6.14 Frog beating

Frog-beating.hex

http://www.yahboom.net/xiazai/Tiny_bit/6.Playing%20with%20Tiny%20bit/Frog-beating.hex

1.Preparation

This course is mainly based on the accelerometer that comes with micro:bit.

When we rotate the micro:bit around the x-axis, that is, when rotating on the yoz plane, the degree of the rotation (picth) will be changed.

When we rotate the micro:bit around the y-axis, that is, when rotating on the xoz plane, the degree of the rotation (roll) will be changed.

When we rotate the micro:bit around the z-axis, that is, when rotating on the yoz plane, the degree of the rotation (yaw) will be changed.

In this experiment, we use the rotation angle to judge.

Programming method:

Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: http://microbit.org/ to enter the programming interface. Add the Yahboom package: https://github.com/lzty634158/Tiny-bit to program.

Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: https://github.com/lzty634158/Tiny-bit, you can program.

In the picture shown below, the ultrasonic module with red wire frame.

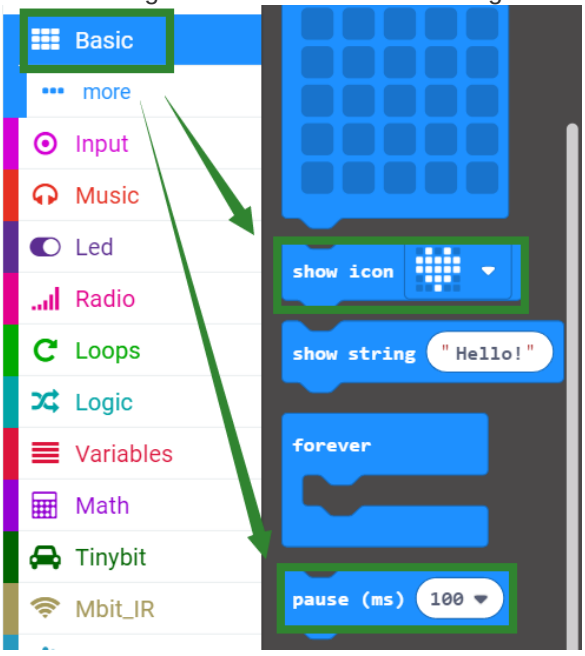
2.Learning goal

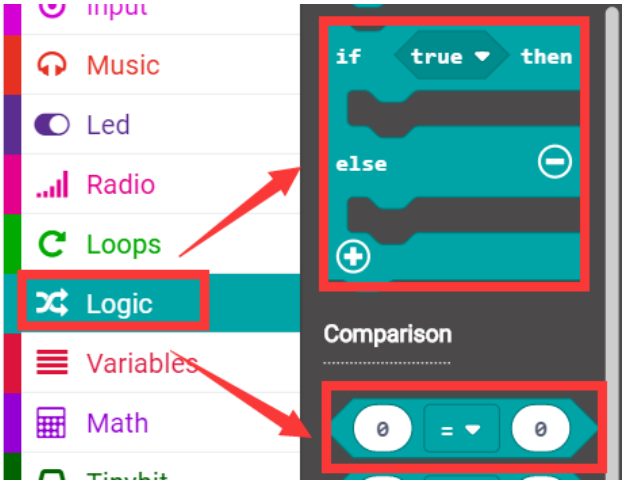
2-1. Learn how to use accelerometer graphically program building blocks

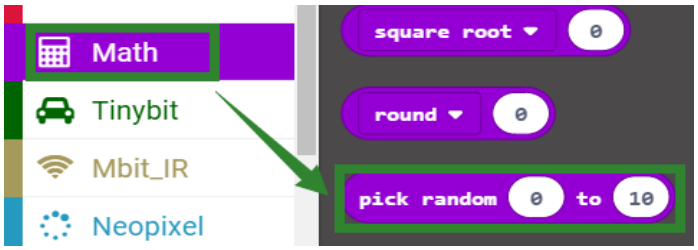
2-2.The function is realized by programming: when we gently press the tail of the robot car with our hand, the Tiny-bit will make a sound and advance a short distance.

