Remote control forklift

Goal

In this lesson, we will learn to use the emakefun infrared remote control to control the Magic_Car forklift.

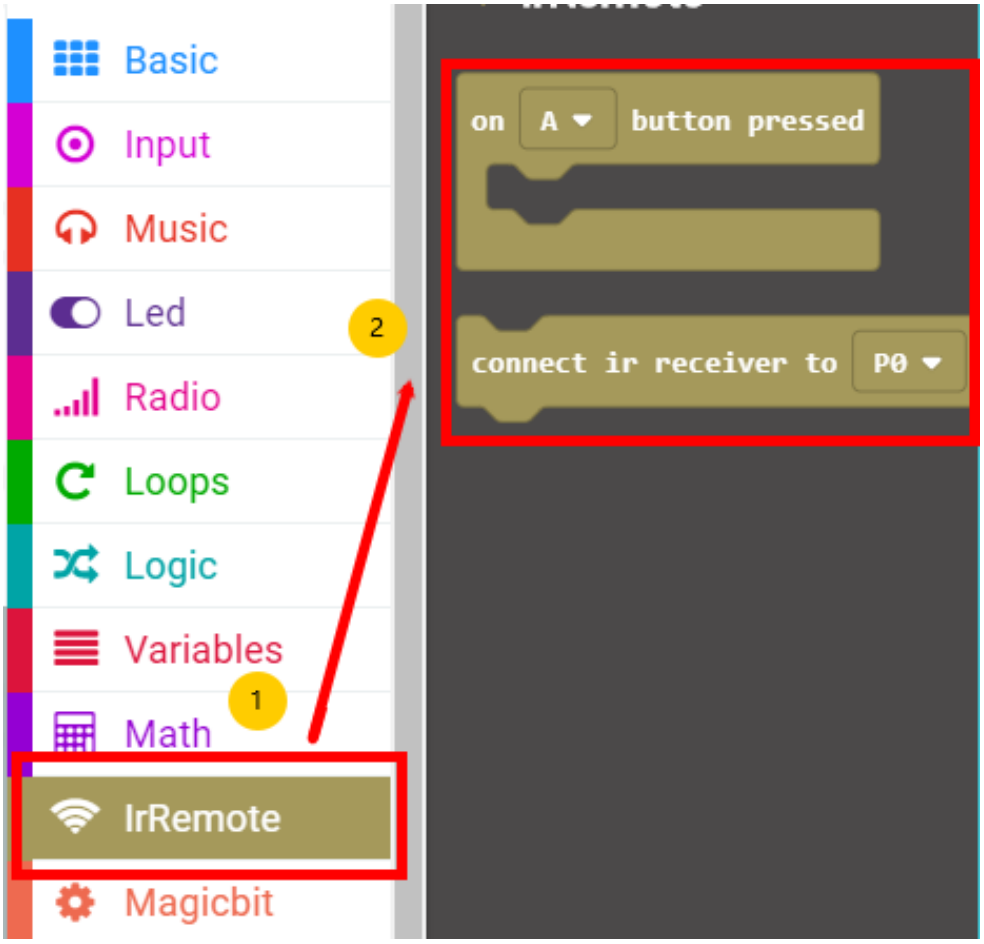
Programming method

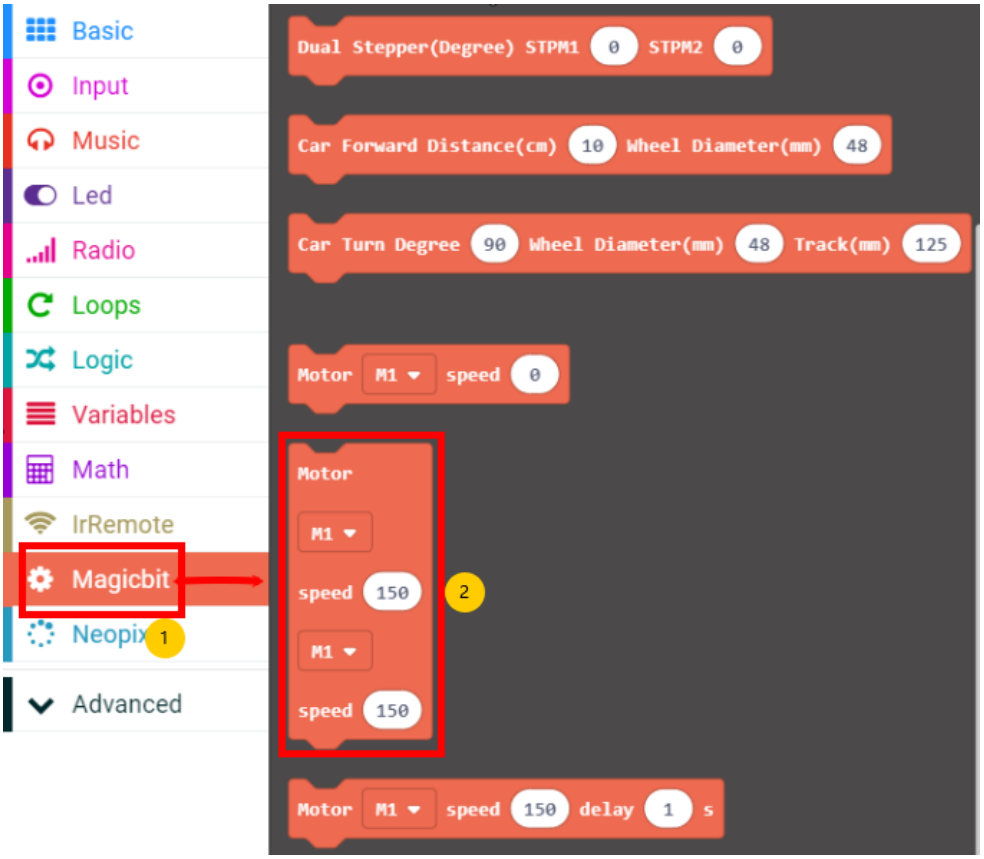
(1) online programming: connect micro:bit with the computer through the USB cable, open my computer, find the MICROBIT memory disk and open it, double-click MICROBIT.HTM, and open the browser programming page. After creating a new project, click advanced, click expand, enter the extension package addresshttps://github.com/emakefun/pxt-magicbit.git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

