# Remote control Magic:car

## Goal

In this lesson, we will learn to control the RGB light, buzzer and motor of Magic_Car by remote control

## 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 MICROBIT.HTM, and open the browser programming page. After creating a new project, click advanced, click expand, enter the extension package addresshttps://github.com/emakefun/pxt-magicbit.git enter or search, add the Microbit extension package, and you can start programming the car with the remote control.

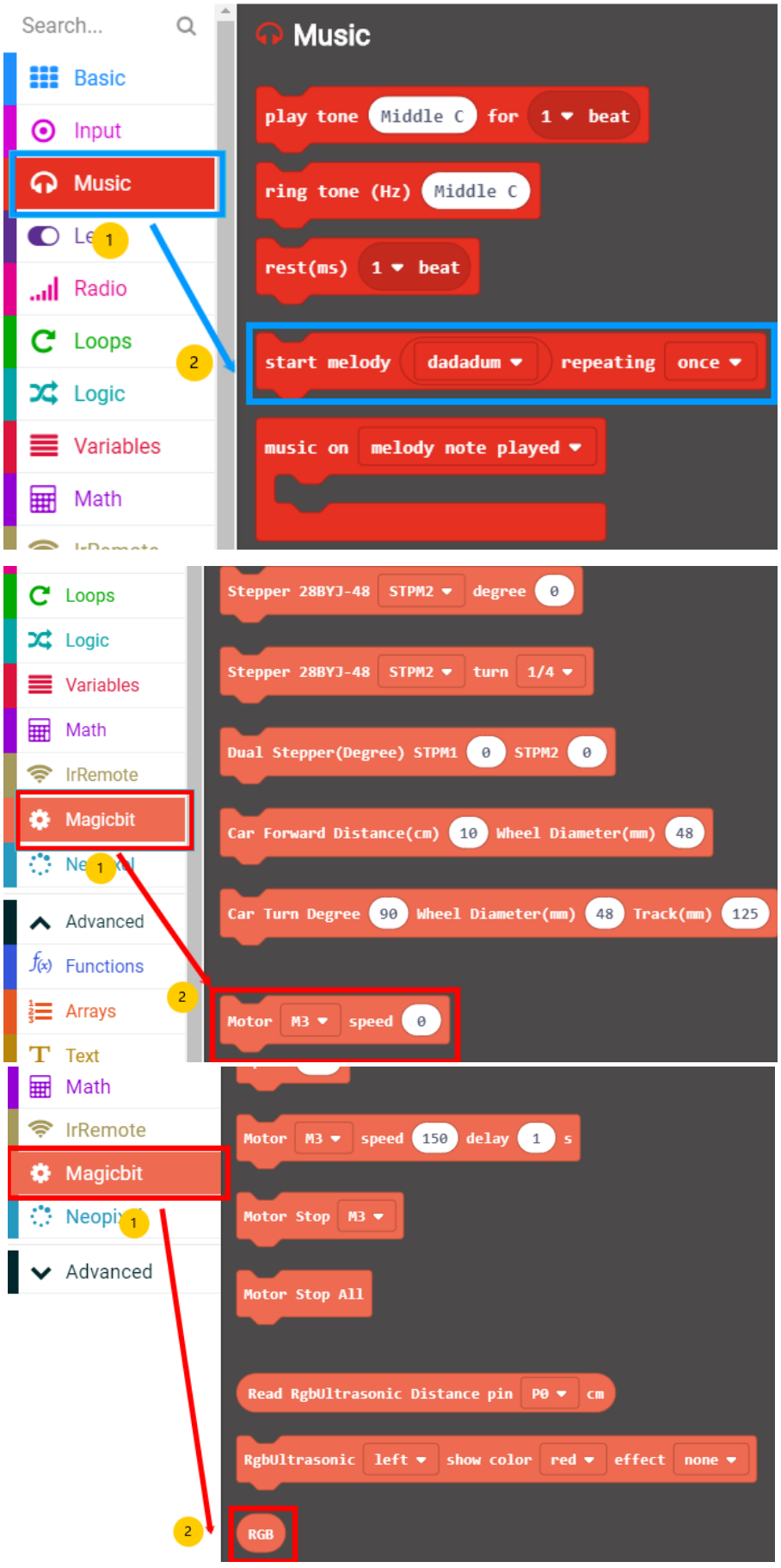
（2）offline programming: open the offline programming software, enter the programming interface, create a new project, click advanced, click expand, enter the address https://github.com/emakefun/pxt-magicbit.git of the extension package, enter or search, add the Microbit extension package, and then you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

