

# 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 | منحكم MC4.0



Chassis | Chasis | الهيكل



Encoder motor Module | Módulo motor codificador | وحدة التحكم بالمحركات



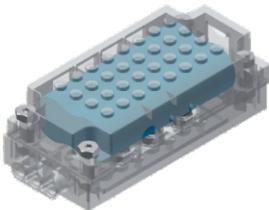
Add-on Fixture | Accesorio adicional | إضافة للتثبيت



Battery Module | Módulo de batería | وحدة بطارية



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



Lithium Battery | Batería de Litio | بطارية ليثيوم



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



Nuts M3 | Nueces M3 |  
صامولة قياس 3 ملم



Motors Cables | Cables de motores |  
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 التشغيل 6 ثواني للإغلاق
- 2 USB TYPE-C | USB TIPO-C | منفذ الـ USB نوع C
- 3 PORT A - I2C | PUERTO A - I2C | منفذ A
- 4 Touch Screen | Pantalla táctil | شاشة لمسية
- 5 2" LCD 320x240 | LCD de 2" 320x240 | شاشة عرض قياس 2 إنش
- 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

3.7V/390 mA Battery

Vibration Motor

Microphone

SP

IMU

Altavoz de 1W

Reloj en tiempo real

Batería de 3,7 V/390 mA

Motor de vibración

Micrófono

AR

وحدة قياس الزاوية

مكبر صوت 1 وات

ساعة الوقت الحقيقي

بطارية 3,7 فولت / 390 مللي أمبير

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

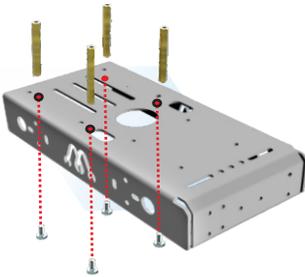
Start!

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

This step should be the first one before Install the motors

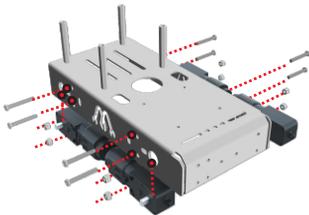


3

## ✓ 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
- M3 nuts 4Pcs



4

## ✓ Motor Installed View

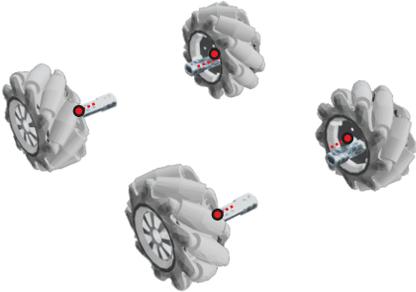
This is a bottom view of the correct way to position the Motors



**5****✓ Motor Shaft Coupling**

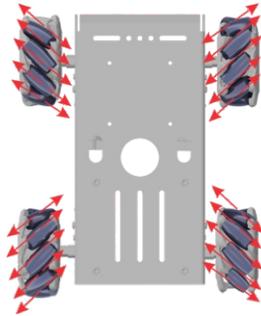
Fix the motor shaft coupling whit wheels

- Wheels 4Pcs
- Motor shaft 4Pcs

**6****✓ The Wheels Orientation**

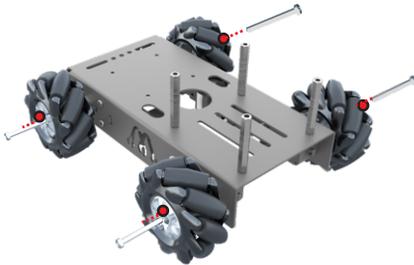
The directions of the wheels shall be installed in the following orientation so that the diagonal directions are the same or closed a V-shape from the frontside and the backside

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

**7****✓ Wheels Fixing**

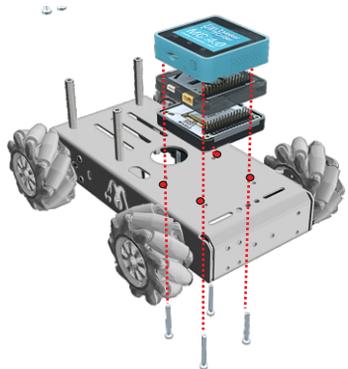
Attach the wheels to the motors shaft using M3x30

- DC Encoder Motors 4Pcs
- Wheels 4Pcs
- Motor shaft 4Pcs
- M3x30 4Pcs

**8****✓ MC4.0 Controller**

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

- MC4.0 controller 1Pcs
- DC encoder module 1Pcs
- Battery base module 1Pcs



**9****MC4.0 control unit**

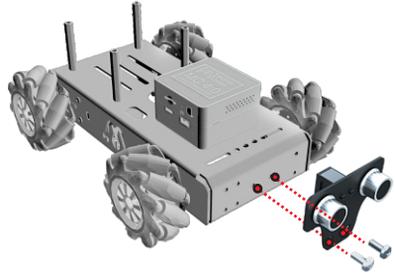
Attach the MC4.0 controller unit on the chassis using M3x25 screws

- MC4.0 control unit 1Pcs
- M3x25 screws 4Pcs

**10****Ultrasonic sensor**

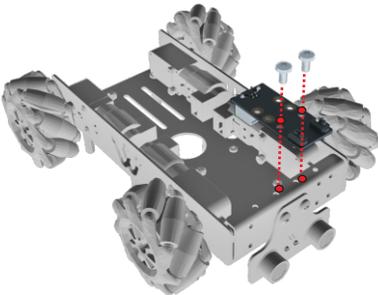
Fix the ultrasonic sensor in the front of the chassis using M4x10 screws

- Ultrasonic sensor 1Pcs
- M4x10 2Pcs

**11****Line Follower sensor**

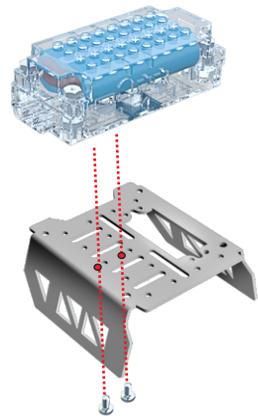
Place the line follower sensor in the bottom of the chassis using M4x8 screws

- Line follower sensor 1Pcs
- M4x8 2Pcs

**12****Lithium Battery**

Put the lithium battery on the ADD-on fixture at the two holes in the middle

- Lithium battery 1Pcs
- Add-on fixture 1Pcs



**13****✓ Lithium Battery**

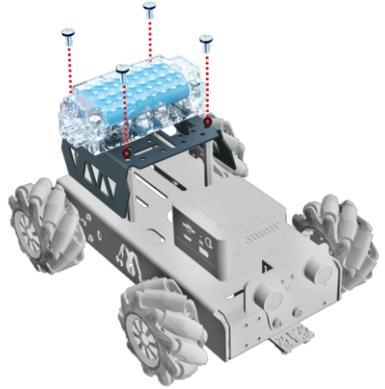
Hold the lithium battery on the ADD-on fixture using M4x8 screws

- Lithium battery 1Pcs
- Add-on fixture 1Pcs
- M4x8 screws 2Pcs

**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 2Pcs

**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.

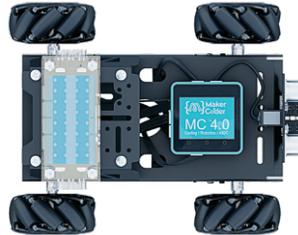
Start!

