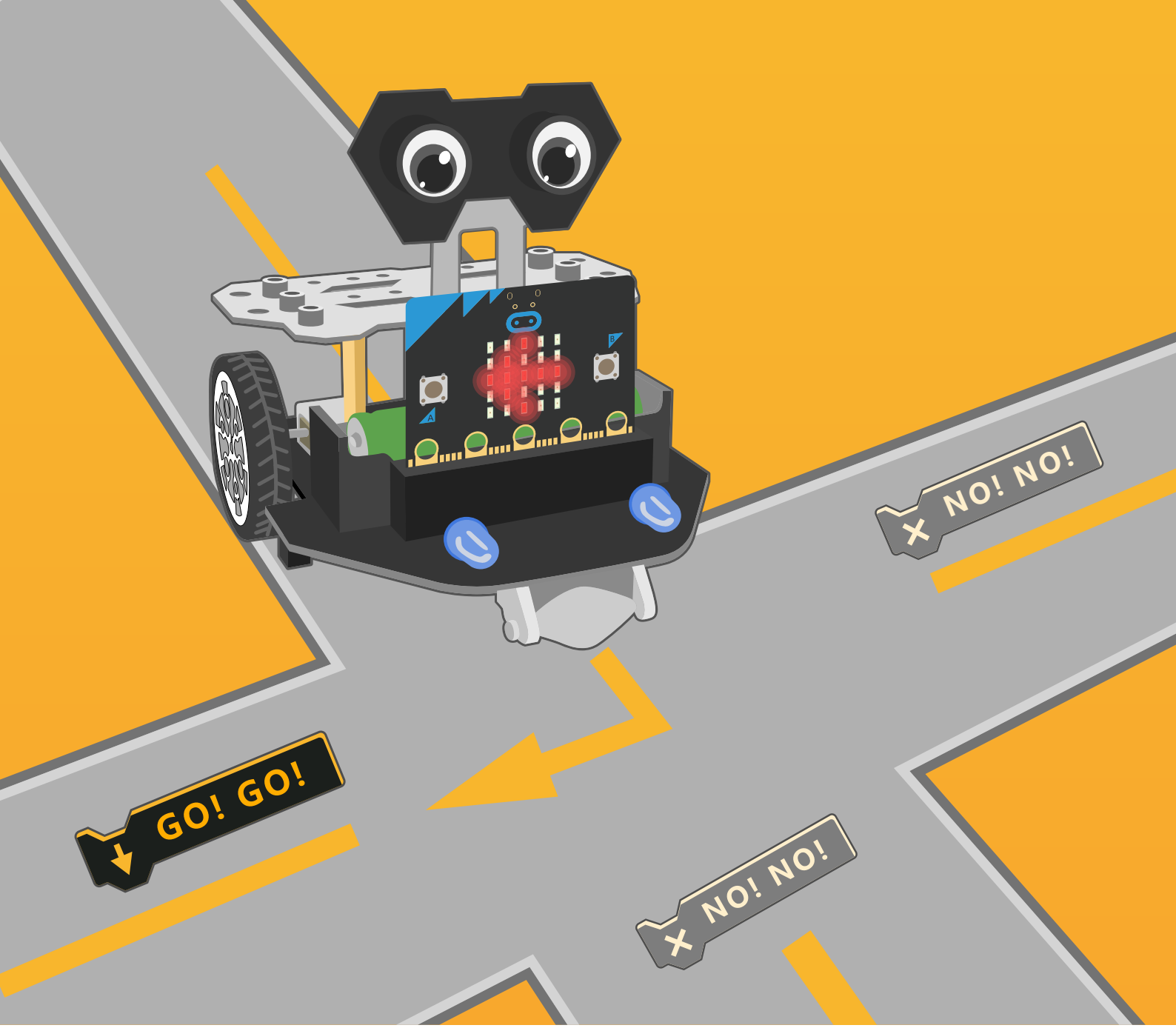


Chapter 10

Tour of Crossroad

Standing at a crossroad, Maqueen Plus is wondering which way he should go. Every road is so unique. Well, why not try all the roads? That sounds a good idea, right! Let’ s help Maqueen Plus to start his tour of crossroad!