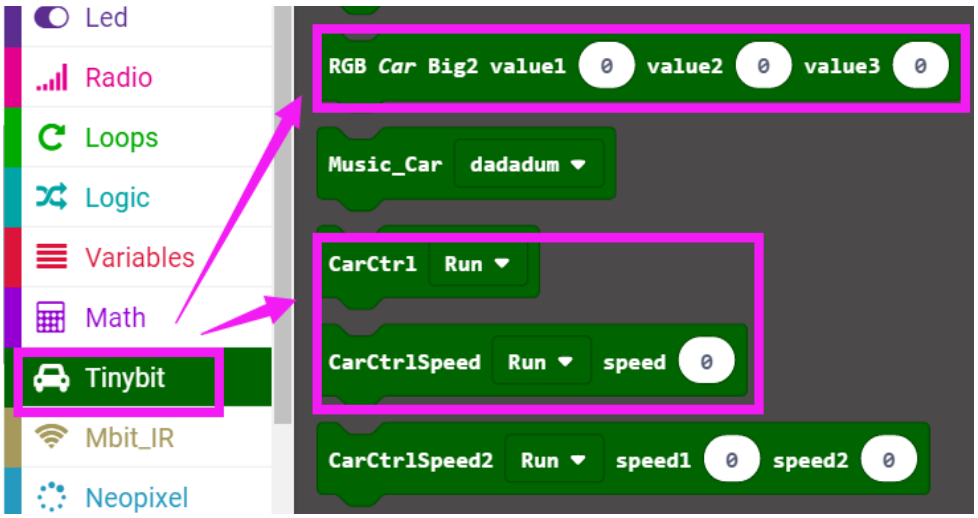
3.Search for block

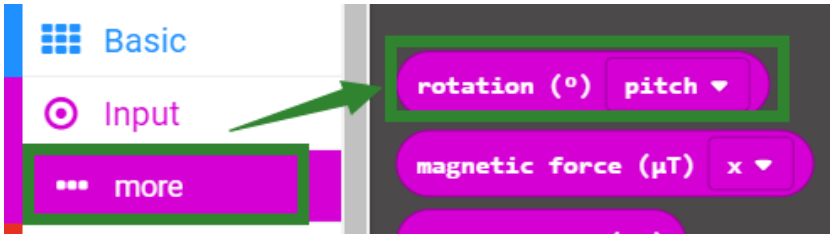
The following is the location of the building blocks required for this programming.