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
- PortD = Line-Follower Sensor



# Get Started

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

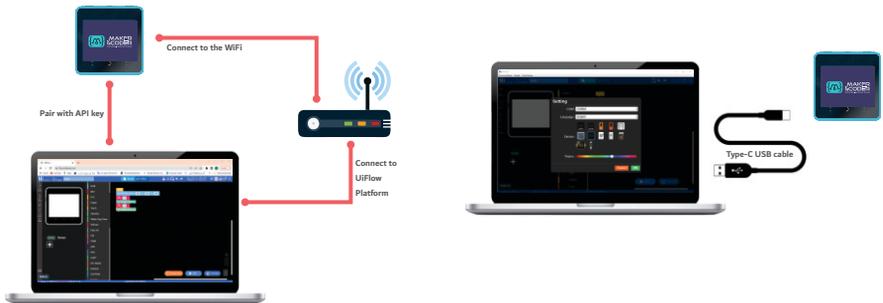
Let's get started with your MC4.0 kit! In this section, we'll guide you through the steps to operate your robot and connect it to the Wi-Fi network, so you can start exploring the world of robotics and AIoT.

Start!

1

### Connect Method

MC4.0 offers two programming options: cable-based and wireless over the internet. Both firmware versions have the same features, but the web version has the added benefit of wireless communication and IoT capabilities. While the web-based and offline IDEs may appear similar, there is one key difference: to use the web IDE, you need to connect MC4.0 to a Wi-Fi network first, and use the device API key to pair it with the web IDE.



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.



Power ON



Press Setup



Press Start

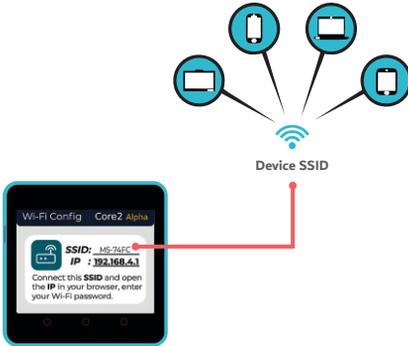


After auto restart

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. Open the browser to access [192.168.4.1](http://192.168.4.1), and enter the WiFi information in the pop-up page to configure it successfully Network distribution (note: special characters such as "space" are not allowed in WiFi information). After the configuration is successful, the device will automatically restart. And enter the online programming mode.



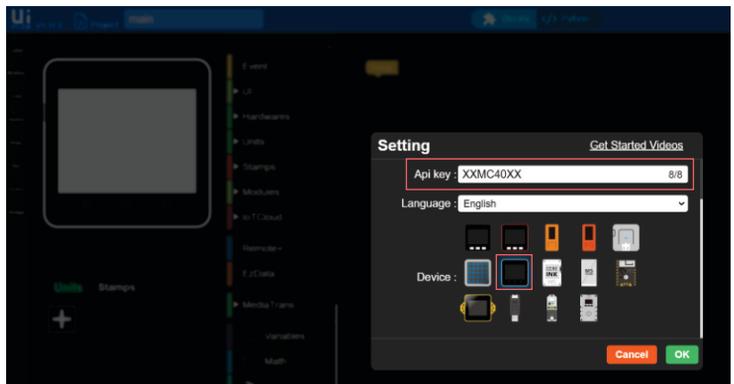
5

### Pairing with UiFlow

5. Open your browser, enter the URL [flow.m5stack.com](http://flow.m5stack.com) and use the API KEY shown on the device, and from the devices menu, chose Core2 Device



use API key and connect to UiFlow Platform

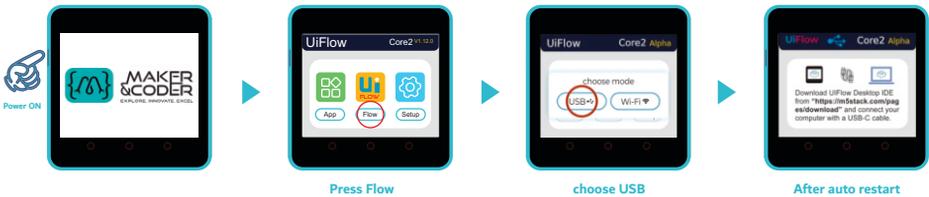


6

### ✓ USB Cable Connection

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

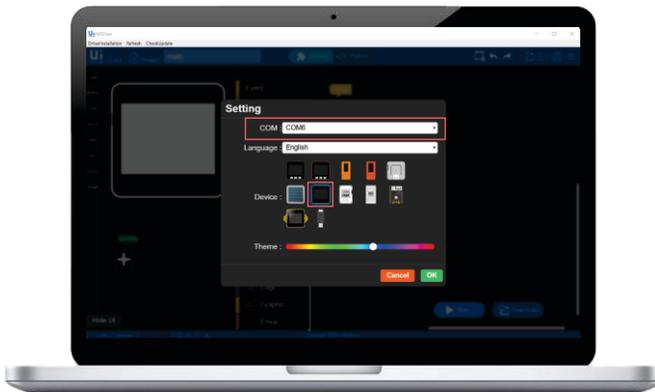
1. Short press the power button for 2s to start the device
2. After the menu appears on the screen, quickly click the UIFlow option.
3. Select the USB mode.
4. Select the corresponding port in the configuration box of UIFlow Desktop IDE, and the programming device, click OK to connect.



