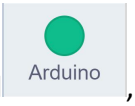
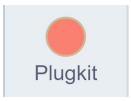
The basic building block instructions in Helloblock are divided into nine categories, and there are also eight types of Yahboom building blocks expansion packs. This course mainly uses the 

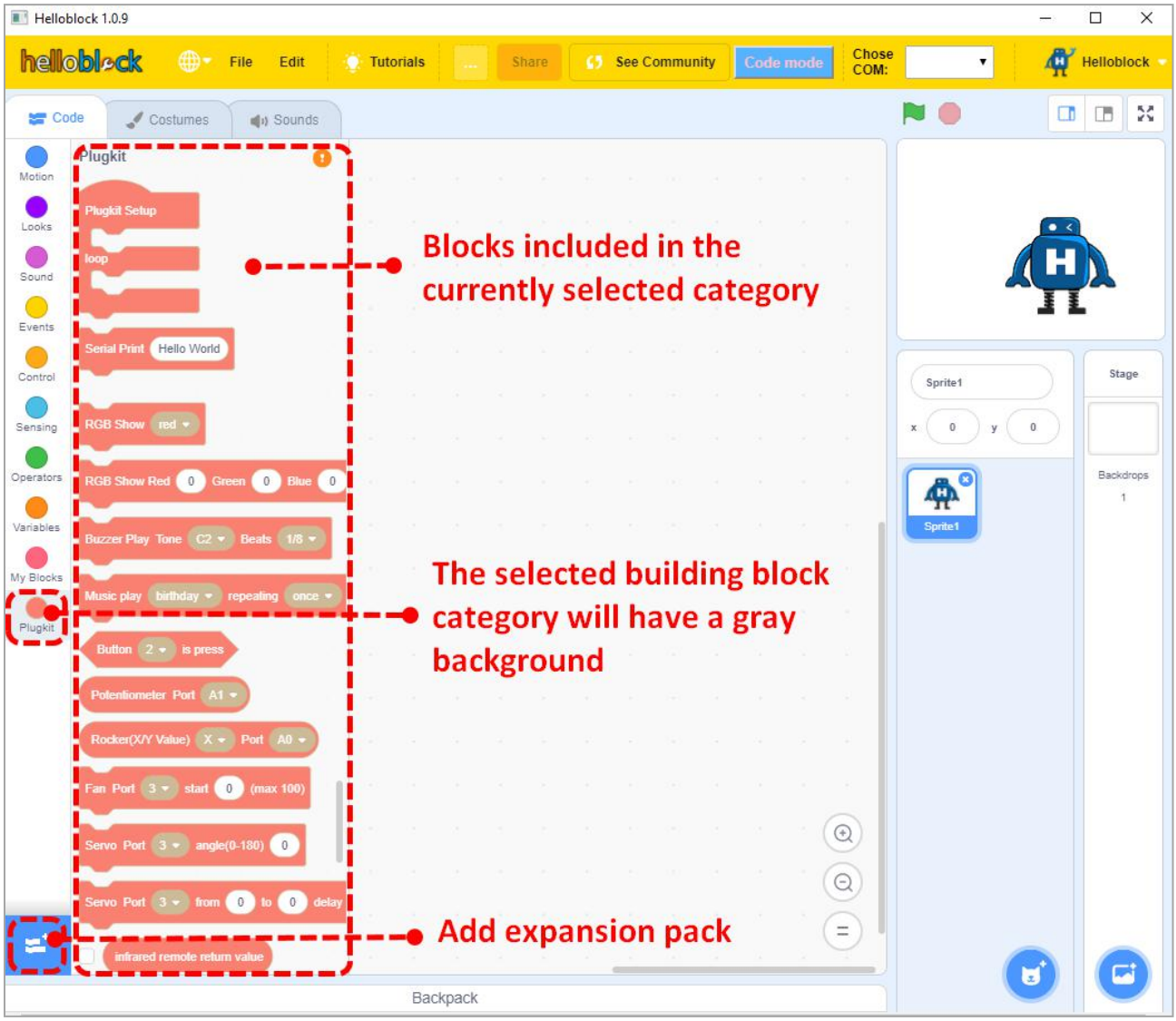
, 

and 

basic building block instructions and 

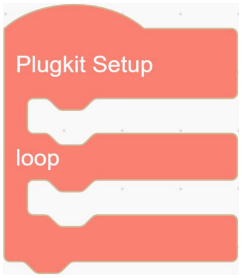
, 

expansion packs. Different modules are marked with different colors, which easy to find quickly. In this course, they are expressed by brackets and category names. For example, the operation class is【Operation】, the control class is【Control】, the variable class is【Variable】, the Arduino class is【Arduino】, and the Plugkit class is【Plugkit】.



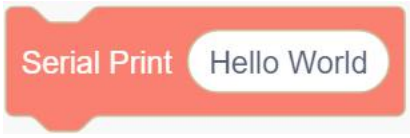
7.1 Plugkit category

Main function



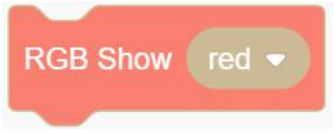
Setup only executes once, and mainly places initialization instructions. Loop execution, mainly places instructions and statements that we need to executes repeatedly.

