MC 4.0

CODING | ROBOTICS | AIOT

MAKER &CODER
EXPLORE, INNOVATE, EXCEL

EN QUICK GUIDE

ES GUÍA RÁPIDA

AR الدليل المختصر

EMPOWERING THE NEXT GENERATION OF MAKERS AND CODERS

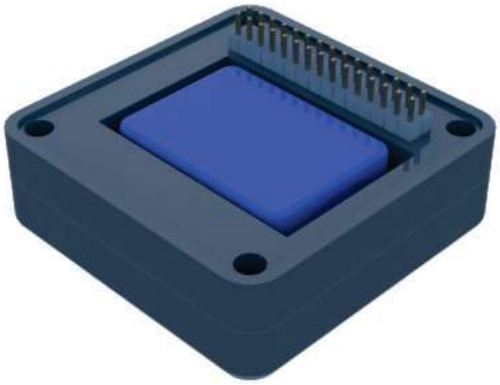
Part List | Lista de partes | قائمة الأجزاء

MC4.0 controller | controlador MC4.0 | MC4.0 متحكم

Chassis | Chasis | الهيكل

Encoder motor Module | Módulo motor codificador | وحدة التحكم بالمحركات

Add-on Fixture | Accesorio adicional | إضافة للتثبيت

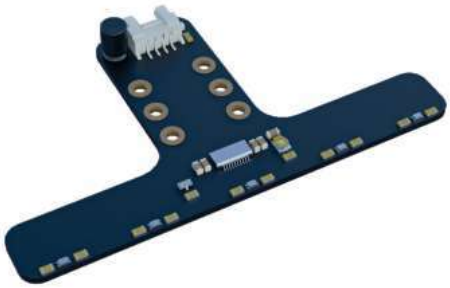


Battery Module | Módulo de batería | وحدة بطارية

DC Encoder Motor | DC Motor codificador | محرك مستمر مع مشفر

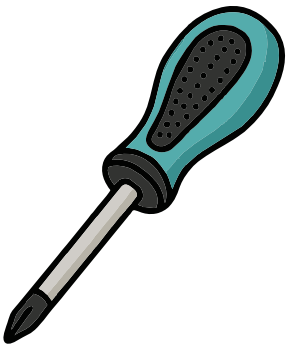
Fixing Plate | Placa de fijación | صفيحة تثبيت

Mecanum wheel | Rueda Mecanum | عجلات ميكانيوم



RGB Line-Follower sensor | Sensor seguidor de línea RGB | حساس ألوان تتبع الخط

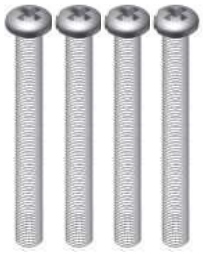
Ultrasonic sensor | Sensor ultrasónico | حساس مسافة فوق الصوتي



Screwdriver | Destornillador | مفك براغي

Motor shaft coupling | Acoplamiento del eje del motor | محور اقتران المحركات

Brass Studs | espaciadores | مباعدات

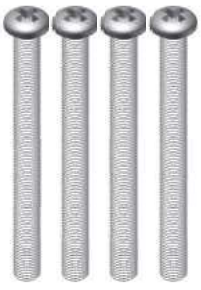


Screws M3x30 | Tornillos M3x30 | براغي قياس 3x30

Screws M3x25 | Tornillos M3x25 | براغي قياس 3x25

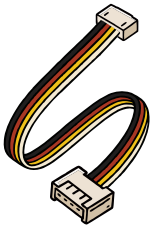
Screws M4x8 | Tornillos M4x8 | براغي قياس 4x8

Screws M4x10 | Tornillos M4x10 | براغي قياس 4x10



Screws M3x35 | Tornillos M3x35 | براغي قياس 3x35

Motors Cables | Cables de motors | أسلاك المحركات



Grove Cables | cables de Grove | أسلاك نوع Grove

What is MC4.0 made of | De qué está hecha MC4.0 | مما يتكون MC4.0

1. Power ON 6 seconds OFF | Interruptor de Encendido, 6 segundos APAGADO | مفتاح التشغيل6 ثواني للإغلاق
2. USB TYPE-C | USB TIPO-C | C منفذ البرمجة نوع
3. PORT A - I2C | PUERTO A - I2C | A منفذ
4. Touch Screen | Pantalla táctil | شاشة لمسية
5. 2" LCD 320x240 | LCD de 2" 320x240 | شاشة عرض قياس 2 انش
6. Reset Switch | Interruptor de reinicio | مفتاح إعادة التشغيل
7. LED | CONDUJO | مؤشر ضوئي
8. SD Card | Tarjeta SD | قارئ ذواكر

What else do you find inside?

¿Qué más encuentras dentro?

ماذا تجد بالداخل أيضا

EN

IMU
1W Speaker
Real Time Clock
7.4 - 8.4 V 2000mAh Battery
Vibration Motor
Microphone

SP

IMU
Altavoz de 1W
Reloj en tiempo real
Bateria de 7.4 - 8.4 V 2000mAh
Motor de vibración
Micrófono

AR

وحدة قياس الزاوية
مكبر صوت ١ وات
ساعة الوقت الحقيقي
بطارية ٧.٤ ـ ٨.٤ فولت/٢٠٠٠ مللي امبير
محرك اهتزاز
ميكروفون

Assembly Instructions

Assemble your educational robot and start your Robotic journey

MC4.0 is the world's most ingenious Multi-coding robotics AIoT kit for every student from school to university to learn all STEM concept (Science, Technology, Engineering, Mathematic) and experience the charm of mechanics, electronics, control system and computer science.

Scan for Assembly Video

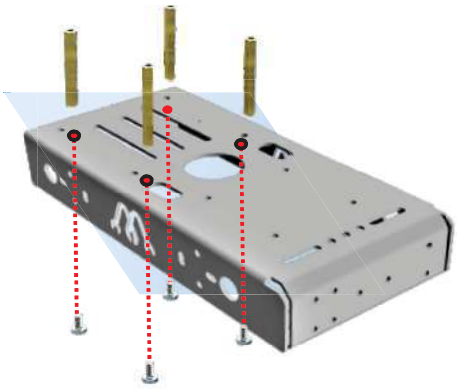
Start!

1

☑ Fixing Brass Studs

Fix the brass studs on the chassis using M4x8 screws

- ☐ Chassis 1Pcs
- ☐ M4x8 4Pcs
- ☐ brass Studs 4Pcs



2

☑ Brass Studs Fixed

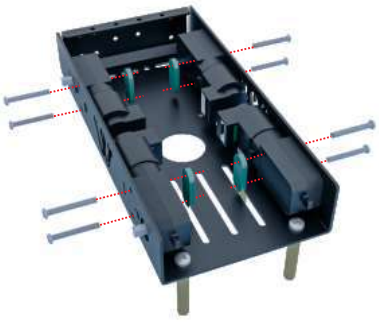
Complete this step prior to motor installation.

3

☑ The Motors Installing

Attach the motors with the chassis with M3x25 screws and hold the screws with M3 nuts

- ☐ DC Encoder Motors 4Pcs
- ☐ M3x25 4Pcs
- ☐ Fixing Plate 4Pcs



4

☑ Motor Installed View

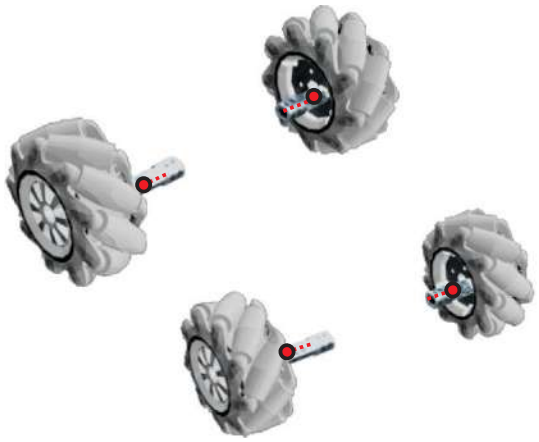
This illustration displays the proper motor placement from the bottom view.

5

Motor Shaft Coupling

Fix the motor shaft coupling with wheels

- Wheels 4Pcs
- Motor shaft 4Pcs

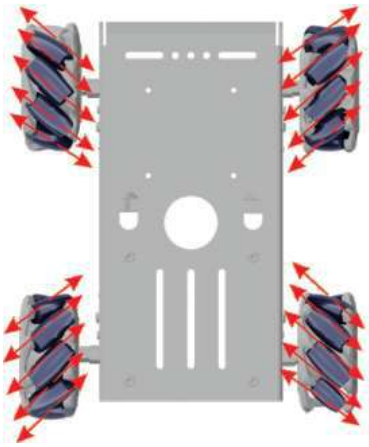


6

The Wheels Orientation

The directions of the wheels shall be installed in the following orientation so that the diagonal directions are the same or closed a V-shape from the frontside and the backside

- DC Encoder Motors 4Pcs
- Wheels 4Pcs
- Motor shaft 4Pcs



7

Wheels Fixing

Attach the wheels to the motors shaft using M3x30

- DC Encoder Motors 4Pcs
- Wheels 4Pcs
- Motor shaft 4Pcs
- M2.5x30 4Pcs

8

MC4.0 Controller

Stack the MC4.0 controller with the DC encoder module and Battery base module

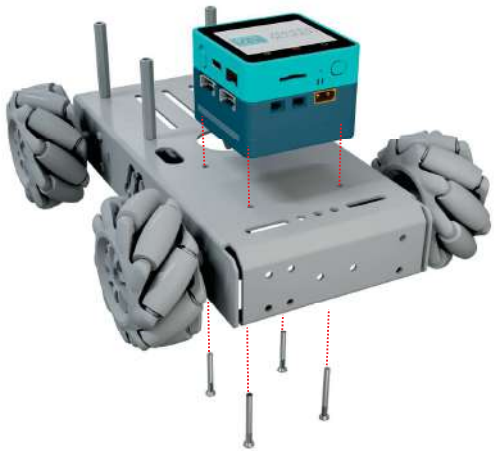
- MC4.0 controller 1Pcs
- 4 Encoder DC Motor Module 1Pcs
- Battery base module 1Pcs

9

MC4.0 control unit

Attach the MC4.0 controller unit on the chassis using M3x25 screws

- ☐ MC4.0 control unit 1Pcs
- ☐ M3x35 screws 4Pcs



10

MC4.0 control unit

11

Ultrasonic sensor

Fix the ultrasonic sensor in the front of the chassis using M4x10 screws

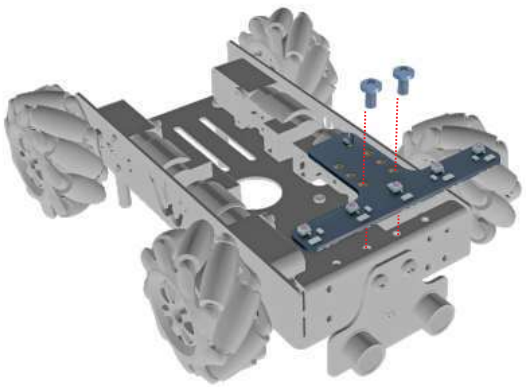
- ☐ Ultrasonic sensor 1Pcs
- ☐ M4x10 2Pcs

12

Line Follower sensor

Place the line follower sensor in the bottom of the chassis using M4x8 screws

- ☐ Line follower sensor 1Pcs
- ☐ M4x8 2Pcs



13

☑ **After placing sensors**

14

☑ **Fixture Add-on**

Put the add-on fixture on the brass studs using M4x8 screws

- Chassis group 1Pcs
- Add-on fixture group 1Pcs
- M4x8 screws 4Pcs

15

☑ **Let It Go!**

END

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Wiring Instructions

Let's wire up your robot and bring it to life!

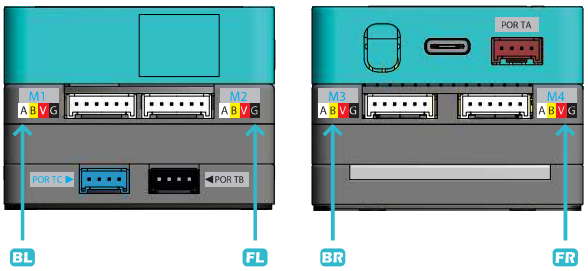
Whether you're a beginner or an advanced learner, MC4.0 offers a comprehensive set of wiring instructions to help you understand the principles of electronics and control systems.

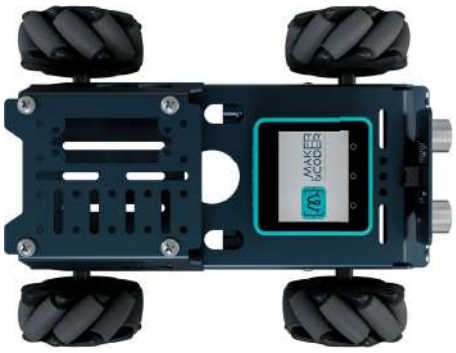
Start! **1**

☑ Motors Wiring

Connect the motors wires to the DC encoder module with the white connectors

- ☐ FL = Forward Left Motor
- ☐ BL = Backward Left Motor
- ☐ FR = Forward Right Motor
- ☐ BR = Backward Right Motor





2

☑ Motors Wiring

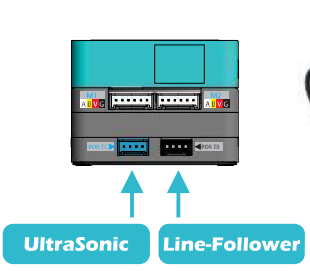
The wires are bent from the bottom and hidden in the chassis in this way

3

☑ Ultrasonic & Line-Follower Wiring

The wires are connected to both ports B and C

- ☐ PortC = Ultrasonic Sensor
- ☐ PortB = Line Follower Sensor



END

Wiring Instructions - I2C Sensors

Let's wire up your robot and bring it to life!

Whether you're a beginner or an advanced learner, MC4.0 offers a comprehensive set of wiring instructions to help you understand the principles of electronics and control systems.

