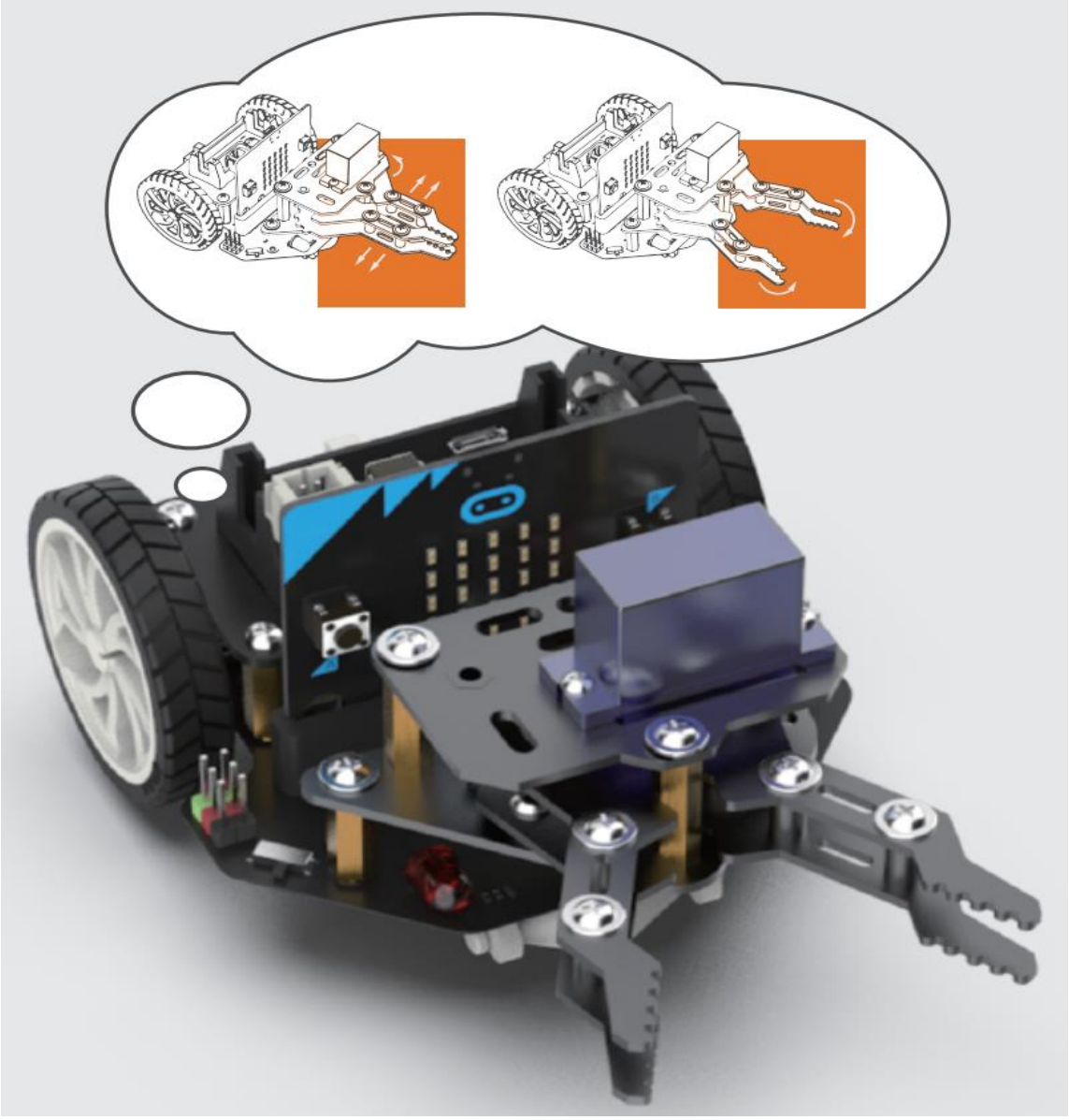
Bluguard Maqueen Mechanic - Beetle



Suggest Age: 9 +
Adult supervision is recommended for children under 9 years old.