7

### ✓ installing UiFlow IDE

To install the UiFlow 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



END

# Block-Based programming

## Discover the simplicity of block-based programming with UiFlow!

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

### 1 Hello world - Displaying text and pictures

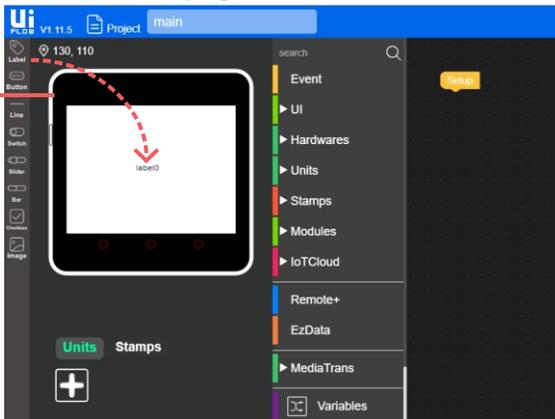
"Hello world" has long been held as the induction to programming, regardless of what language is being taught. It teaches the most basic of programming concepts and prints "Hello World" to the screen of the device. While it may sound simple, even some seasoned programmers may use this code as a test 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

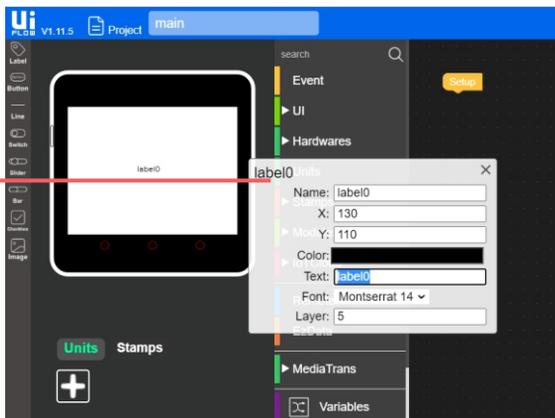
1

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

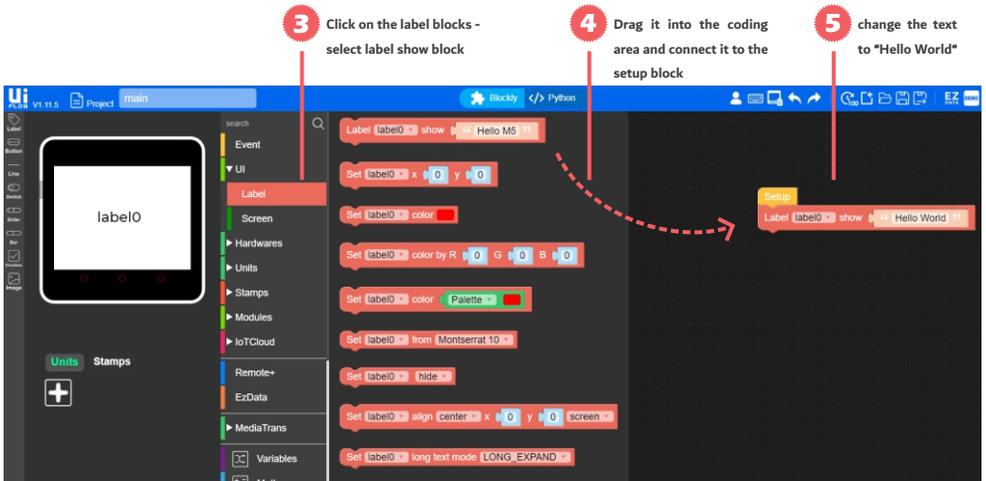


2

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 entitled "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 and that you have entered into USB mode as instructed explained earlier.



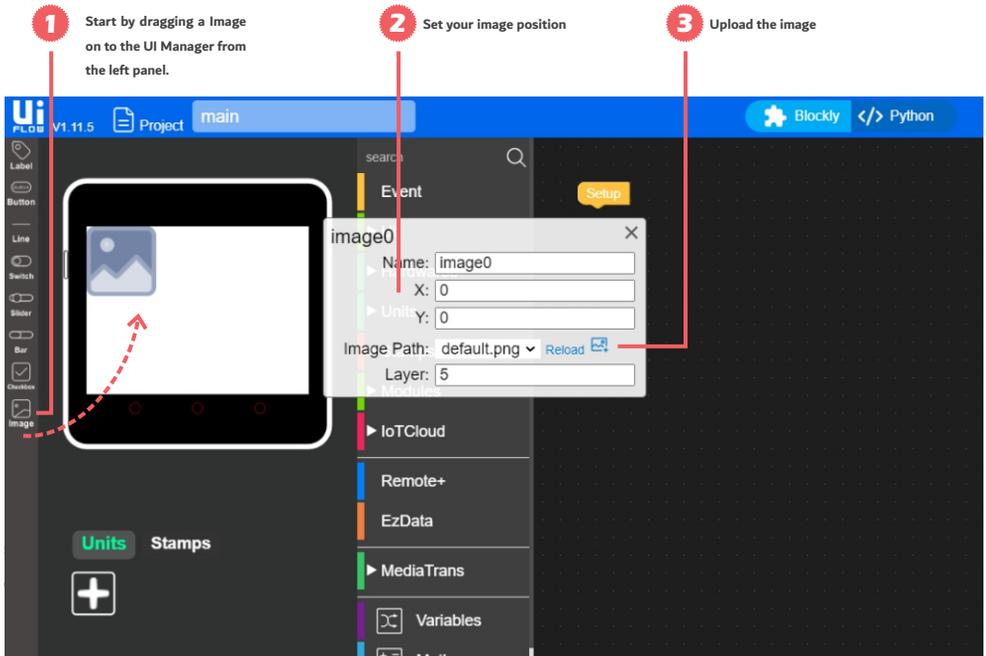
Connected

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.

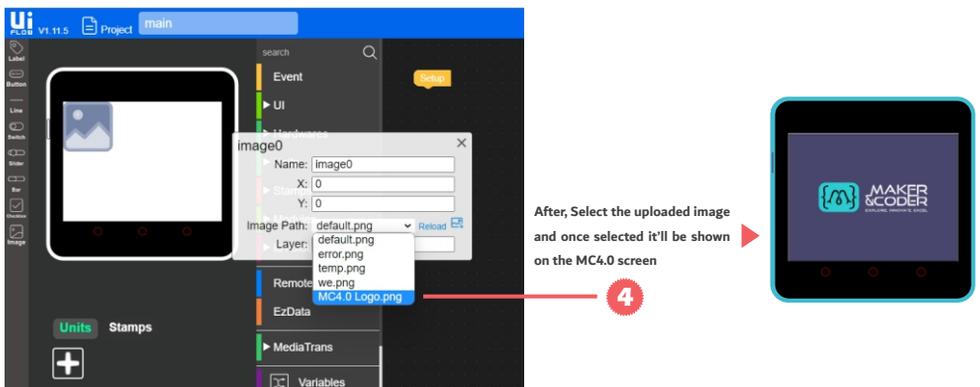
Run

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 UiFlow. 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 UiFlow screen and your MC4.0 device's screen