Start! — **1**

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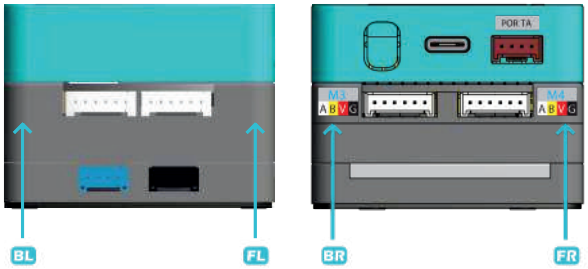
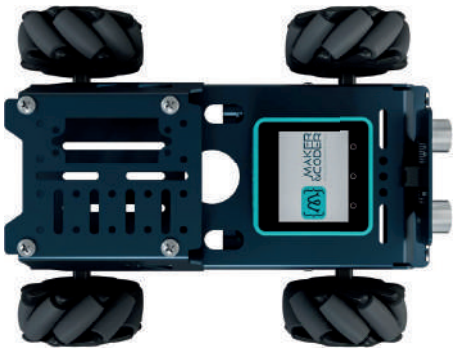
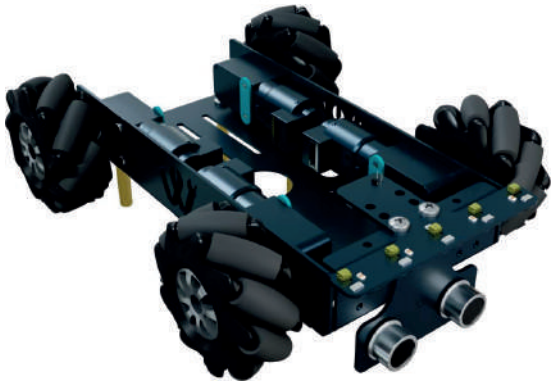




2

☑ Motors Wiring

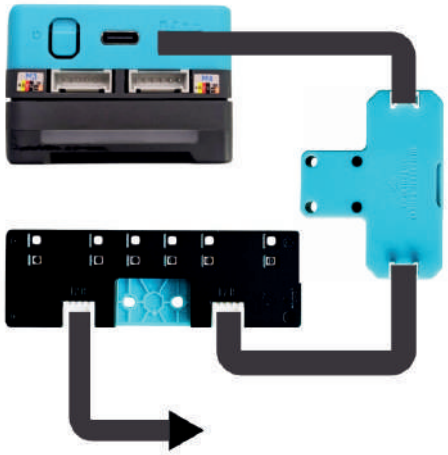
The wires are bent from the bottom and hidden in the chassis in this way



3

☑ Ultrasonic & Line-Follower Wiring

The wires are connected to PORT A



END

Get Started

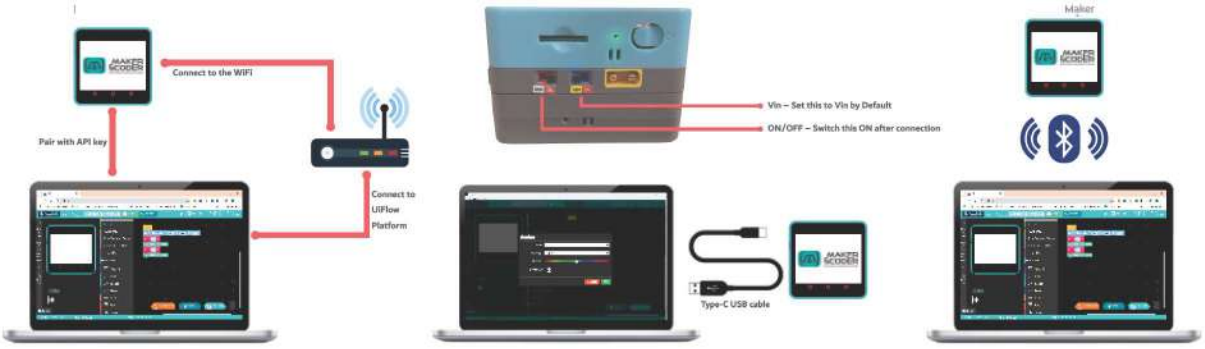
Ready to unleash the full potential of your MC4.0 kit

Let's get started with your MC4.0 kit! In this section, we'll guide you through the steps to operate your robot and connect it to the Wi-Fi network, so you can start exploring the world of robotics and AIoT.

Start! **1**

☑ Turn ON and Connect

Turn On the module by switching the pin to ON and ensure the voltage is Vin as shown in the image. Now turn ON the MC4.0 by pressing the Power button at the side. MC4.0 supports three programming methods: USB cable, Wi-Fi, and Bluetooth (BLE). All offer the same features, but the web IDE adds wireless communication and IoT capabilities. To use the web IDE, MC4.0 must be connected to Wi-Fi and paired using its API key. For offline environments, the MC4.0 can be connected via USB, or BLE allows direct pairing with a device without internet access, making programming flexible and accessible.



Wi-Fi mode | USB Mode | BLE Mode

2

☑ WiFi Config

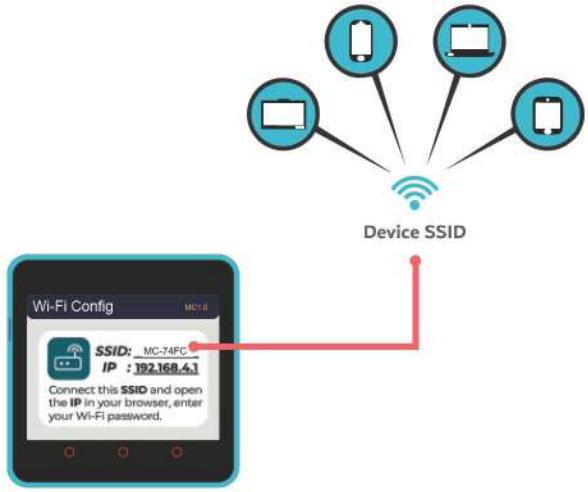
1. Short press the power button on the left side of the MC4.0 for 2 seconds to turn on, and the Maker and Coder Logo appears on the screen. After entering the main page, press the "Setup" button on the screen
2. In the Wi-Fi option, press the start button of the config Wi-Fi by web option, and the device will automatically restart.

Press Start | After auto restart

3

WiFi Connection

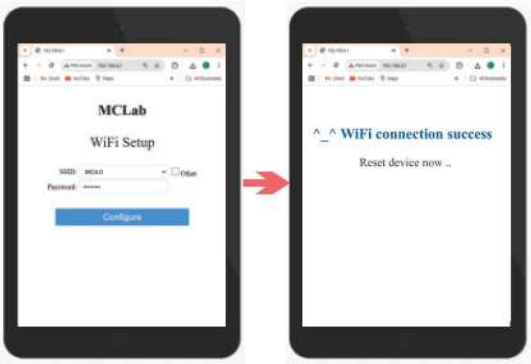
3. Once the device is up and running, you'll see the WiFi Config page. Simply find the device SSID hotspot name, and jump to your mobile phone, Tablet, iPad, or computer's WiFi settings,and connect to it to proceed.



4

WiFi Setup

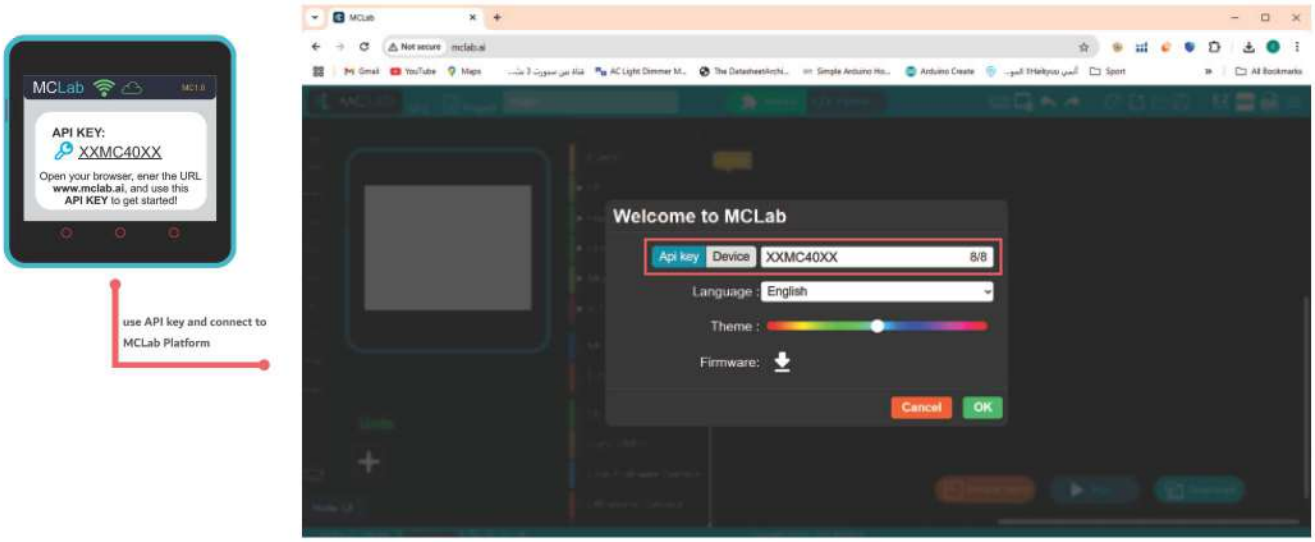
4. After connecting to the SSID shown on the screen open the browser to access 192.168.4.1, and enter the WiFi information in the pop-up page to configure it successfully. After the configuration is successful, the device will automatically restart, and enter the online programming mode.



5

Pairing with MCLab

5. Open your browser, enter the URL www.mclab.ai and use the API KEY shown on the device



6

USB Cable Connection

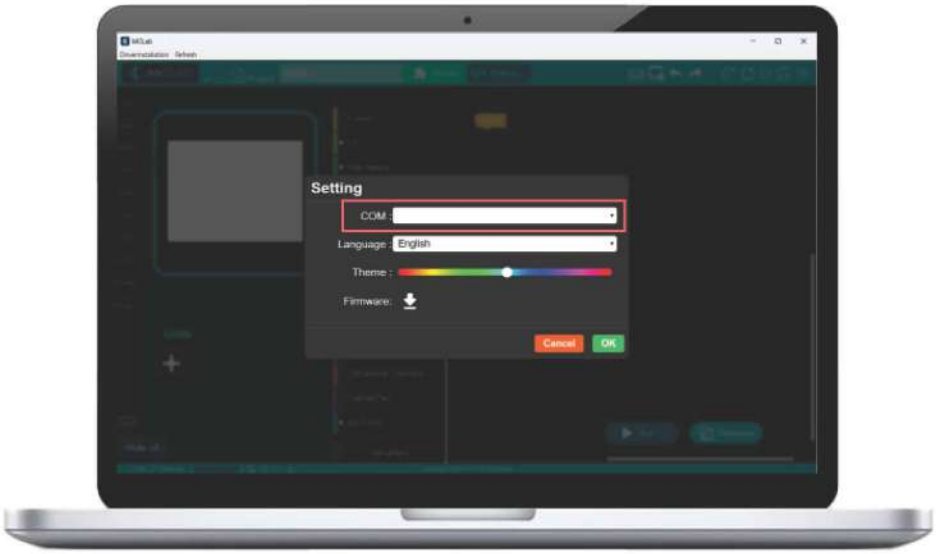
When programming with the offline version of MCLab, you need to configure the device to USB mode.

1. Short press the power button for 2s to start the device
2. After the menu appears on the screen, quickly click the “Mode” option.
3. Select the USB mode.
4. Select the corresponding port in the configuration box of MCLab Desktop IDE, and the programming device, click OK to connect.

7

installing MCLab IDE

To install the MCLab IDE on your device, scan the QR code and open the link in your web browser. Then, choose the suitable operating system and click on the 'Install' button to proceed. Once the installation is complete, open the IDE and remember to select the correct COM port and device before programming your MC4.0 kit.



SCAN ME

8

BLE Connection

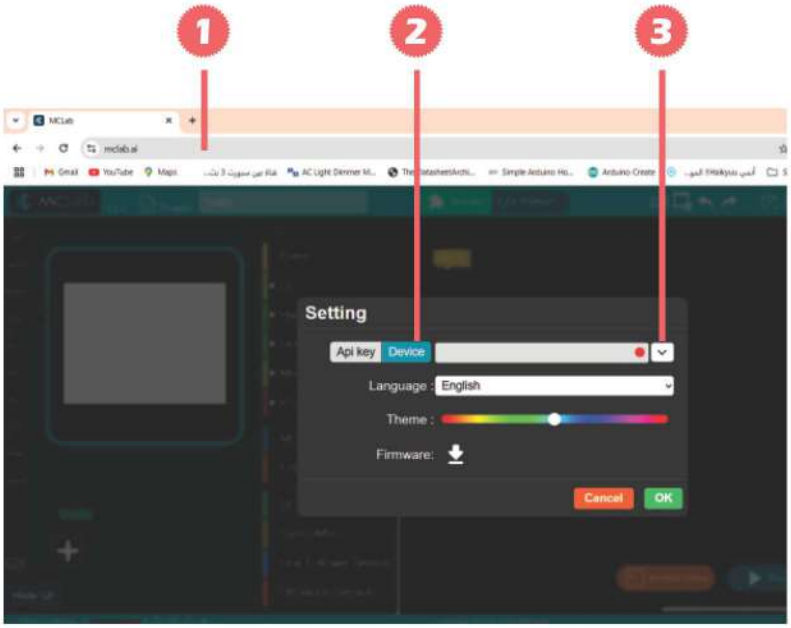
When programming with BLE option in MCLab, you need to configure the device to BLE mode.

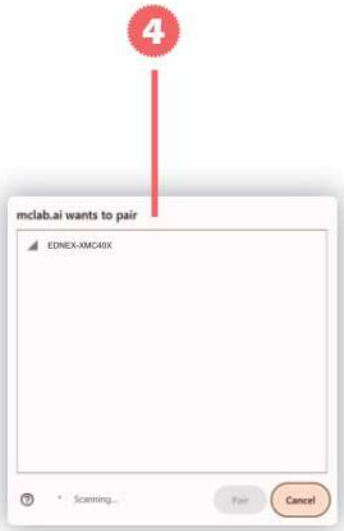
1. Short press the power button for 2s to start the device
2. After the menu appears on the screen, quickly click the “Mode” option.
3. Select the BLE mode.
4. After auto restart of MC4.0 the BLE address will appear on the screen.

9

Pairing with MCLab

1. open mclab.ai
2. Select “Device” option
3. browse available devices (search near by devices will start)
4. Select the same address shown on the MC4.0 screen.





END

Block-Based programming

Discover the simplicity of block-based programming with MCLab!

Block-based programming with MCLab is designed to be easy and simple, even for beginners. In this section, we'll show you how to use MCLab to create code for your MC4.0 kit in a fun and interactive way. With a visual interface similar to Scratch, MCLab makes it easy for anyone to start programming and bring their ideas to life.

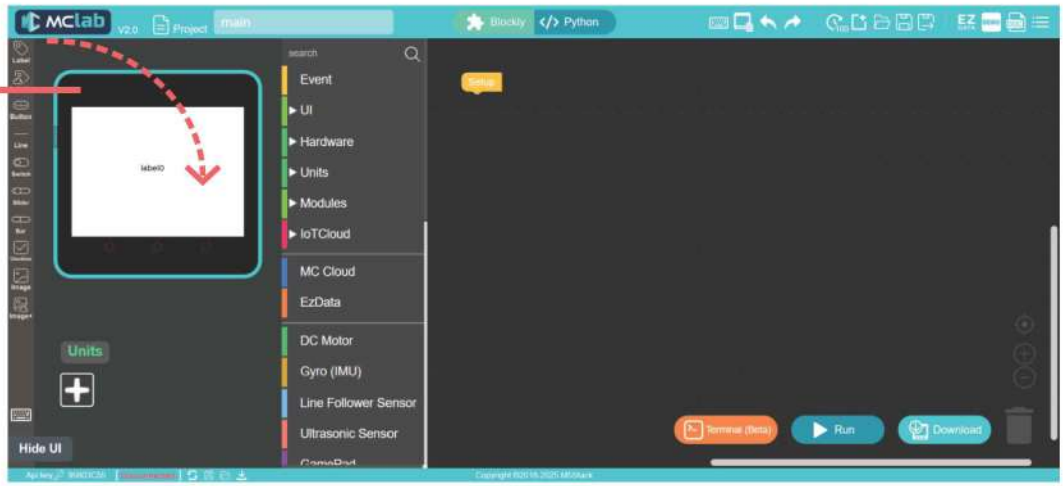
1 Hello world - Displaying text and pictures

"Hello world" has long been held as the induction to programming, regardless of what language is being taught. It teaches the most basic of programming concepts and prints "Hello World" to the screen of the device. While it may sound simple, even some seasoned programmers may use this code as a test when trying a new language or device for the first time. Once we have learned the hello world program it will give us the confidence to go on to learn more advanced things.