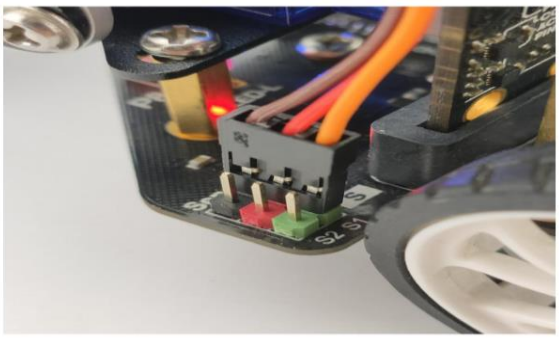
Installation Diagram

Method to Control

1. Wiring

Plug the 3 pins servo wire into port S1 or S2 of Maqueen, shown as below :

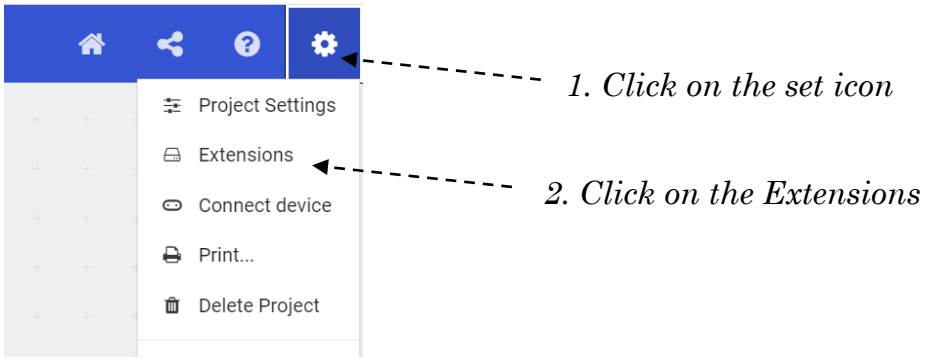
- Brown wire to Black pin
- Red wire to Red pin
- Orange wire to Green pin



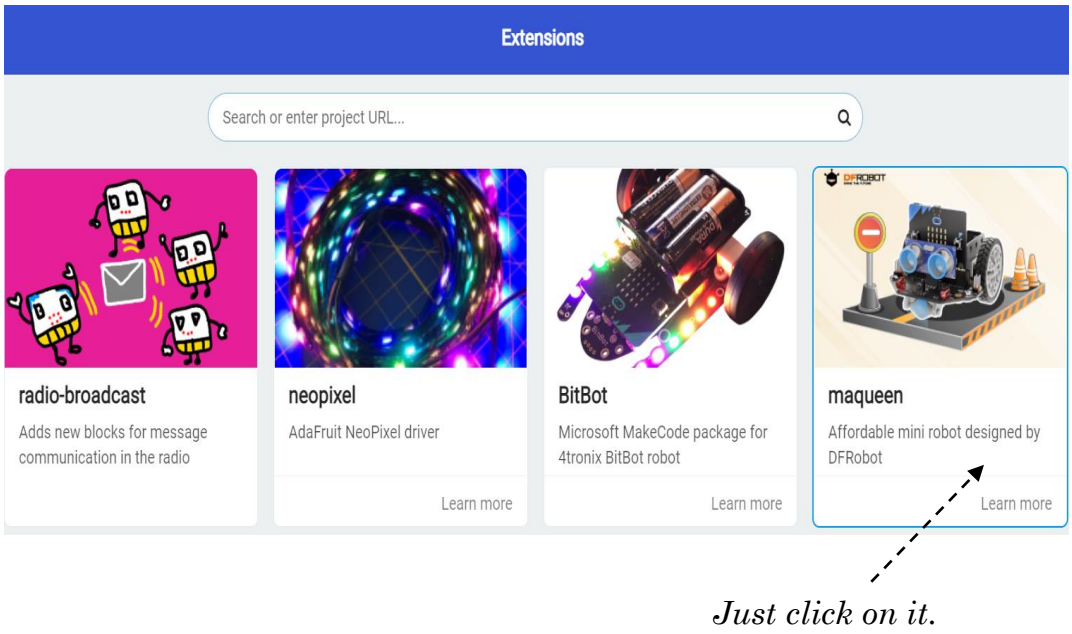
2. Makecode Tutorial

I. Click the link https://makecode.microbit.org, enter the makecode graphical online programming platform and create **New Project**. (Note: Loading will be slow in the first time, please wait patiently)

