Spider Micro:bit handle control

(Due to the problem of the building block structure, if you want to make the spider move forward, the building block motor needs to turn back, speed of motor need to be set negative number, such as, -255)

1.Learning goals

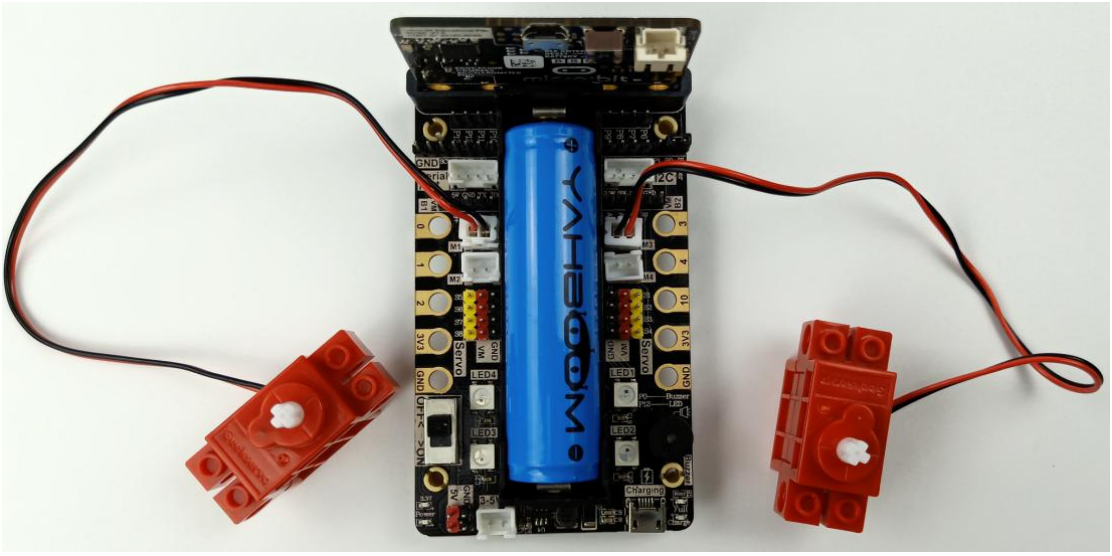
In this course, we mainly learn how to use handle control Spider.

2.Building block assembly steps

For the building block construction steps, please refer to the installation manual or building block installation picture of [Assembly course]-[Spider].

3.Wiring of motor and servo

The motor wiring on the left side of the Spider is inserted into the M1 interface of the Super:bit expansion board, and the black wire is close to the battery side;
The motor wiring on the right side of the Spider is inserted into the M3 interface of the Super:bit expansion board, and the black wire is close to the battery side;
As shown below:



4.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/SuperBit** and **https://github.com/lzty634158/GHBit** to program.

Mode 2 offline programming: We need to open the offline programming software.

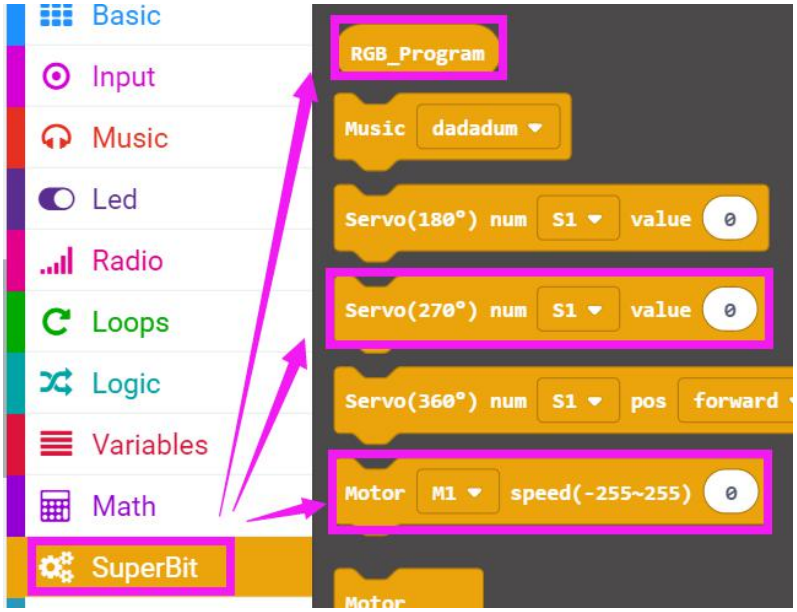
After the installation is complete, enter the programming interface, click【New