So let's get started with our "Hello world" program

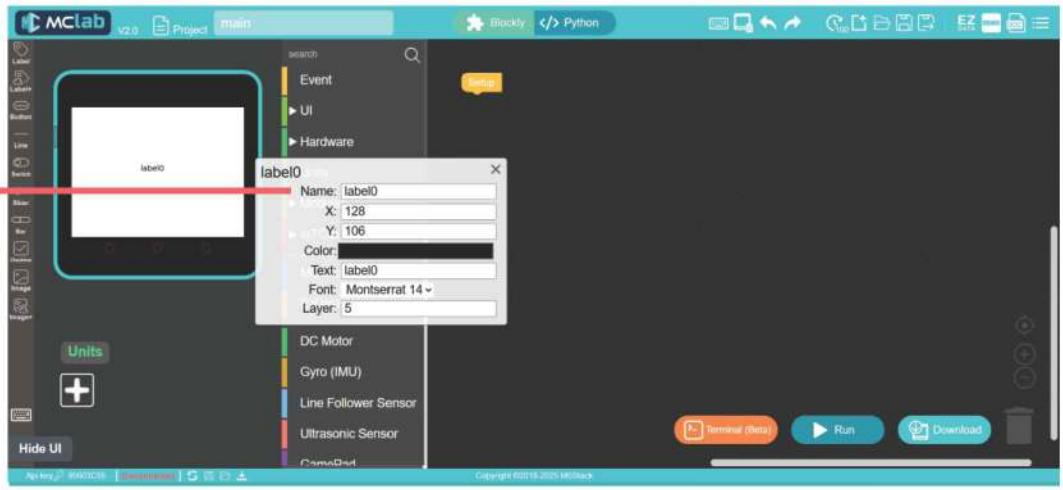
1

Start by dragging a label on to the UI Manager from the left panel.

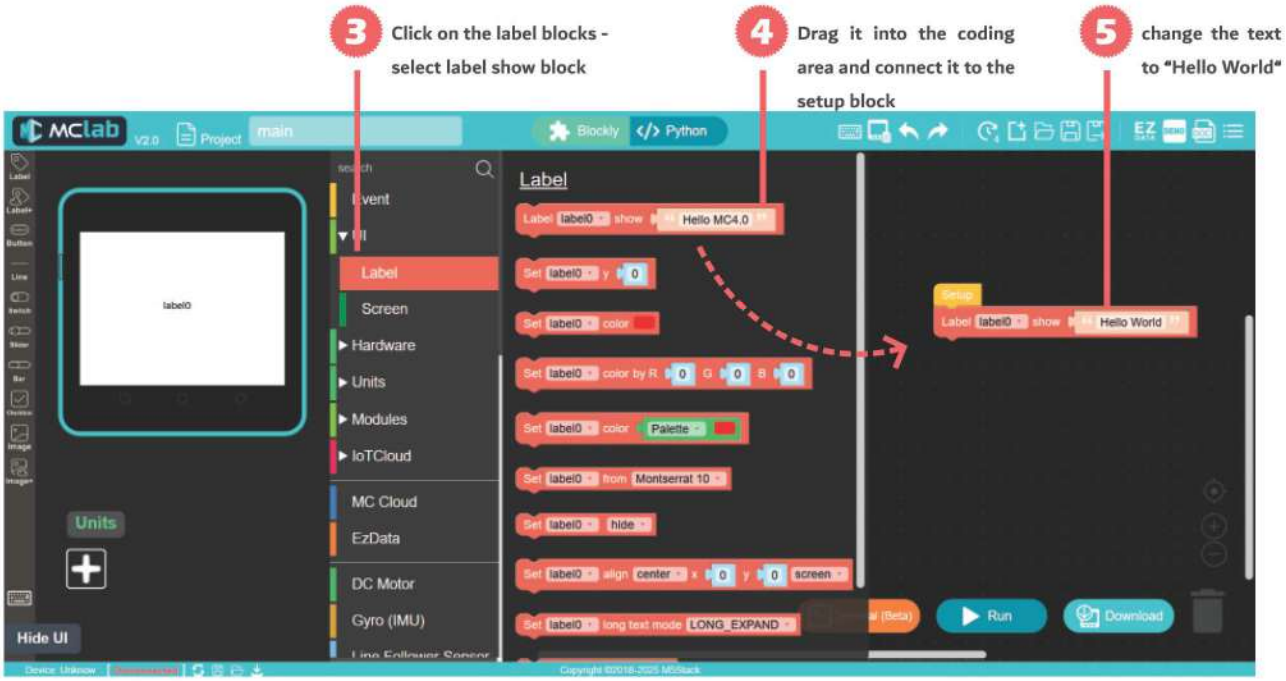


2

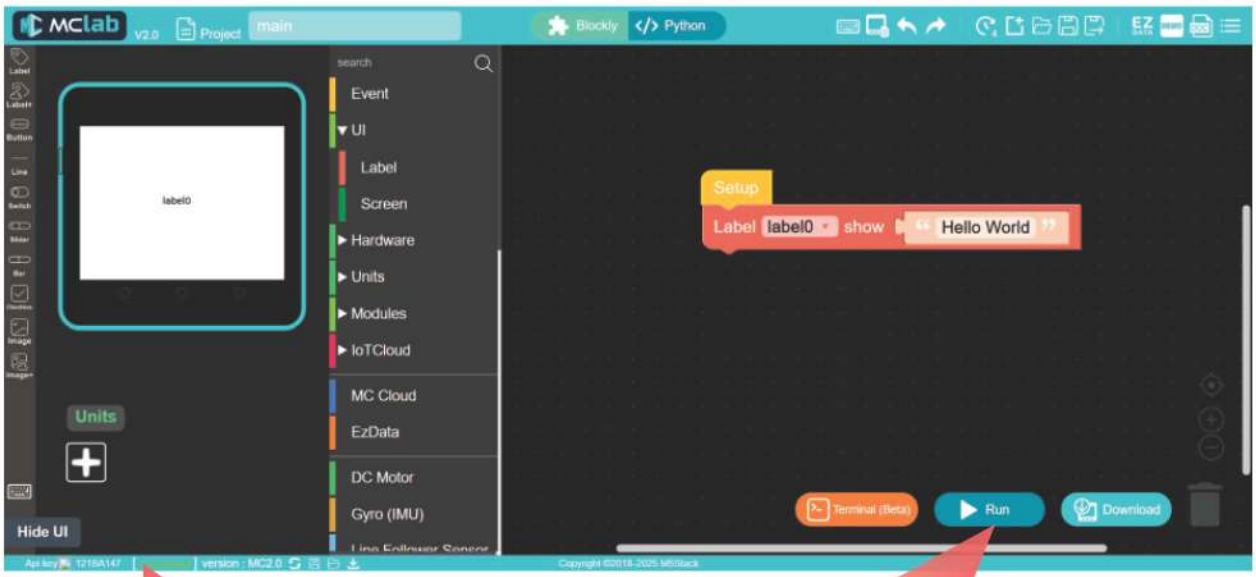
a pop-up message will appear to let you set all the feature of the label, you can change the color, text, font, and others



Click on the UI section of the blocks menu and you'll notice there is a sub-menu titled "label". Inside the label we'll find a bunch of different blocks which can be used to program the text label. We will choose the first in the list for now "Label" (label_name) show [text] Drag this block into the coding area and connect it up to the setup block. Now we can enter "hello world" inside the text field, or any other message for that matter of fact.



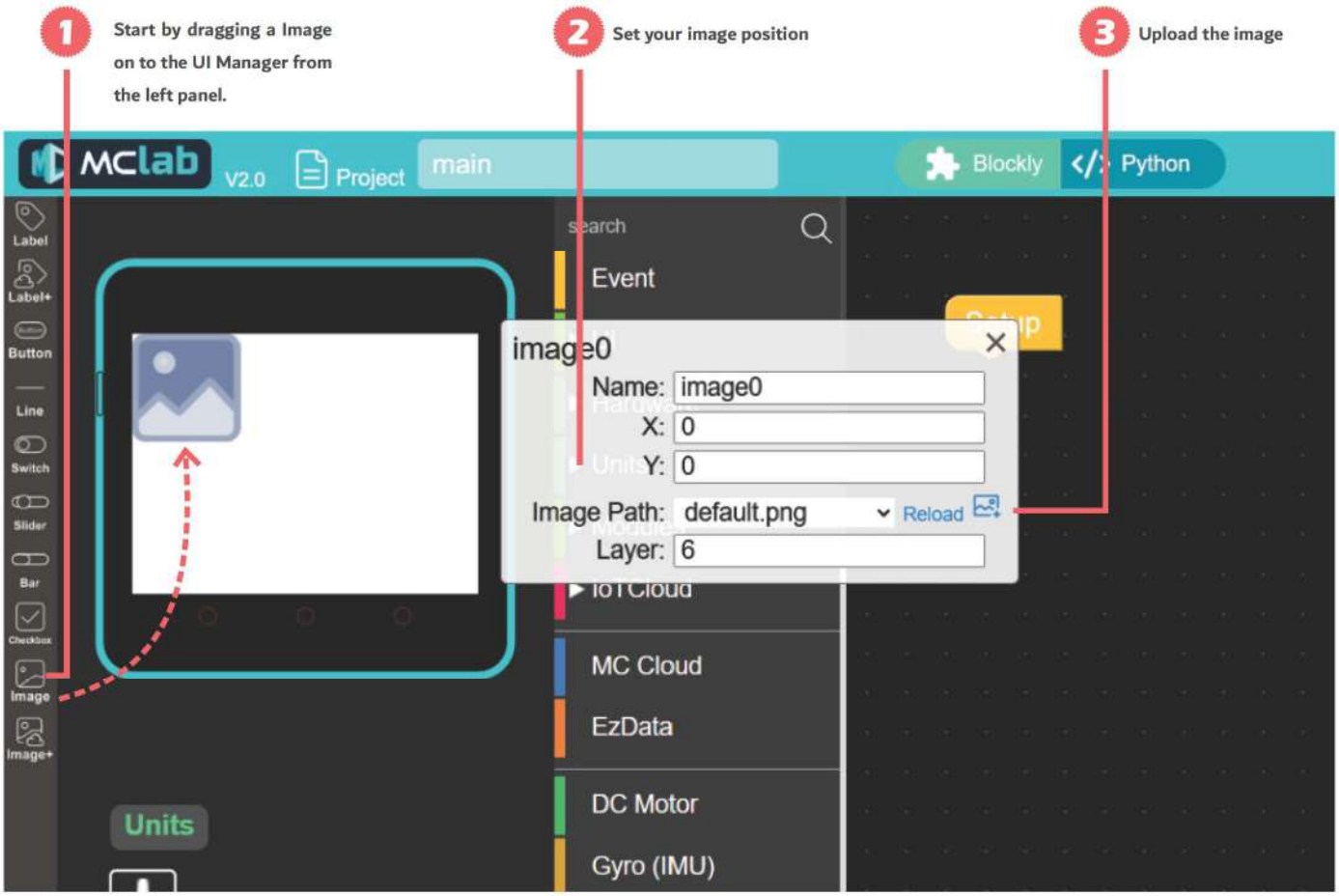
Now you've created your very first program. That was easy, wasn't it? Now in order for it to run on the MC4.0 we need to make sure that your WiFi setup is done, or your USB cable is connected if you are using USB mode, or BLE paired



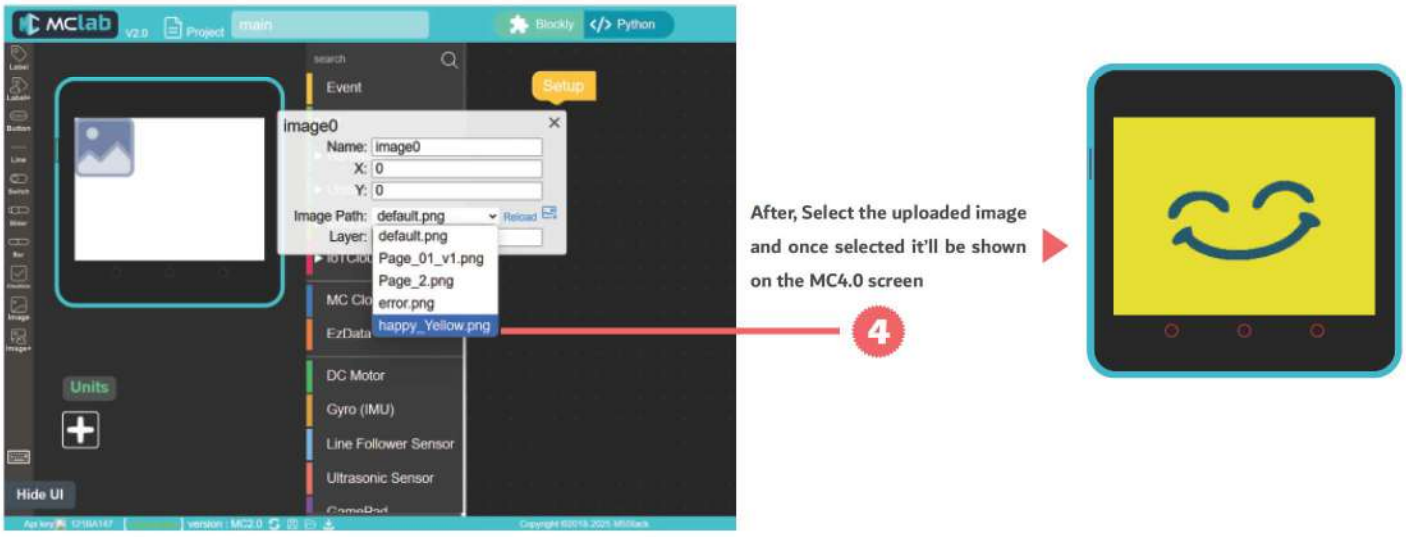
If your MC4.0 Device is connected properly you should notice The word "connected" in green. If you don't see it click on the refresh Icon next to it to try to reconnect.

Click on the play button at the bottom right-hand corner of the window to run your program

Adding images to your MC4.0 screen is a breeze with MCLab. Simply drag and drop the 'Image' object from the left menu to your desired location on the screen. From the pop-up message, you can easily upload your image. Be sure to keep your image size under 50KB and its dimensions no larger than 320x240 pixels to ensure optimal display.



