

Arduino IDE and M5Stack Core 2 Essentials Installation

Programming M5Stack Core2 Using Arduino IDE

01/06/2026

Estimated Time to Complete: 2 hours

Objectives

Upon completion of this tutorial, you will be able to:

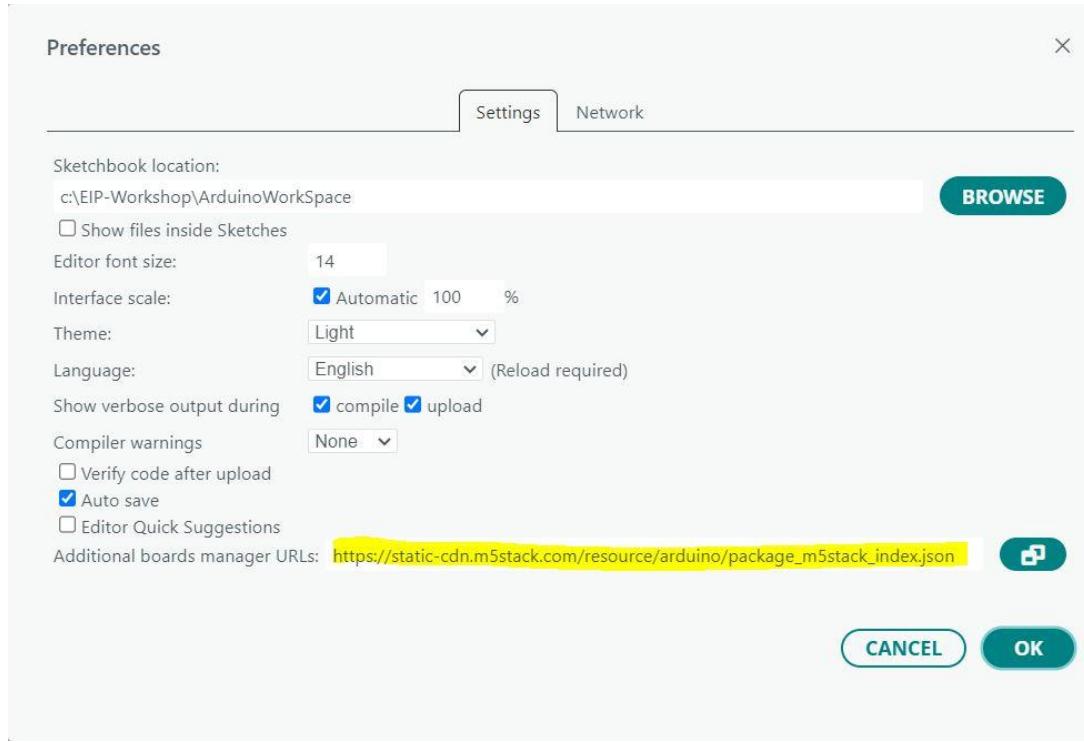
- **Install Arduino IDE**
- **Install support for M5Stack Core2**
- **Experiment with the example codes for M5**
- **Write custom program and upload it to the M5**

Materials & Prerequisites

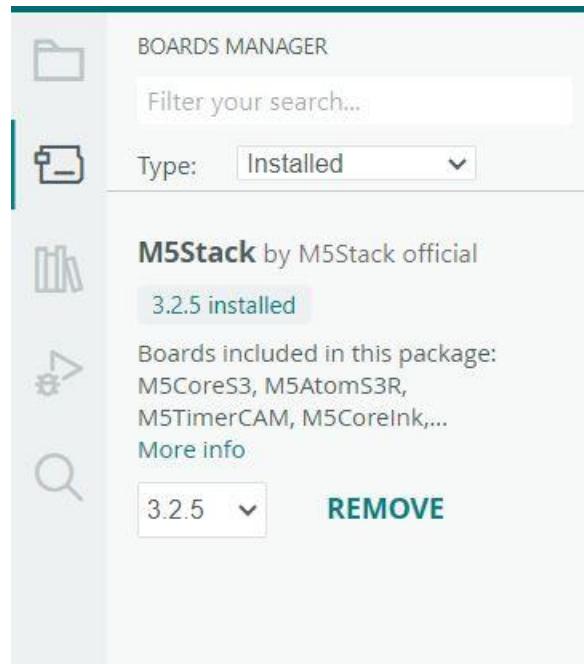
- **Materials/Equipment:**
 - A computer
 - M5Stack Core 2
 - USB A to C cable
 - Internet connection
- **Prerequisite Knowledge/Skills:**
 - Basic Knowledge about C programming
 - Knowledge about microcontroller is preferred but not required

