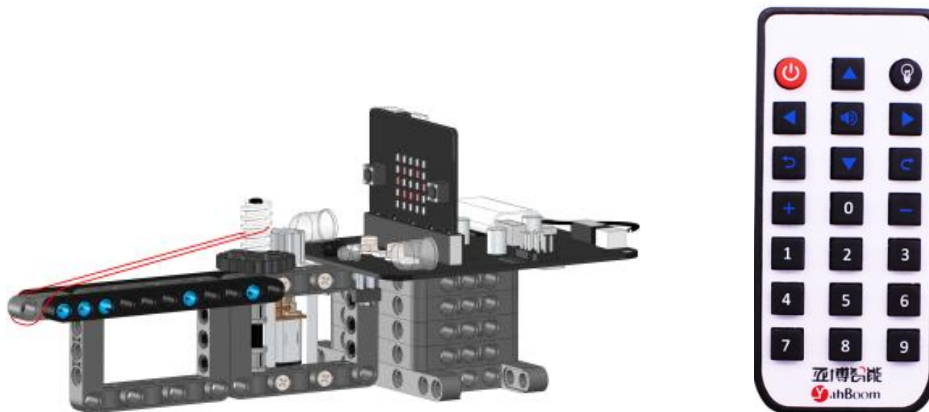
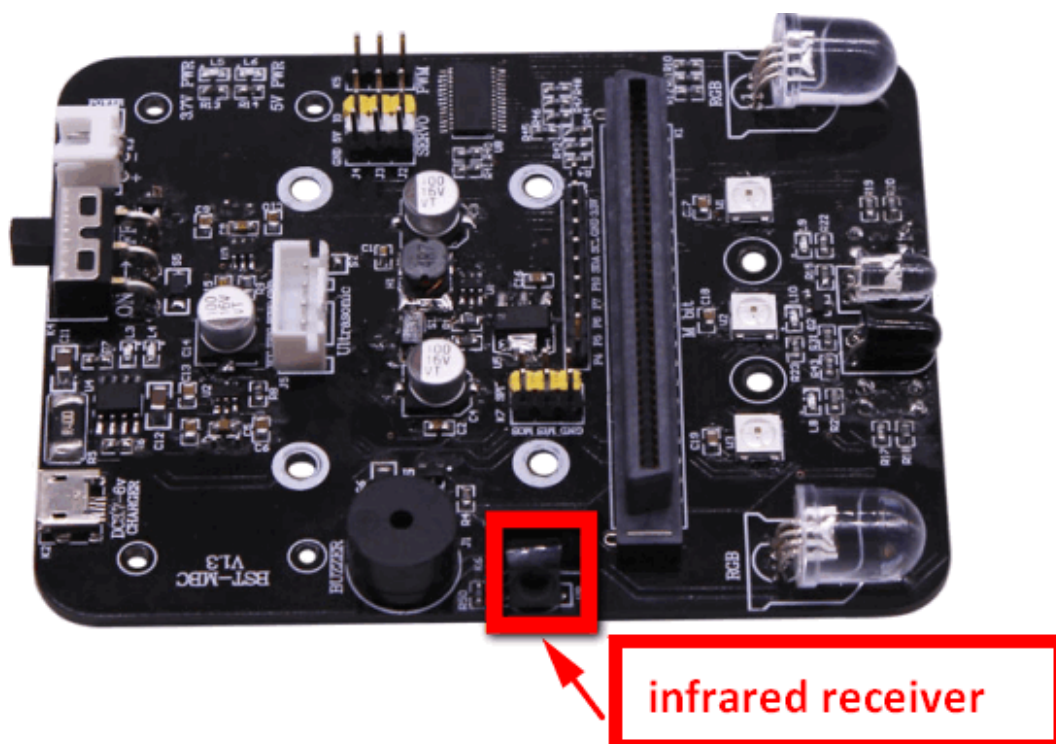