Once you've uploaded your image, be sure to select it from the list of uploaded images in the pop-up message. The selected image will be displayed on both the MCLab screen and your MC4.0 device's screen



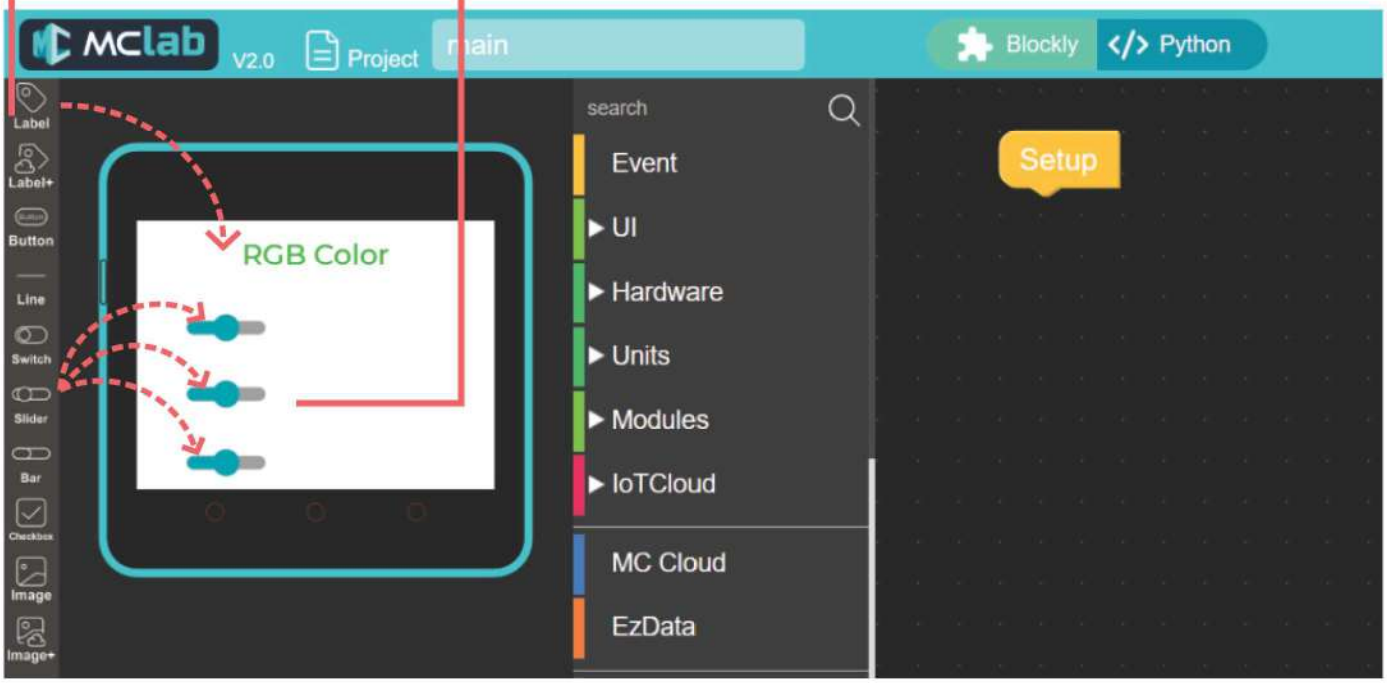
2 RGB Color

Get ready to add some color to your MC4.0 project! In this next example, we'll explore the RGB bar located at the bottom of MC4.0 With MCLab, you can easily adjust the RGB values to create your own custom colors and make your project pop. Let's dive in!

So let's getstarted

1 Start by dragging a label on to the UI Manager from the left panel and change the text to RGB Color.

2 Drag three Sliders to the UI Manager

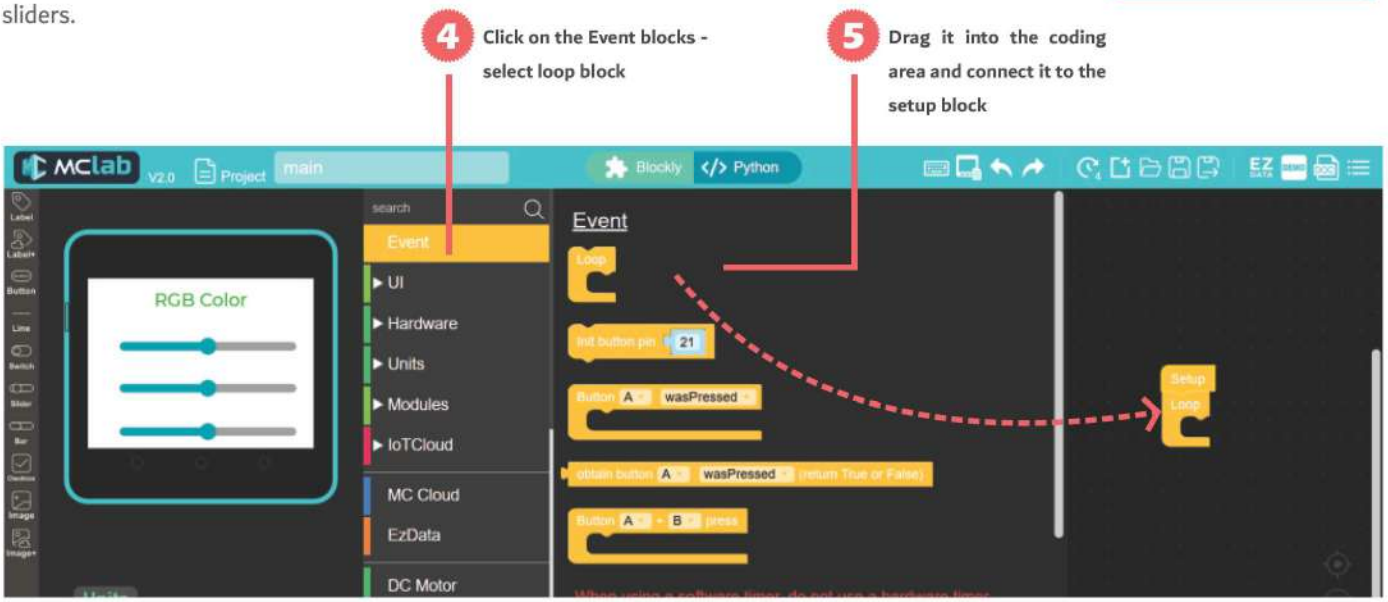


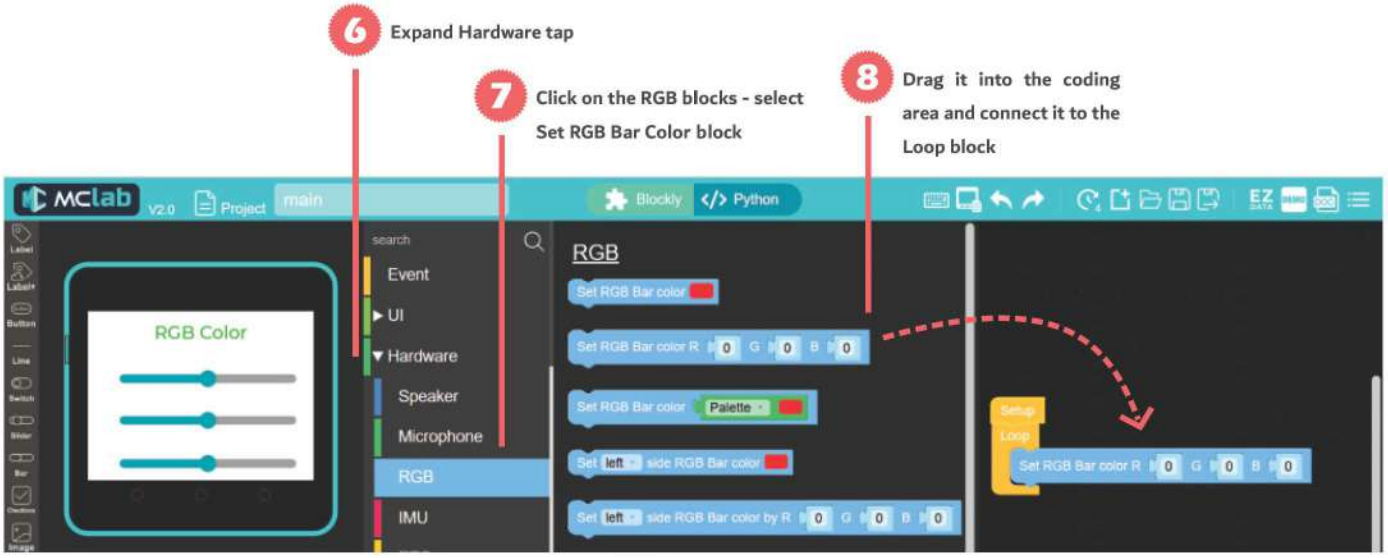
Adjusting the length of the sliders changes the intensity of each color, allowing you to create a wide range of colors. Keep in mind that the maximum value for each color is 255, so adjusting the sliders to the desired length within that range will give you the best results.

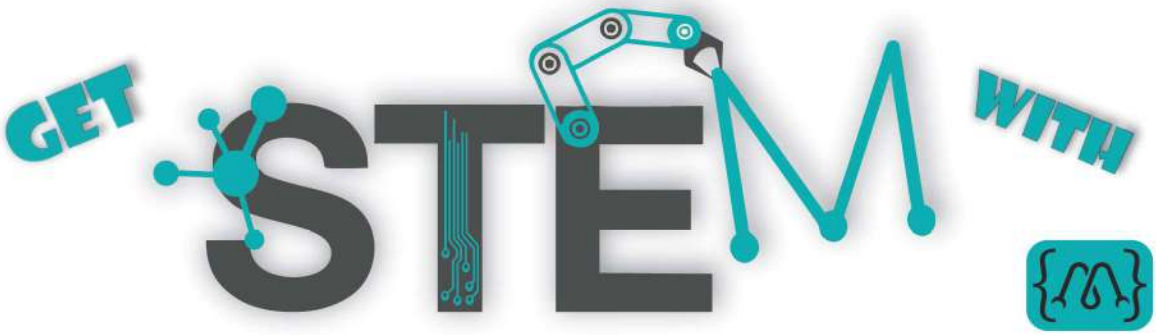
3 By clicking on the Slider the pop-up window will appear and you can change the position, width, and Max value as shown

To make things even easier, we can label the sliders with the letters R, G, and B to correspond with each color channel. With these labels in place, we can easily add the necessary blocks to control the RGB LED on the MC4.0.

To begin programming the RGB example, you must ensure your program runs continuously. To achieve this, you will add an infinite loop to your code. Next, you can find the specific block for the RGB bar under the 'Hardware' tab in MCLab. For each color, you will use the corresponding color from the sliders.







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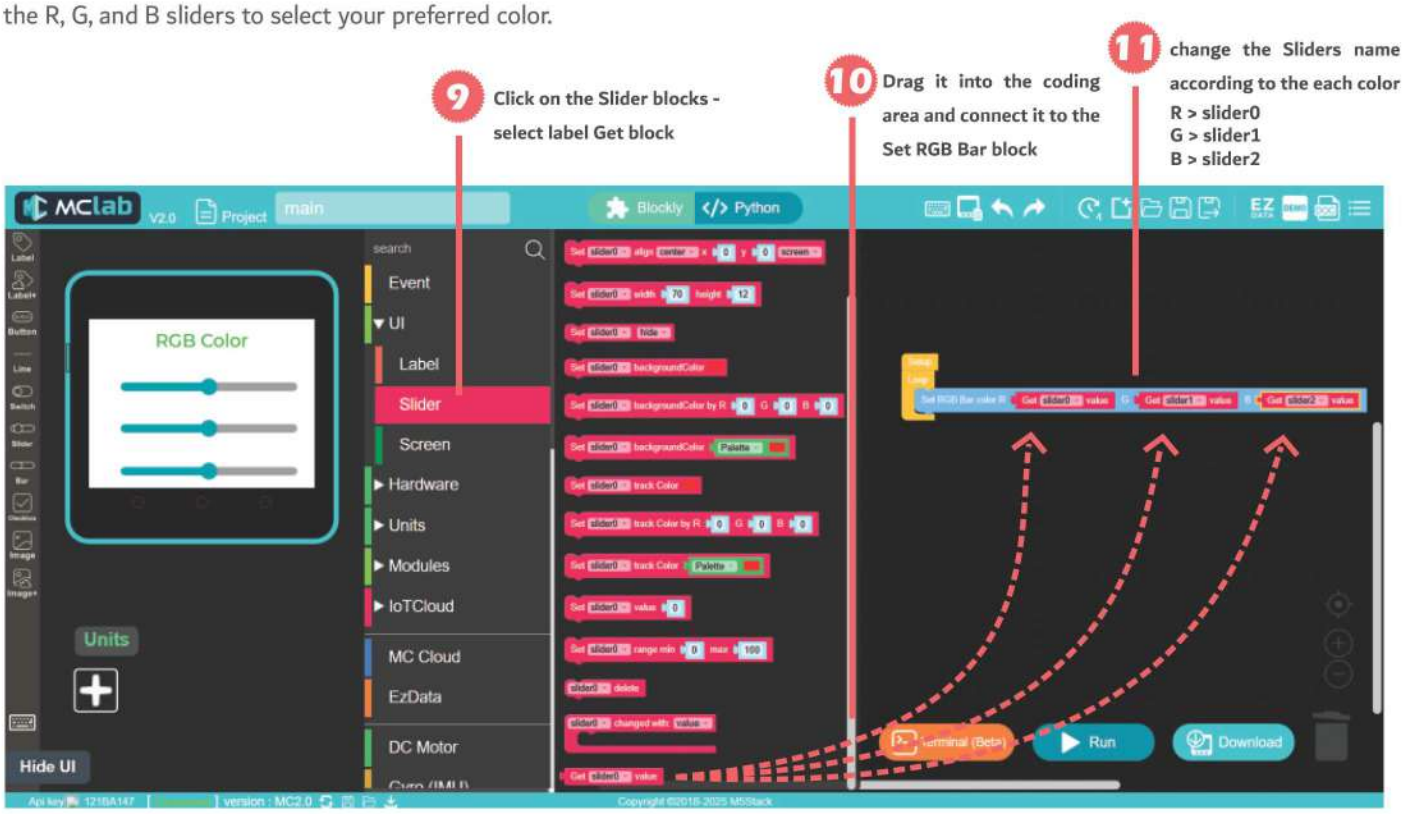
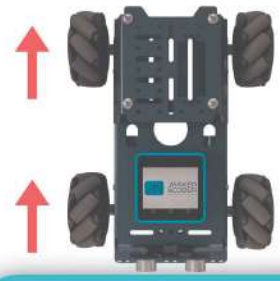
Once you have finished, you can click on the 'Run' button located in the bottom right-hand corner of the screen. From there, adjust the R, G, and B sliders to select your preferred color.



3 LET's move MC4.0 kit

The MC4.0 kit comes equipped with mecanum wheels, which are special wheels that allow for omnidirectional movement. Mecanum wheels have a unique design of angled rollers that enable the wheel to move in any direction, including sideways and diagonally. This makes the MC4.0 kit is highly maneuverable and versatile, as it can easily navigate around obstacles and change directions on the fly. In the next, we'll take a closer look at the movement capabilities of the mecanum wheels and explore how they allow the MC4.0 to move in any direction. Then, we'll delve into the programming side of things and see how we can control the movement of the MC4.0 with MCLab.

