



4. ESP32 and Servo Motor Testing

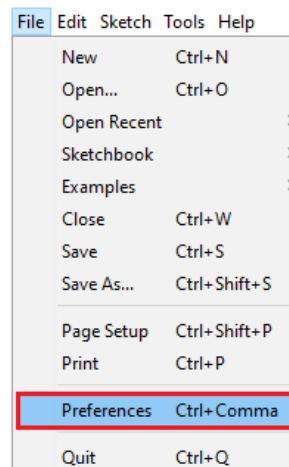
The ESP32 microcontrollers are the on board brain of the bots! So it is very important to test every board and every motor as soon as they're shipped to ensure that you don't face any hiccups due to faulty components.

Without further ado, let's get started!

Setting up Arduino IDE

To be able to program using Arduino IDE, follow the instructions:

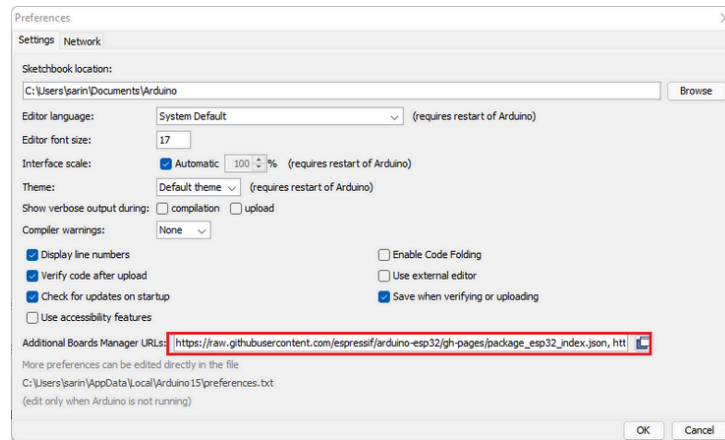
0. You can download Arduino IDE from [this link](#).
1. Open Arduino IDE, go to File -> Preferences.



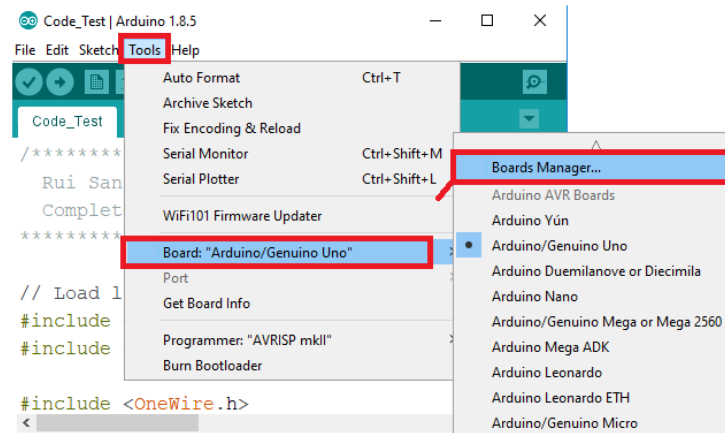
2. Paste the following link in the Additional Board manager. Once done, click OK.

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

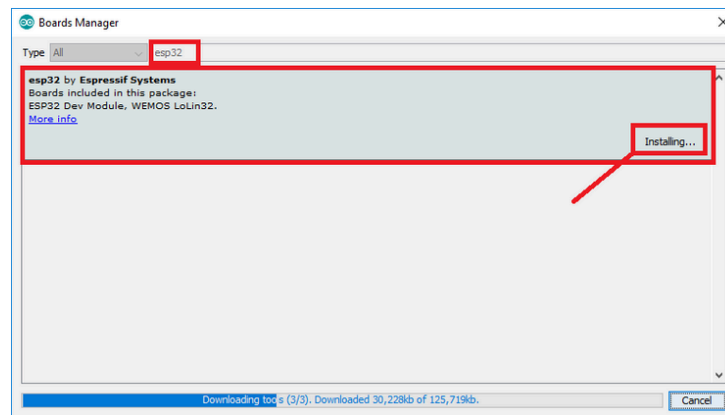




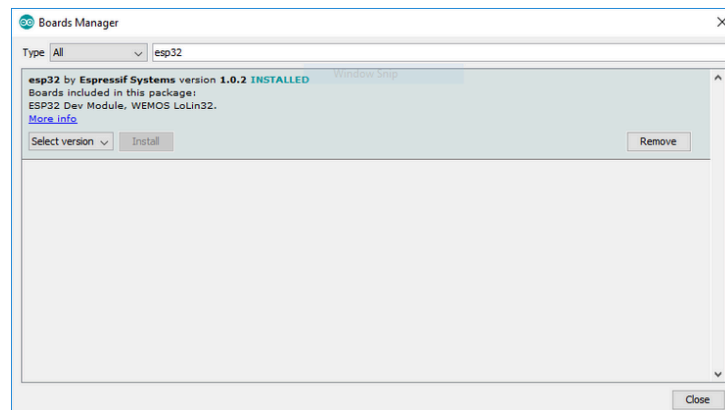
3. Go to Tools -> Board -> Boards manager.