Goal

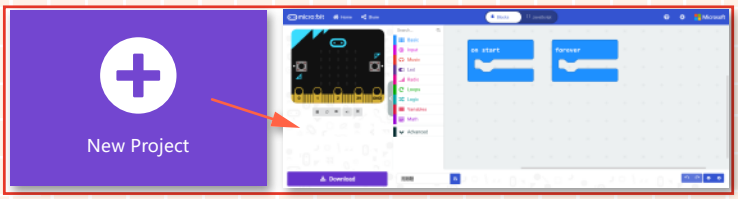
Learn the use of multiple line-tracking sensors

Hands-on Practice

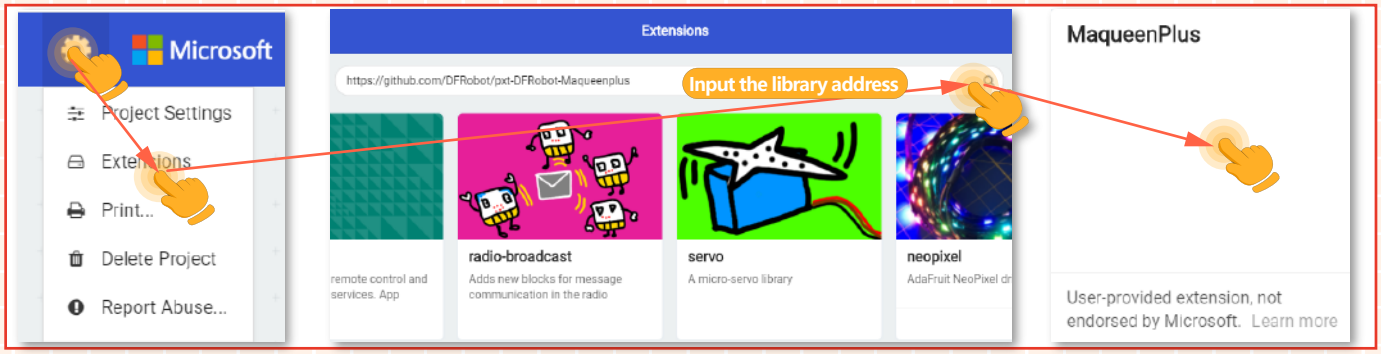
Step 1 Create a New Project

1.Input https://makecode.microbit.org/ into your browser to enter MakeCode editor.
2.Click "new project" to enter MakeCode programming interface.
3.Add the Maqueen Plus library:https://github.com/DFRobot/pxt-DFRobot-Maqueenplus