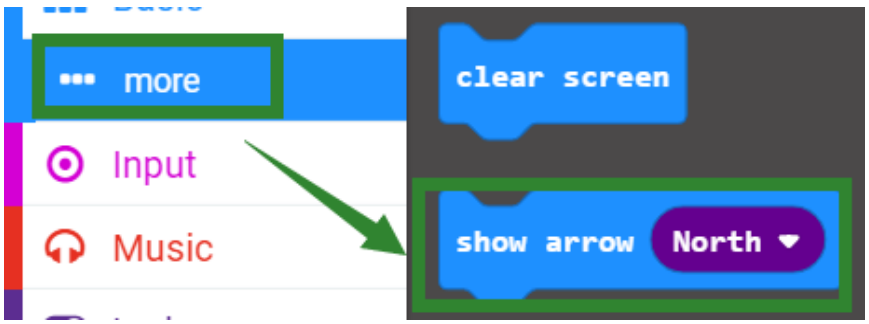


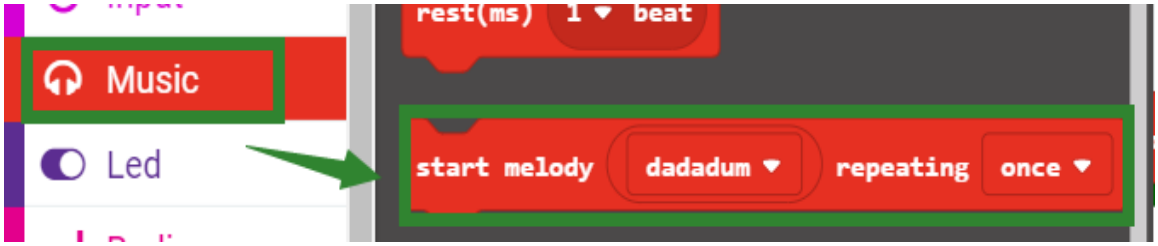

Music
Led
Radio
Loops
Logic
Variables
Math
if true then
else
Comparison
0 = 0


Math
Tinybit
Mbit_IR
Neopixel
square root 0
round 0
pick random 0 to 10


Led
Radio
Loops
Logic
Variables
Math
Tinybit
Mbit_IR
Neopixel
RGB Car Big2 value1 0 value2 0 value3 0
Music_Car dadadum
CarCtrl Run
CarCtrlSpeed Run speed 0
CarCtrlSpeed2 Run speed1 0 speed2 0

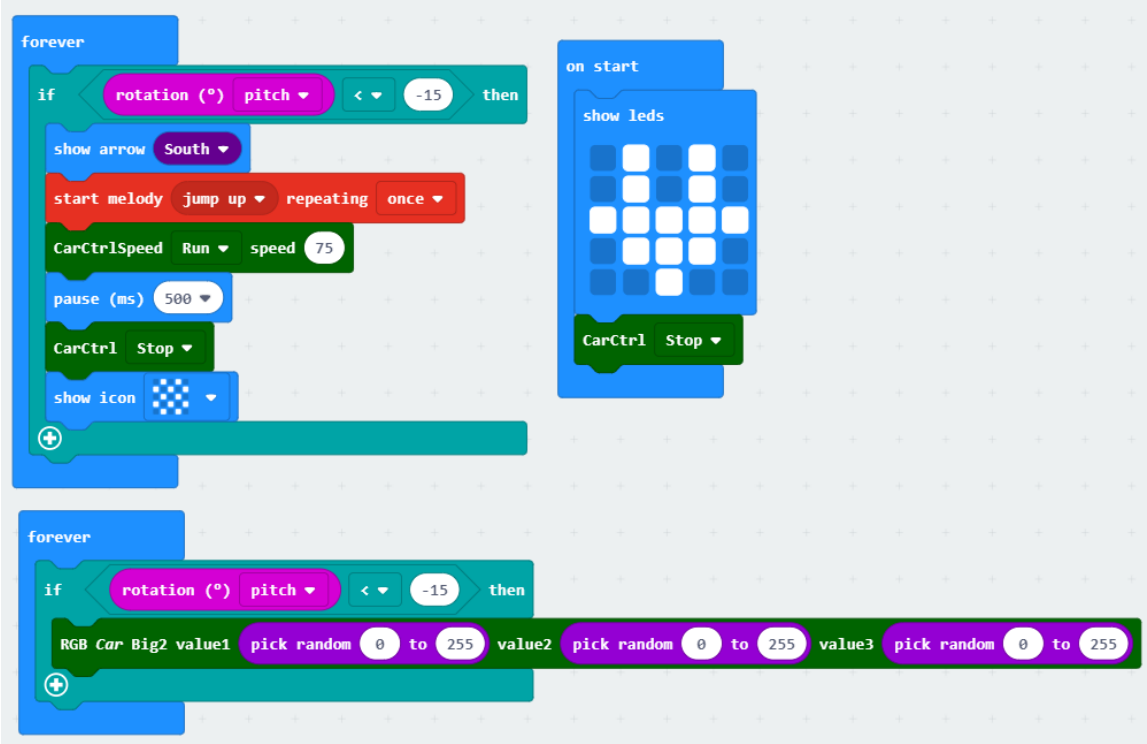

Basic
Input
more
rotation (°) pitch
magnetic force (µT) x


more
Input
Music
clear screen
show arrow North



4.Combine block

The summary program is shown below:



5.Experimental phenomena

After the program download is complete, open the power of the robot car. When we gently press the tail of the Tiny-bit, the forward arrow will be displayed on the micro:bit dot matrix, and a piece of music will be played, and the lights will be randomly lit at the same time, the car advances for a short time, then stops.

As shown below.