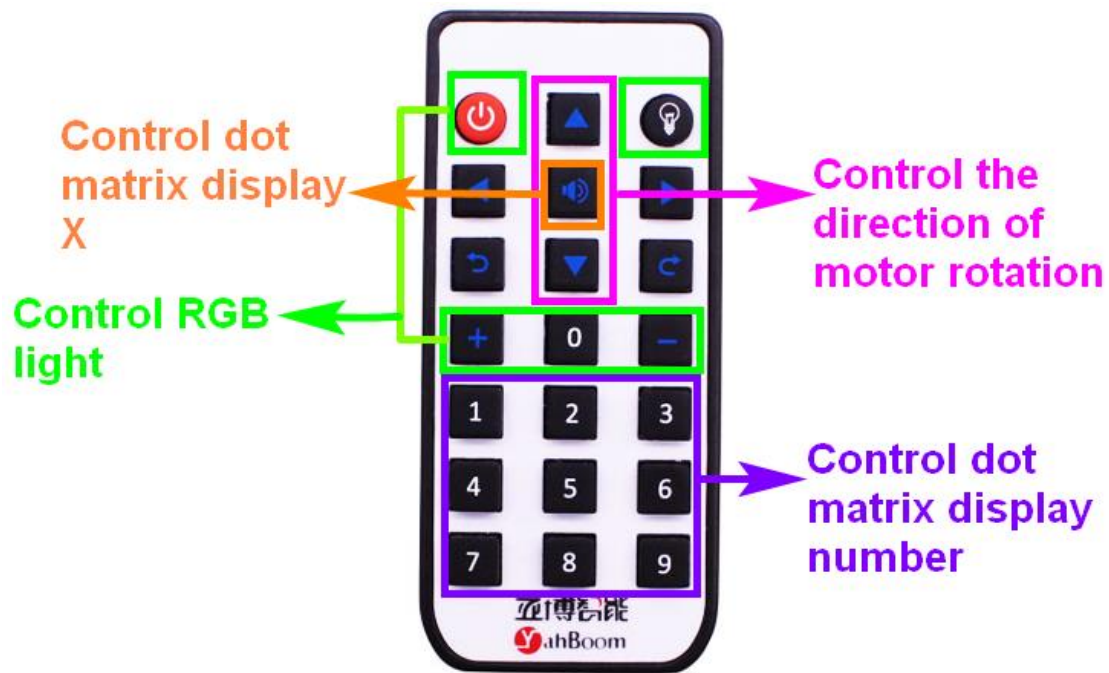
Lesson2 of Building:bit Sniper---“Infrared remote control”

**Note:**

1. When performing infrared remote control, the remote controller should face the infrared receiver on the expansion board.
2. There is a plastic piece on the bottom of the infrared remote controller that needs to be taken down for normal use.
3. The infrared light emitted by the infrared remote controller and the infrared receiver is invisible to the human eye. It can be seen under the camera without filtering infrared light.



1.Experimental phenomena



2.Preparation before class

We need to be ready:

Building Block Sniper *1

Infrared remote controller *1

USB data cable *1

2-1.Two programming methods:

Online programming:

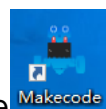
First, we need to connect the micro:bit to the computer by USB data cable, the computer will pop up a USB flash drive. Then, click on the URL in the USB flash drive: <http://microbit.org/> to enter the edit process interface, click to

【Extensions】, and copy the package URL:

https://github.com/lzty634158/yahboom_mbit_en and

https://github.com/lzty634158/YB_IR to the input field, and you can use the building blocks of the Yahboom software package.

Offline programming:

