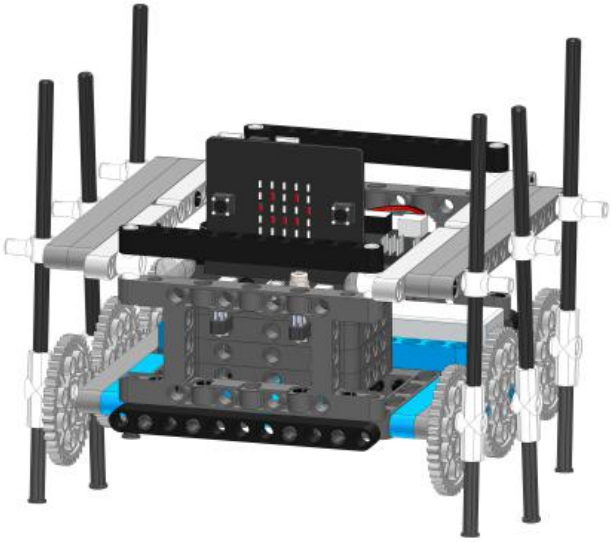
Lesson2 of Building:bit Hexapod robot---“Infrared remote control”

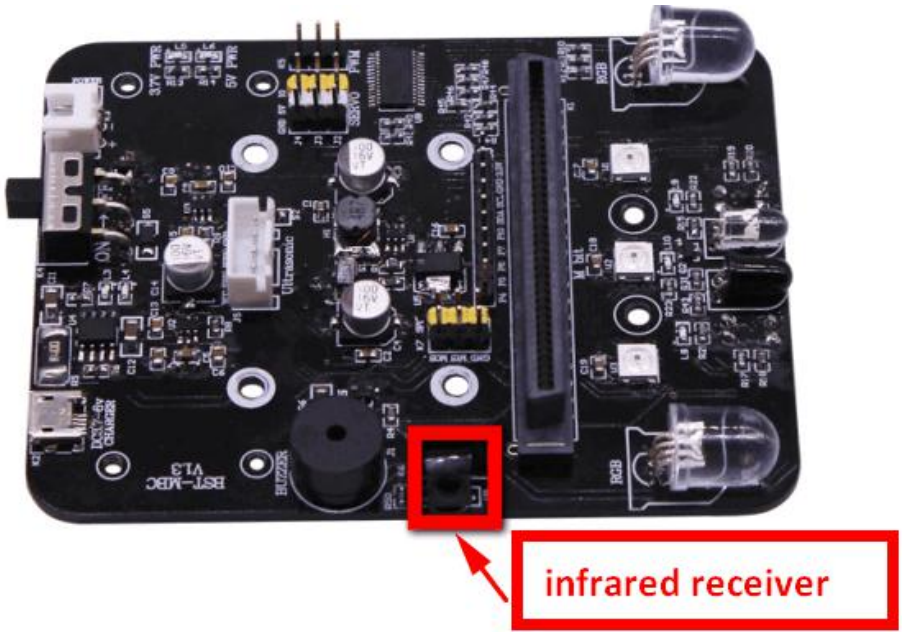


Note：

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

After downloading the program, open the power switch of the Hexapod robot and press the button of the infrared remote controller. The Hexapod robot will have corresponding action. On the Infrared remote controller, small

light button, add button, subtract button to control the color of the colorful lights, the red power button to turn off light, 1~7 button represents the music do, re, mi, fa, sol, la, si. The front, back, left and right buttons control the advance, back, turn left and turn right of the Hexapod robot, the spin left button and spin right button control the Hexapod robot to rotate left and rotate right. 0 and 8, 9 are used to control the image of the dot matrix screen.

2.Preparation before class

We needs to be ready:

Building Block Hexapod robot*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 to the input field, and you can use the building blocks of the Yahboom software package.