1.Enter MakeCode editor



2.Enter programming interface

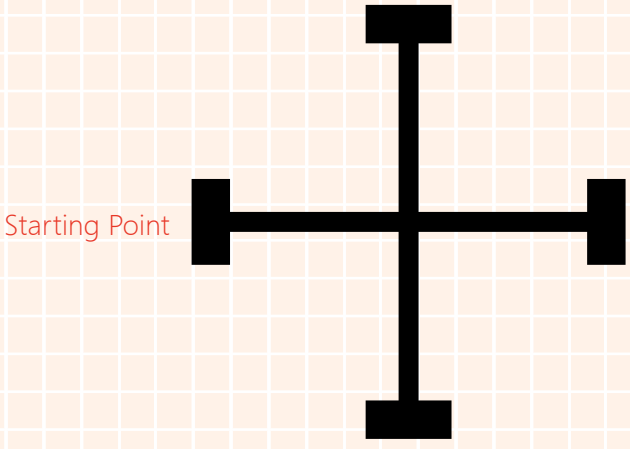


3.Add the extension library

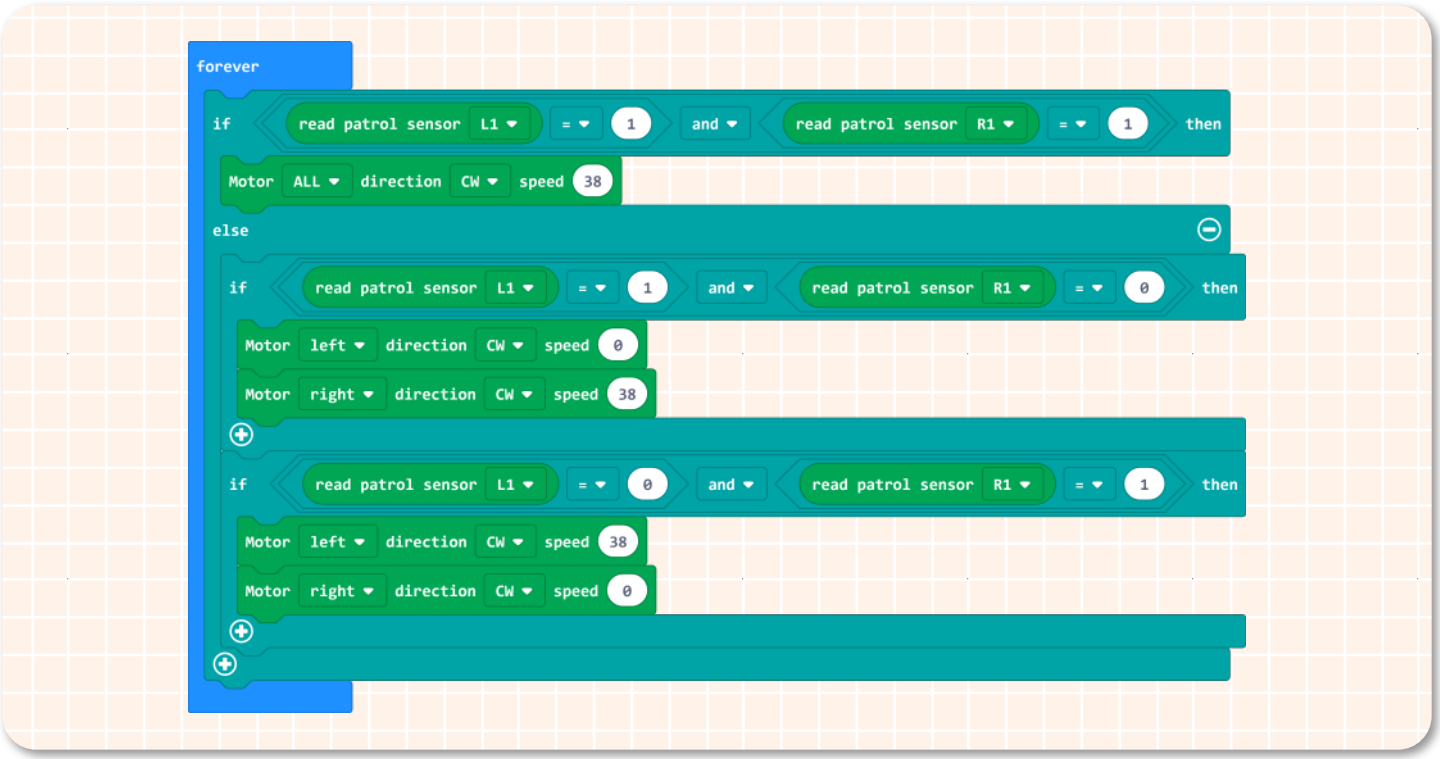
Step 2 Programming

1.In this project, Maqueen Plus will try all roads of the crossroad, and then back to the starting point. How can we realize that by programming?

In the process of line-tracking, Maqueen Plus turns left/right at the intersection, and then turns around at the end of the road. Repeat this series of actions all the time