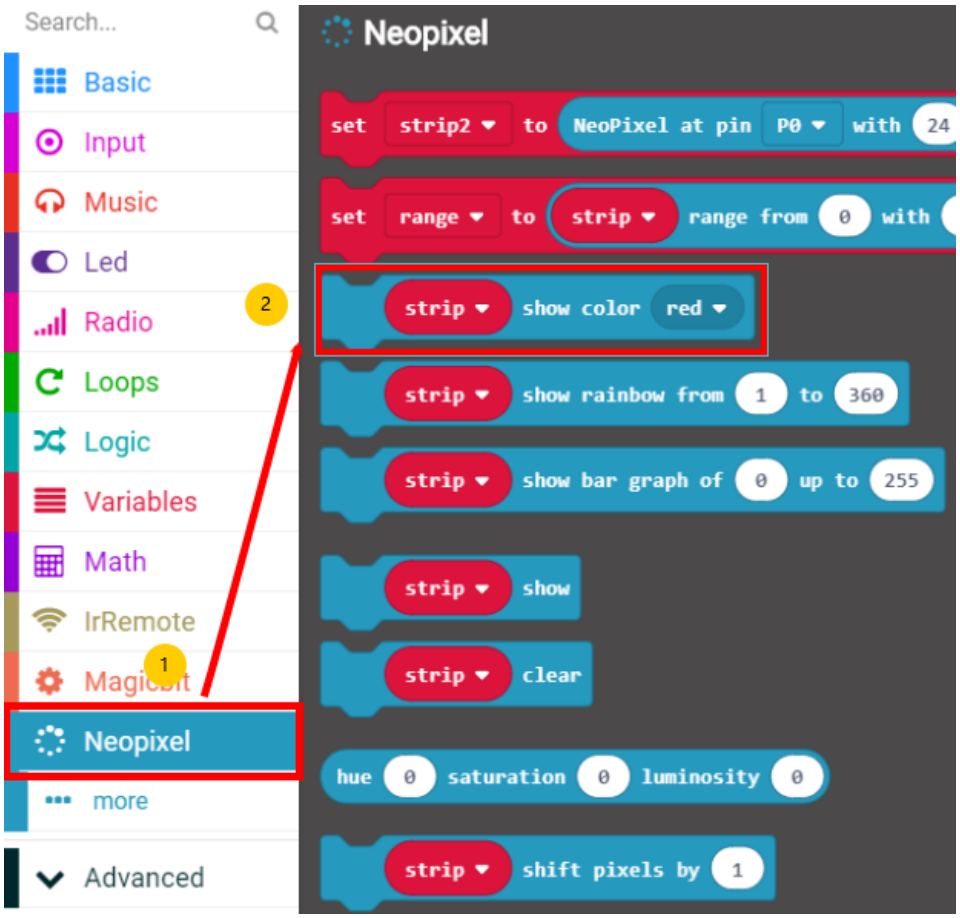
## Principle of remote control

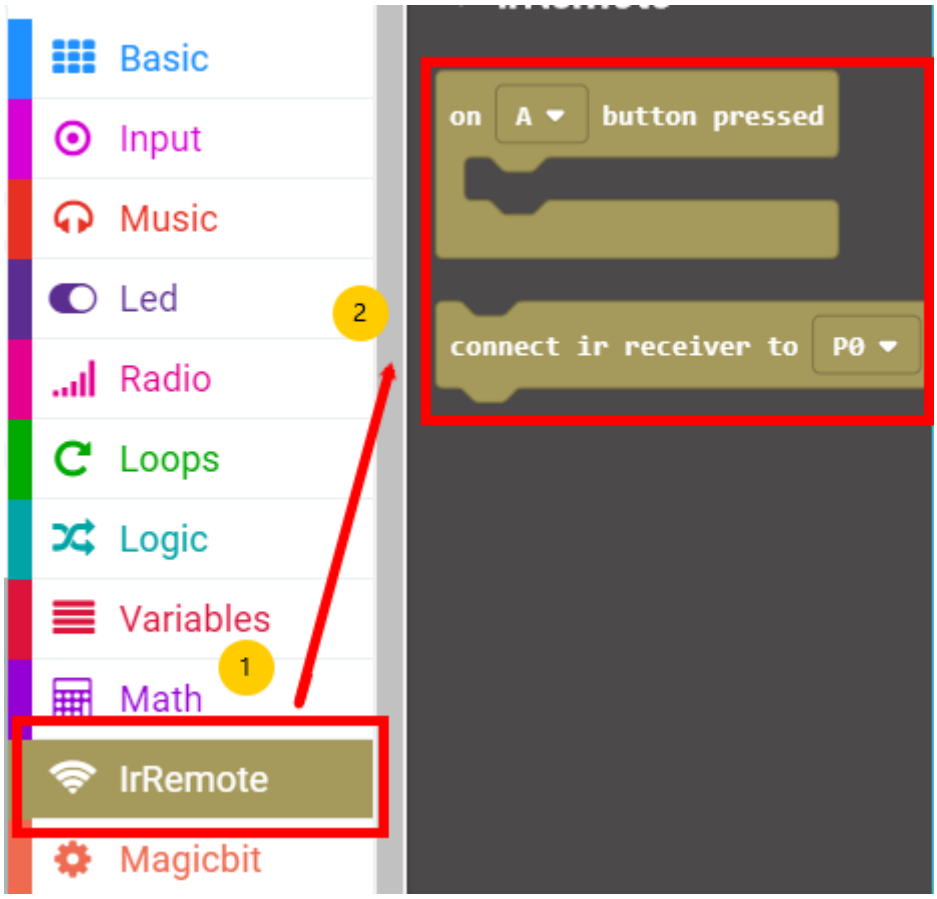
Each key of the remote control corresponds to an infrared code. If the button of the remote control A is pressed, the infrared receiver will receive the infrared code of the key A. At this time, the motherboard will make corresponding actions after judgment.

