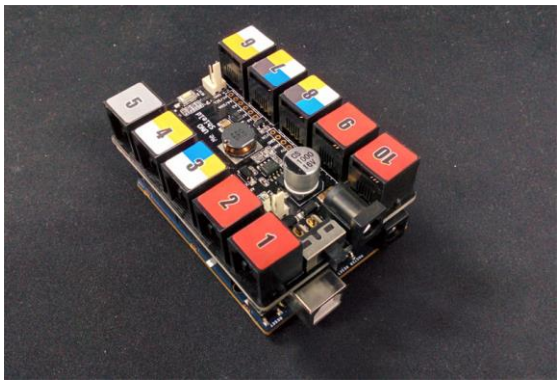
mBot 101 Programming Manual

Introduction

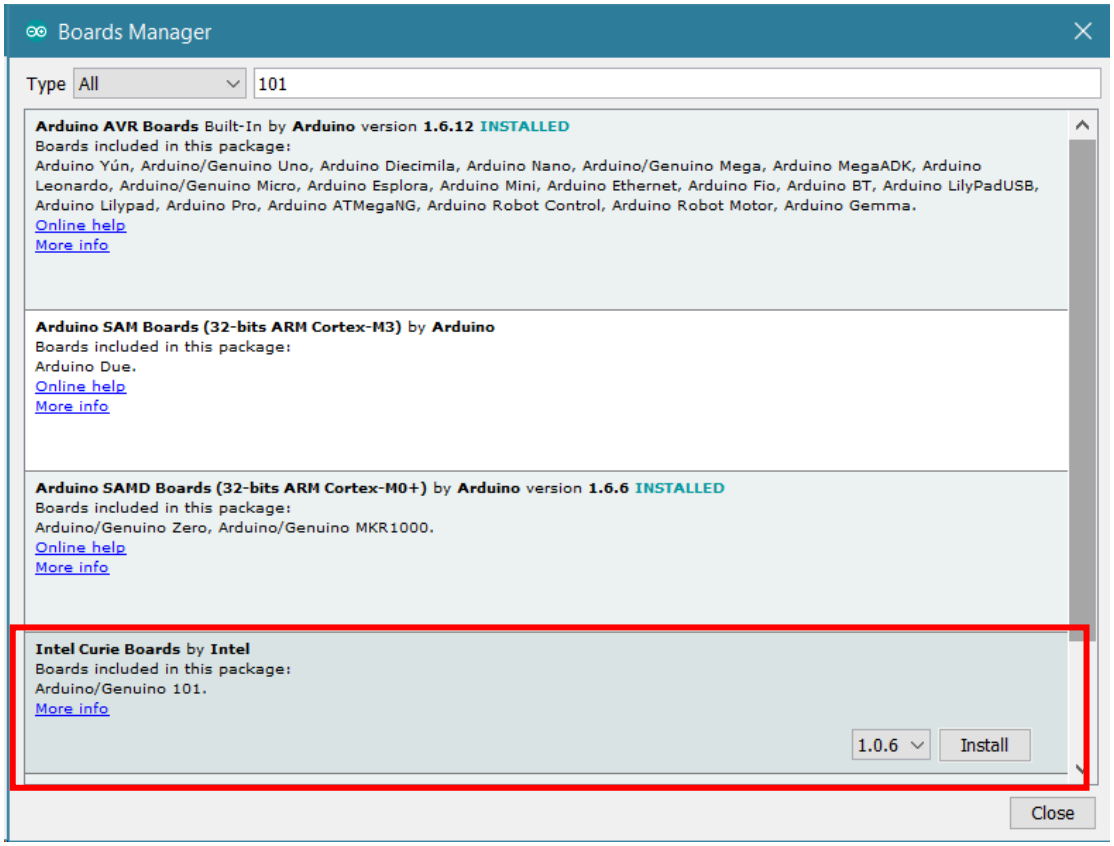
Me Uno Shield is a shield of Arduino UNO and Arduino101/Genuino101. It can turn Arduino pins into Makeblock RJ25 ports and you can connect Arduino101/Genuino101 to the Makeblock electronic modules. Moreover, this shield provides a stable power so that it can drive many motors.



