

5.5 Route plan

Route plan.hex

http://www.yahboom.net/xiazai/Tiny_bit/5.Running%20with%20Tiny%20bit/Route%20plan.hex

1.Preparation

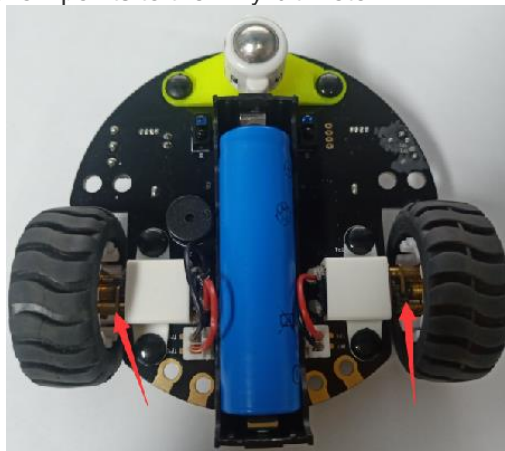
1-1.The position of the motor on the robot car.

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.

As shown in the figure below, the red arrow points to the Tiny-bit motor.



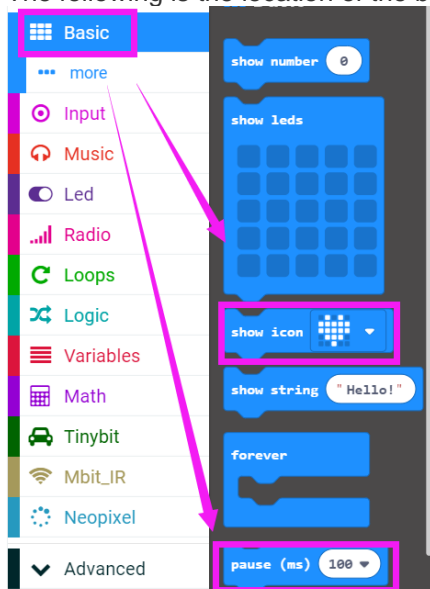
2.Learning goal

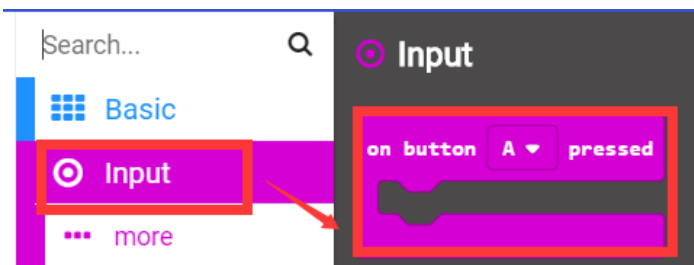
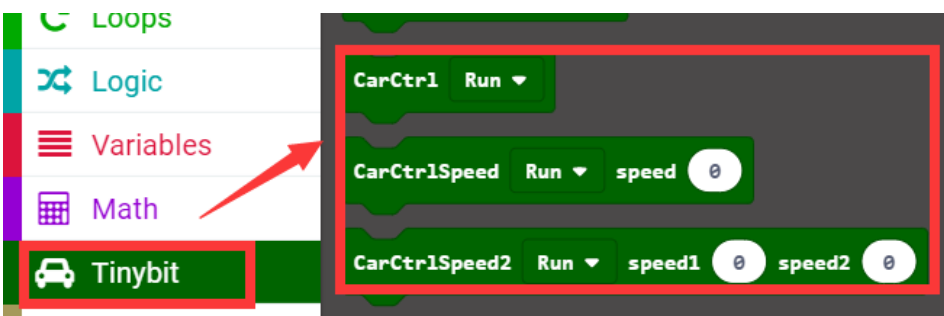
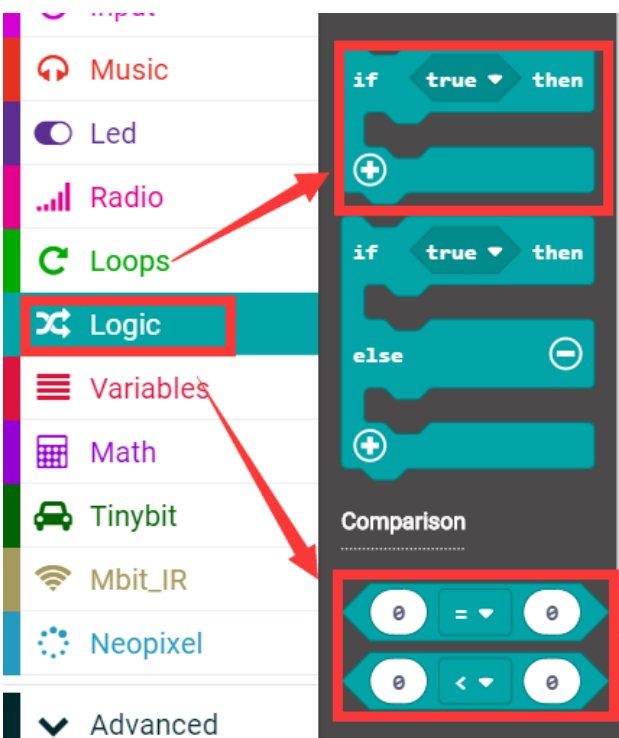
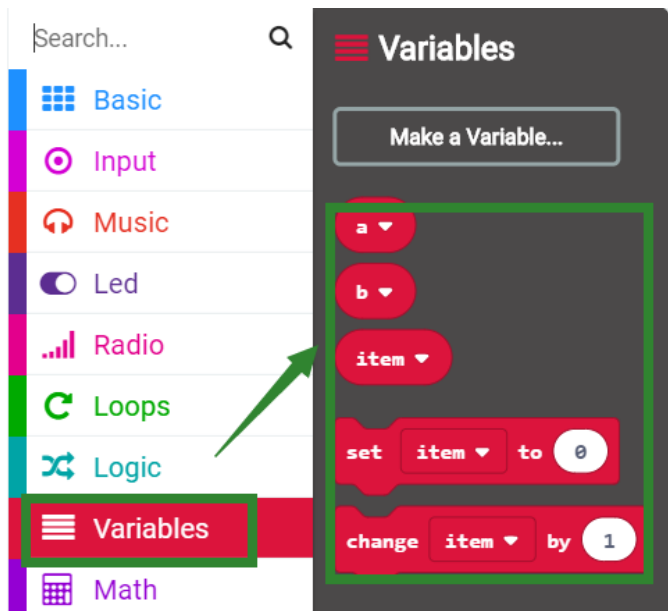
2-1.Learn how to use control motor graphically program building blocks

2-2.In this lesson, we need to realize button switches four prepared routes and displays the shape of the path on the micro:bit dot matrix.

3.Search for block

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





4. Combine block

The summary program is shown below.

The image displays a Scratch script for a car control program, organized into two main sections. The top section contains initialization and event-driven blocks, while the bottom section is a large 'forever' loop that controls the car's movement based on sensor data.

Top Section:

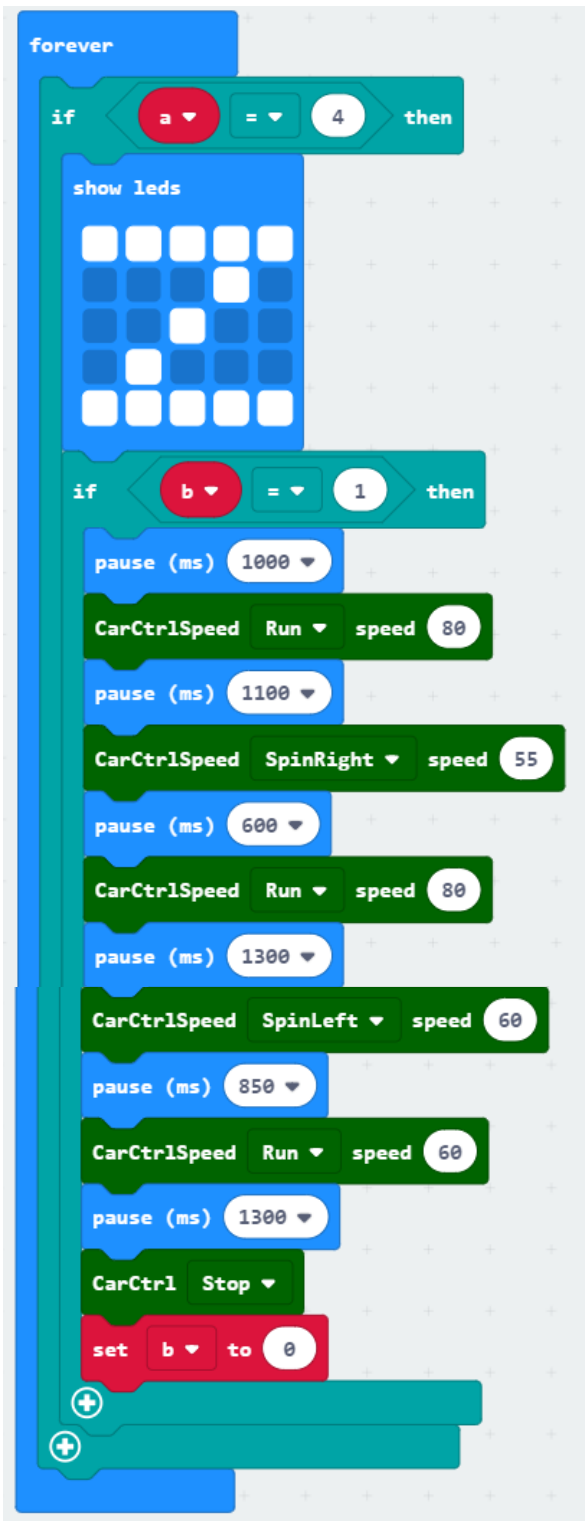
- forever** loop:
 - if** `a = 5` **then** `set a to 1`
- on start** block:
 - `set a to 0`
 - `set b to 0`
- on button B pressed** block:
 - `set b to 1`
- on button A pressed** block:
 - `change a by 1`

Bottom Section (forever loop):

- if** `a = 1` **then**:
 - show leds** block (5x5 grid)
 - if** `b = 1` **then**:
 - `pause (ms) 1000`
 - `CarCtrlSpeed Run speed 80`
 - `pause (ms) 1000`
 - `CarCtrlSpeed SpinLeft speed 65`
 - `pause (ms) 400`
 - `CarCtrlSpeed Run speed 80`
 - `pause (ms) 1000`
 - `CarCtrl Stop`
 - `set b to 0`

```
forever
  if a = 2 then
    show leds
  if b = 1 then
    pause (ms) 1000
    CarCtrlSpeed Run speed 80
    pause (ms) 1000
    CarCtrlSpeed SpinLeft speed 65
    pause (ms) 400
    CarCtrlSpeed Run speed 80
    pause (ms) 1000
    CarCtrlSpeed SpinLeft speed 65
    pause (ms) 400
    CarCtrlSpeed Run speed 80
    pause (ms) 1000
    CarCtrlSpeed SpinLeft speed 65
    pause (ms) 400
    CarCtrlSpeed Run speed 80
    pause (ms) 1000
    CarCtrl Stop
    set b to 0
```

```
forever
  if a = 3 then
    show leds
    if b = 1 then
      pause (ms) 1000
      CarCtrlSpeed Run speed 80
      pause (ms) 1000
      CarCtrlSpeed SpinLeft speed 65
      pause (ms) 400
      CarCtrlSpeed Run speed 80
      pause (ms) 1000
      CarCtrlSpeed SpinLeft speed 55
      pause (ms) 800
      CarCtrlSpeed Run speed 80
      pause (ms) 1200
      CarCtrl Stop
      set b to 0
    +
  +
```



5. Experimental phenomena

After the program download is complete, turn on the power of the car.

When we press the A button for the first time, the dot will display "L", then press the B button, we can see that the path forwarded by the car is "L".

When we press the A button for the second time, the dot will show "口", then press the B button, we can see that the path forwarded by the car is "口".

When we third press the A button for the third time, "∟" will be displayed on the dot matrix, then press the B button, we can see that the path forwarded by the car is "∟".

When we press the fourth A button for the fourth time, "Z" will be displayed on the dot matrix, then press the B button, we can see that the path forwarded by the car is "Z".

When we press the A button for the fifth time, the dot will display "L", then press the B button, we can see that the path forwarded by the car is "L".

.....
And keep the loop in this state~