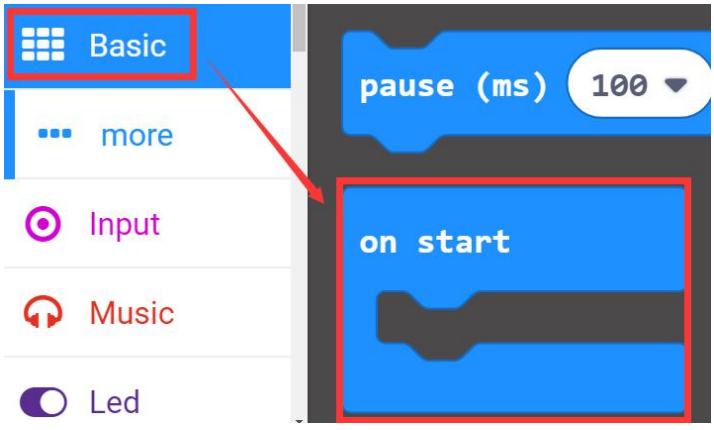
Offilne programming:

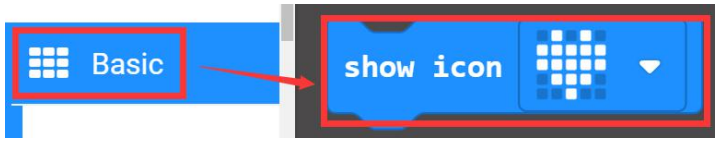
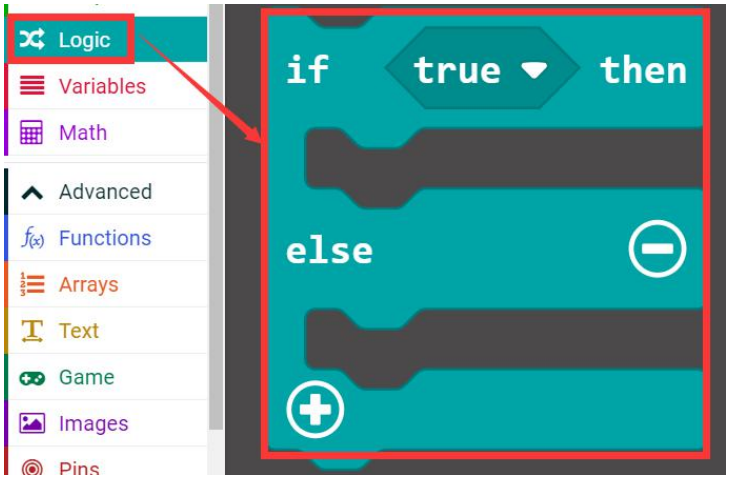
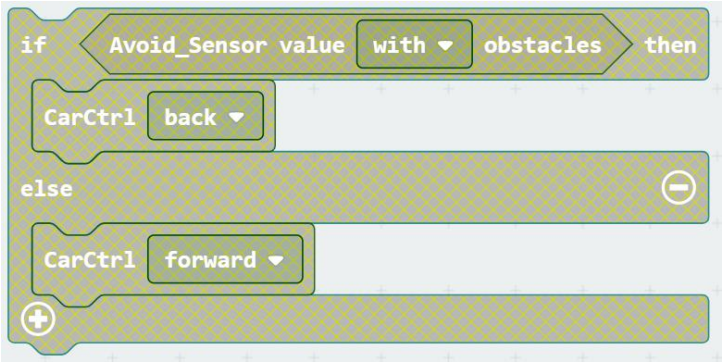
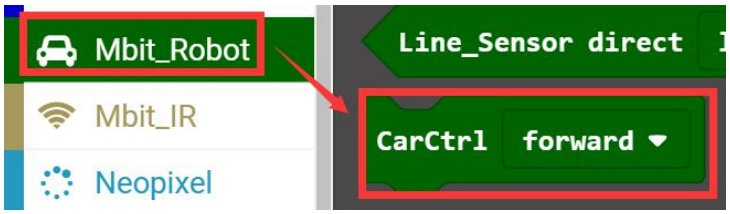
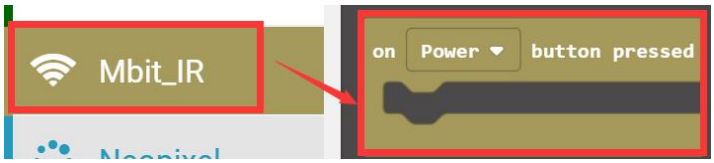
Open the offline programming software 

, click to 【Extension】 and copy the package URL: https://github.com/lzty634158/yahboom_mbit_en 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