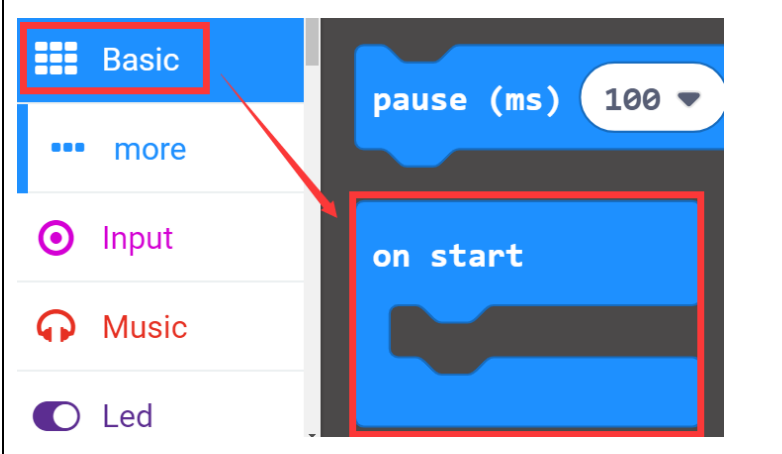
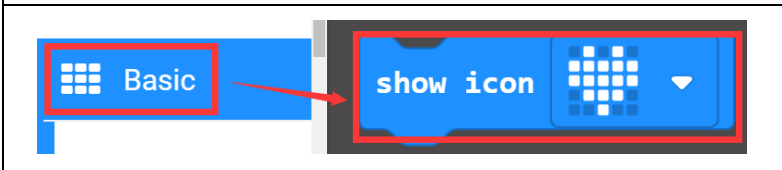
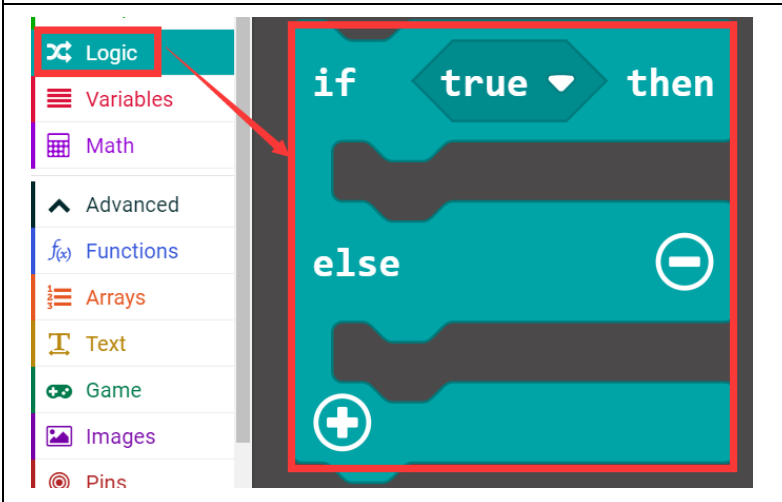
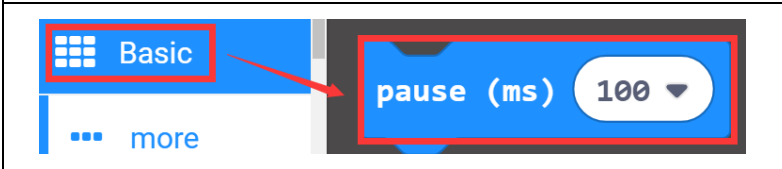
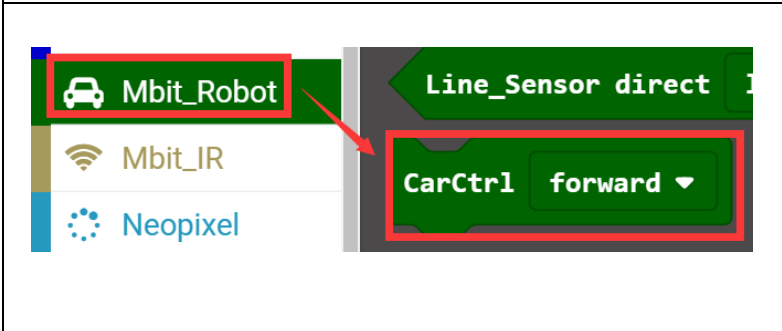