When all the mecanum wheels on the MC4.0 are moving in the same direction, it will move either forward or backward.



when two of the side wheels move in the same direction the MC4.0 kit will move in a stationary clockwise or anti-clockwise direction

If two of the side wheels move in the same direction while the other two move in the opposite direction, the MC4.0 kit will rotate in a stationary clockwise or anti-clockwise direction.

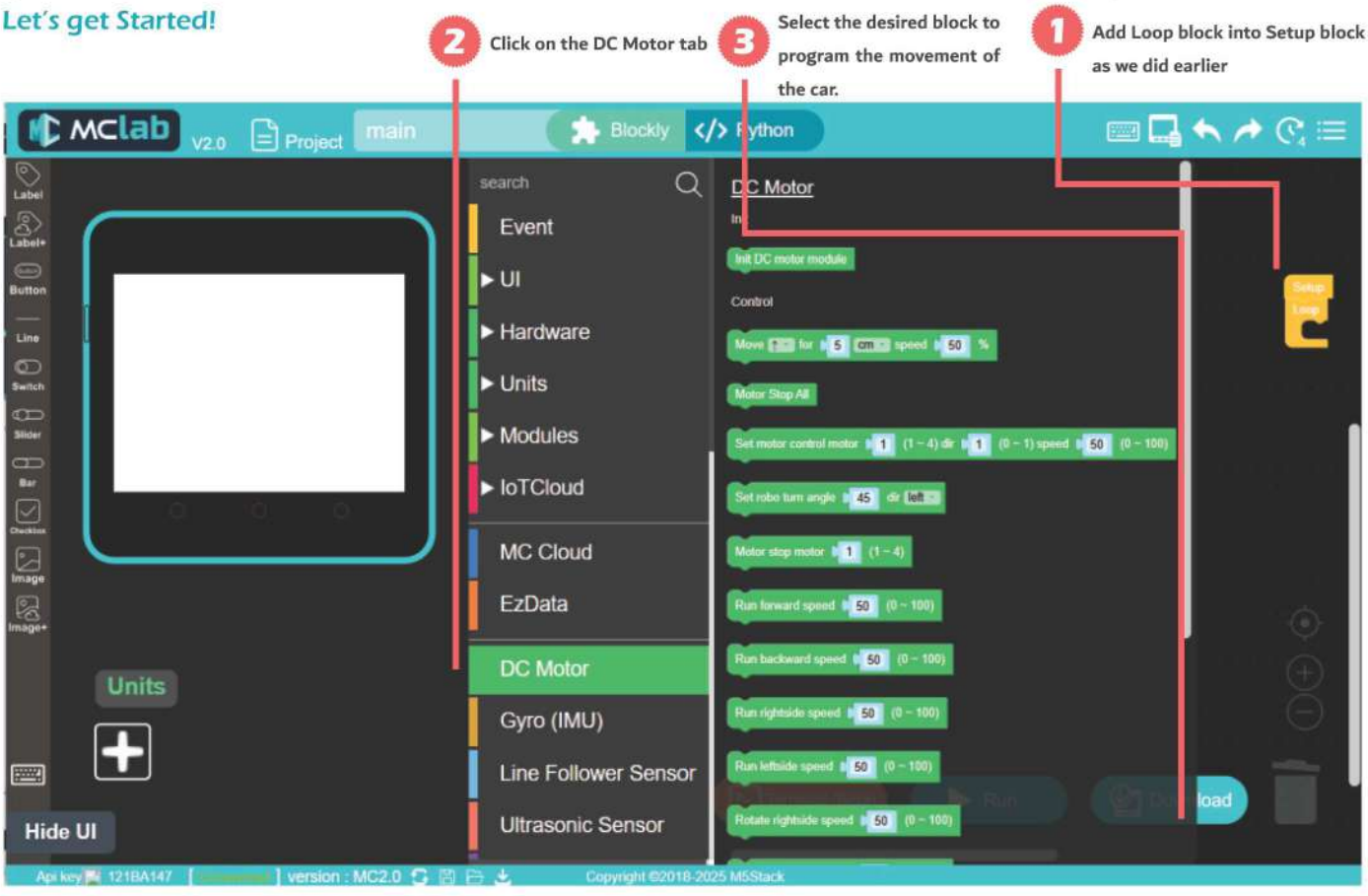
When two of the wheels move anti-clockwise and the other two move clockwise, the MC4.0 kit moves in a sideways direction

When move two diagonal wheels in the same direction , the MC4.0 kit will move diagonally along that axis

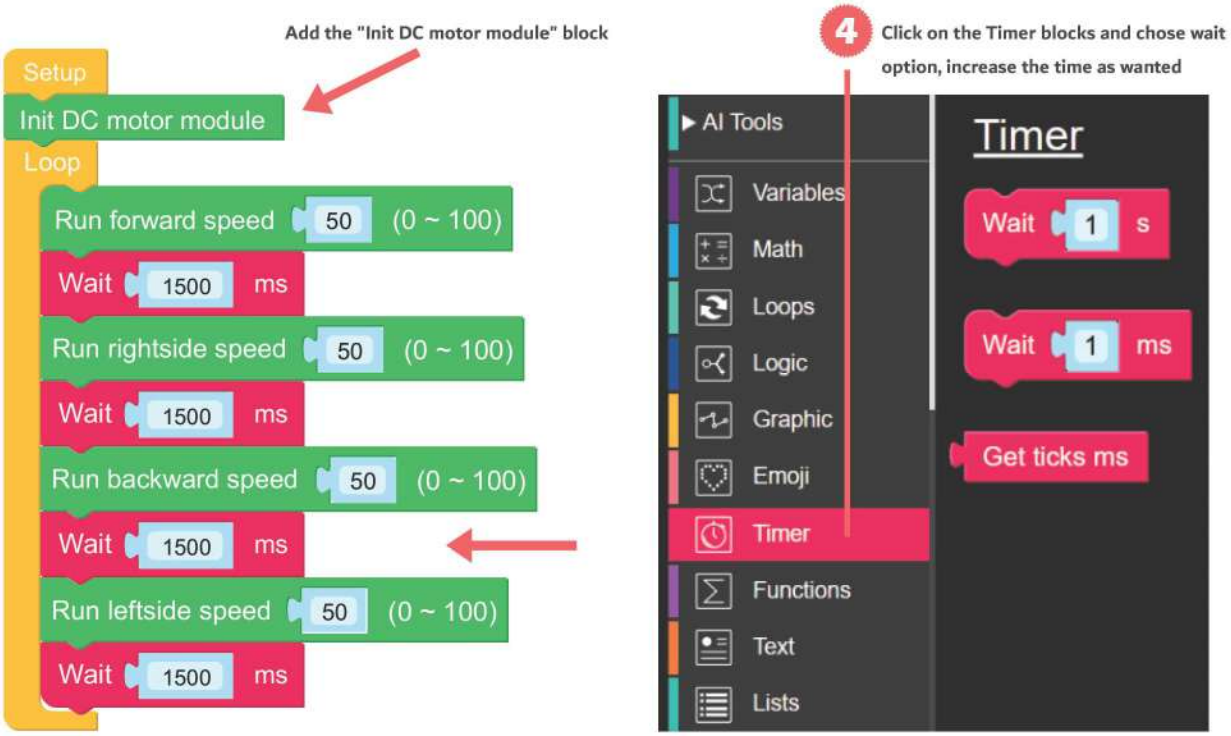
by rotating the front left wheel in the opposite direction of the front right wheel while keeping the back wheels stopped, the MC4.0 will move in a circular path. This is because the mecanum wheels are designed to allow for omnidirectional movement, and by rotating the front wheels in opposite directions, you create a sideways force that causes the MC4.0 to move in a circular path.

Now that we understand the basics of the mecanum wheels and how they work, let's dive into programming the MC4.0 kit to move using block-based programming and MCLab. here we'll explore how to use the specific blocks for motor control, how to set the motor speed and direction, and how to combine these blocks to make the MC4.0 move in different directions and patterns.

Let's get Started!

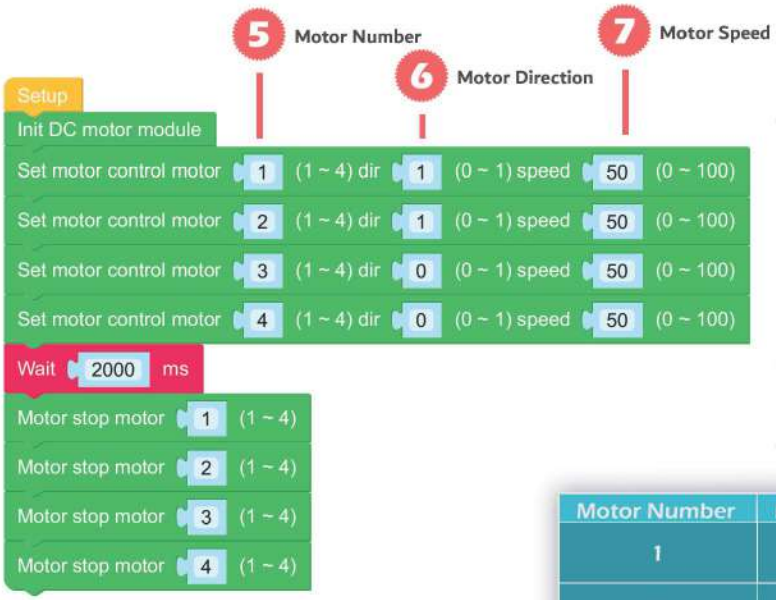


Congratulations on reaching the programming section of the MC4.0 manual! It's time to write your first example and make the car move in a specific direction using block-based programming with MCLab. This will be an exciting moment because you'll see your MC4.0 car come to life as you program it to move.



This program will allow the MC4.0 kit to move forward for 1.5 seconds, then move towards the right sidewalk for 1.5 seconds, then move backward for 1.5 seconds, and finally move towards the left sidewalk for the same duration of time.

Let's test other way to control MC4.0 kit



This program will make the MC4.0 move forward for a duration of 2 seconds and then come to a stop. However, if you want to have more control over the motor movement, you can use the individual motor blocks. These blocks allow you to specify the speed and direction of each motor separately. To use these blocks, you will need to enter data into the table below, which specifies the speed and direction for each motor

Motor Number	Motor Location	Motor Direction	Motor Speed
1	Left rear	1 >> Forward 0 >> Backward	0% to 100%
2	Left front	1 >> Forward 0 >> Backward	
3	Right rear	1 >> Backward 0 >> Forward	
4	Right front	1 >> Backward 0 >> Forward	

2 Ultrasonic & Line-Follower sensors

The MC4.0 kit comes with an ultrasonic sensor and a line-follower sensor, both of which can be easily controlled through the block-based programming language. The ultrasonic sensor is equipped with RGB eyes that allow it to detect objects and measure distances. The line-follower sensor detects differences between dark and light surfaces, enabling MC4.0 to follow lines or explore specified courses.

1 **This block initializes the ultrasonic sensor and must be placed before the main loop to ensure proper operation; it can be configured to use either Port A or Port C**

2 **With this block, you can read the ultrasonic value in MM or CM**

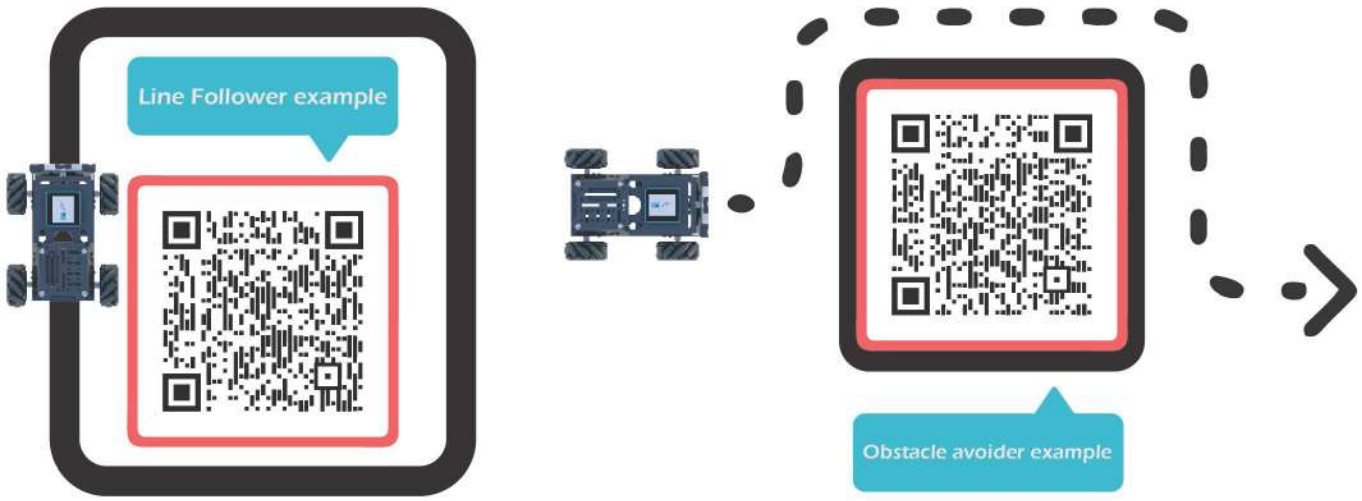
3 **These blocks are used to control the RGB eyes of the ultrasonic sensor. Each eye contains three RGB LEDs: LEDs 1, 2, and 3 for the left eye, and LEDs 4, 5, and 6 for the right eye.**

4 **This block is used to initialize the line follower sensor. It must be placed before the main loop and before any actions involving the sensor. You can initialize the sensor on either Port A , Port B, or Port C**

4 **This block reads data from all five points of the line follower sensor (1 to 5). You need to insert a separate variable for each point to store and access the reflected data individually**

3 **This block is used to read data from a specific point on the line follower sensor. It allows you to select which sensor point (1 to 5) to read from, and choose between digital or analog mode depending on your application needs**

Let's try the examples of these two sensors



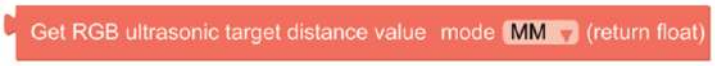
2 Ultrasonic & Line-Follower I2C Sensors

The MC4.0 kit includes an ultrasonic I²C sensor and a 6-channel line-follower I²C sensor, that can be easily controlled using the block-based programming language. With the latest sensor update, multiple sensors can now be connected in series using a single port, significantly reducing port usage on the controller and allowing more efficient hardware expansion.

The ultrasonic sensor features RGB eyes that enable object detection and accurate distance measurement. The line-follower sensor identifies variations between dark and light surfaces, allowing the MC4.0 to follow paths, tracks, or predefined courses with precision.

RGB Ultrasonic I²C sensor

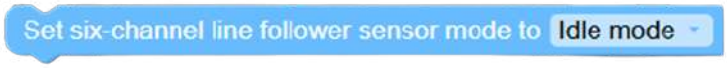
1 The block initializes the RGB ultrasonic I2c sensor and must be placed before the main ioop to ensure proper operation; it can be configured to use PORTA.