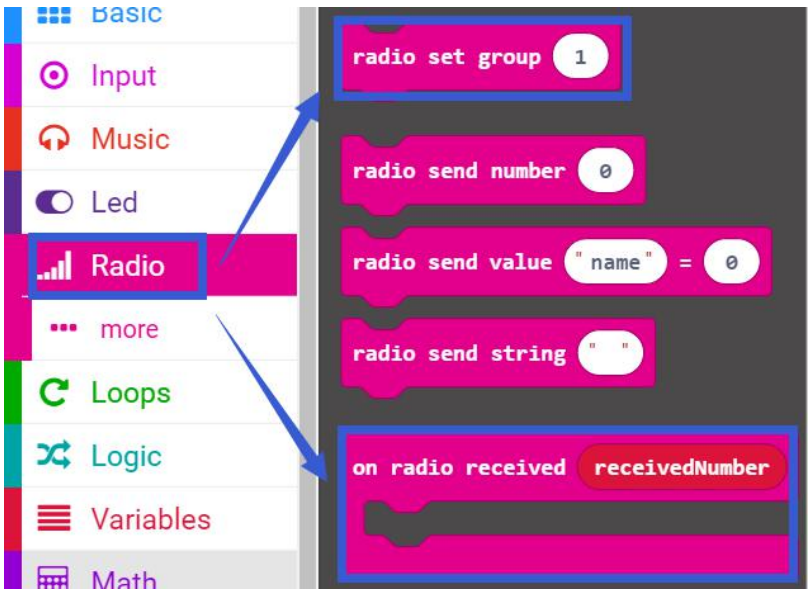
Project】, add Yahboom package: **https://github.com/lzty634158/SuperBit** and **https://github.com/lzty634158/GHBit** , you can program.

