Clumsy reptile

1. Learning objectives

In this course, we mainly learn how to use MakeCode graphical programming to make Unicycle move forward and backward.

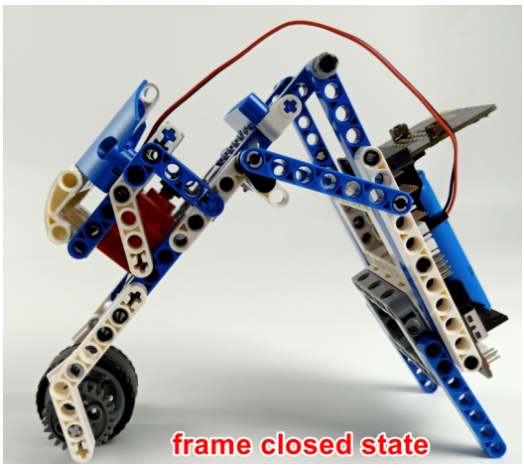
Unicycle walking principle:

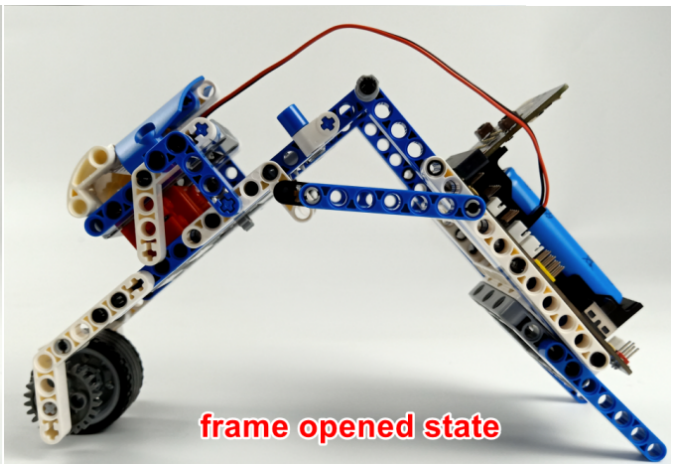
The friction of the front wheel is changed by adjusting the 1# bolt connection buckle ratchet to control the forward direction of the car. When the 1# bolt connection is located in front of the 24-tooth gear, the front wheel can only move forward, so the car creeps forward; when the 1# bolt is connected to the back of the 24-tooth gear, the front wheel can only move backward, and the car creeps backward.

2. Building blocks

For detailed steps of building blocks, please refer to the installation drawings of **[Assembly Course]--[Unicycle]** in the materials or the building block installation album.

After assembly, the frame of the Unicycle needs to be adjusted to the closed state.

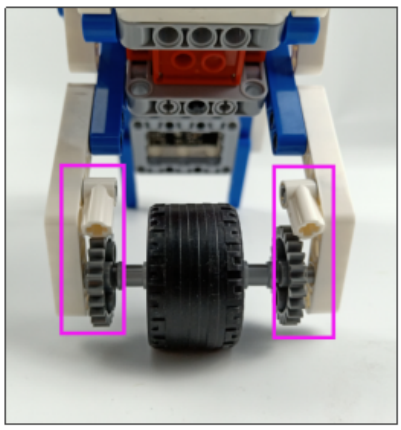




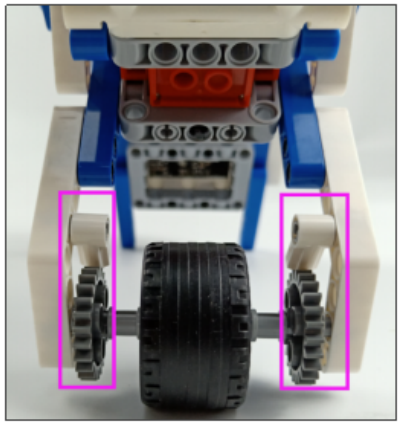
! Note

When 1# bolt connector are placed in front of the 24-tooth gear, the unicycle can move forward.

When 1# bolt connector are placed behind the 24-tooth gear, the unicycle can move backwards.