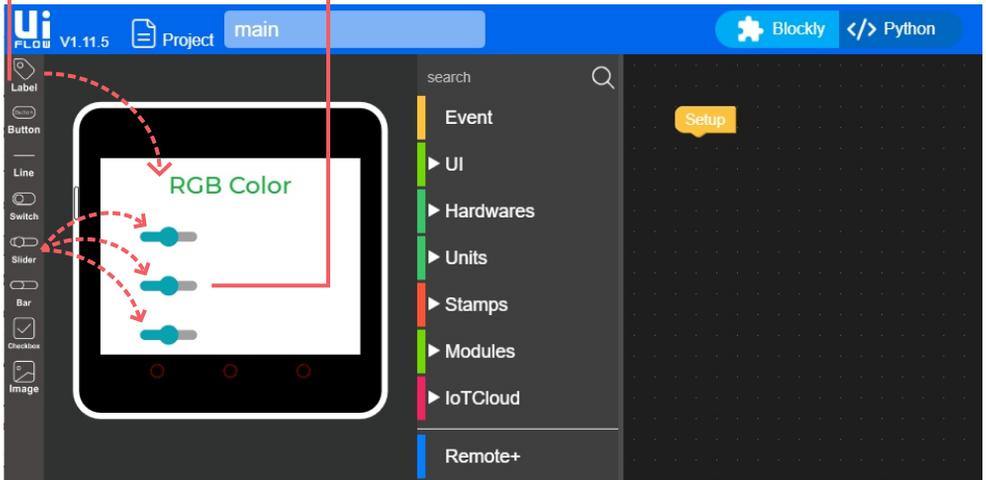


## 2 RGB Color

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 UiFlow, you can easily adjust the RGB values to create your own custom colors and make your project pop. Let's dive in!

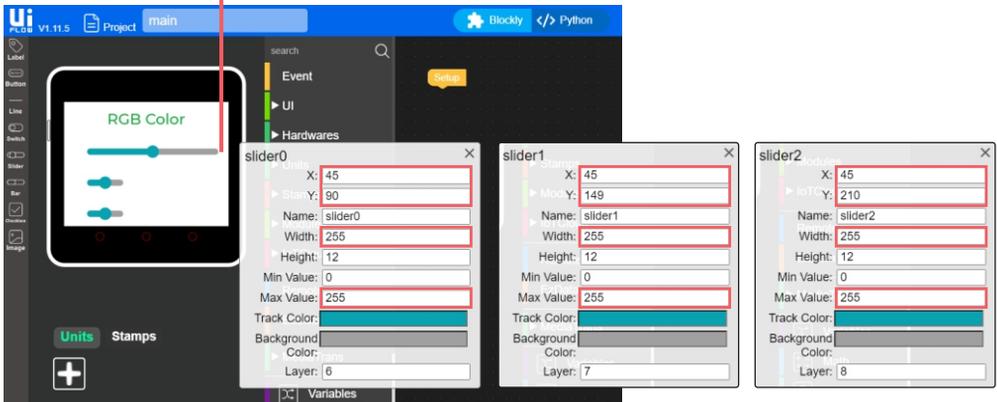
### So let's get started

- 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

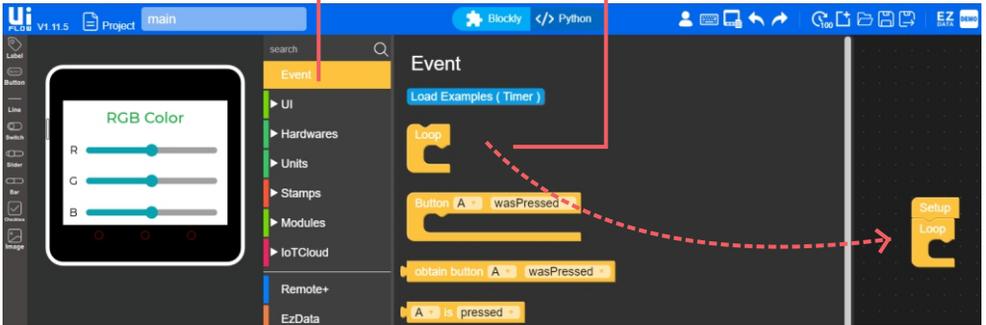


To make things even easier, we can label the sliders with the letters R, G, and B to correspond with each color channel. With these labels in place, we can easily add the necessary blocks to control the RGB LED on the MC4.0.

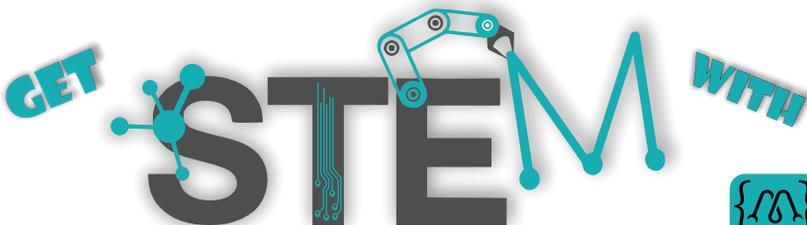


To begin programming the RGB example, you must ensure your program runs continuously. To achieve this, you will add an infinite loop to your code. Next, you can find the specific block for the RGB bar under the 'Hardware' tab in UiFlow. For each color, you will use the corresponding color from the sliders.

- 4 Click on the Event blocks - select loop block
- 5 Drag it into the coding area and connect it to the setup block



- 6 Expand Hardware tap
- 7 Click on the RGB blocks - select Set RGB Bar Color block
- 8 Drag it into the coding area and connect it to the Loop block



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.

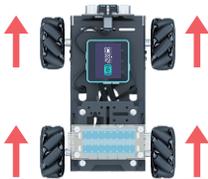
**9** Click on the Slider blocks - select label Get block

**10** Drag it into the coding area and connect it to the Set RGB Bar block

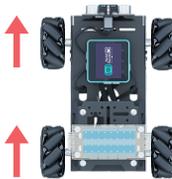
**11** change the Sliders name according to the each color  
 R > slider0  
 G > slider1  
 B > slider2

### 3 LET's move MC4.0 kit

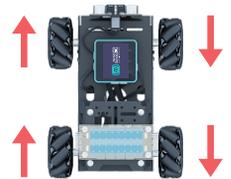
The MC4.0 kit comes equipped with mecanum wheels, which are special wheels that allow for omnidirectional movement. Mecanum wheels have a unique design of angled rollers that enable the wheel to move in any direction, including sideways and diagonally. This makes the MC4.0 kit highly maneuverable and 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 UIFlow.