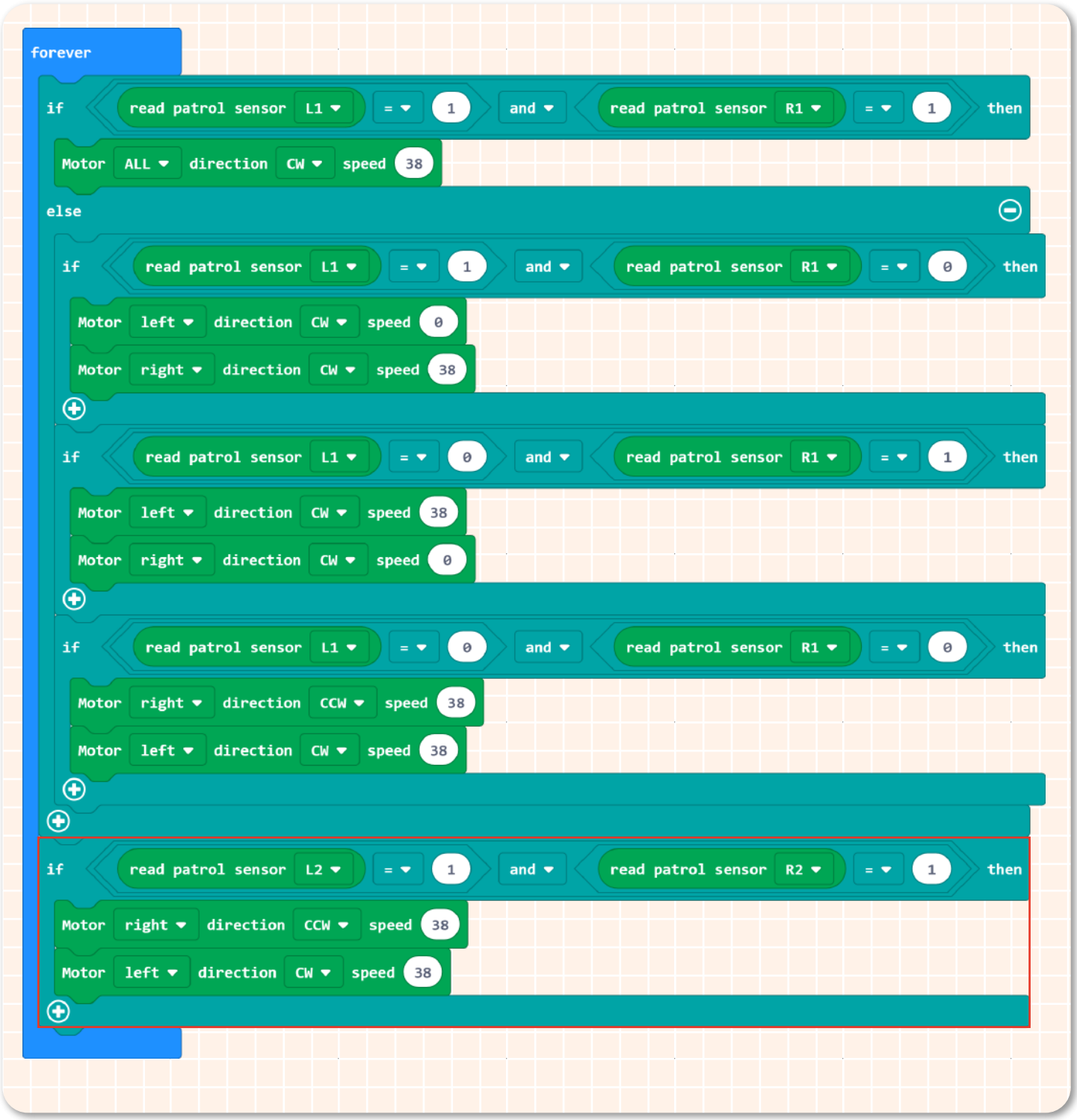


2.First,complete the program of line-tracking.



3.When no black line is detected by sensors L1 and R1, it means that the car drives out of the black track. Now let the Maqueen Plus spin around until the black track is found again.

4.When the sensors L2 and R2 detected the black line, it means that the car has arrived the intersection or the end of the road, and the car needs to spin around to find the black track again.

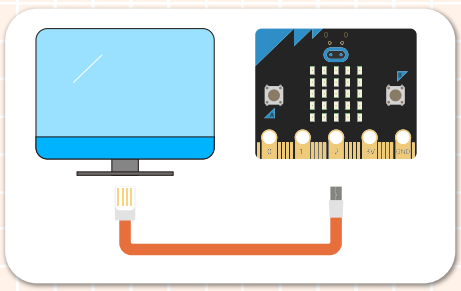


5.The complete program is shown below.

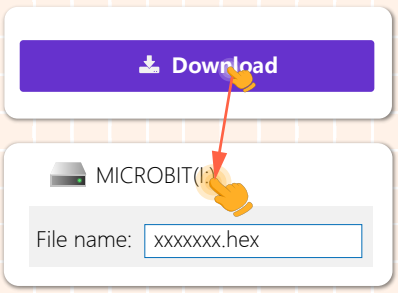
Note: if the Maqueen Plus car turns left or right too much, you can change its motor speed to adjust.

