Control Magic:carRGB lights

Goal

In this lesson, we will learn to control the RGB color lights of the car Magic_Car, and realize the full and partial control of the RGB color lights of the car.

Programming method

(1) online programming: connect micro:bit with the computer through the USB cable, open my computer, find the MICROBIT memory disk and open it, double-click 击 MICROBIT.HTM and open the browser programming page. After creating a new project, click advanced, click expand, enter the extension package address https://github.com/emakefun/pxt-magicbit.git, and press enter or search, add the Microbit extension package, and you can start programming the car RGB lights.

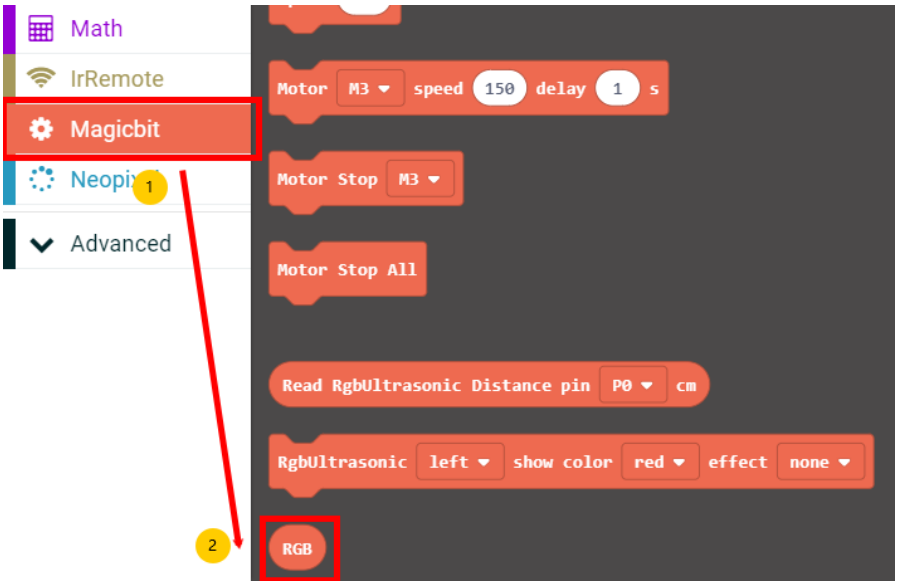
(2) offline programming: open the offline programming software, enter the programming interface, create a new project, click advanced, click expand, enter the address https://github.com/emakefun/pxt-magicbit.git of the extension package, and press enter or search, add the Microbit extension package, and then you can start the programming control of the car RGB lamp.