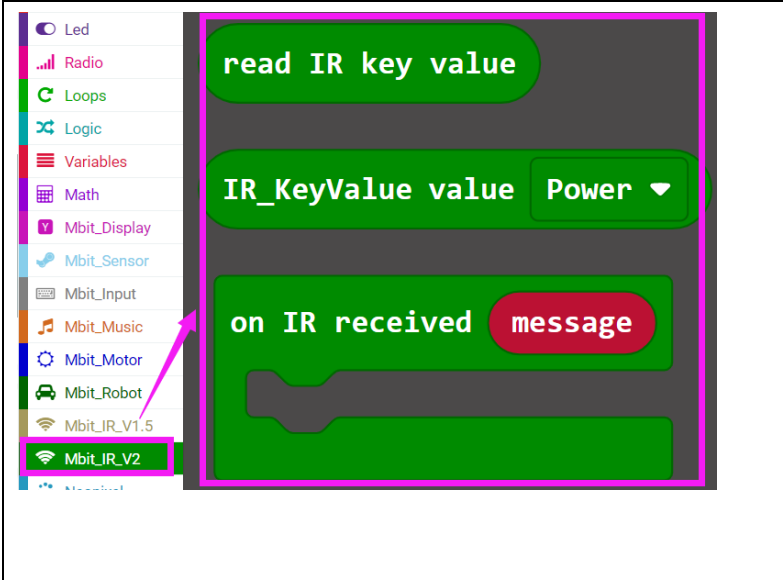


Open the offline programming software [Makecode](#), click to 【Extension】 and copy the package URL: https://github.com/lzty634158/yahboom_mbit_en and https://github.com/lzty634158/YB_IR to the input field, and you can use the building blocks of the Yahboom software package.

For detailed programming, please read the documentation before class

【1. Preparation before class】----【Introduction of programming method】. We use micro:bit official website for online programming in here.

3.Studying blocks

Blocks	Instruction
	<p>Executed at boot time, the code is only executed once.</p>
	<p>Display image on the lattice of micro:bit.</p>
	<p>If it is true then execute. If it is false, it will not be executed.</p>
	<p>The program pauses for 100 milliseconds and the time can be modified by yourself.</p>
	<p>The car control forward represents the motor rotates in the positive direction and the car control back represents and the motor rotates in the opposite direction.</p>

	<p>When the power button on the remote controller is pressed, the code inside will be executed, and the button can be customized.</p> <p>Set the infrared remote control receiving pin. In this experiment, the receiving pin is P8, so you must select P8, otherwise you will not receive the signal.</p>
	<p>Select the color of the lights.</p>
	<p>Can play different tones.</p>

4.Programming

Next, we started to write the program for the infrared remote control of the building block Sniper, as shown below:



The image displays a Scratch script with the following blocks:

- set ir to 9
- else if message = IR_KeyValue value Zero then
- set ir to 10
- else if message = IR_KeyValue value Minus then
- set ir to 11
- else if message = IR_KeyValue value One then
- set ir to 12
- else if message = IR_KeyValue value Two then
- set ir to 13
- else if message = IR_KeyValue value Three then
- set ir to 14
- else if message = IR_KeyValue value Four then
- set ir to 15
- else if message = IR_KeyValue value Five then
- set ir to 16
- else if message = IR_KeyValue value Six then
- set ir to 17
- else if message = IR_KeyValue value Seven then
- set ir to 18

```

else if <message v = IR_KeyValue value Eight v> then -
  set ir v to 19
else if <message v = IR_KeyValue value Nine v> then -
  set ir v to 20
else if <message v = IR_KeyValue value Light v> then -
  set ir v to 21
+