2 With this block, you can read the ultrasonic value in MM or CM

6-way Color Line Follower I2C Sensor

1 This block is used to initialize the line follower i2c sensor. It must be placed before the main loop and before any actions involving the sensor. You can initialize the sensor on either Port A beacuse PORTA is i2c pin.

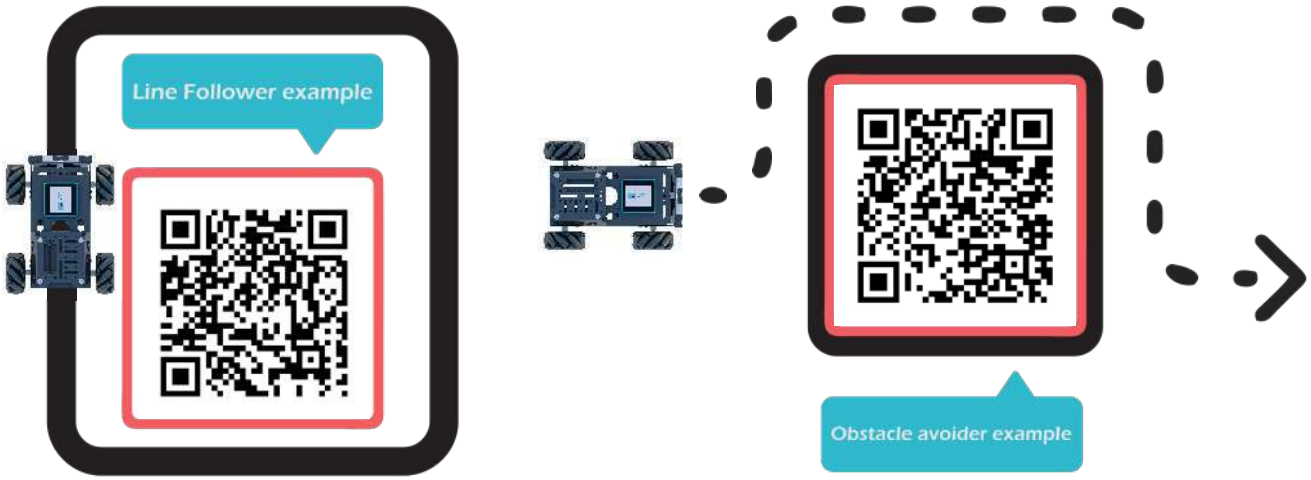


2 This block, we can initialize the sensor in main loop. Select the mode to detect a specific color, black line, binary values, or set it to idle mode.

3 This block reads data from a selected point (1–6) of the 6-channel line follower I²C sensor and allows choosing between digital or analog mode based on application requirements.

4 This block initializes the sensor and gets values according to the selected mode.

Let's try the examples of these two Sensors



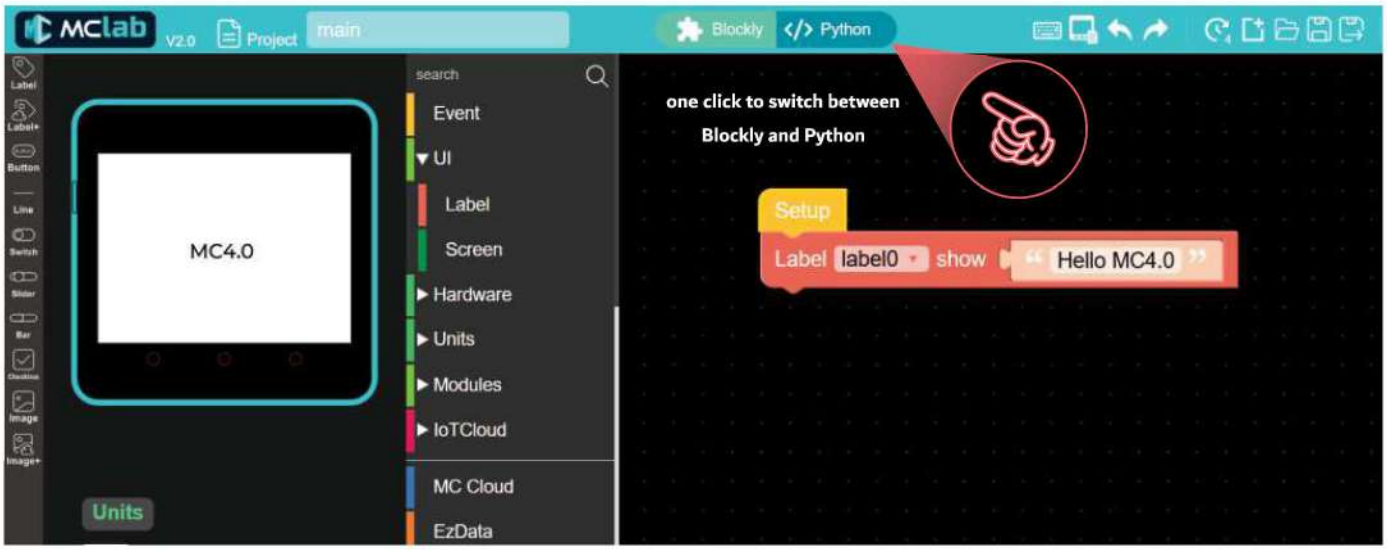
Script programming (Python and C++)

Get ready to take your coding skills to the next level

it's time to take your programming skills to the next level and dive into the world of script programming. With this powerful tool, you can create more complex programs, add more functionality to your kit, and take full advantage of the capabilities of the sensors and modules available to you. In this section, we'll explore the basics of script programming for the MC4.0 kit and show you how to write your first scripts to control the kit in new and exciting ways.

1 Python

In MCLab, transitioning from block-based programming to Python script programming is as easy as clicking a button. This makes creating your first "Hello World" program in Python a breeze. As we mentioned earlier, the "Hello World" program is the cornerstone of programming,

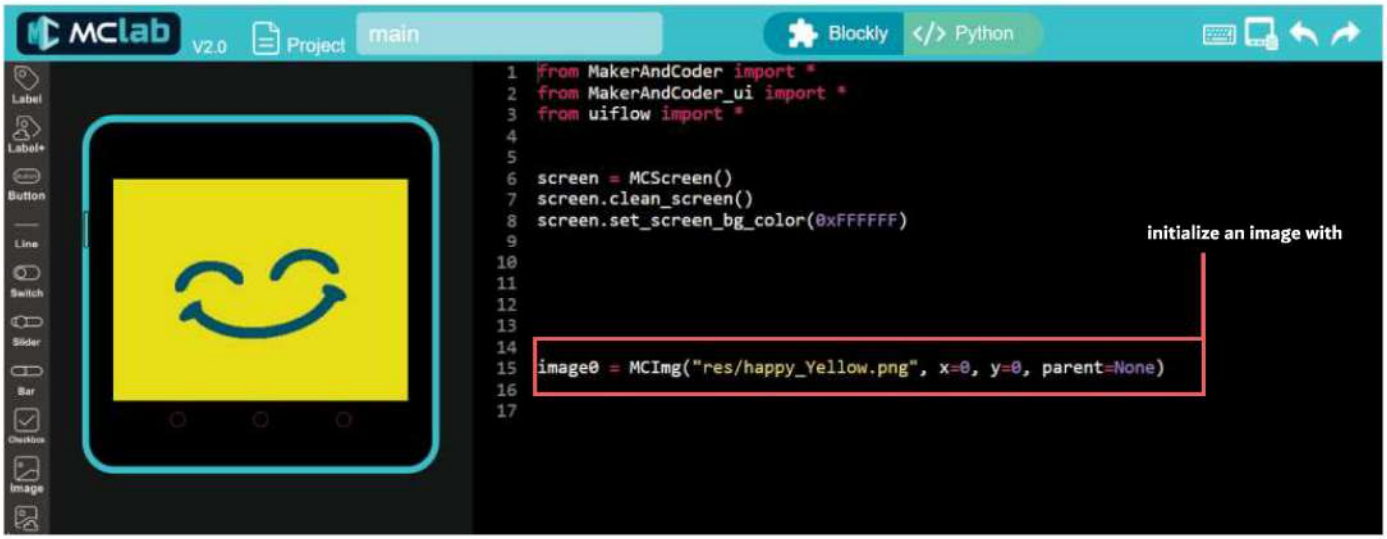


After creating your "Hello World" program in block-based programming, you can easily convert it to Python using the button in MCLab. This allows you to see the Python code that corresponds to the blocks you used.

From there, you can continue to learn and explore more advanced concepts in Python programming. With our platform's simple and user-friendly interface, you'll be on your way to becoming a skilled Python programmer in no time.

1.1 Load Image in Python

Once you have loaded and selected an image, you can easily switch to Python code and notice how to initialize the photo within the MC4.0 controller using Python.



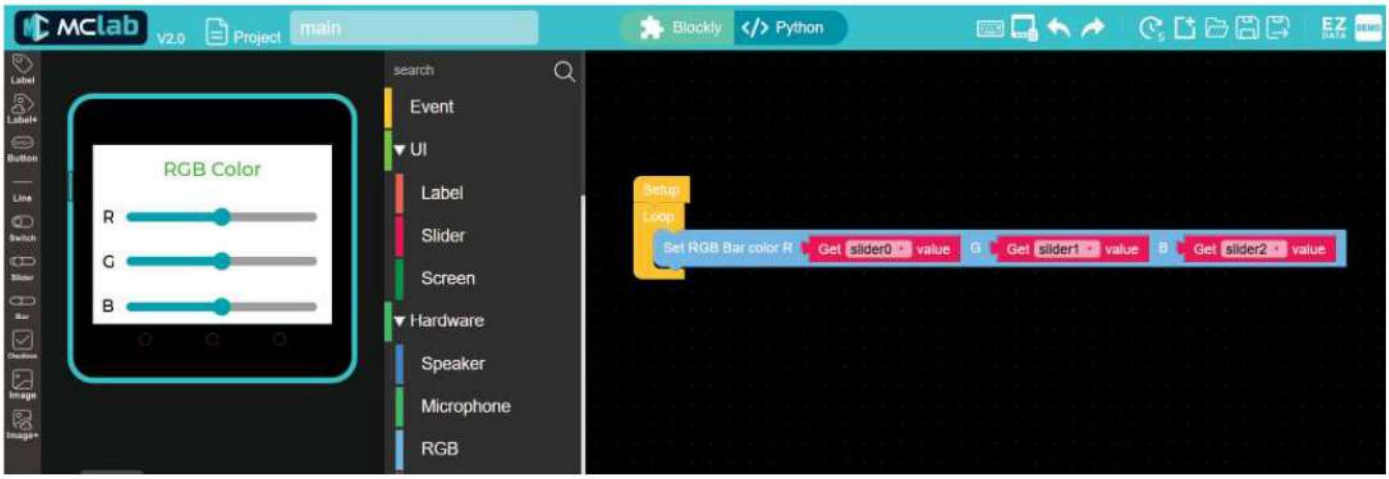
If you want to select a different image from the ones that are already loaded, you can use the following function:

```
image0.set_img_src("res/Happy_Yellow.png")
```

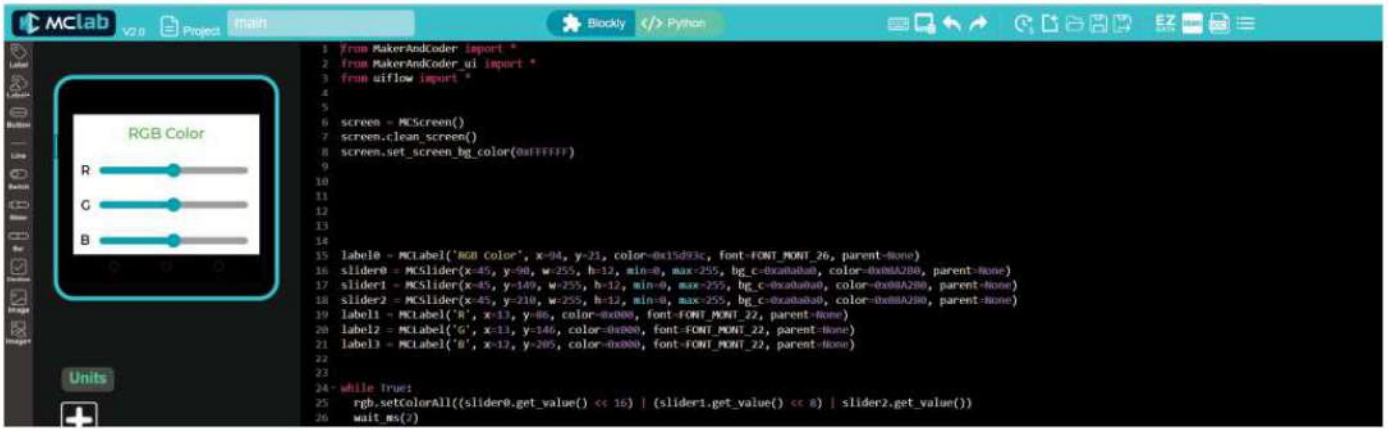
image0: as an object defined from the previous line the function to call an image is : set_img_src one parameter here refer to the name of the image

1.2 RGB Color in Python

As long as you have completed the previous RGB example using block-based programming, you can easily convert the code into Python script programming to further understand the difference. By switching to Python, you can edit the code and add more functionality to the program



Script programming in Python offers more flexibility and control compared to block-based programming. With Python, you have the ability to write custom code and manipulate variables directly, giving you more precise control over your project.