How to Use

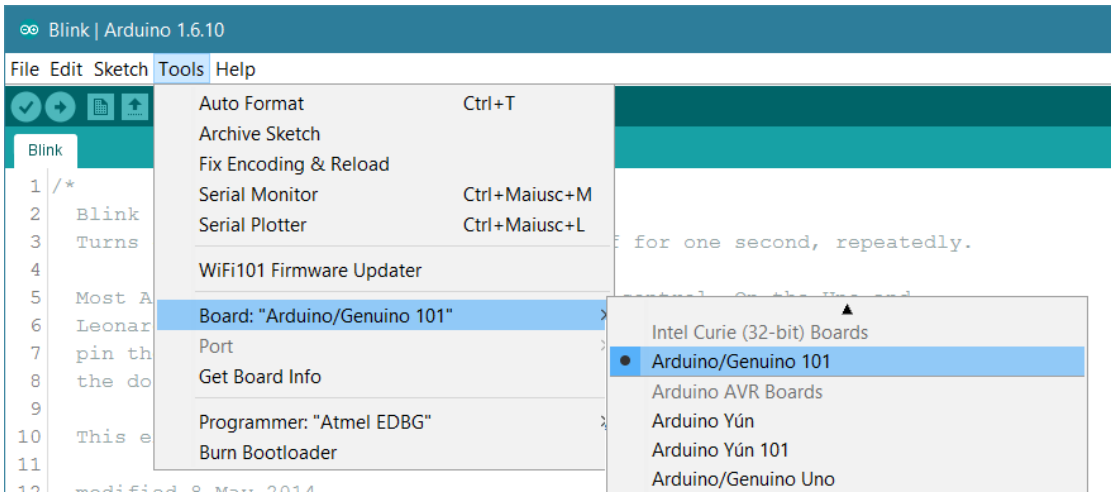
To support mBlock programming, we need to upload the mBlock firmware to Genuino 101 using Arduino IDE.

1) Install the Arduino IDE (https://www.arduino.cc/en/Main/Software)
2) Open Arduino IDE, select **Tools** -> **Boards** -> **Boards Manager**.



Here you can search Intel Curie or 101 to find the core. Click on the install button and then follow the installation procedure which includes the installation of the Genuino 101 driver.

3) Go to **Tools**, then select the **Board Arduino/Genuino 101.**



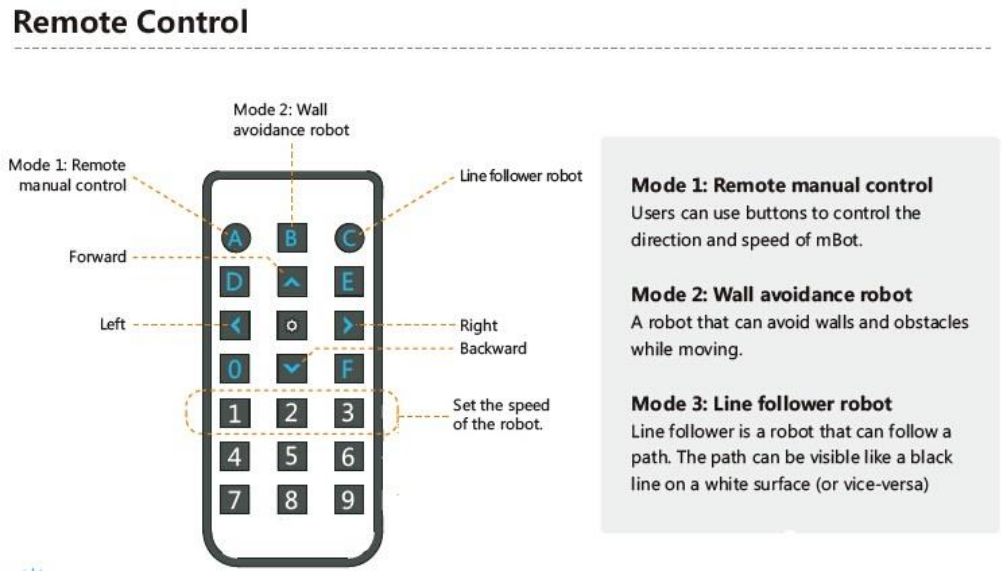
Download the Makeblock library for Arduino101/Genuino101