```

```

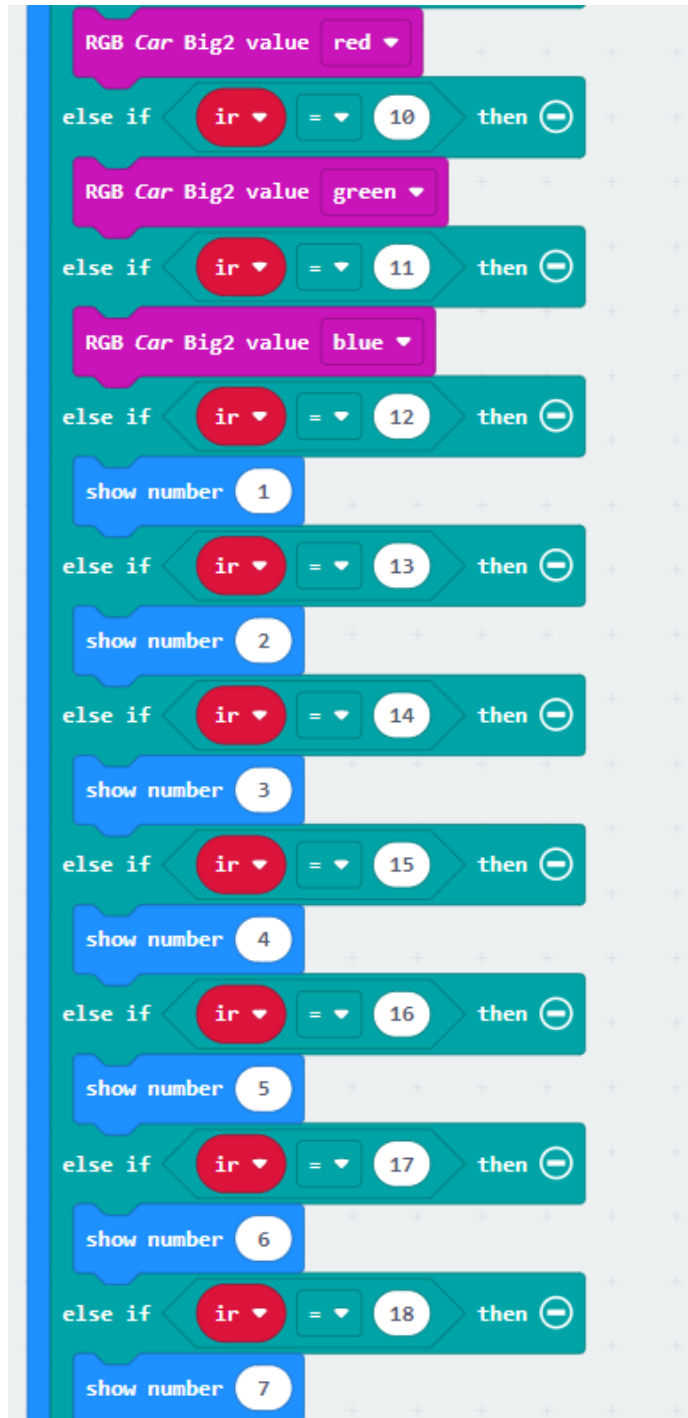
forever
  if <ir v = 1> then
    set ir v to 0
    CarCtrlSpeed forward v speed 100
    pause (ms) 300
    CarCtrl stop v
  else if <ir v = 2> then -
    set ir v to 0
    CarCtrlSpeed back v speed 100
    pause (ms) 300
    CarCtrl stop v
  else if <ir v = 3> then -
  else if <ir v = 4> then -
  else if <ir v = 5> then -
  else if <ir v = 6> then -
  else if <ir v = 7> then -

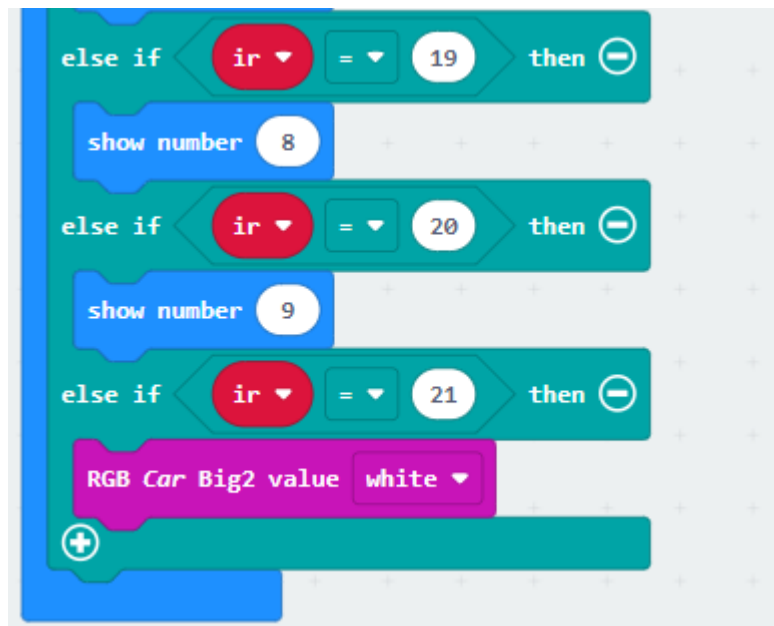
```

```

show leds
  else if <ir v = 8> then -
    RGB Car Big2 value off v
  else if <ir v = 9> then -

```





The above is the program for this Sniper. After writing, we need to download it to the micro:bit board.