【1# bolt connector are placed in front of the 24-tooth gear】

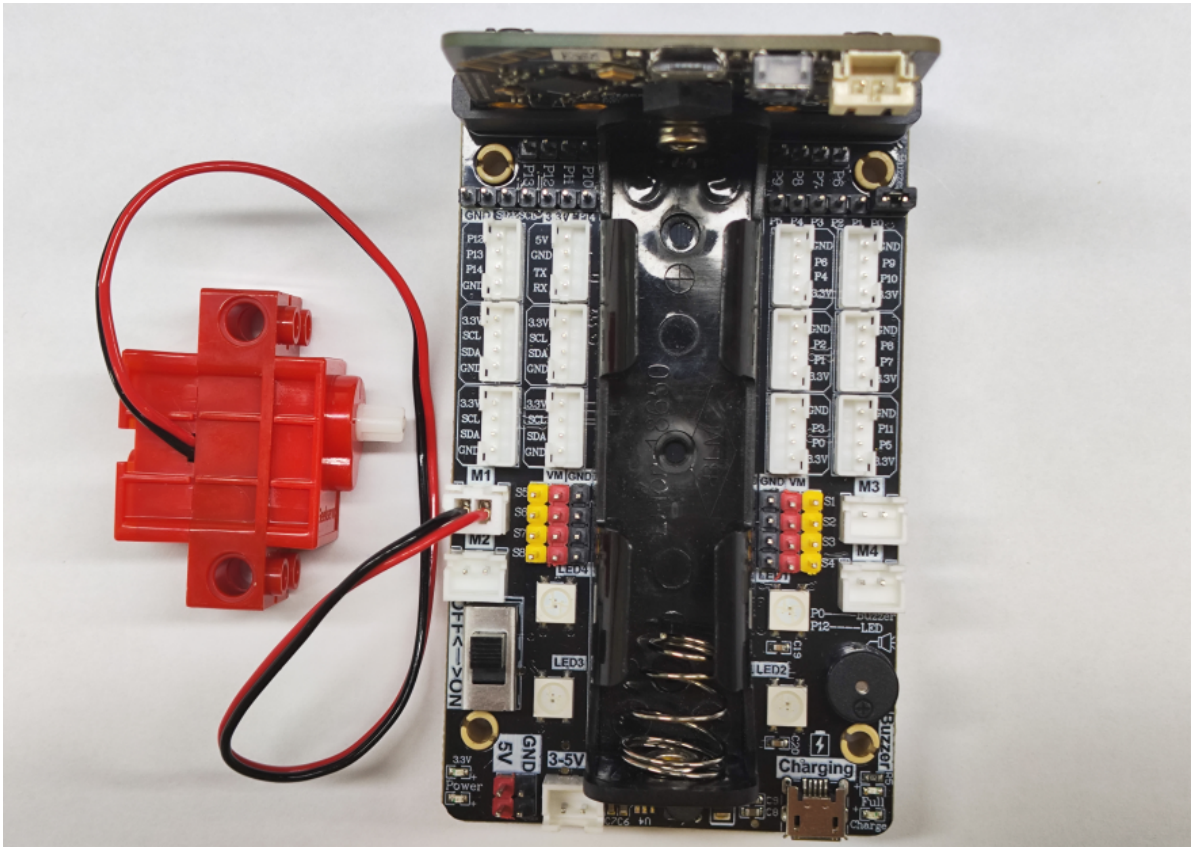


【1# bolt connector are placed behind the 24-tooth gear】

3. Motor wiring

Insert the motor wiring on the left side of the car into the M1 interface of the Super:bit expansion board, with the black wire close to the battery side;

As shown in the figure below:



4. Programming

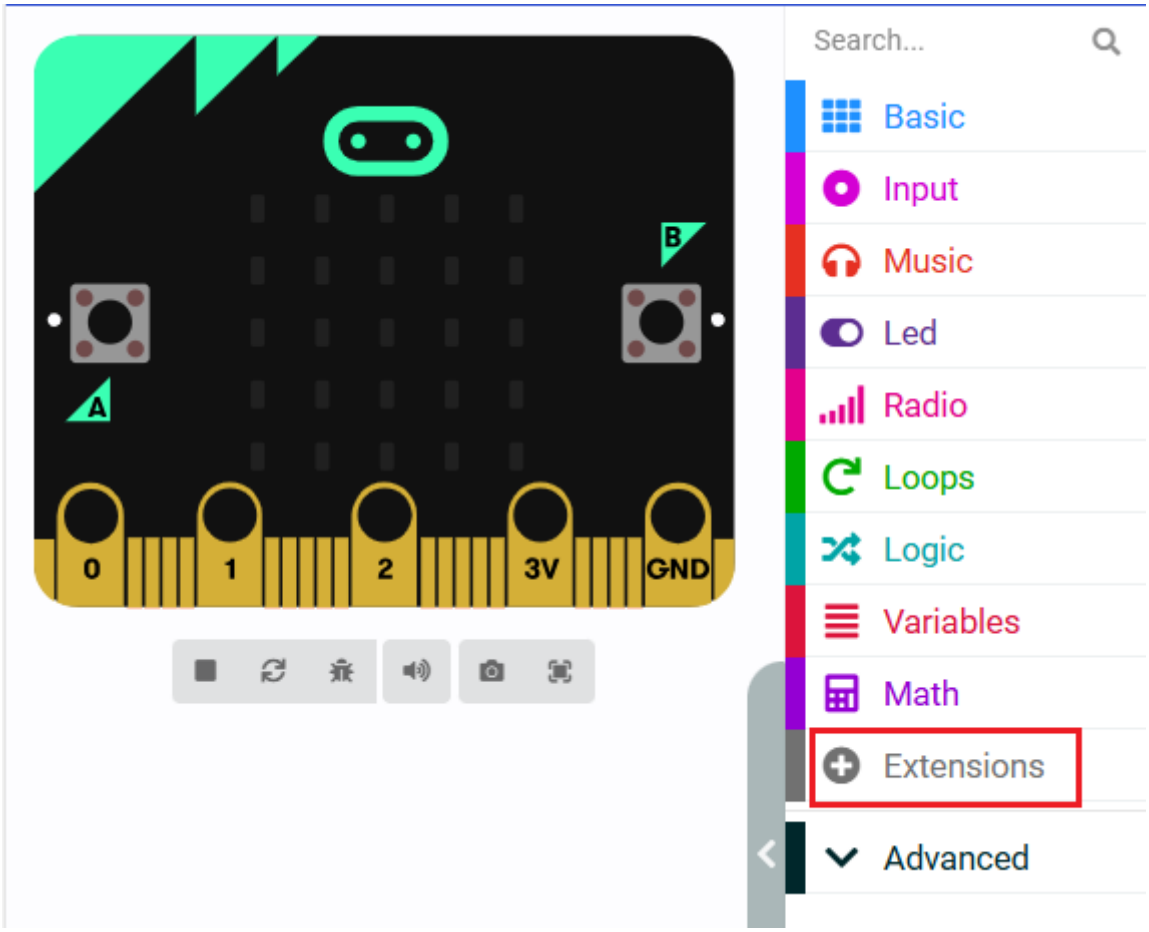
Method 1 Online programming:

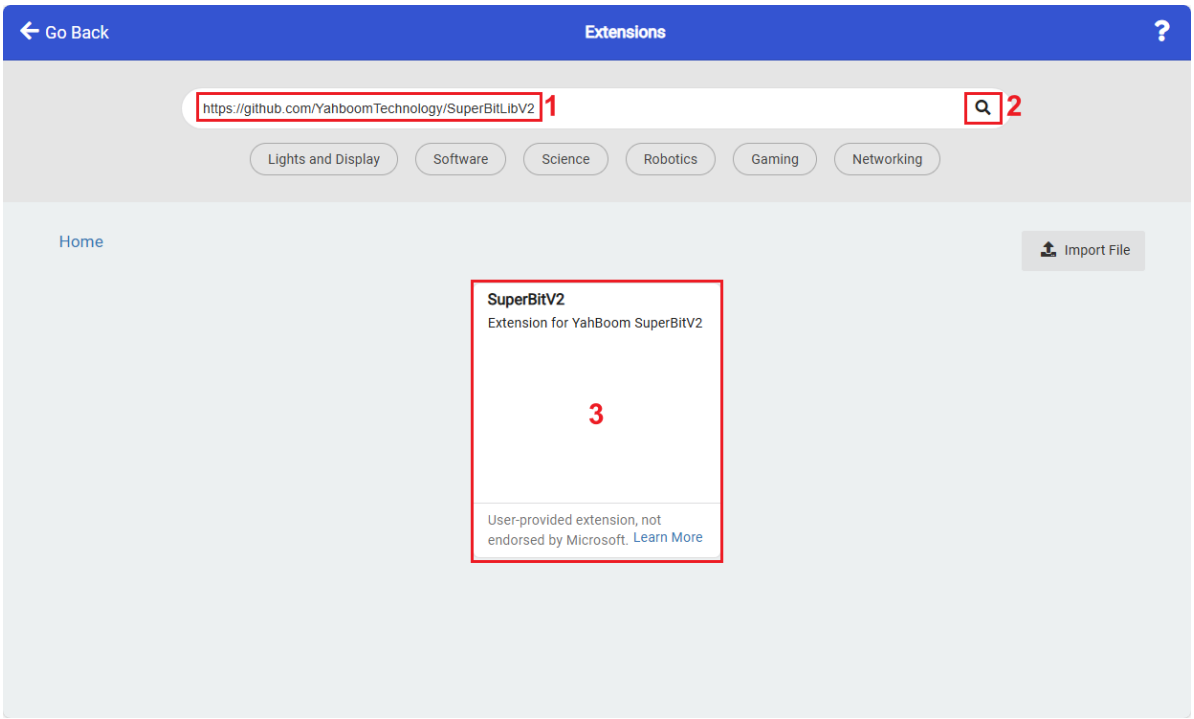
First, connect micro:bit to the computer via a USB data cable. The computer will pop up a U disk. Click the URL in the U disk: https://makecode.microbit.org/ to enter the programming interface. Then, add the Yahboom software package **https://github.com/YahboomTechnology/SuperBitLibV2** to start programming.

Method 2 Offline programming:

Open the offline programming software MakeCode and enter the programming interface. Click [New] and add the Yahboom software package **https://github.com/YahboomTechnology/SuperBitLibV2** to start programming.