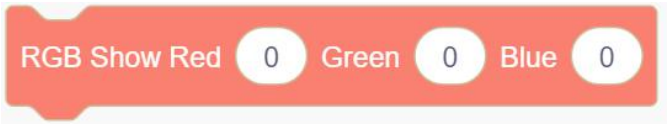
Serial Print



The serial port prints character strings or sensor data. The default baud rate is 115200.

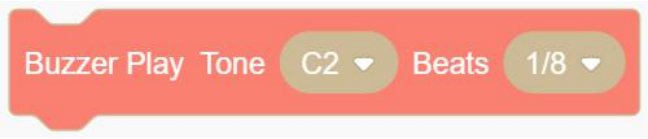
RGB light

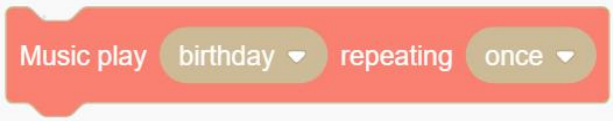




Set color or color value of RGB light

Buzzer





The buzzer module plays the corresponding beat tone or music. The tone CDEFGAB indicates different pitches, and 2345678 indicates same pitches, from low to high. For example, 4, 5, and 6 are low, medium, and high respectively, C4 <C5 <C6, C5 <D5 <E5 <F5 <G5 <A5 <B5.

Button

The key module outputs a Boolean value, which is one of “True” or “False”.

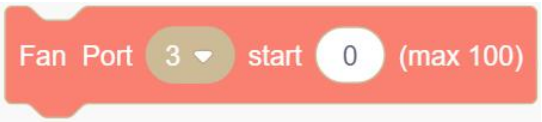
Potentiometer

Output potentiometer data value

Rocker

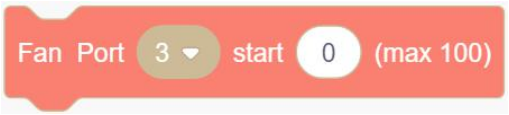
Output rocker data value

Fan Motor

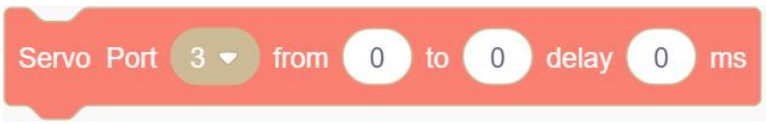


Set the fan module port and wind speed (wind speed range recommended 0 ~ 100)