1.3 LET's move MC4.0 kit using Python

In this section, we will delve into the functions responsible for controlling the movement of the MC4.0 kit, including how to control each motor, adjust motor speeds, and read encoder values, in addition, to obtaining ultrasonic data, changing the color of the MC4.0 eyes, and obtain line follower values.

```
robo = Robocar()
robo.init_motor_module()
```

This is needed object to run all possible functions

Python script	Block
`robo.set_motor_speed(1, 1, 50)`	Set motor control motor 1 (1 ~ 4) dir 1 (0 ~ 1) speed 50 (0 ~ 100)
`robo.set_motor_angle(45, 0)`	Set robo turn angle 45 dir left
`robo.motor_stop(1)`	Motor stop motor 1 (1 ~ 4)
`robo.move_forward(50)`	Run forward speed 50 (0 ~ 100)
`robo.move_backward(50)`	Run backward speed 50 (0 ~ 100)
`robo.move_right(50)`	Run rightside speed 50 (0 ~ 100)
`robo.move_left(50)`	Run leftside speed 50 (0 ~ 100)
`robo.rotate_right(50)`	Rotate rightside speed 50 (0 ~ 100)
`robo.rotate_left(50)`	Rotate leftside speed 50 (0 ~ 100)

Python script	Block
robo.ultrasonic_port_init(unit.PORTC)	Init ultrasonic sensor PORTC
robo.ultrasonic_rgb_color_all(0x000000, 50)	Set RGB ultrasonic LED all color Palette brightness 50 (0 – 100) %
robo.ultrasonic_rgb_sensor(mode=1)	Get RGB ultrasonic target distance value mode MM (return float)
robo.ow_line_port_init(unit.PORTB)	Init line follow sensor PORTB
(s1, s2, s3, s4, s5) = robo.ow_multi_line_get_sensor_values()	Get multi-channel line follower sensor 1 s1 2 s2 3 s3 4 s4 5 s5

Follow our learning platform on our website to access a wealth of knowledge and prepare yourself for your Python journey

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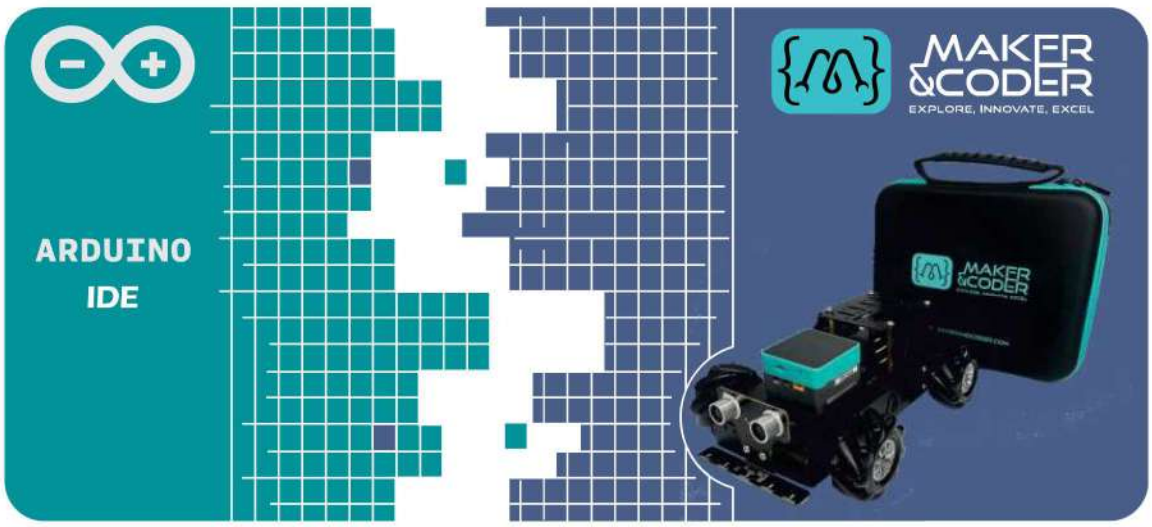
Scan and Learn

2 Arduino IDE

Welcome to the world of MC4.0! In this section, we will introduce you to the Arduino IDE compatible. You will learn how to write, compile, and upload programs to your kit, and get hands-on experience with a few basic projects. Whether you're a beginner or an experienced programmer, this section will provide you with the knowledge you need to get started with MC4.0 programming in Arduino IDE. So, let's dive in and explore the endless possibilities!



2.1 Install MC4.0 Board to Arduino IDE

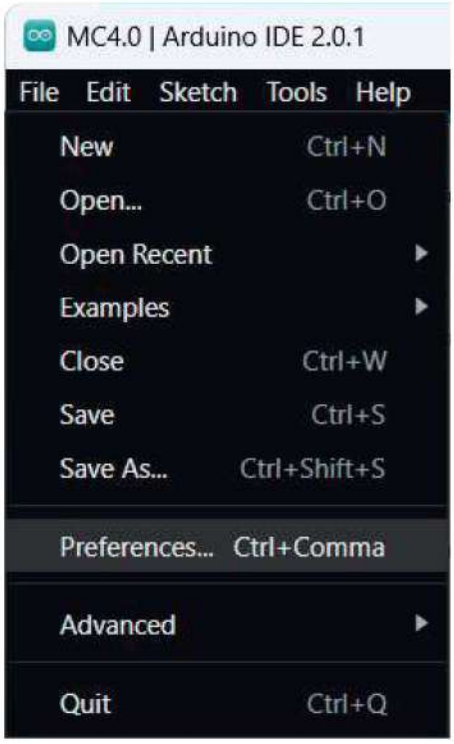
Arduino IDE

Before starting this installation procedure, you need to have Arduino IDE installed on your computer.

There are two versions of the Arduino IDE you can install: version 1 and version 2.

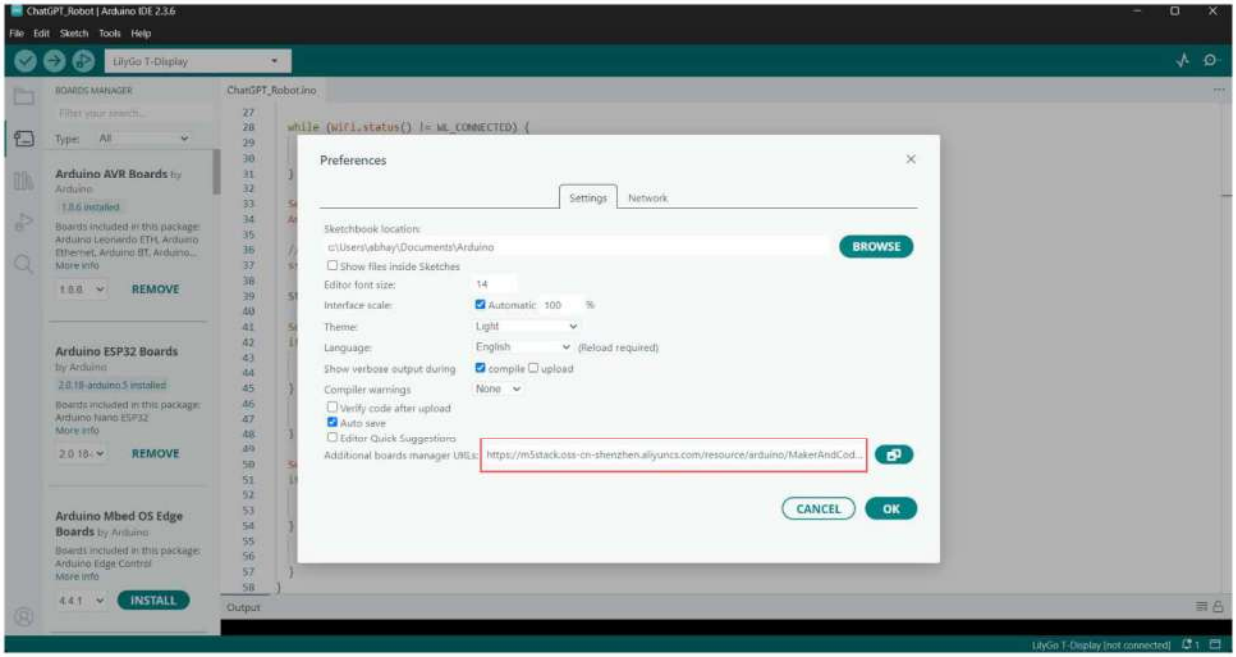
You can download and install Arduino IDE by clicking on the following link:

To install the MC4.0 board in your Arduino IDE, follow these next instructions:

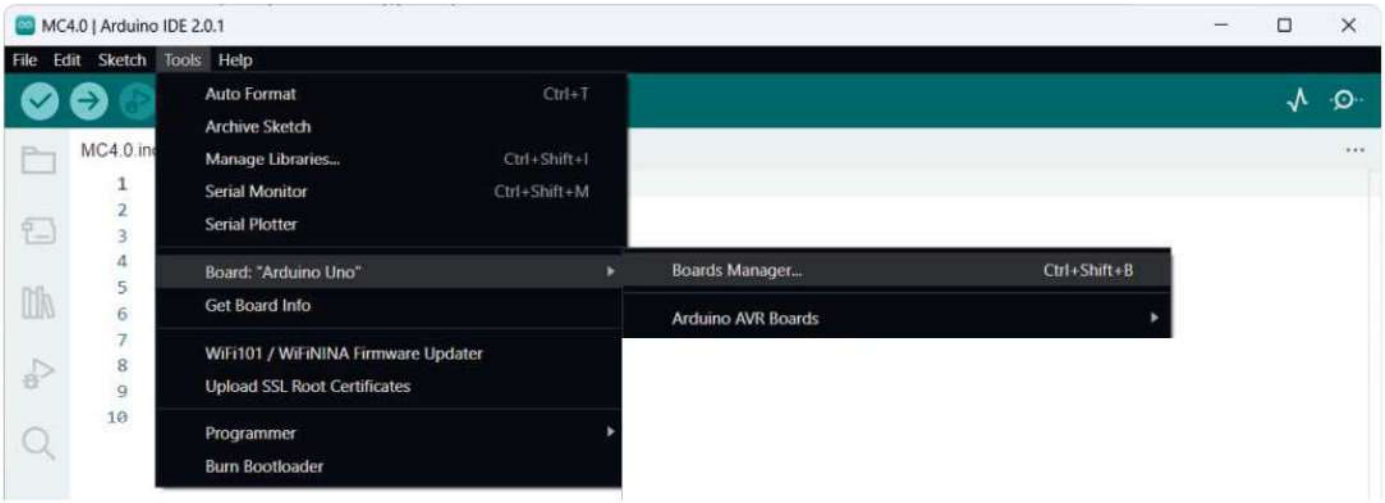


1. from the file menu choose Preferences , then in Preferences dialog box enter the following into the “Additional Board Manager URLs” field:
https://m5stack.oss-cn-shenzhen.aliyuncs.com/resource/arduino/MakerAndCoder_index_v4.json

Or scan the QR code to copy the link



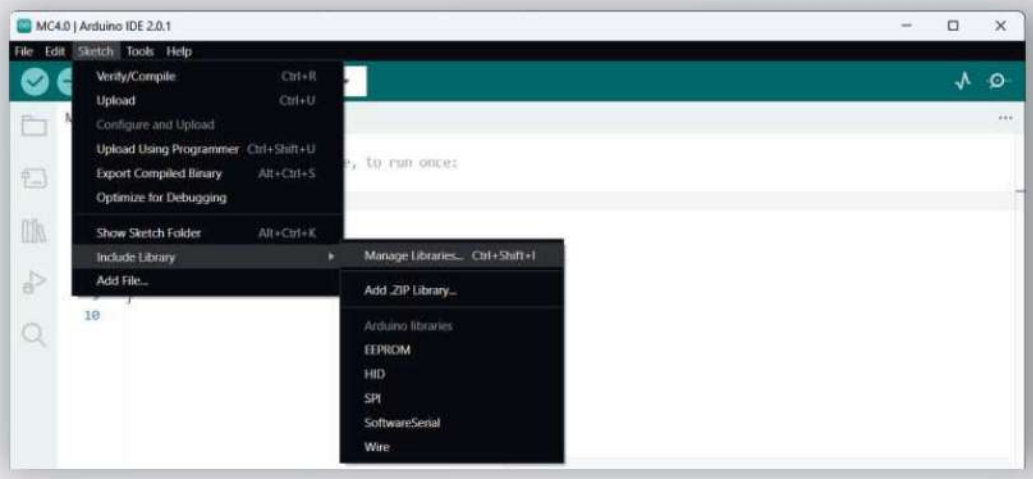
2. Open the Boards Manager. Go to **Tools > Board > Boards Manager**



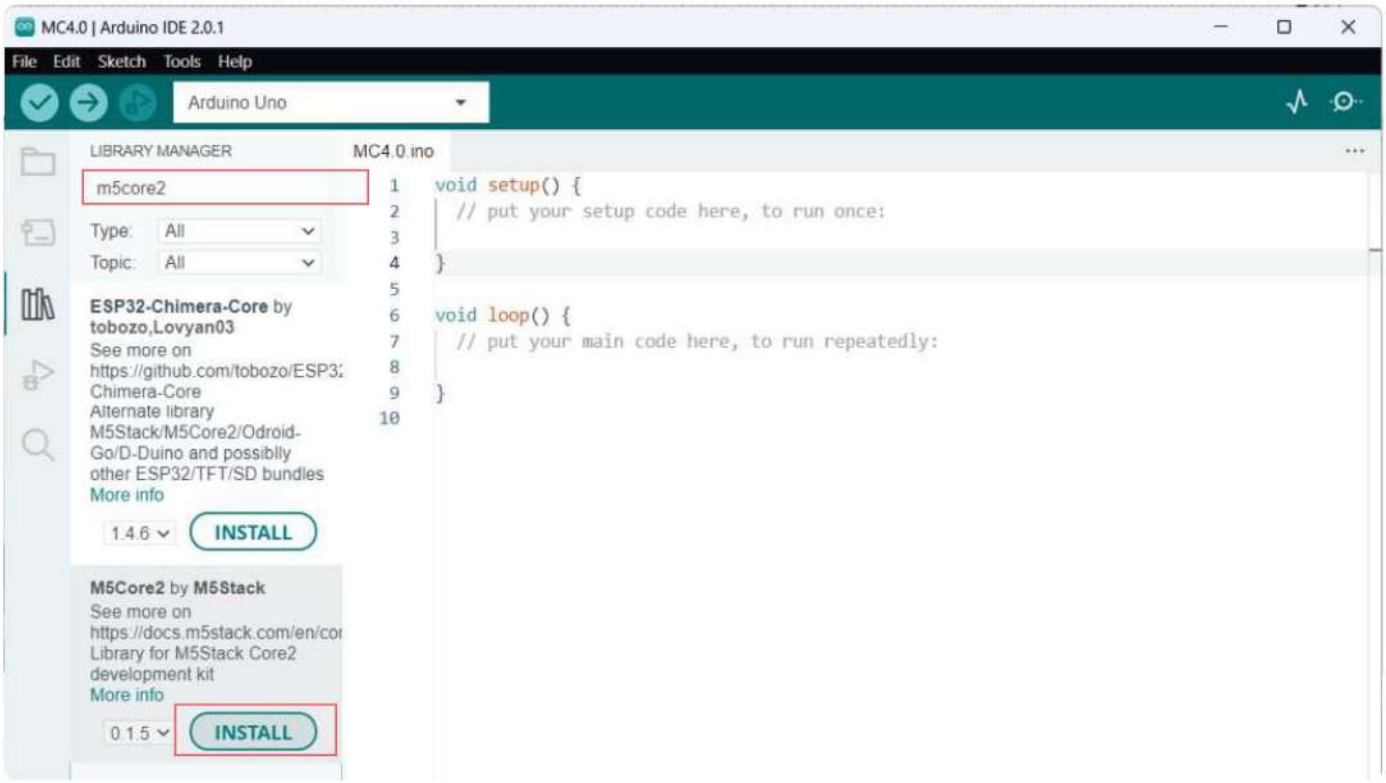
3. Search for **MC4.0** and press install button for the "Maker & Coder":