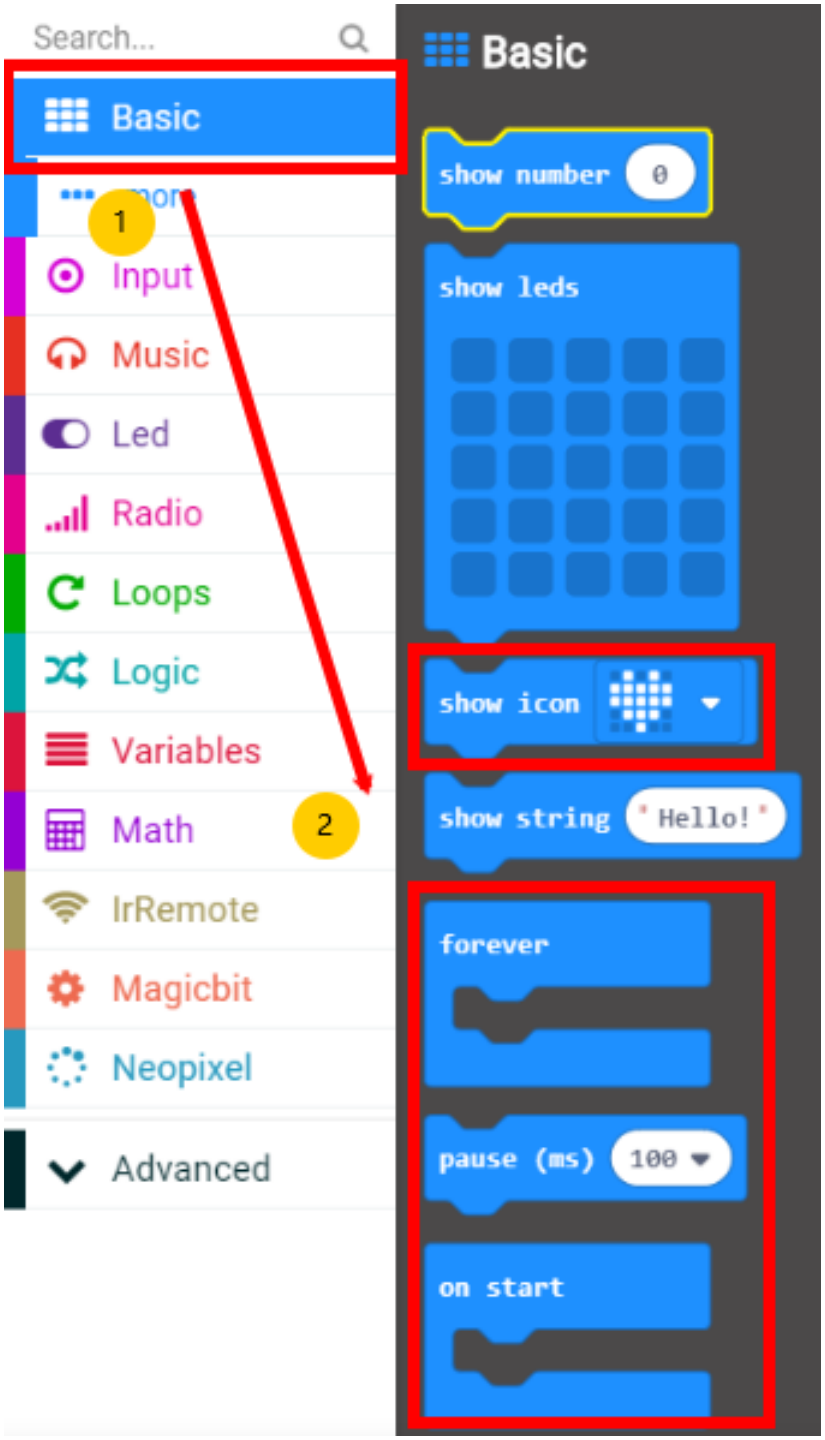
(2) offline programming: open the offline programming software, enter the programming interface, create a new project, click advanced, click expand, enter the address of the extension package https://github.com/emakefun/pxt-magicbit.git and press enter or search, add the Microbit extension package, and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