https://github.com/Makeblock-official/MeBoard101/archive/master.zip

Unzip the file and copy the Makeblock folder to your Arduino default library. Your Arduino library folder should now look like this

- (on Windows): `[x:\Users\XXX\Documents]\Arduino\libraries\MeBoard101\src`
- (on Mac OSX): `[\Users\XXX\Documents]\Arduino\libraries\MeBoard101\src`

4) If you want to control your robot using the remote controller, choose the **Starter** program from File Examples **MeBoard101.** Compile and upload the program to your Arduino101/Genuino101 board.



Note: You can use the map in the box in the line-following mode.

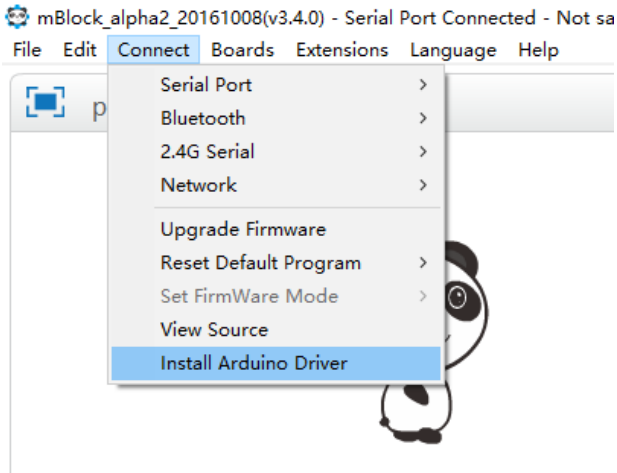
5) If you want to use mBlock to program it, choose the **FirmwareFor101** from File Examples **MeBoard101**. Compile and upload the program according to your Arduino101/Genuino101 board.

Note: Please refer to the link https://github.com/Makeblock-official/MeBoard101 for the firmware and other examples. The example codes are for the Arduino IDE.

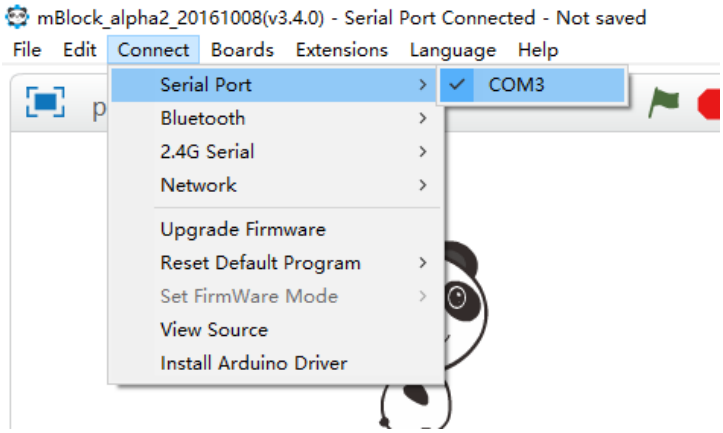
mBlock Programming

mBlock is an innovative way to learn and experiment with programming. It is a custom build upon Scratch – the de-facto standard of graphical programming software taught in many schools.