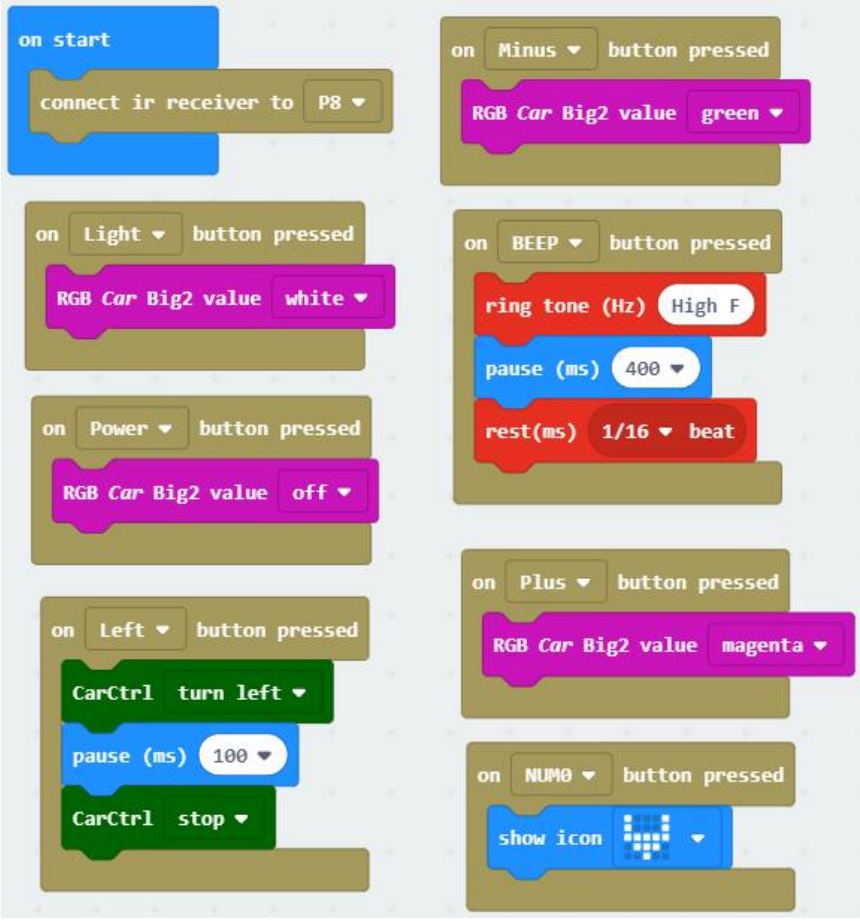
Blocks	Instruction
	Executed at boot time, the code is only executed once.

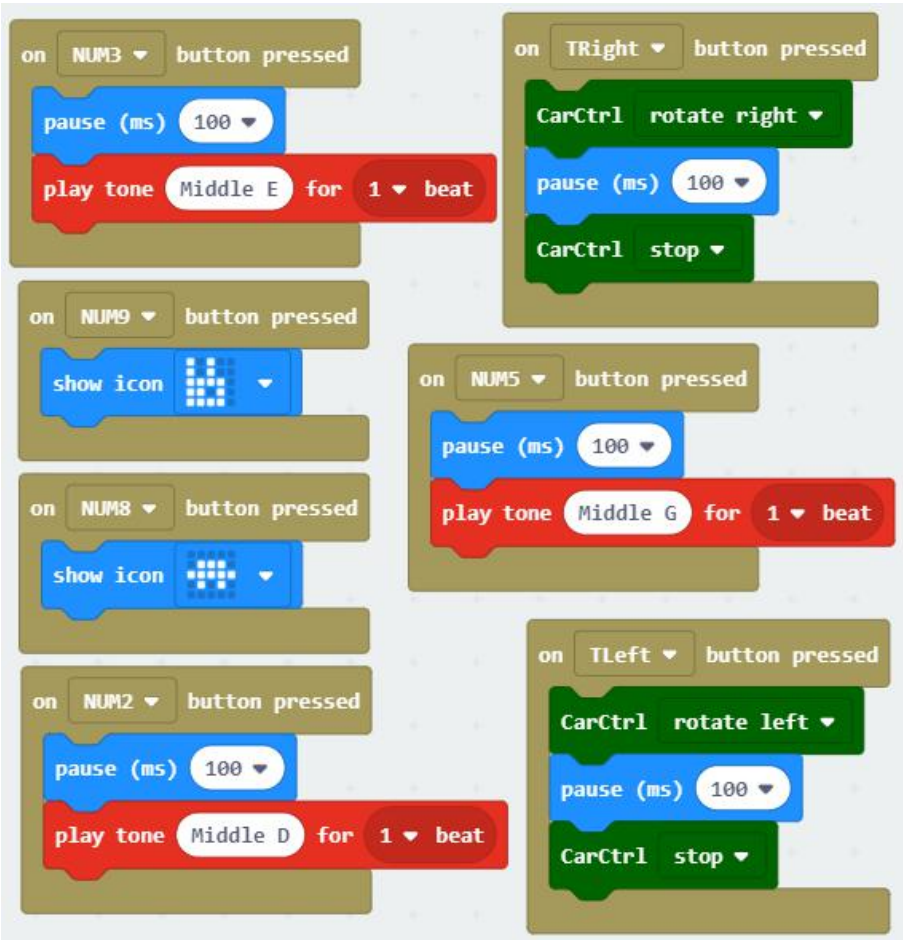
	Display image on the lattice of micro:bit.
	If true then execute. If it is false, it will not be executed.
	If there is an obstacle in front, then the car will back, otherwise the car will forward.
	The program pauses for 100 milliseconds and the time can be modified by yourself.
	The Hexapod robot's motion state selection.You can select forward,back,turn left, turn right,rotate left, rotate right, and stop.
	When the power button on the remote controller is pressed, the code inside will be executed, and the button can be customized.