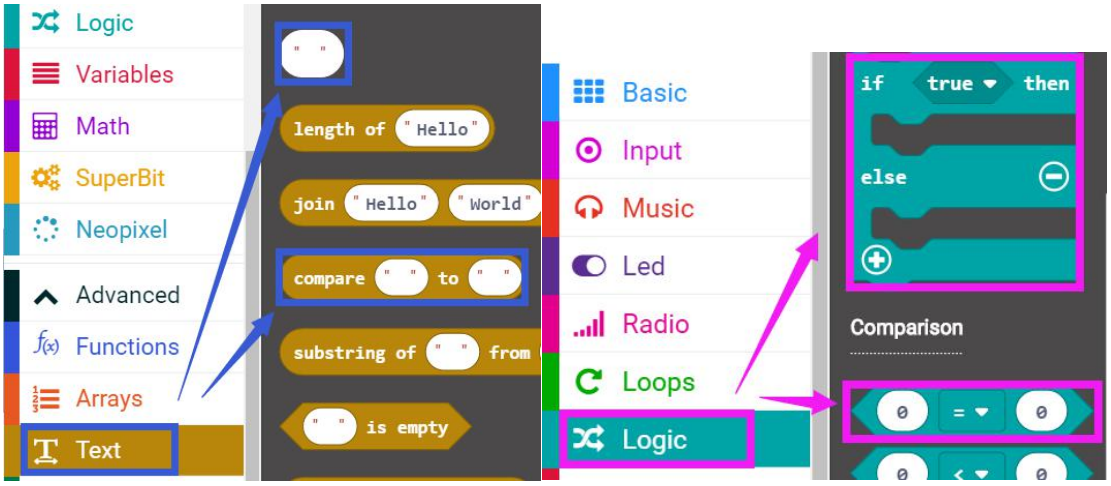
5.Looking for blocks

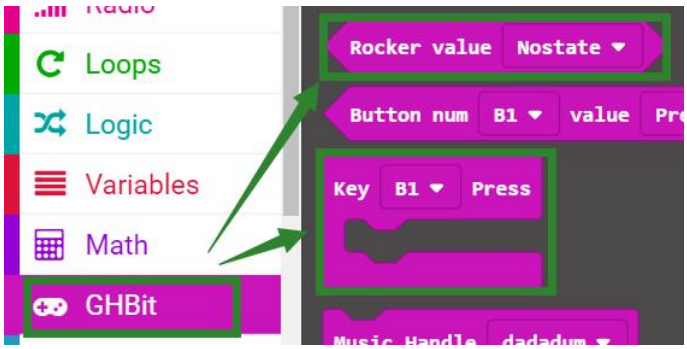
The following is the location of the building blocks required for this programming.

Radio
Loops
Logic
Variables
set item to 0
change item by 1


Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBit
RGB_Program
Music dadadum
Servo(180°) num S1 value 0
Servo(270°) num S1 value 0
Servo(360°) num S1 pos forward
Motor M1 speed(-255~255) 0


Basic
Input
Music
Led
Radio
more
Loops
Logic
Variables
Math
radio set group 1
radio send number 0
radio send value "name" = 0
radio send string " "
on radio received receivedNumber





