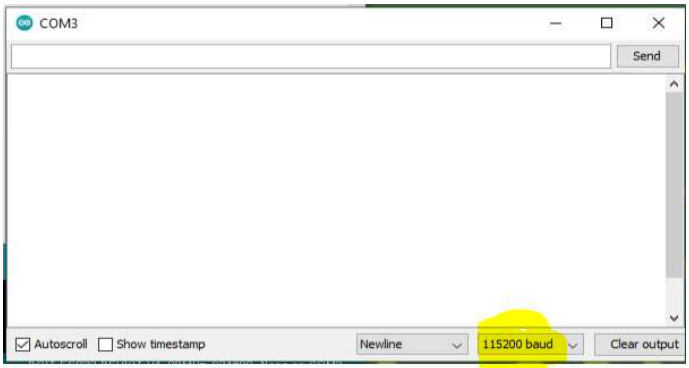
8) Select COM port for the board (see step 4):



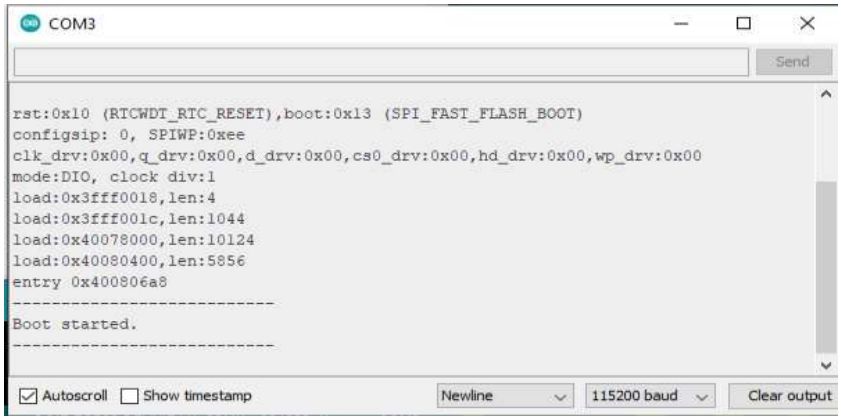
9) Open “Serial monitor”.



10) Adjust the baud rate to 115200:



11) If you press the “Enable” button on the board / device, you should see messages like this:



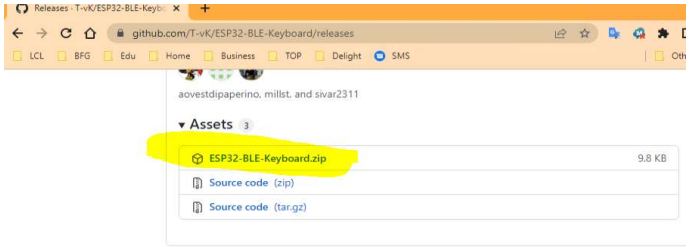
The system is now ready.

Adding libraries

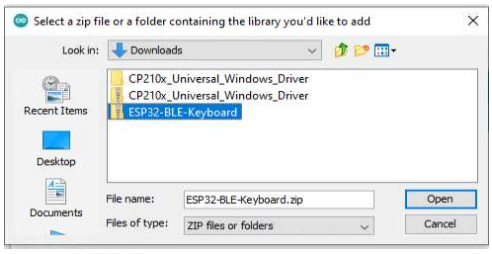
1) Click on “Tools – Manage Libraries”.
2) Type “Keypad” in the search box. Scroll down until you find this one:

This library manages matrix keypads.

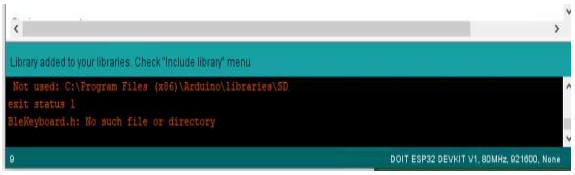
3) Next is a library that enables ESP32 board to act as a BT keyboard. It is a ZIP library. To install it, fist download the zip file from the repository: https://github.com/T-vK/ESP32-BLE-Keyboard/releases



Download the file.
In the Arduino IDE go to "Sketch" -> "Include Library" -> "Add .ZIP Library..." and select the file you just downloaded.