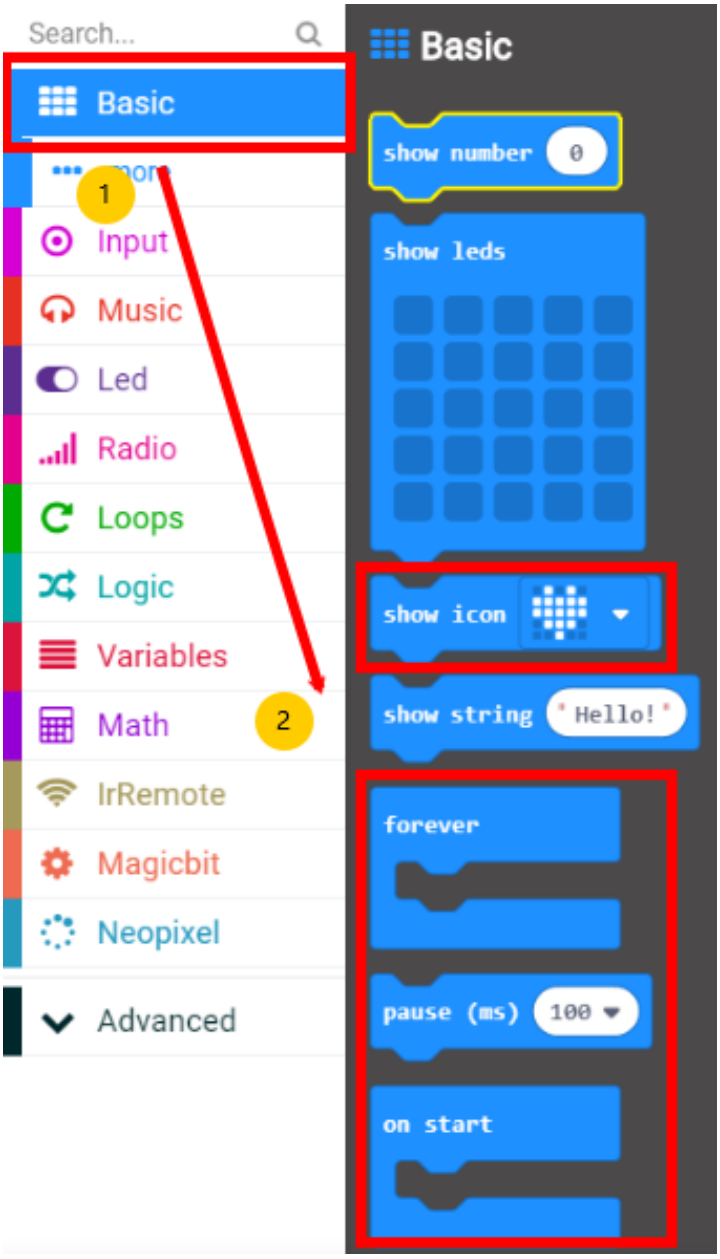
## Block programming

1、. Location of building blocks required

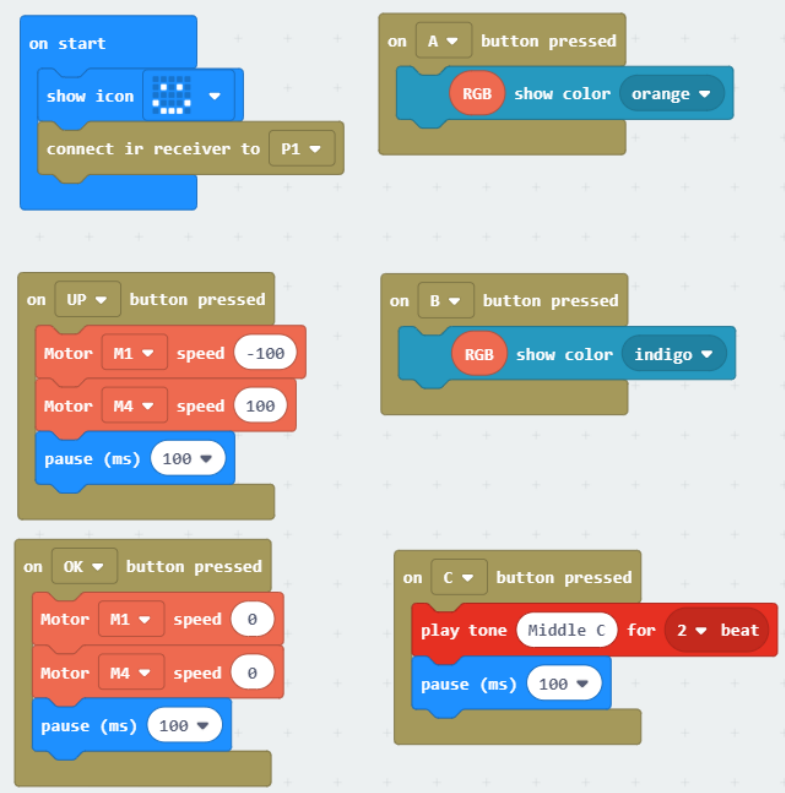

Search...
Basic
Input
Music
Le
Radio
Loops
Logic
Variables
Math
1
2
Music
play tone Middle C for 1 beat
ring tone (Hz) Middle C
rest(ms) 1 beat
start melody dadadum repeating once
music on melody note played
Loops
Logic
Variables
Math
IrRemote
Magicbit
Advanced
Functions
Arrays
Text
Stepper 28BYJ-48 STPM2 degree 0
Stepper 28BYJ-48 STPM2 turn 1/4
Dual Stepper(Degree) STPM1 0 STPM2 0
Car Forward Distance(cm) 10 Wheel Diameter(mm) 48
Car Turn Degree 90 Wheel Diameter(mm) 48 Track(mm) 125
Motor M3 speed 0
Math
IrRemote
Magicbit
Advanced
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
more
Advanced
2
1
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


Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
IrRemote
Magicbit
2
1
on A button pressed
connect ir receiver to P0




2、Final program building block combination




## Wiring

1. Connection of steering gear;

The car steering gear is connected to the S1 pin of the PWM steering gear of the expansion board, in which the yellow line of the steering gear is connected to the blue pin of the expansion board, the red line of the steering gear is connected to the red pin of the control board, and the brown line of the steering gear is connected to the black GND pin of the control board.

2. Motor connection;

The motor to the left of the car is connected to the extension board M4 interface

The motor to the right of the car is connected to the expanded M1 interface

## The experimental results

After downloading the program to the microbit motherboard of Magic_Car car, open the main switch of the expansion board, microbit displays a smiley face, when the key up is pressed, the car will advance; When the button OK is pressed, the car will stop; When key A is pressed, the car RGB will display orange. When button B is pressed, the car displays indigo; When the key C is pressed, the car will play the note of C.