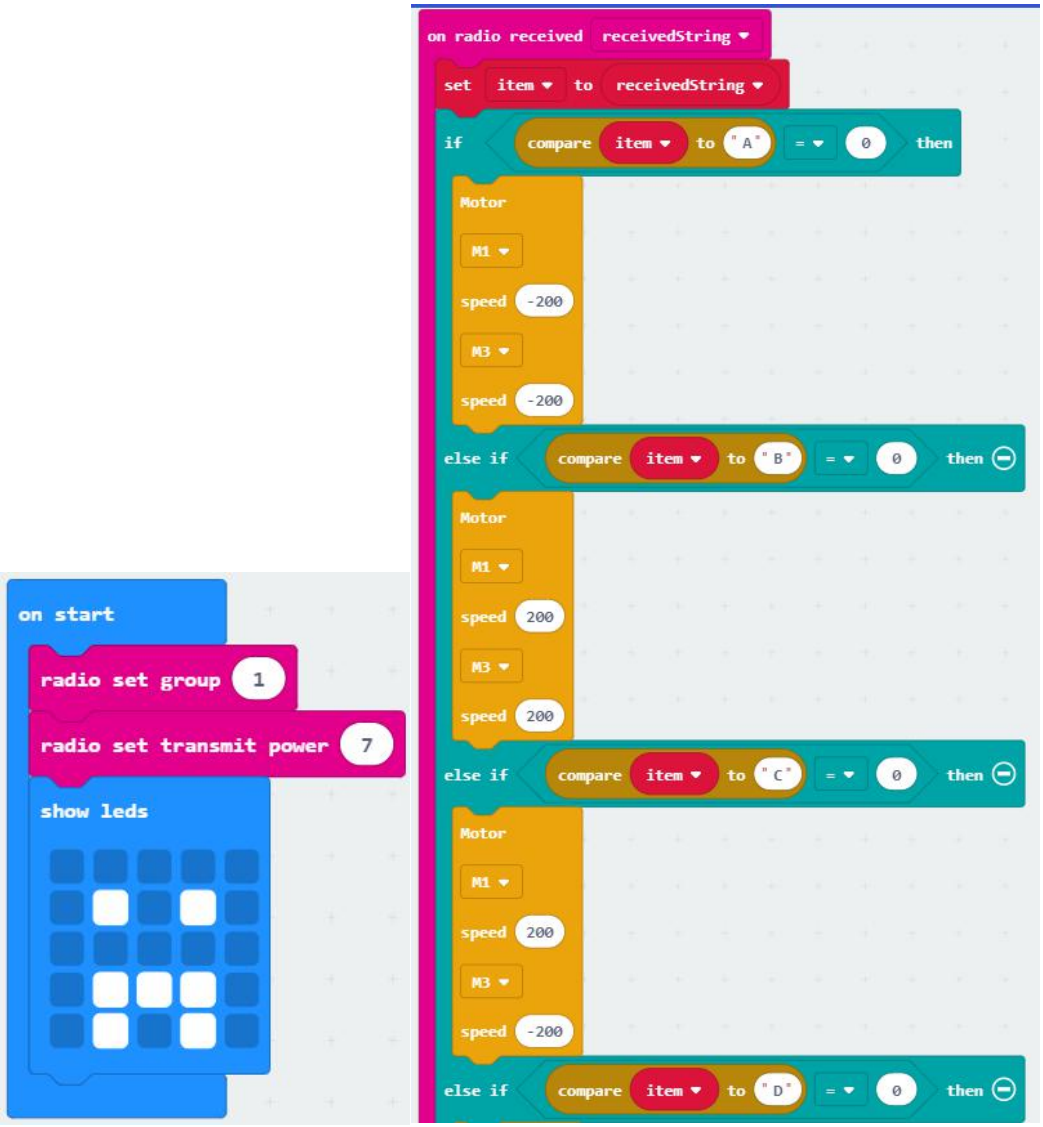
How to create a new variable

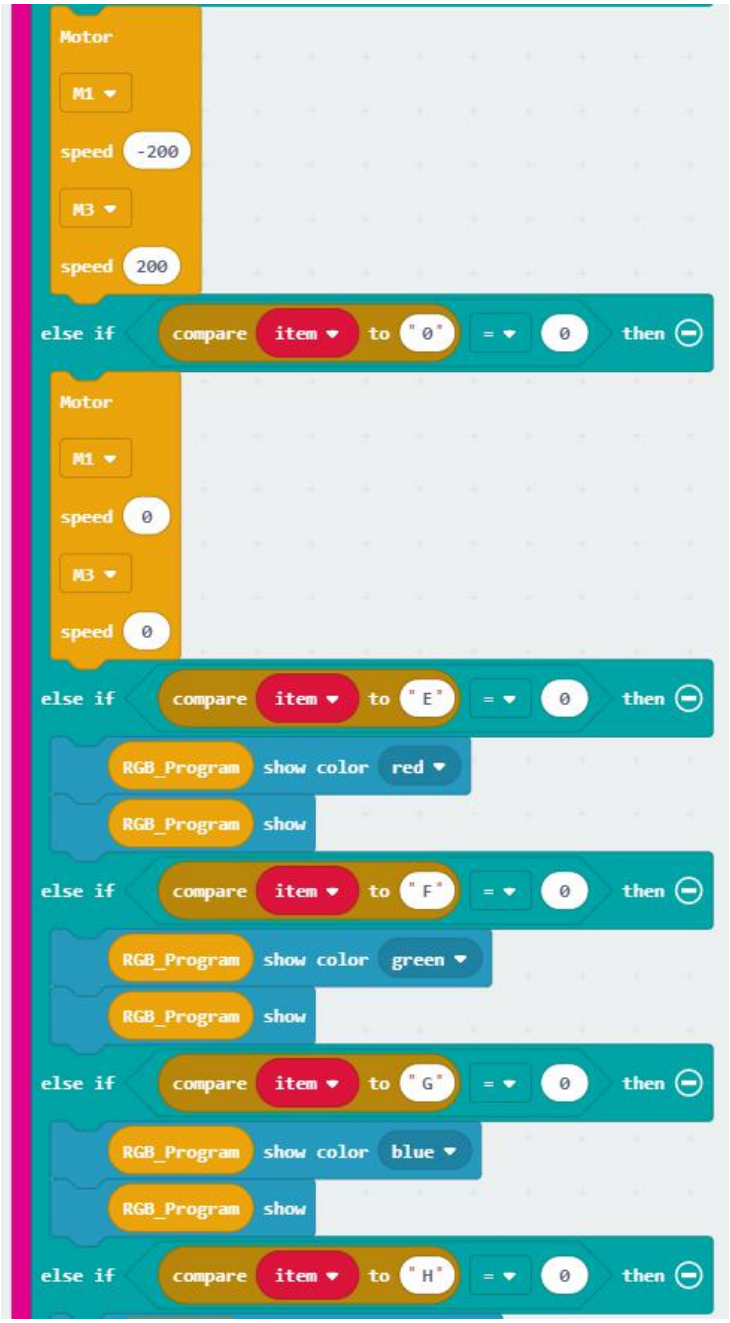
①Find the [Variable] option in the building block column-[Make a Variable]