6.Name your project as "Tour of crossroad" and save it.

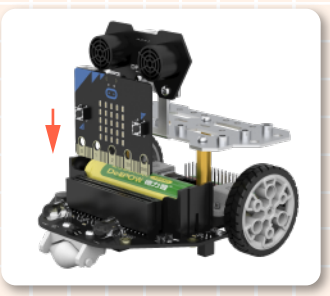
Step 3 Download Program



1.Connect to computer



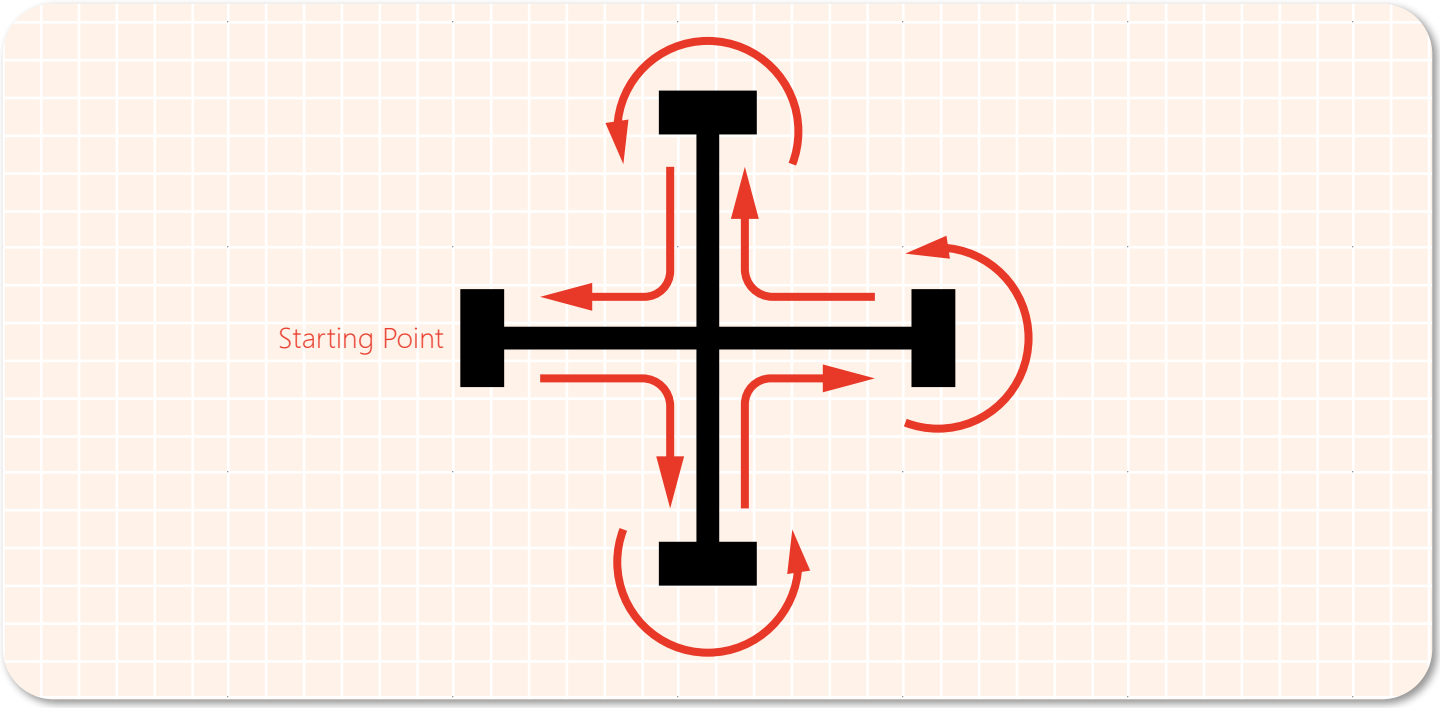
2.Download program



3.Plug in micro:bit

Step 4 Effect Display

When completed all the steps, put Maqueen Plus on the crossroad map, turn on its power switch.



Think & Explore

When Maqueen Plus arrives at the intersection, he will turn right, well, now let's make its right RGB LED flash while turning right, and then the both RGB LEDs flash when turning around.

Tip: add RGB blocks in the program above.