2.2 Install required libraries

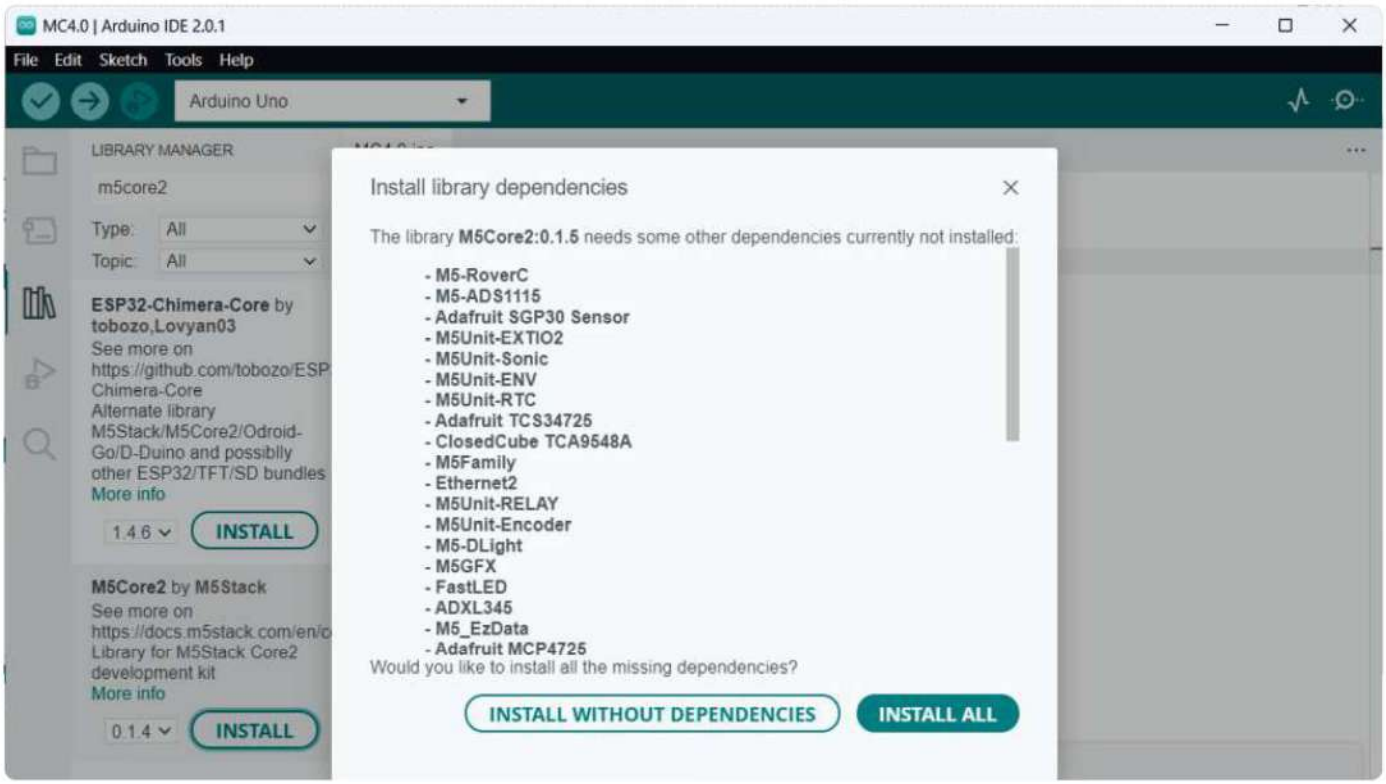
Open Libraries Manager from **Sketch > Include Library > Manage Libraries**



Search for M5Core2 and press install button for the “M5Stack”:



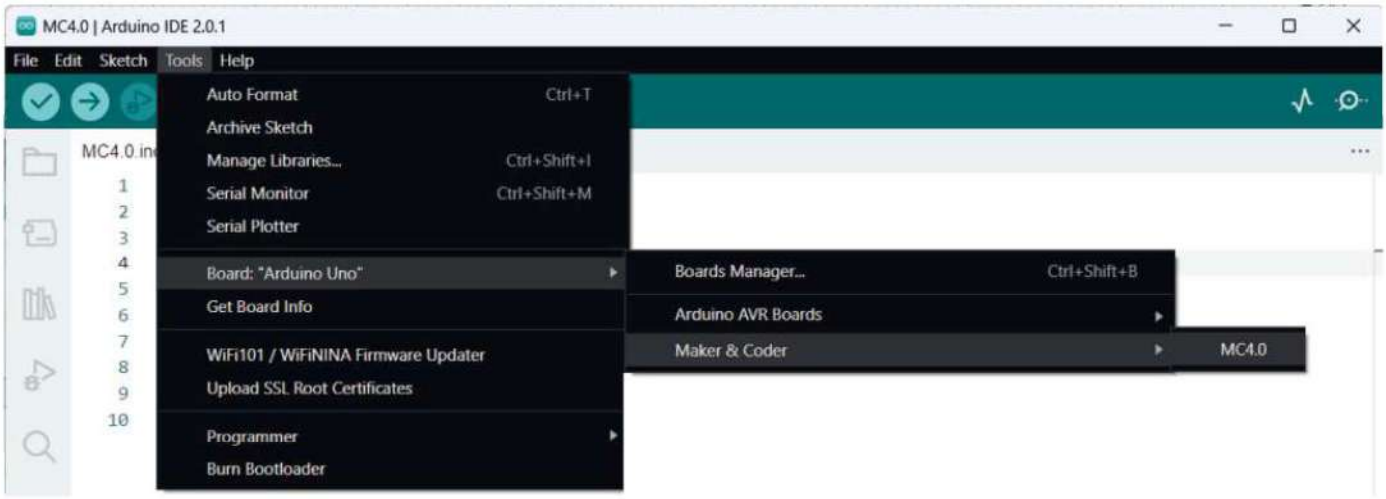
From the pop-up box click on **INSTALL ALL**



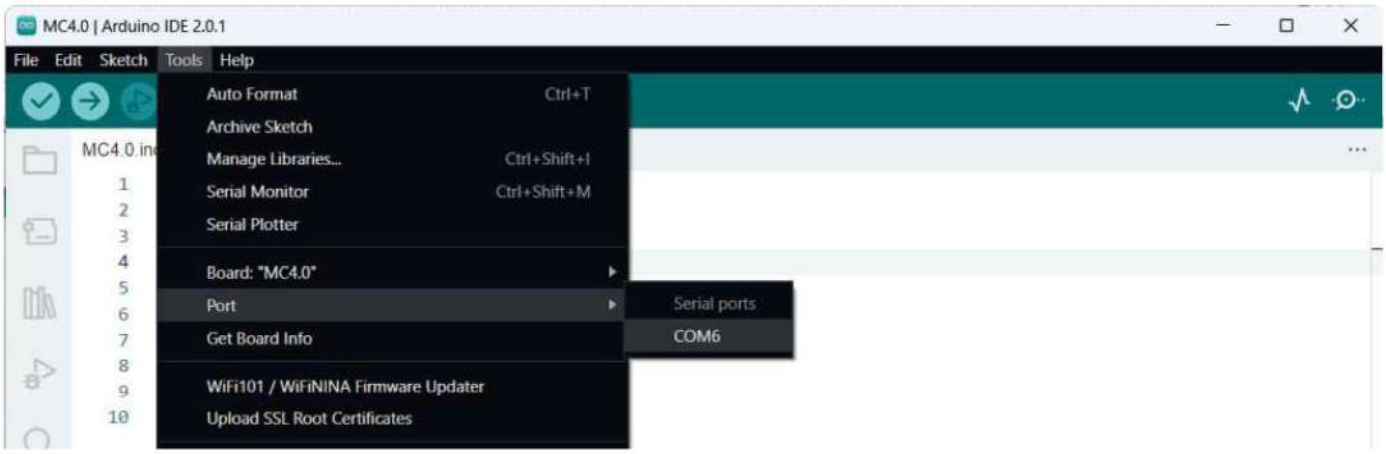
2.3 Testing the Installation

Plug the MC4.0 Controller to your computer. With your Arduino IDE open, follow these steps:

1. Select your Controller from **Tools > Board menu > Maker & Coder > MC4.0**



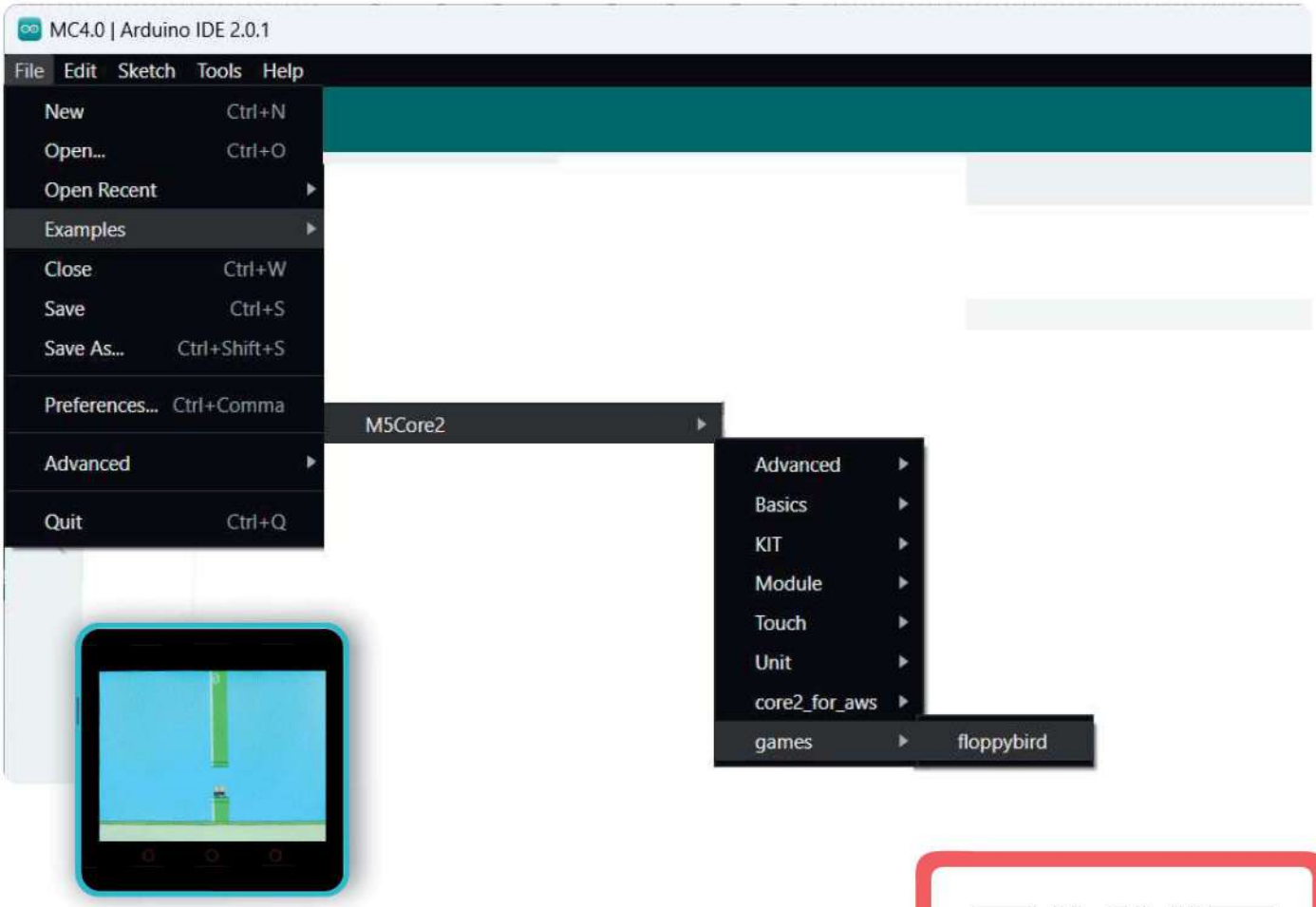
2. From the **Tools** menu, Select the Port (if you don't see the COM Port in your Arduino IDE, you need to install the MC4.0 Driver



3. To install the USB driver for MC4.0:

Windows **MacOS** **Linux**

3. Open the following example under **File > Examples > M5Core2 > games > floppybird**



Enjoy playing Flappy bird game ^_^

2.4 Let's Move MC4.0 kit with Arduino

In this example, we'll show you how to control the MC4.0 kit using the Arduino IDE. To start, we'll need to include the required libraries and files. We'll be using three files: two for the motor drivers and one for the MC4.0 image to be displayed on the screen. In the setup function, we'll initialize the MC4.0 and the screen. Then, we'll move the kit in a specific sequence, with 1.5 seconds for each movement: left, right, forward, backward, and some diagonal directions.

Scan for Arduino IDE example

2.5 Download Firmware

Firmware is a type of software that is installed on a hardware device, such as the MC4.0 kit, and provides low-level control of the device's functions. It is typically designed to control the behavior of the hardware, manage interactions with other devices, and provide a stable platform for the software applications that run on the device. Firmware is often pre-installed on devices, but can also be updated or replaced to improve functionality or fix issues.

It's important to note that if you're switching from the Arduino platform back to MCLab, you'll need to reinstall the firmware on the kit. This is because the firmware is different for each platform, and switching between them requires a firmware update.

To install the firmware on the MC4.0 kit, you'll need to follow these steps:

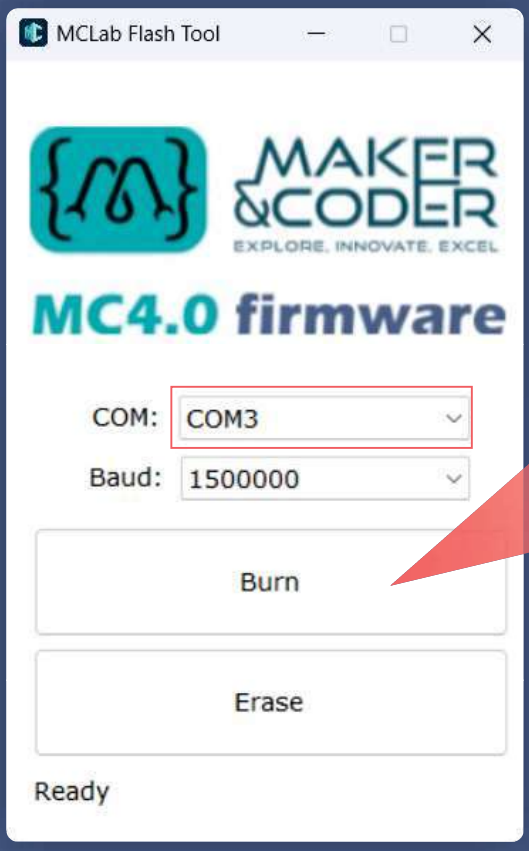
1. First, download the latest firmware version from the official Maker & Coder website.

MacOS

Windows

2. Next, connect your MC4.0 kit to your computer using a USB cable.

3. Once the firmware burning tool is downloaded, open it and select the right COM port for your MC4.0 kit. You can find the COM port information in the Device Manager on your computer.



4. After selecting the correct COM port, click the "Erase" button to clear the controller's existing data in preparation for installing the latest firmware.

4. After selecting the correct COM port, click on the "Burn" button to start the firmware installation process. You'll see a progress bar that shows you the percentage of completion.

5. During the firmware installation process, a command prompt window will pop up. This is normal and it's part of the installation process. Don't close this window until the firmware installation is complete.

6. Once the firmware installation is complete, the MC4.0 kit will automatically restart and return to its initial status.

AFTER - SALES SERVICES AND TECHNICAL SUPPORT

If you come across any issues with the quality of the product or discover any missing or damaged parts upon opening the package, or if you require any technical support, please reach out to us for after-sales assistance via the following contact information:

Support@makerandcoder.com

(Service Hour: 9:00-17:00 (+4 GMT) from Monday to Friday)

www.makerandcoder.com
Designed & Marketed: Maker and Coder
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Phone: +971 4 318 0283
What's App: +971 56 398 2854