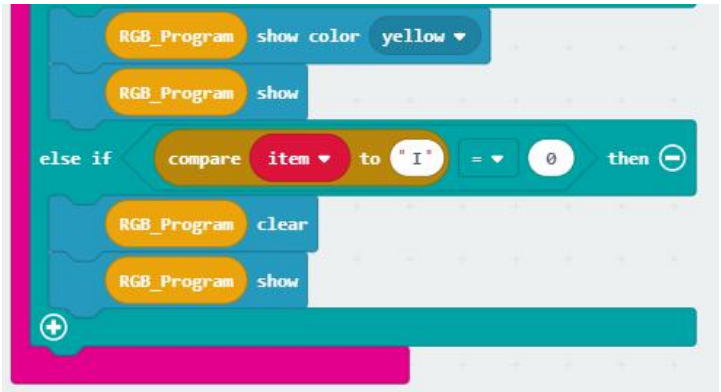
②Enter the name of variable to complete the new variable.

6.Combine block

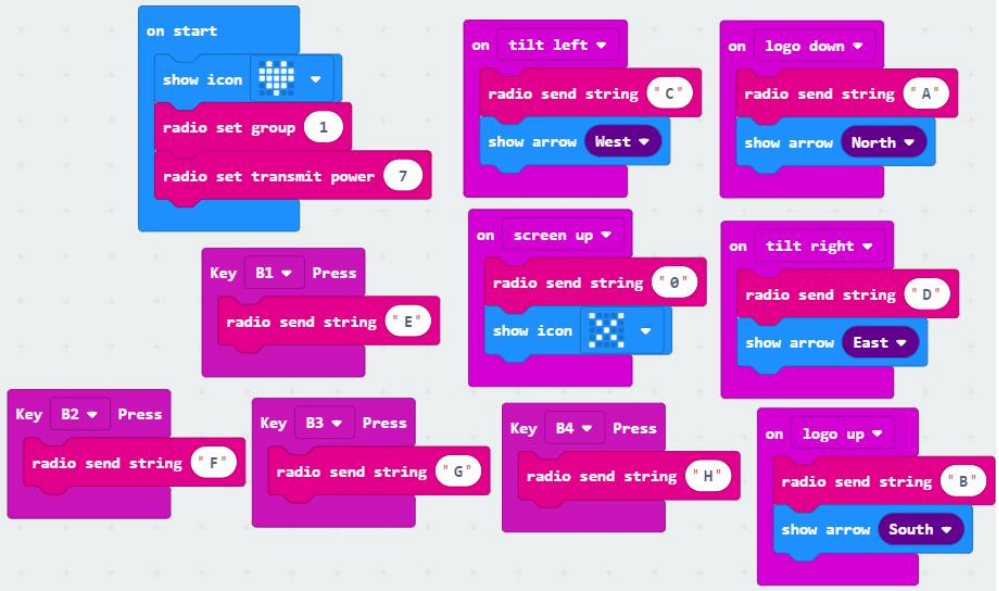
The Spider program is shown below.