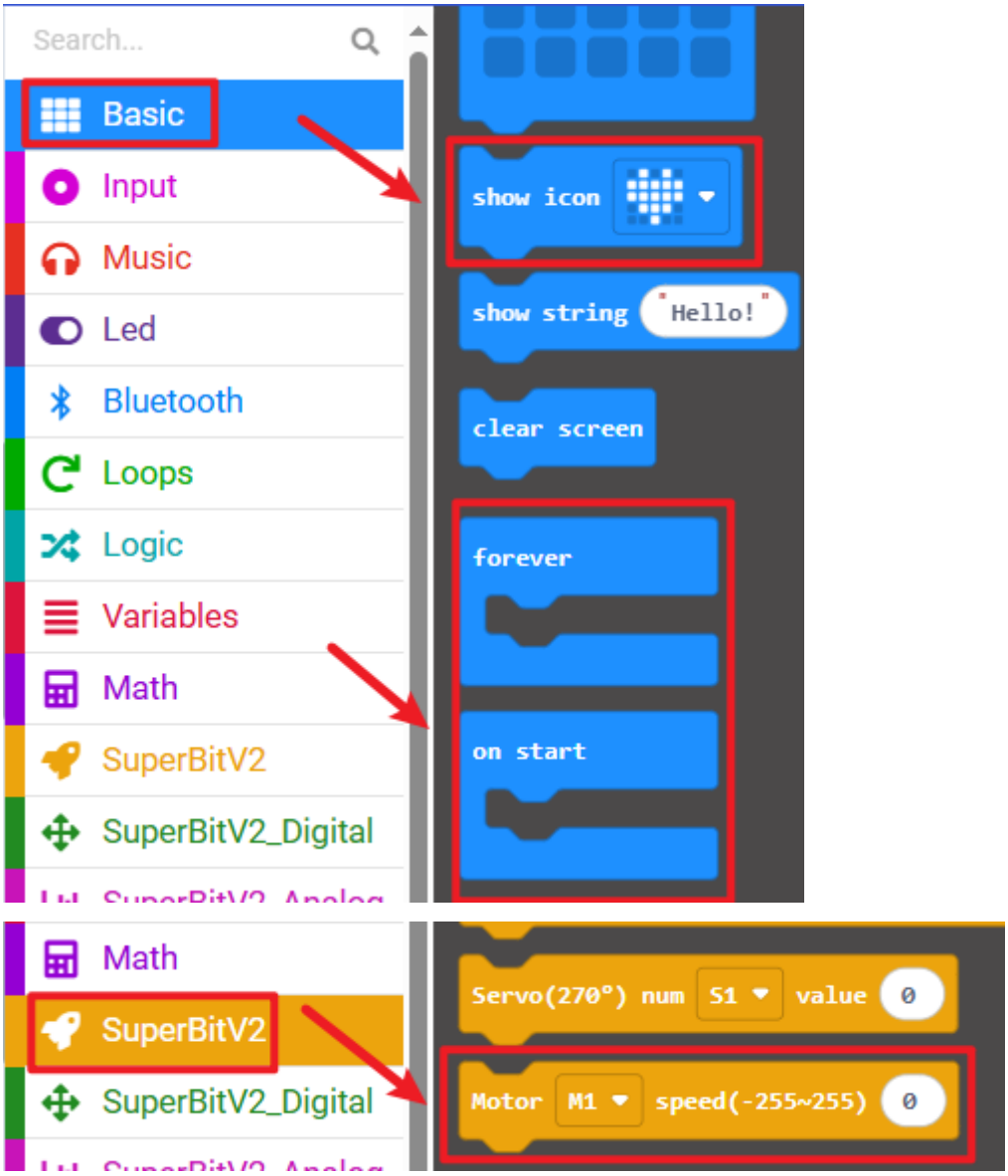
4.1 Adding extension packs





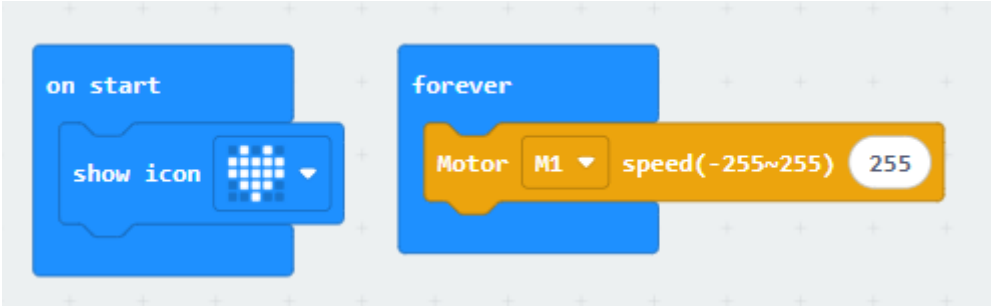
4.2 Building blocks used

The locations of the building blocks required for this programming are shown in the figure below.



4.3 Combining building blocks

The summary program is shown in the figure below.



You can also directly open the **microbit-Clumsy-reptile.hex** file provided in this experiment and drag it into the browser that opens the URL, and the program diagram of this project source code will be automatically opened

5. Experimental phenomenon

After the program is successfully downloaded, the micro:bit dot matrix will display the heart pattern.

Case 1: If we put two 1# bolt connectors in front of the 24-tooth gear, the car will move forward.

Case 2: If we put two 1# bolt connections behind the 24-tooth gear, the car will retreat.