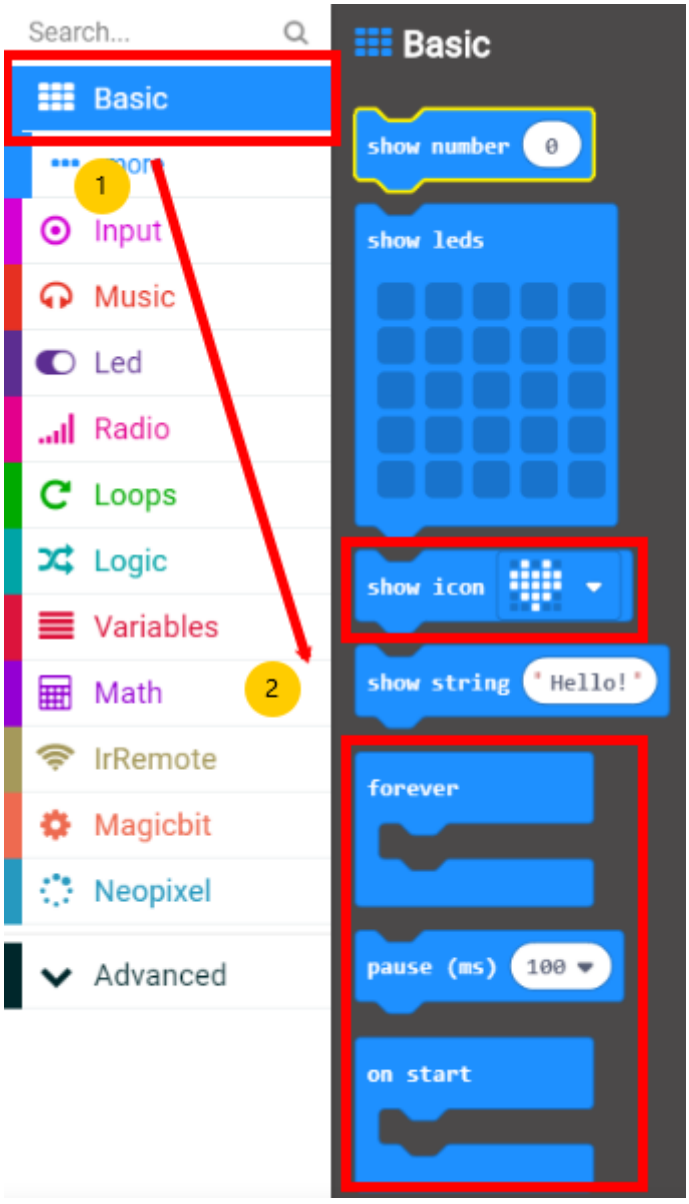
R G B lights principle

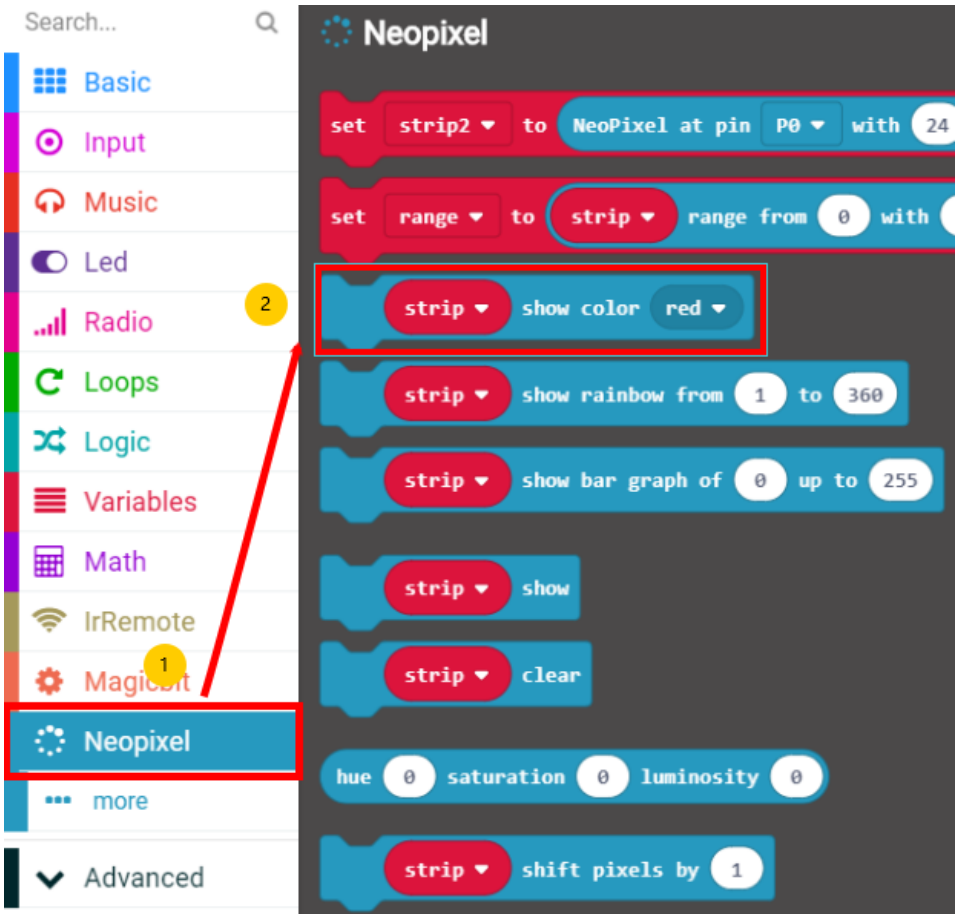
RGB is designed from the principle of color luminescence, the popular point says its color mixture way is like having red, green, blue 3 lamps, when their light superposition each other, color is mixed, and brightness is equal to the sum of brightness, the more mixed brightness is higher. The red, green, and blue color channels have 255 levels of brightness for each color, and the "light" is turned off at 0.