Servo

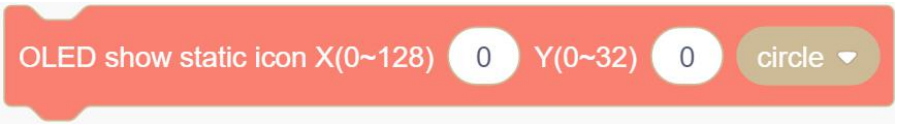


Set port and angle of servo

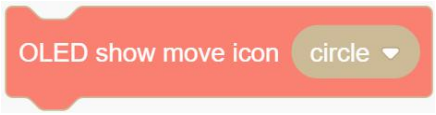


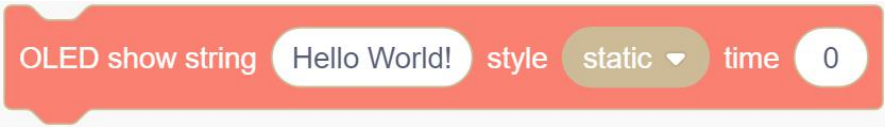
Set the start angle and end angle of servo rotation, every 1 degree time interval

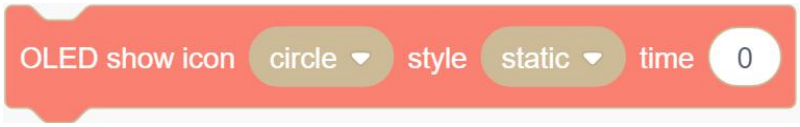
OLED



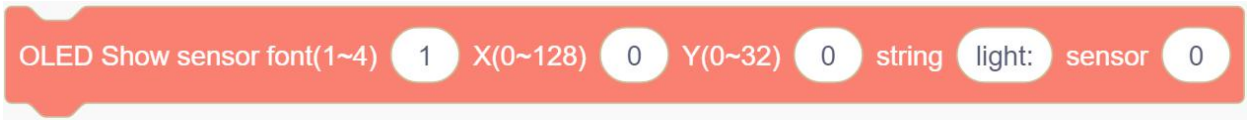
OLED static display







OLED dynamic display

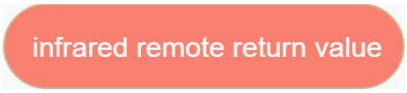


OLED display string and sensor data

OLED Custom draw points and lines

OLED display and clear

IR Control



IR control return value

Selection corresponding buttons for IR controller

Sound sensor

Returns the value of the sound sensor

Photosensitive sensor

Returns the value of the photositive sound sensor

Hall sensor

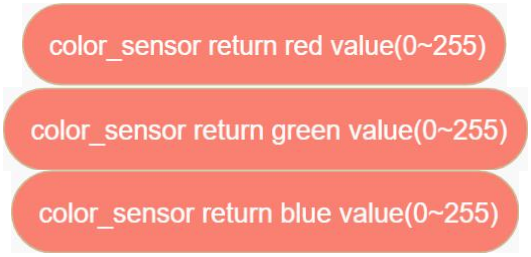
Returns the value of the hall sensor

Vibration sensor

Vibration sensor output boolean

Color recognition sensor

Color recognition sensor output boolean



Color recognition sensor returns color values

Temperature and humidity sensor

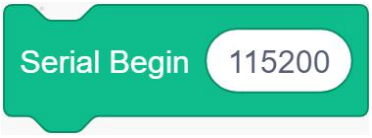
Temperature and humidity sensor returns temperature and humidity value

Ultrasonic sensor

Ultrasonic sensor returns ultrasonic value

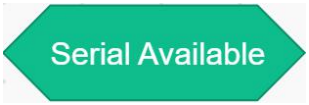
7.2 Arduino category

Serial baud rate setting



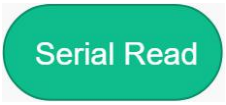
Set the serial port baud rate. The default is 115200.

Determine whether the serial port has data



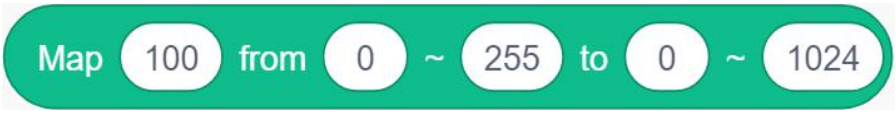
If data is detected on the serial port, return True otherwise return False.