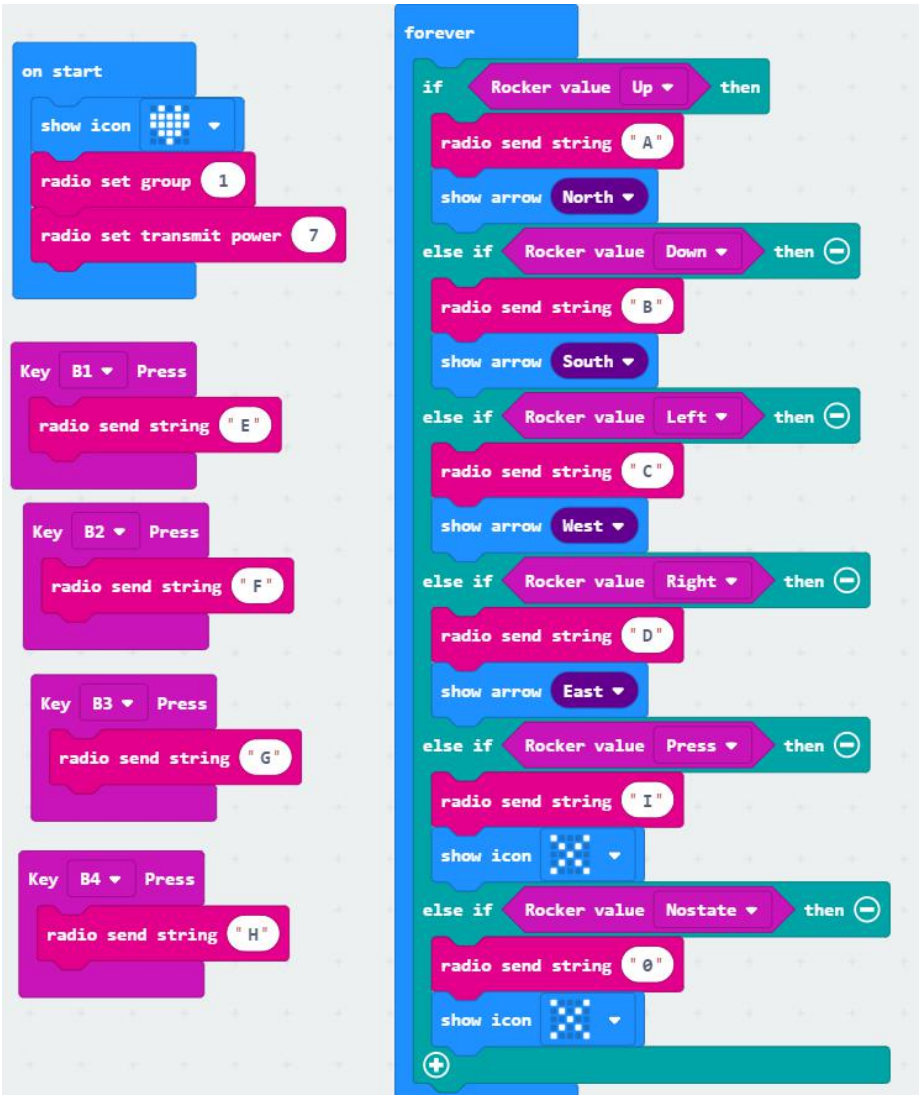

Motor
M1
speed -200
M3
speed 200
else if compare item to "0" = 0 then
Motor
M1
speed 0
M3
speed 0
else if compare item to "E" = 0 then
RGB_Program show color red
RGB_Program show
else if compare item to "F" = 0 then
RGB_Program show color green
RGB_Program show
else if compare item to "G" = 0 then
RGB_Program show color blue
RGB_Program show
else if compare item to "H" = 0 then


RGB_Program show color yellow
RGB_Program show
else if compare item to "I" = 0 then
RGB_Program clear
RGB_Program show

Handle gravity control code, as shown below.



Handle rocker control code, as shown below.



7.Experimental phenomena

We need to download the Spider code into the micro: bit board of the Spider. Open the power switch of the Spider, we can see a spider pattern displayed on the micro:bit dot matrix;

We need to download the Handle code into the micro:bit board of the handle. Open the power switch of the handle, we can see that the micro: bit dot matrix will initially display a heart pattern, and then display an "X" pattern, indicating that the handle is in the default(no data is sent).

They will automatically pairing, then, we can start remote control the Spider by handle.

The handle functions are shown below.