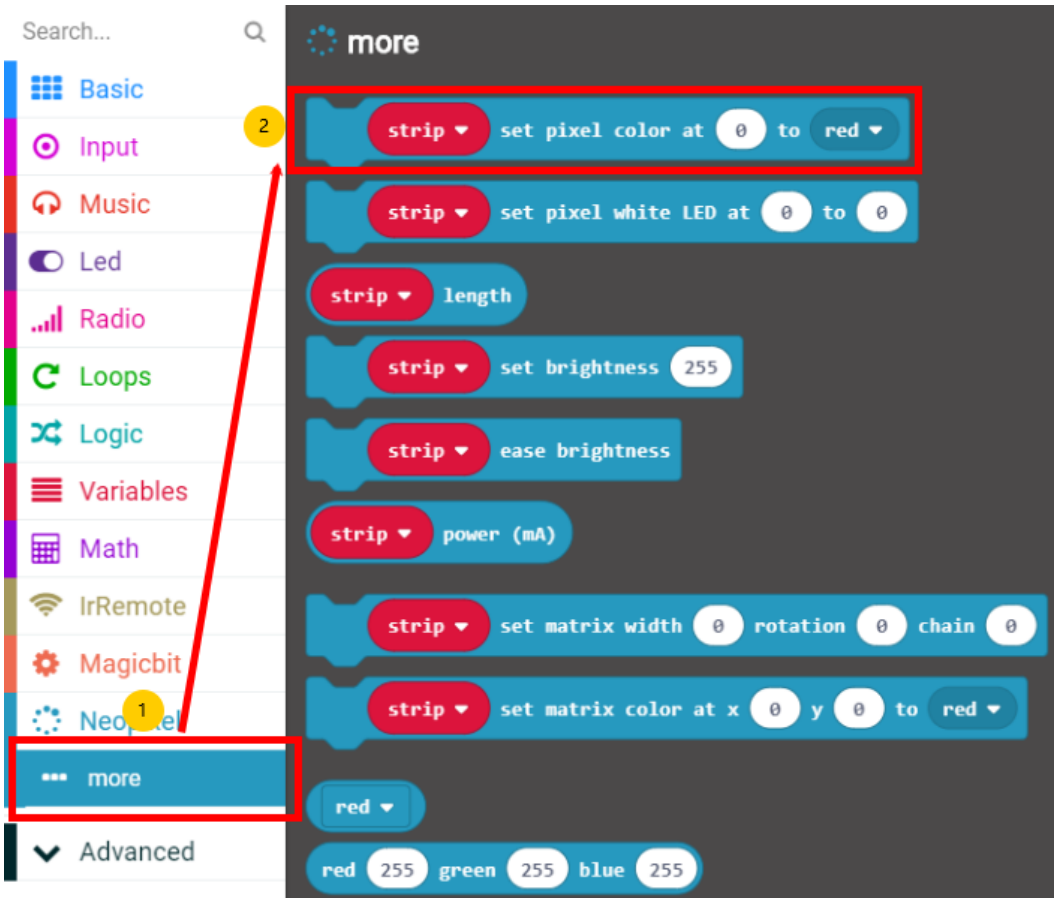
Block programming

1. Location of building blocks required

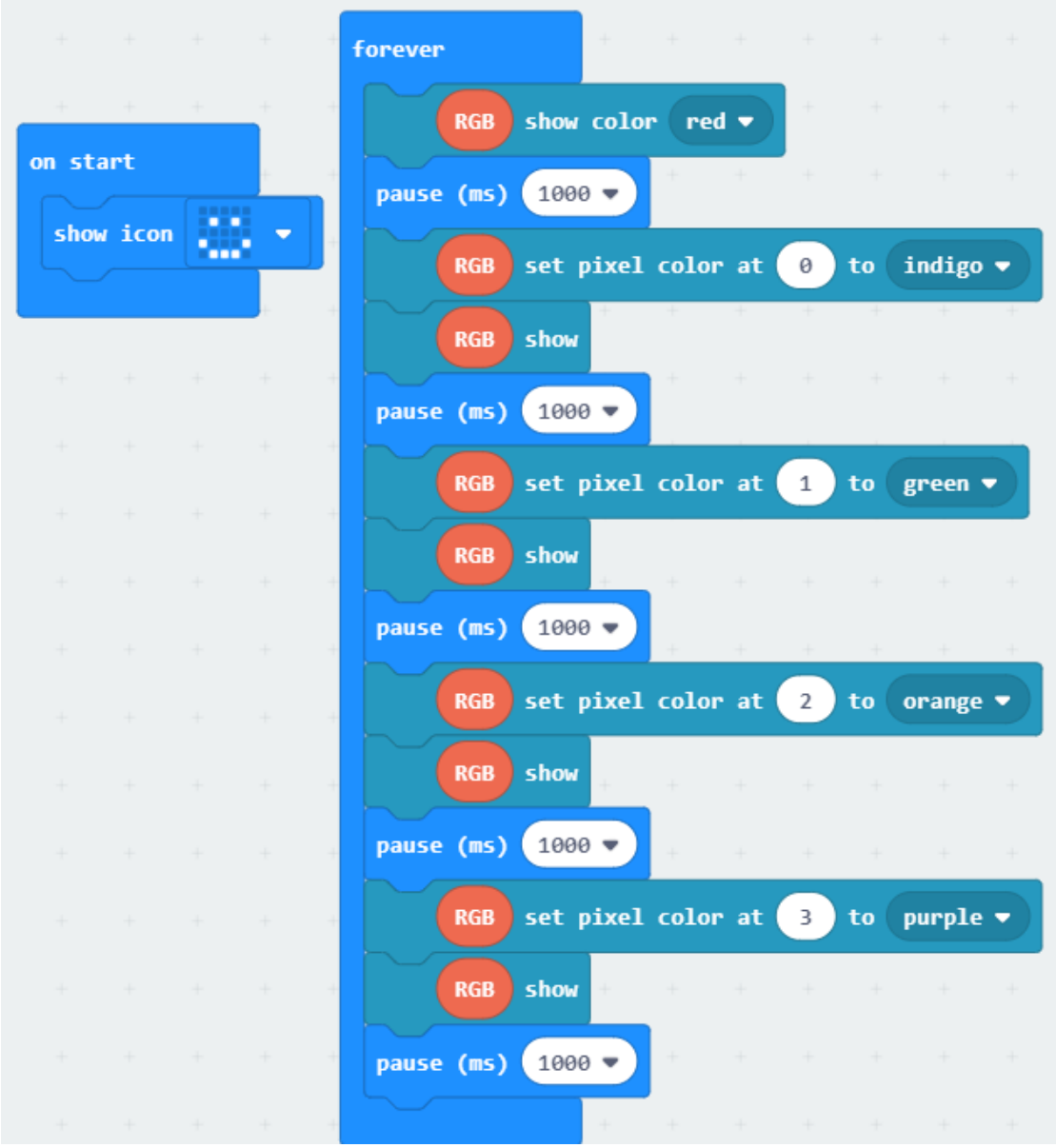

Math
IrRemote
Magicbit
Neopi
Advanced
1
2
Motor M3 speed 150 delay 1 s
Motor Stop M3
Motor Stop All
Read RgbUltrasonic Distance pin P0 cm
RgbUltrasonic left show color red effect none
RGB


Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
IrRemote
Magicbit
Neopixel
Advanced
1
2
Basic
show number 0
show leds
show icon
show string "Hello!"
forever
pause (ms) 100
on start


Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
IrRemote
Magicbit
Neopixel
more
Advanced
1
2
Neopixel
set strip2 to NeoPixel at pin P0 with 24
set range to strip range from 0 with
strip show color red
strip show rainbow from 1 to 360
strip show bar graph of 0 up to 255
strip show
strip clear
hue 0 saturation 0 luminosity 0
strip shift pixels by 1


Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
IrRemote
Magicbit
more
Advanced
1
2
more
strip set pixel color at 0 to red
strip set pixel white LED at 0 to 0
strip length
strip set brightness 255
strip ease brightness
strip power (mA)
strip set matrix width 0 rotation 0 chain 0
strip set matrix color at x 0 y 0 to red
red
red 255 green 255 blue 255

2 Final program building block combination



The experimental results

After downloading the program to the microbit motherboard of Magic_Car, turn on the main switch of the expansion board, microbit displays a smiley-face, the RGB light of Magic_Car will be all red, then the first light turns indigo, the second light turns green, the third light turns orange, the fourth light turns purple, and so on.