4. Search for ESP32 and press install button for the "ESP32 by Espressif Systems"



5. Once the installation is completed you can close the window.



Wired Flashing of ESP32 Board

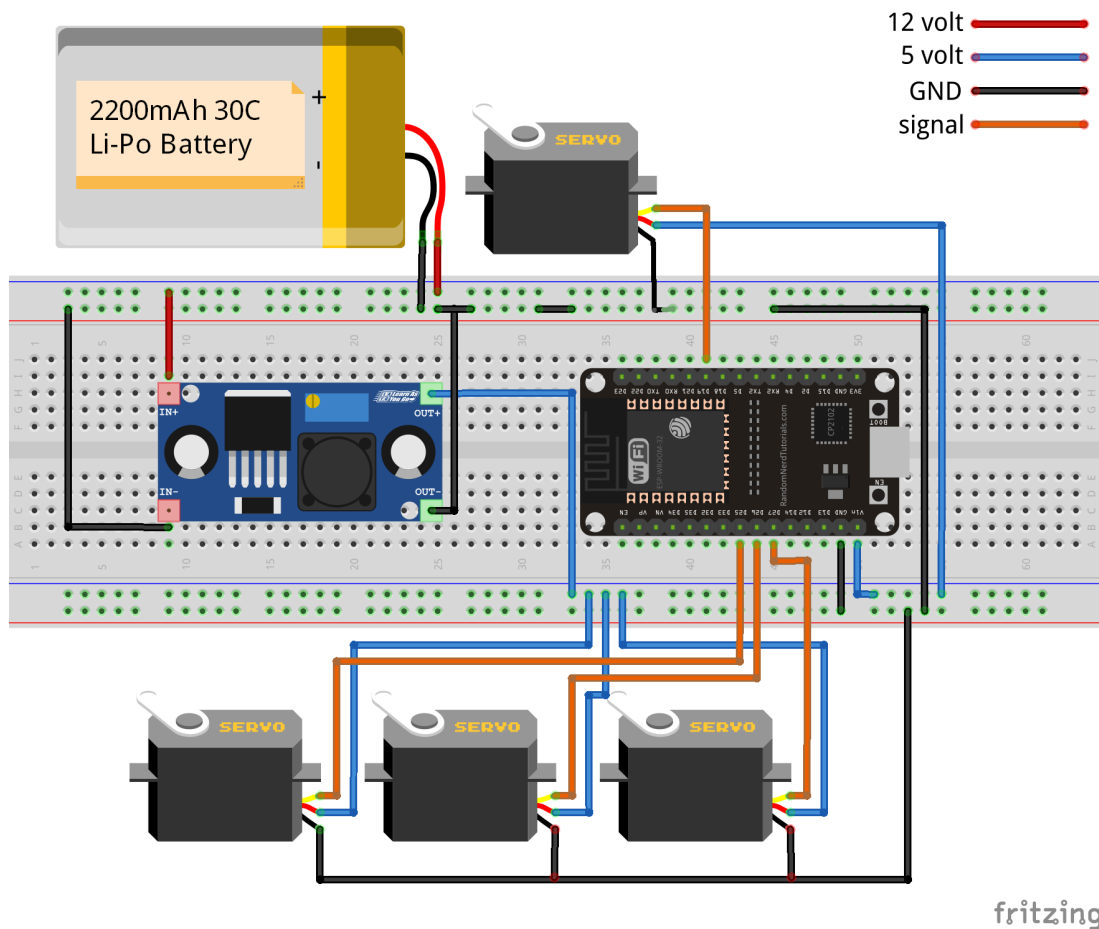
Now our IDE is ready to program ESP32 board. Plug the ESP32 board to your computer using the **micro-USB cable** provided in the kit. With your Arduino IDE open, follow these steps:

1. Extract the `Task_3_resources.zip` zip file that you downloaded. This zip contains `test_esp_servo.ino` inside the **test_esp_servo** folder.
2. Open `test_esp_servo.ino` in arduino IDE.
3. Select your Board in **Tools > Board** menu > **ESP32 Arduino > ESP32 Dev Module** or **DOIT ESP32 DEVKIT V1**.
4. Select the Port (if you don't see the COM Port in your Arduino IDE, you may need to install the [CP210x, USB to UART Bridge VCP Drivers](#)).
5. Press the Upload button in the Arduino IDE. Wait a few seconds while the code compiles and uploads to your board.

Once uploaded, disconnect the ESP32 from the computer.

Wiring Diagram

Using a breadboard and jumper wires, replicate connections as shown in the circuit diagram below.



When the circuit is closed, the blue LED on ESP32 will start blinking. Additionally, all 4 servo motors will rotate in clockwise direction, then stop, then rotate counterclockwise in one second intervals.