Read serial port data



Read the data received by the serial port

Mapping function



Map a data value or variable from one range to another. The first range can be larger or smaller than the second range.

7.3 Control category

Wait 1s

Wait (delay) function, default is 1s.

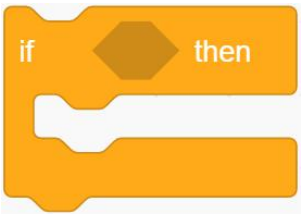
Repeated execution function (for loop)

The function is executed repeatedly, which is repeated 10 times by default.

Repeat execution function (while loop)

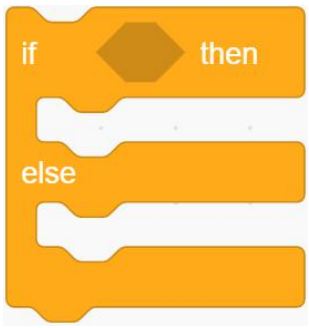
Keep repeated execution

Conditional statement (if condition)



If the conditions are met, execute ...

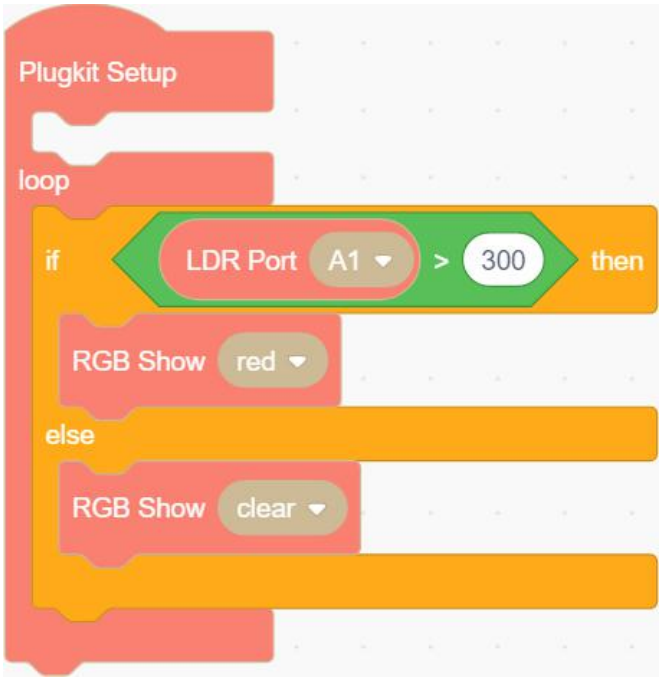
Conditional statement（if...else...）



If the conditions are met, execute ... If conditions are not met, execute…

7.4 Operators category

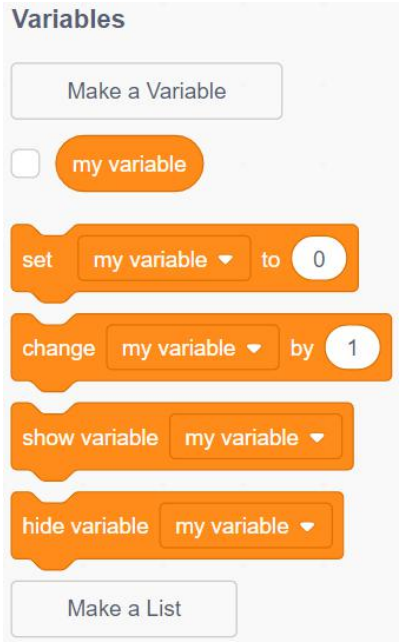
In the process of programming, we often need to judge some conditions. At this time, we need to use our operation instructions, including four operations, random number generation, size comparison, and, or functions. Operation instructions are often related to control instructions are used together.



7.5 Variables category

Variables are derived from mathematics and are abstract concepts in computer languages that can store calculation results or represent values. We can think of variables as a box, and the program can access the data in the box at any time. We use variables reasonably to improve programming efficiency and increase program readability.

In Helloblock, we can create variables, click to create a variable, and give the variable a name.



The created variables will be displayed below my variables, so we can use the variables we created, and my variables are created by default.