Procedure: Step-by-Step Instructions

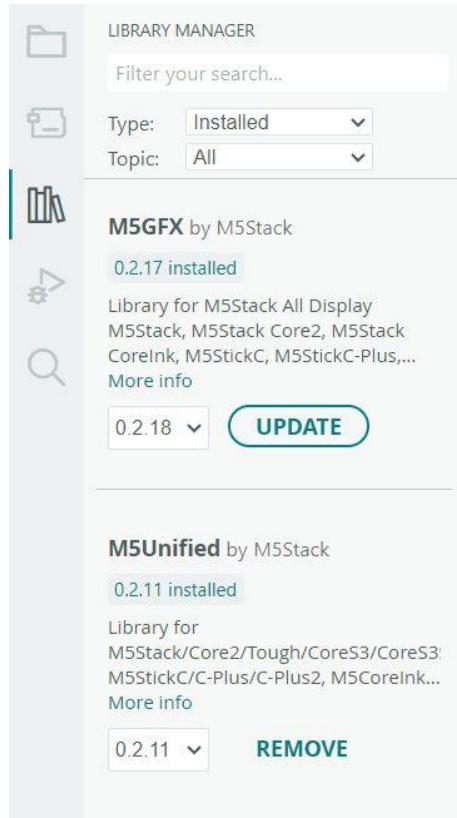
- Step 1: Download the Arduino IDE from this link
<https://www.arduino.cc/en/software/>
- Step 2: Install the Arduino IDE following the instructions in the screen.
- Step 3: Go to File -> Preference and then put this link https://static-cdn.m5stack.com/resource/arduino/package_m5stack_index.json in the *Additional board managers URL field* shown as bellow (highlighted in yellow) and press OK.



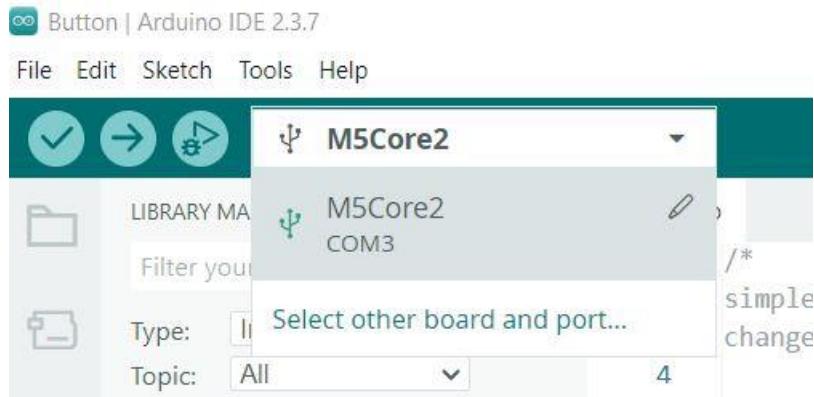
- Click the Boards Manager and select M5Stack (3.2.5) and click Install. See the image below.



- Now click the Library Manager and install M5Unified (0.2.11). It will ask for installing dependencies. Click to Yes. It will automatically install M5GFX. See the image below



- Connect your M5Stack with your computer and select the M5Core2 as the board. See the image below.



- Now open the example codes provided. Compile and upload to the M5 and see the results.
- Try to understand the code and do some modifications of your own.

Experiments with the provided example codes

Expected outcome

- Processing buttons inputs
- Drawing basic shapes in the display
- Performing basic file operation in the microSD card
- Processing touch input from the display
- Updating time from the network
- Recording sound using microphone and later playing it
- IMU calibration and display IMU data

Results

- Process user input from button and touch screen
- Sensor (IMU and microphone) data acquisition
- File R/W in the storage media
- Displaying information in the screen
- Learning a simple mechanism (SNTP) to update device time

Summary & Inference

In the lab the students get familiar with the Arduino framework and M5Stack Core 2. They learn how to use different libraries to acquire data from the integrated sensors, process user input, display output, perform file operation and finally update device time. These basics will help them to develop their custom application in a great extent. They can extend their knowledge achieved from this lab to more advanced projects.