II. Import the extensions.

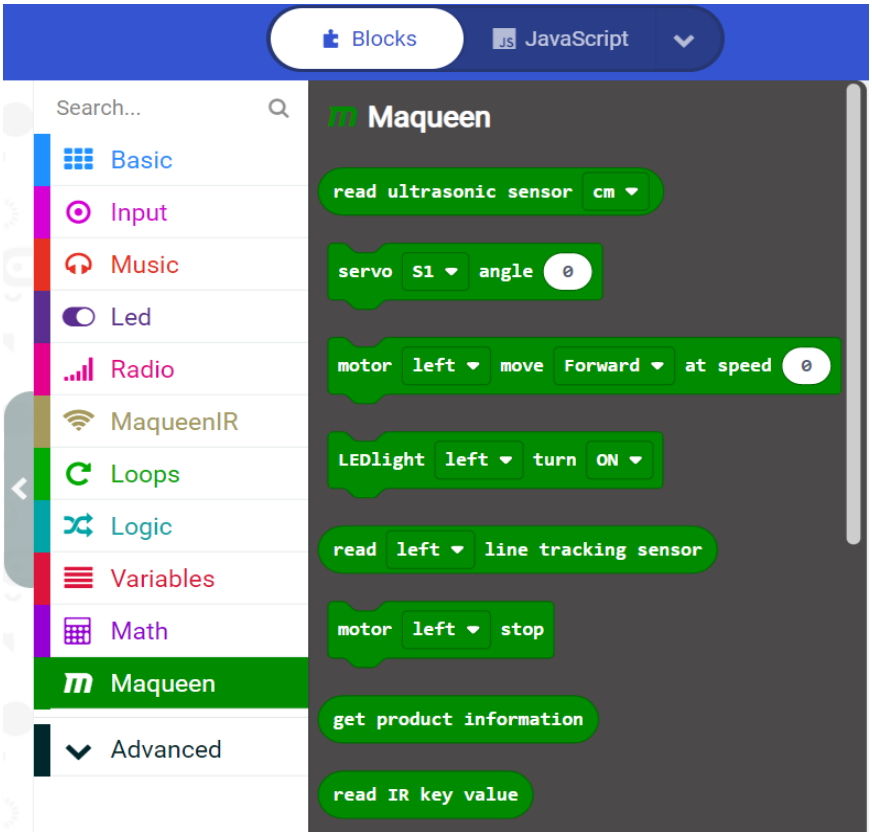


III. Click on the Maqueen's library.



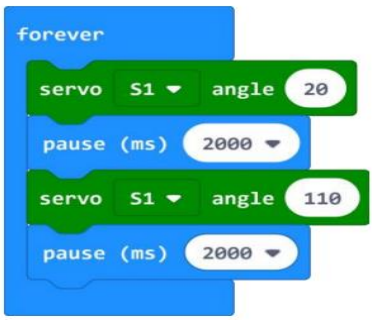
Just click on it.

IV. Import completed.

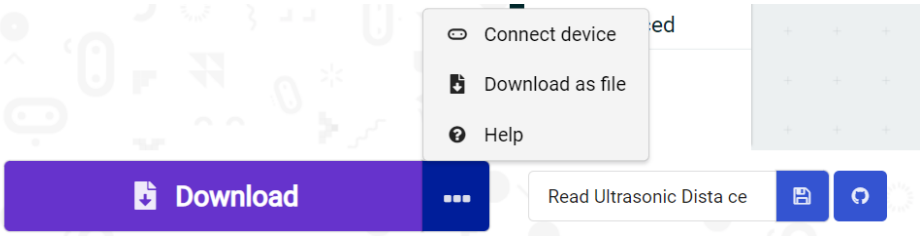


3. Examples

I. The example will use a servo to make the pincers grasp and release. The code is as follows:



II. Go to 'connect device' after connect micro:bit with cable. Just follow instruction and this step just one time setup. Click 'Download' button to download code to micro:bit.