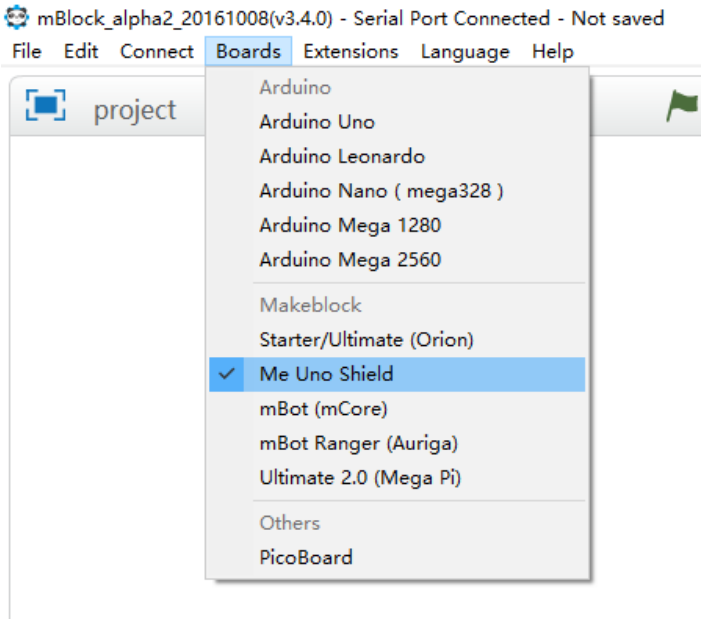
1) Please download and install mBlock on your computer. (http://www.mblock.cc/)
2) If it is the first time you install and use mBlock, you need to install USB driver otherwise the USB cable won't work on your robot. Select **Connect** -> **Install Arduino Driver** as the picture shown below.



3) Use a USB cable to connect your robot to your PC. Make sure the robot is powered on (using the power switch).
4) Select **Connect** -> **Serial Port** -> your robot's port. If you are using Windows, it should be something like "COM" and a number; if you are using a Mac, it starts like "/dev/tty.wchusbserial". You may try different options if it does not works.



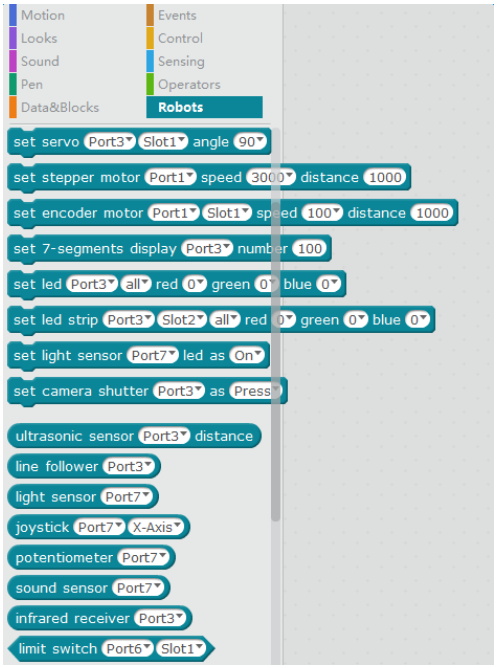
5) Select **Boards** -> **Me Uno Shield**. Choose Me Uno Shield as your mainboard.