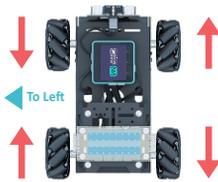
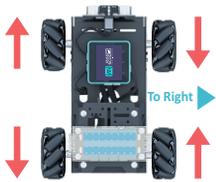
When all the mecanum wheels on the MC4.0 are moving in the same direction, it will move either forward or backward.



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

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.



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

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 UIFlow. 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!**

- 1 Add Loop block into Setup block as we did earlier
- 2 Click on the MC4.0 blocks under Third Party tab
- 3 Select the desired block to program the movement of the car.

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 UiFlow. 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	0 >> Forward	0% to 100%
		1 >> Backward	
2	Left front	0 >> Forward	
		1 >> Backward	
3	Right rear	0 >> Backward	
		1 >> Forward	
4	Right front	0 >> Backward	
		1 >> 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, on the other hand, is designed to detect different colors and is especially useful in following lines or navigating through paths with color-coded markers.

Get RGB ultrasonic distance value pin **14** mode **MM**

**1** With this block, you can read the ultrasonic value in CM, The number in the block indicates the port to which the ultrasonic sensor is connected. You can refer to the port schedule below to determine the correct port.

Port Name	Port Map			
	Pin (I/O)	Pin (I/O)	VCC	GND
Port A	33	32	VCC	GND
Port B	36	26	VCC	GND
Port C	13	14	VCC	GND

Set RGB ultrasonic LED pin **13**

Set RGB ultrasonic LED index **1** (1 ~ 6) color **Palette** brightness **50** (0 ~ 100) %

Set RGB ultrasonic LED from **1** to **6** (1 ~ 6) color **Palette** brightness **50** (0 ~ 100) %

Set RGB ultrasonic LED all color **Palette** brightness **50** (0 ~ 100) %

- ✓ Palette
- RGB
- Hex

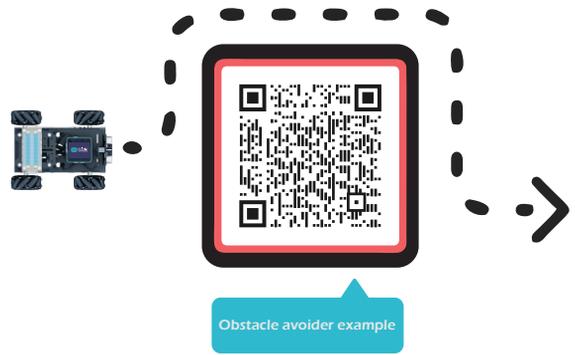
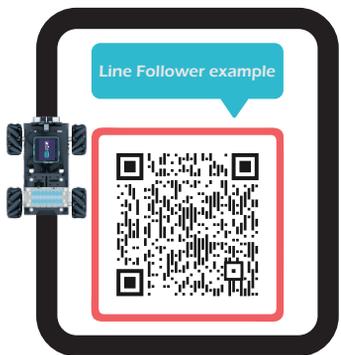
**2** These blocks can be used to control the RGB eyes of the ultrasonic. The first block is to define the port as per the previous schedule. The remaining blocks to change the eyes' colors, each eye has 3 RGB LED inside (1,2,3 for the Left eye - 4,5,6 for the Right eye)

Update multi-channel line follower in loop sensor pin **26** type **ANALOG**

Get multi-channel line follower sensor **1** (return int)

**3** These blocks read the data from the line-follower sensor, The first block is set port and the mode (analog or digital) in the sensor that you want to read from, as the sensor consists of 5 points. The second parameter is for the point that you need to read it.

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

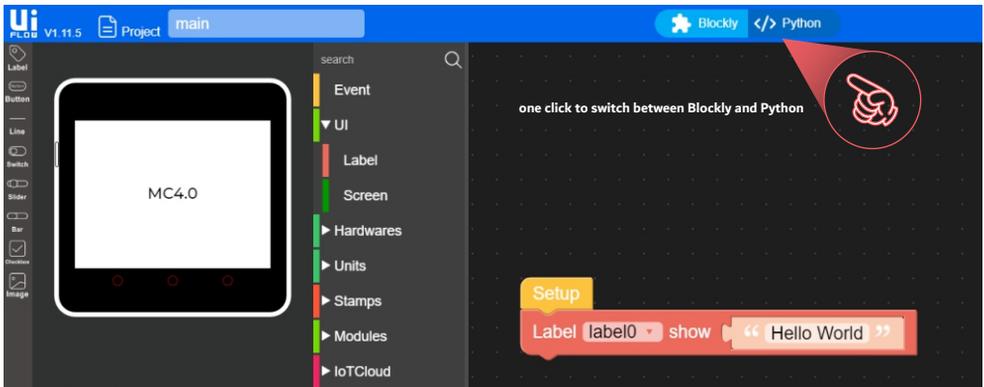
It's time to take your programming skills to the next level and dive into the world of script programming. With this powerful tool, you can create more complex programs, add more functionality to your kit, and take full advantage of the capabilities of the sensors and modules available to you. In this 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

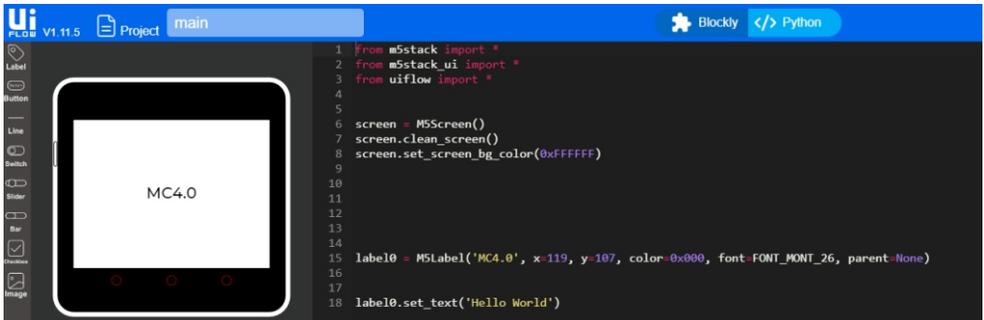
In UiFlow, transitioning from block-based programming to Python script programming is as easy as clicking a button. This makes creating your first "Hello World" program in Python a breeze. As we mentioned earlier, the "Hello World" program is the cornerstone of programming,