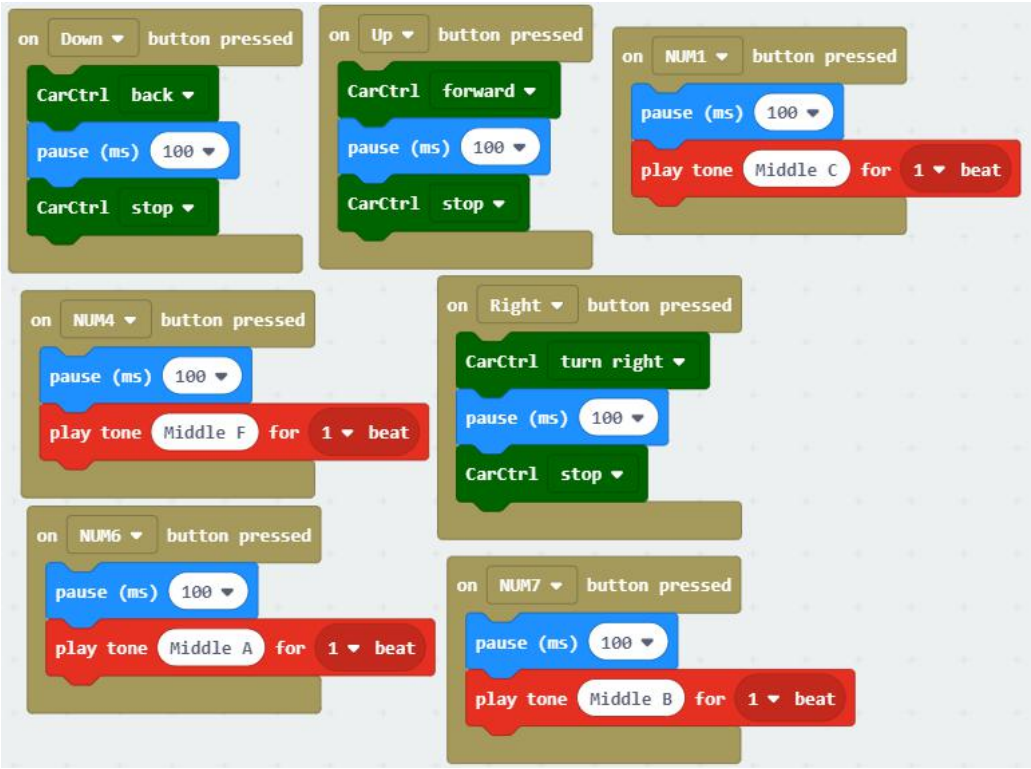
	Set the infrared remote control receiving pin. In this experiment, the receiving pin is P8, so you must select P8, otherwise you will not receive the signal.
	Select the color of the lights.
	Can play different tones.

4.programming

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







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