Block programming

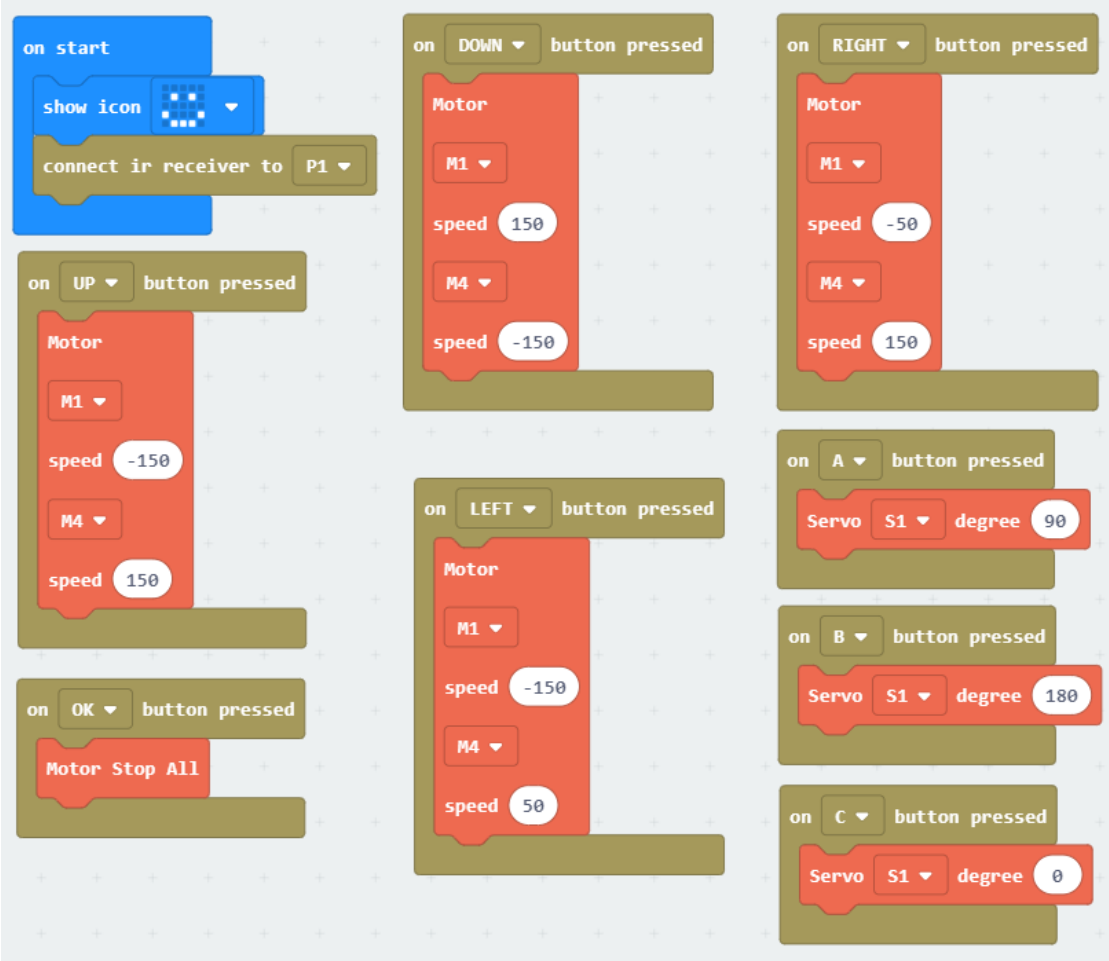
1、 Location of building blocks required


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


Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
IrRemote
Magicbit
Neopix
Advanced
1
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 M1 speed 0
Motor
M1
speed 150
M1
speed 150
2
Motor M1 speed 150 delay 1 s



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

3. Installation of jumper cap of infrared receiving head; The jumper cap between the infrared receiver of the control board and the buzzer should be inserted well, otherwise the infrared receiver cannot be used.

The experimental results

After downloading the program to the microbit motherboard of the Magic_Car car, open

the main switch of the expansion board, microbit displays the smiling face, when the button up of the remote control is pressed, the forklift will advance; When the DOWN button of the remote control is pressed, the forklift will back up. When the LEFT button of the remote control is pressed, the forklift truck will turn LEFT; When the RIGHT button of the remote control is pressed, the forklift will turn RIGHT. When the button A, B or C of the remote control is pressed, the fork of the forklift truck will turn to the corresponding height. In actual operation, the height of the fork can be adjusted by adjusting the Angle of the steering gear.