Hello World



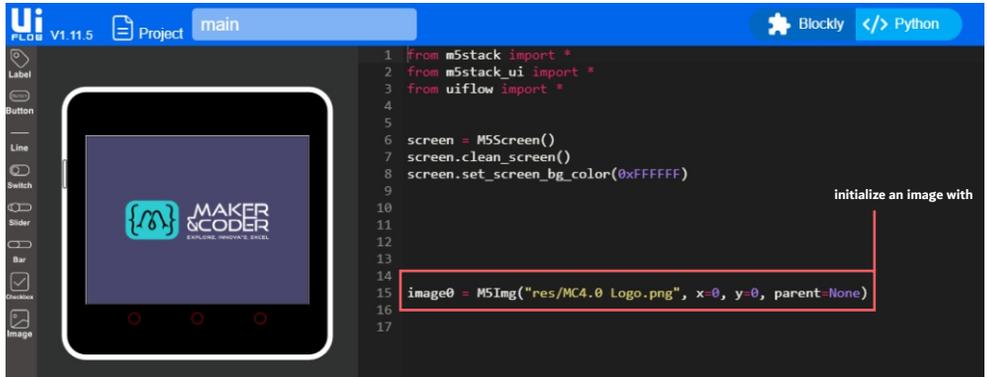
After creating your "Hello World" program in block-based programming, you can easily convert it to Python using the button in UiFlow. This allows you to see the Python code that corresponds to the blocks you used.



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:

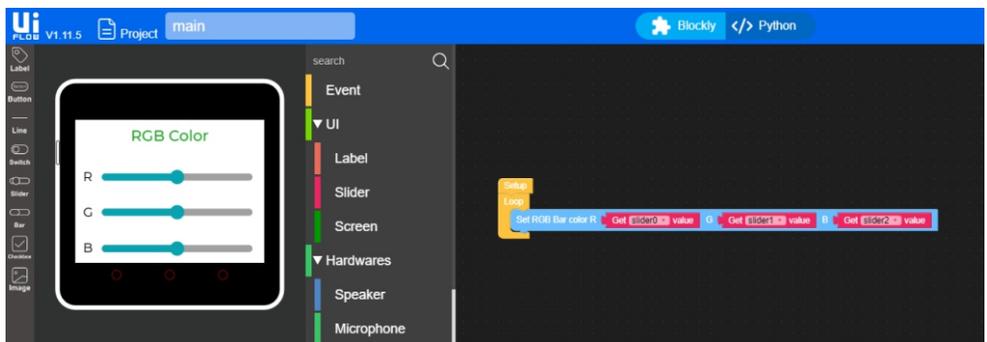
`image0.set_img_src("res/MC4.0 Logo.png")`



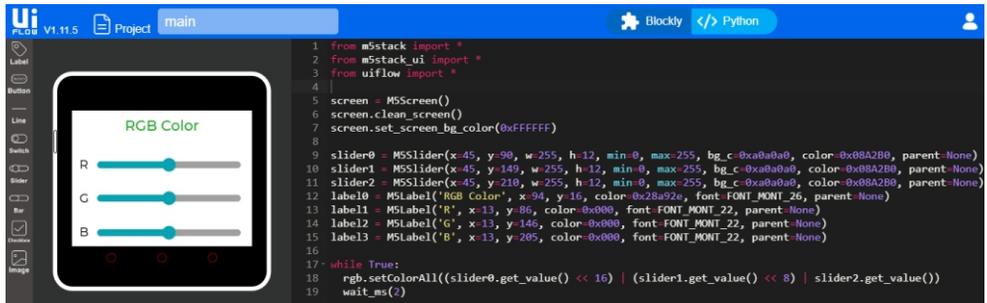
image0: as an object defined from the previous line the function to call an image is : `set_img_src` one parameter here refer to the name of the image

## 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()`

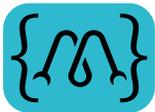


This is needed object to run all possible functions

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

Python script	Block
<code>robo.clear_encoder_count(1)</code>	Clear encoder pulse motor 1
<code>robo.read_encoder_count(1)</code>	Read encoder pulse motor 1
<code>robo.ultrasonic_rgb_sensor(14,1)</code>	Get RGB ultrasonic target distance value pin 14 mode MM (return float)
<code>robo.ultrasonic_rgb_color_all(0x000000, 50)</code>	Set RGB ultrasonic LED all color Palette brightness 50 (0 - 100) %
<code>robo.line_5_sensor[0]</code>	Get multi-channel line follower sensor 1 (return int)

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



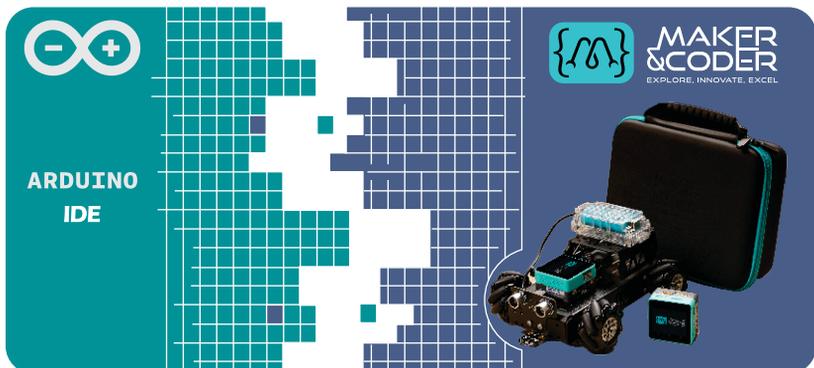
**MAKER  
&CODER**  
EXPLORE, INNOVATE, EXCEL



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

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:

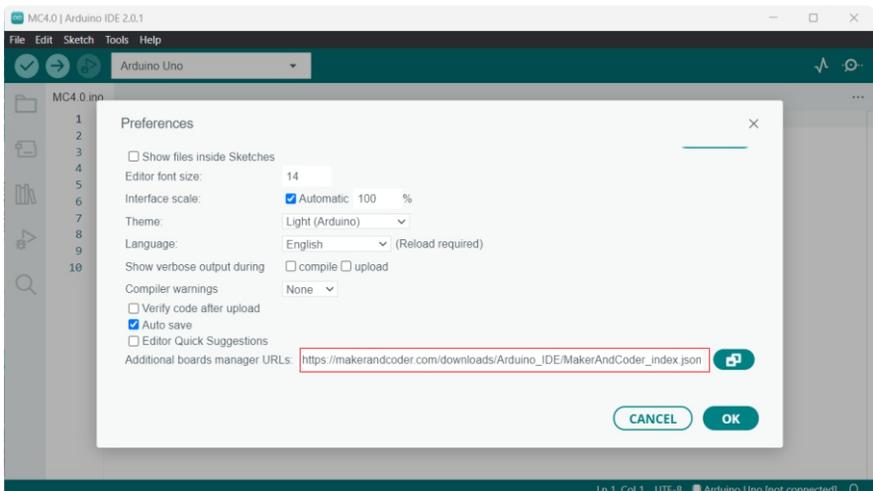
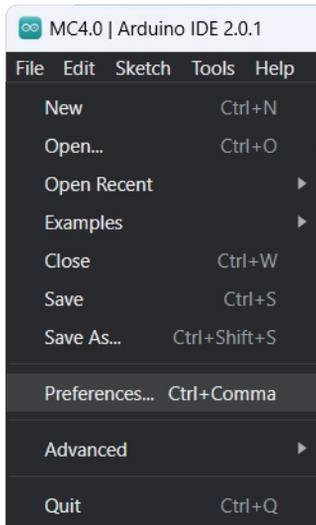
Arduino IDE