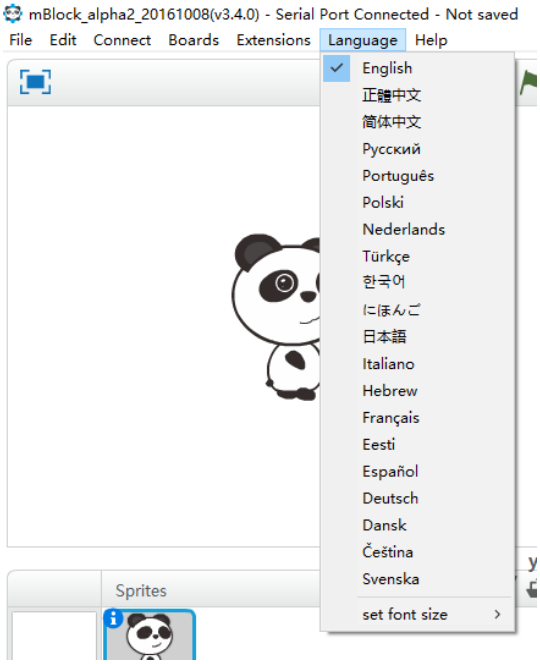


6) Now you should be able to program the mBot 101.

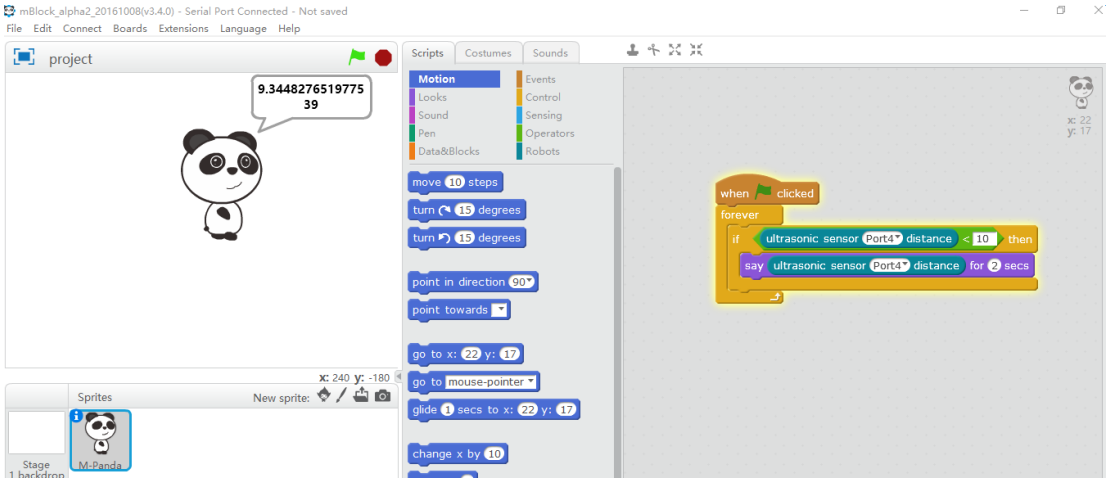
The robot related blocks come from the **Robots section**. The box you received should include an ultrasonic sensor, an infrared receiver, a line-following sensors and two motors. You can find the corresponding blocks in this section. Please modify the port number based on your robot.

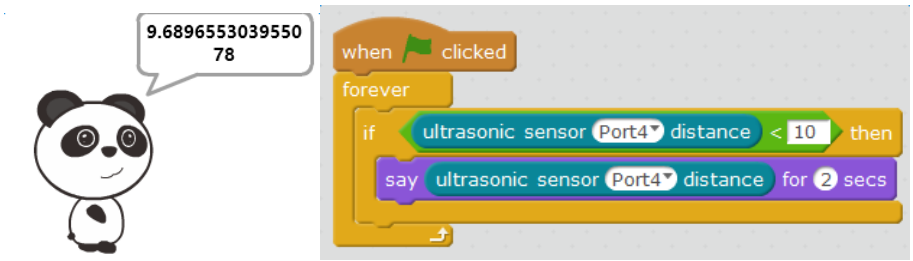
Besides the **Robots section**, the rest sections should be similar to Scratch 2.0. You can also select your language as the picture below.





Example:





When you click the green flag, the panda will say the distance detected by the ultrasonic sensor for 2 seconds when the distance is smaller than 10.

For more information/tutorials about mBlock, please visit http://learn.makeblock.com/getting-started-programming-with-mblock/