III. Turn Maqueen on when the example code is downloaded, then the beetle pincers will constantly grasp and release. There are two ways to adjust the starting and ending angles of rotation:

- Adjust the angle value in the code.

- Loosen the two screws on the servo and adjust the servo by hand, then tighten the screws.

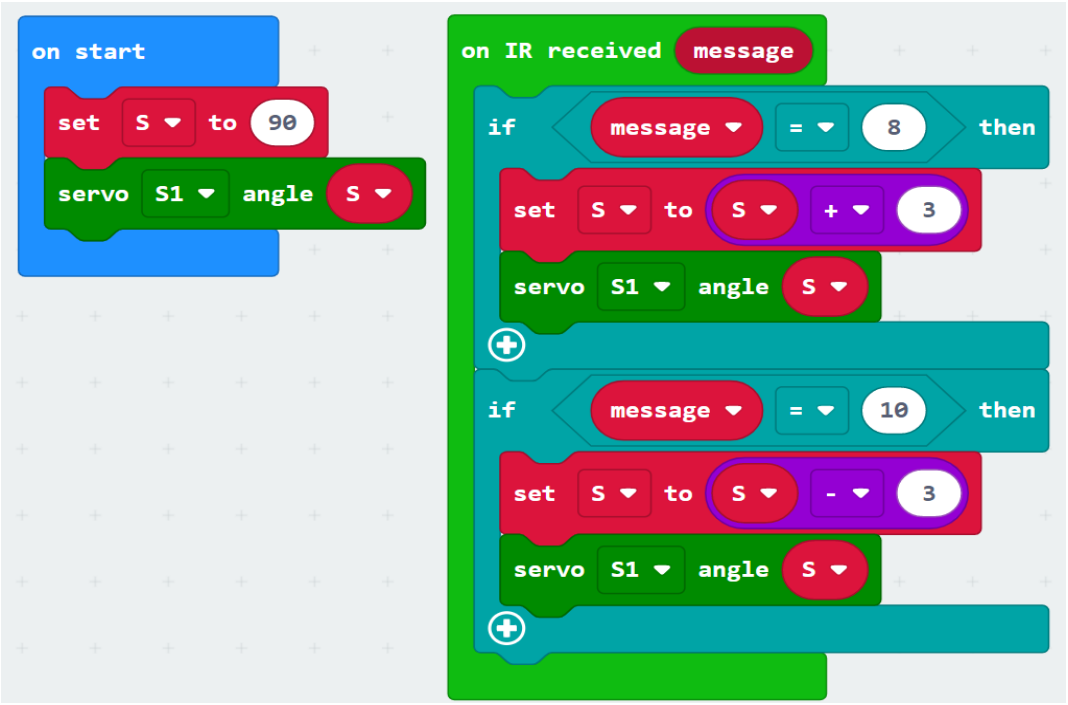
4. IR Remote Control of Beetle

I. This example uses the infrared remote control to make the beetle pincers to grasp and release. Each button of the infrared remote control is corresponding to one key value.

Key	Key Value（Decimal）
Red Key	0
VOL+	1
FUNC/STOP	2
Rwd	4
Pause/Play	5
Fwd	6
Down Triangle	8
VOL-	9
Up Triangle	10
0	12
EQ	13
ST/REPT	14
1	16
2	17
3	18
4	20
5	21
6	22
7	24
8	25
9	26

Key value table of infrared remote control.

II. Now, let's program an example to control the angle of the beetle pincers by the infrared remote control. The code is shown in the figure:

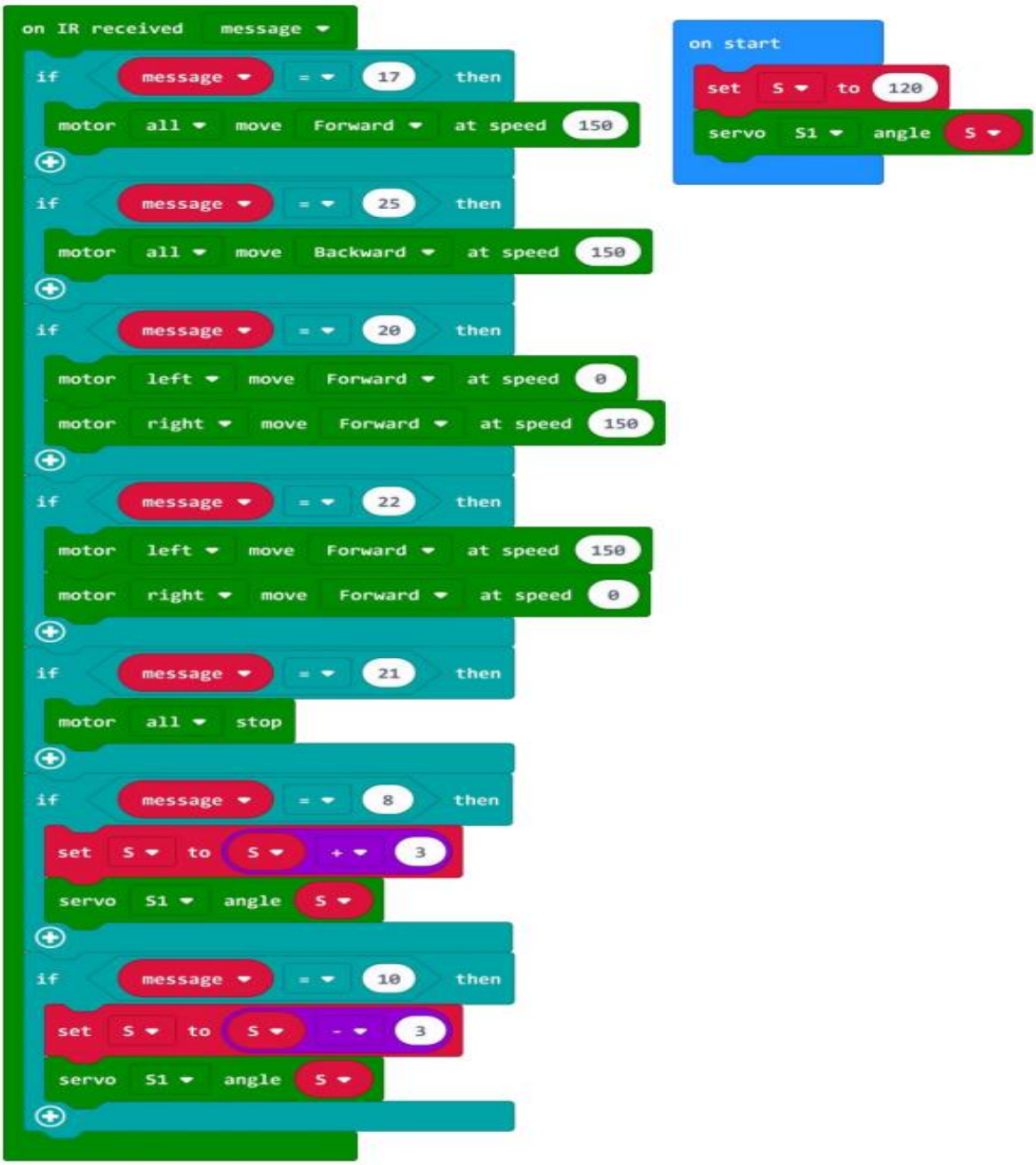


III. After the code is downloaded to micro: bit, pointing the infrared remote control to the infrared receiver of Maqueen, holding the Up Triangle and the Down Triangle respectively, and the beetle pincers will grasp and release accordingly.

5. IR Remote control of the Maqueen Mechanic - Beetle

I. In the two programs above, we have controlled the movement of the beetle pincers separately. The example below is a comprehensive program. It uses the infrared remote control to enable the Maqueen move forward and backward and make the pincers grasp and release.

The code is shown as below :



II. In this example, Keys 2, 8, 4, 6, 5 are used to control Maqueen to move forward, move backward, turn left, turn right and stop; The Up and Down Triangles are used to make the beetle pincers release and grasp respectively.

Program Link :

https://makecode.microbit.org/_hdfUUH5y9Pbd