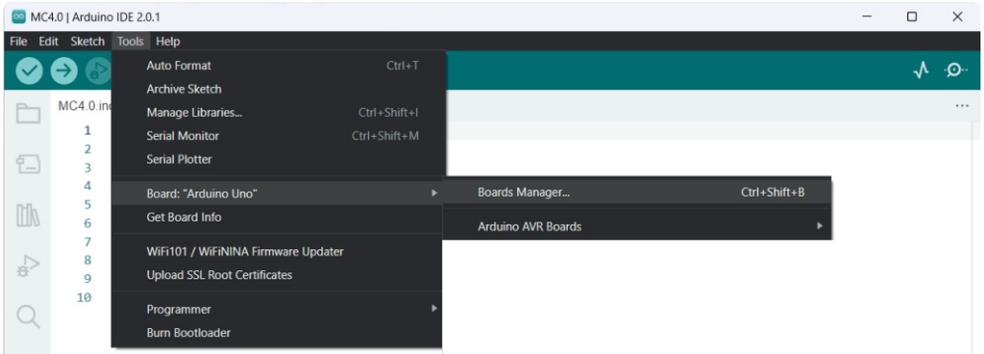
1. from the file menu choose Preferences , then in Preferences dialog box enter the following into the “Additional Board Manager URLs” field:

[https://makerandcoder.com/downloads/Arduino\\_IDE/MakerAndCoder\\_index.json](https://makerandcoder.com/downloads/Arduino_IDE/MakerAndCoder_index.json)