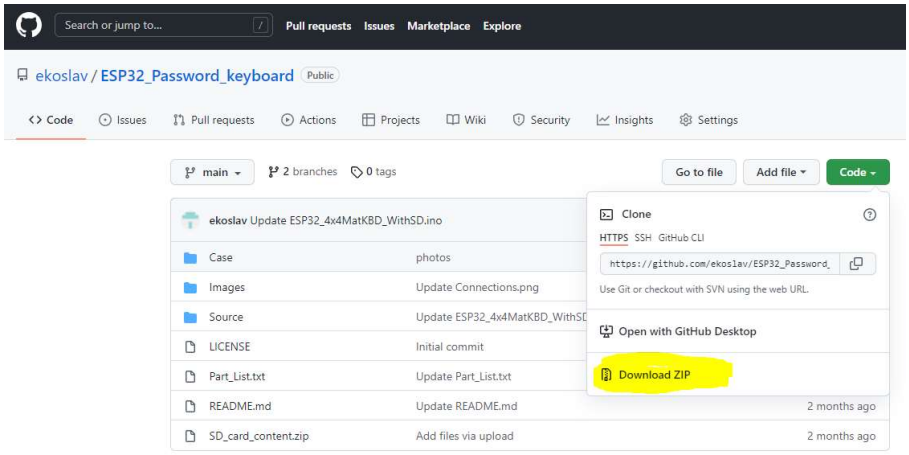
The IDE window will show success message:



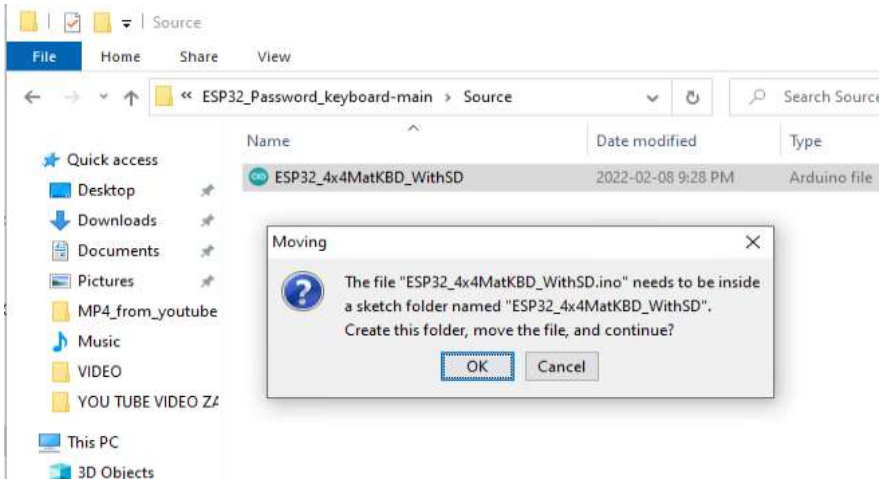
The libraries are now ready.

Testing compile and upload

1) Download the code for the “Macro keyboard” from the GitHub:
https://github.com/ekoslav/ESP32_Password_keyboard
Download the zip file :

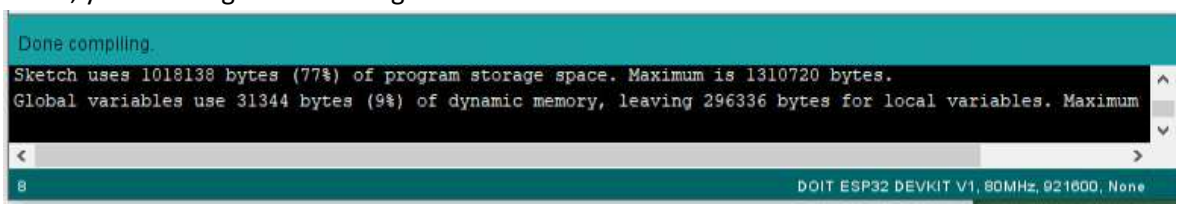


Extract the zip file.
Go to “Source” folder and double click .ino file. If you get this message click “OK”:



You can update line
“BleKeyboard bleKeyboard("Macro_kbd_SN0000X","ESP32 DEVKIT V1", 98);”
to match what you want for the device to present (Device Name, Manufacturer, Battery level)