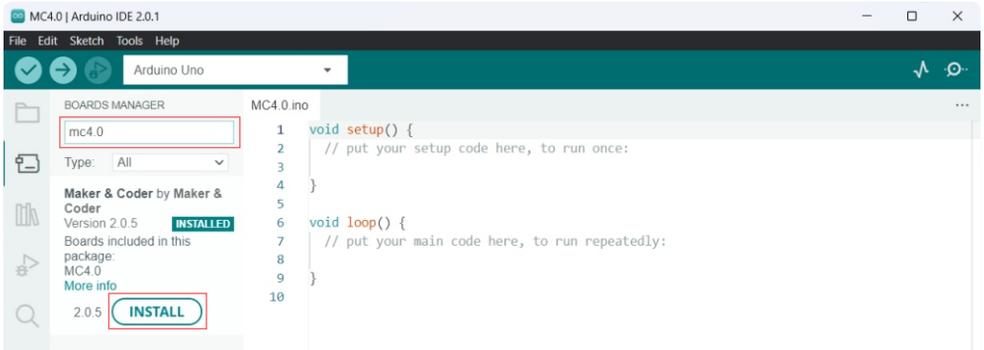
Or scan the QR code to copy the link



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

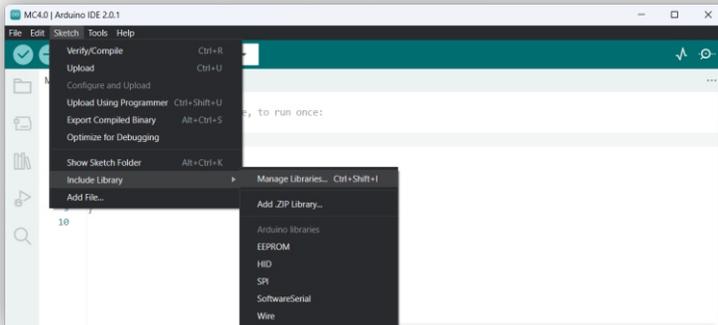


3. Search for **MC4.0** and press **install** button for the "Maker & Coder":

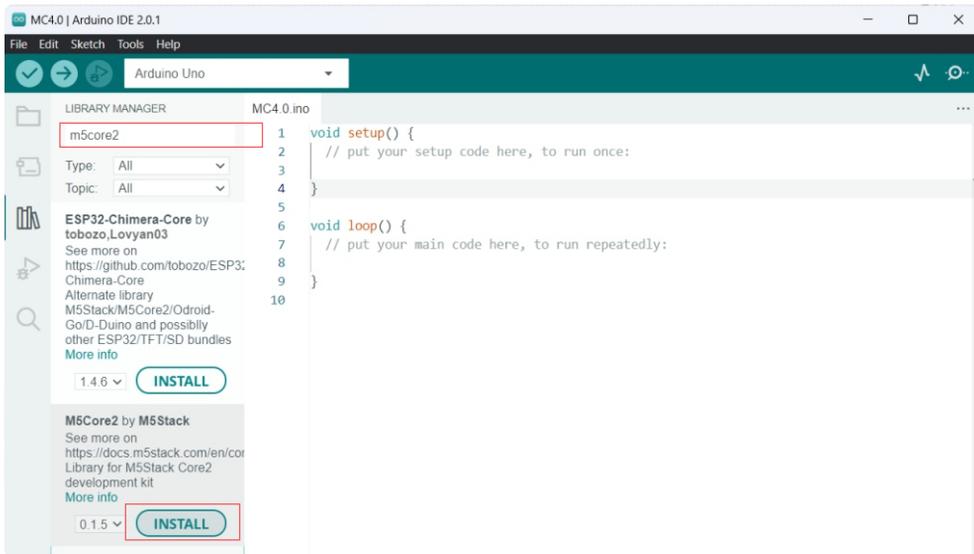


## 2.2 Install required libraries

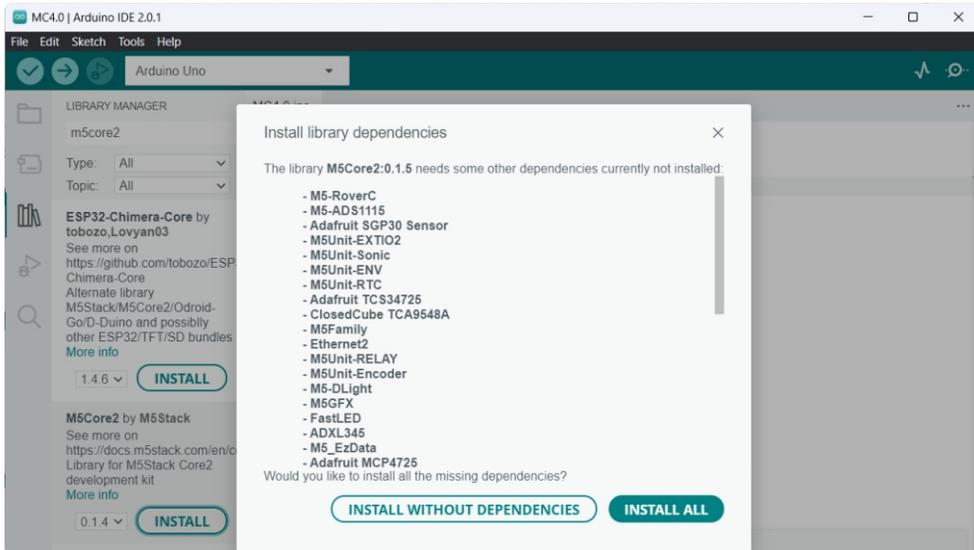
Open Libraries Manager from **Sketch > Include Library > Manage Libraries**



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



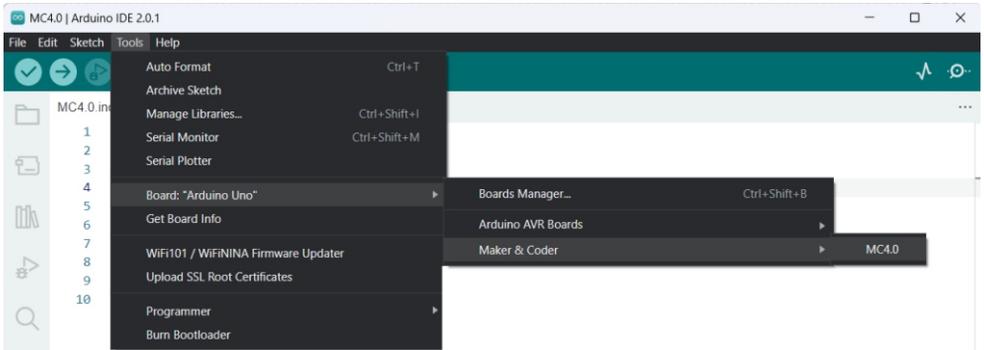
From the pop-up box click on **INSTALL ALL**



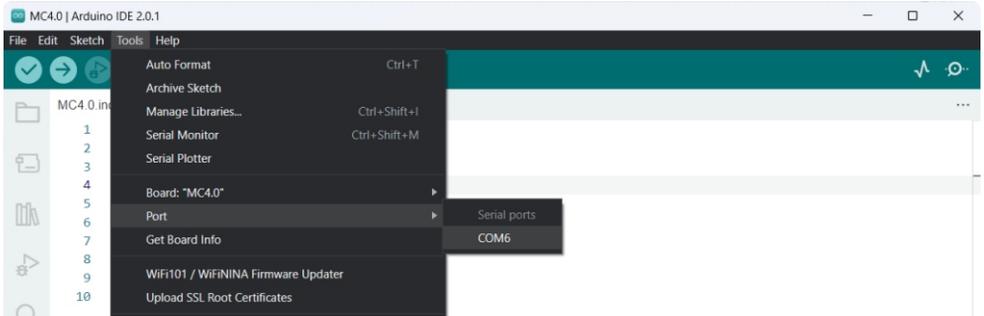
## 2.3 Testing the Installation

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

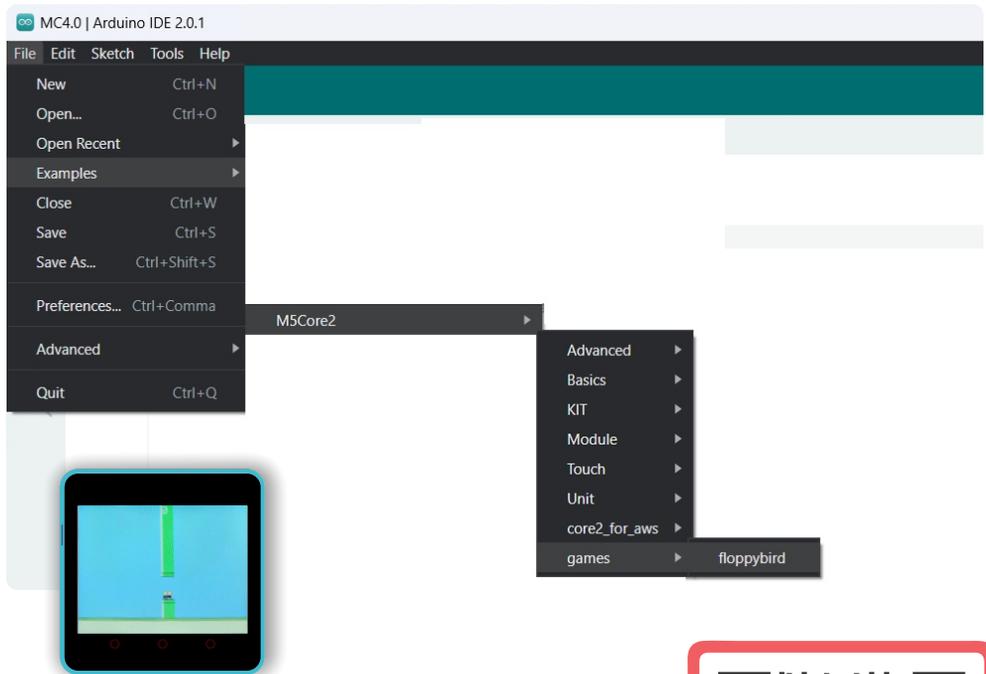


MacOS



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



[WWW.MAKERANDCODER.COM](http://WWW.MAKERANDCODER.COM)

## 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 UIFlow, 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. You can find it under the "References" section of the MC4.0 product page or find this URL:

<https://makerandcoder.com/downloads/Software/MC4.0%20Firmware.exe>

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.



MC4.0 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](mailto:Support@makerandcoder.com)

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

[www.makerandcoder.com](http://www.makerandcoder.com)

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