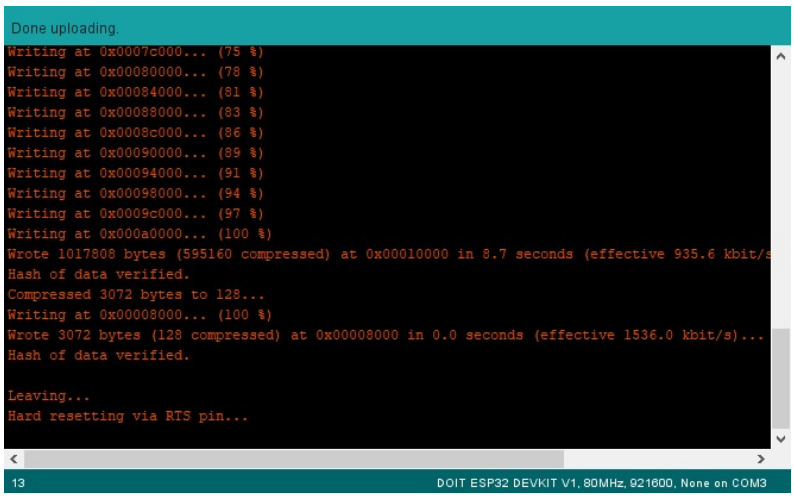
2) Click on the “Verify”  button. The compilation of the file will start and if nothing is amiss, you should get this message:



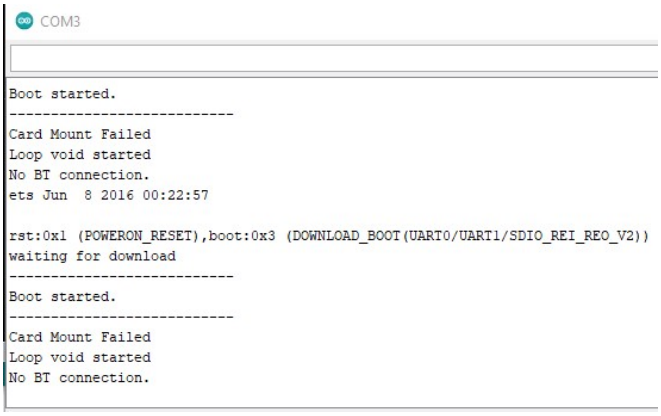
3) To flash the device with this code, open "**Tools – Serial Monitor**".
On the board / device, press and **hold** "Enable" button, press and **hold** "Boot" button, release "Enable" button, and release "Boot" button.
You should see this message in the Serial Monitor:

Click on the "Compile"  button. You will se compile progress bar:

When completed you will see upload progress:



4) Once the process is completed, you can press the “Enable” button, and monitor the messages in the Serial monitor:

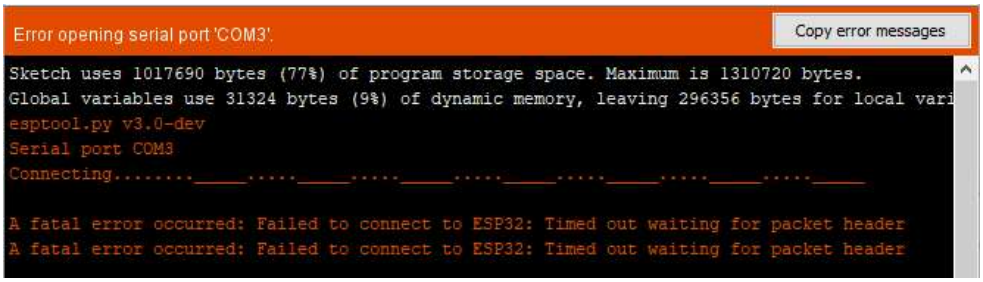


5) If you press “Enable” button, and see no messages in the Serial Monitor, close the Serial monitor window, and open it again.

6) If you get this error during the upload procedure, repeat the

*“ press and **hold** “Enable” button, press and **hold** “Boot” button, release “Enable” button, and release “Boot” button”*

when the *“Connecting…”* message shows up, but before it time outs.



7) If you get error like this, simply repeat step 3. If you repeatedly get this error, and the Device manager shows proper COM port, you may need to reboot your computer.