Unicycle APP control

1.Learning goals

In this course, we mainly learn how to use APP control Unicycle.

The principle of unicycle walking:

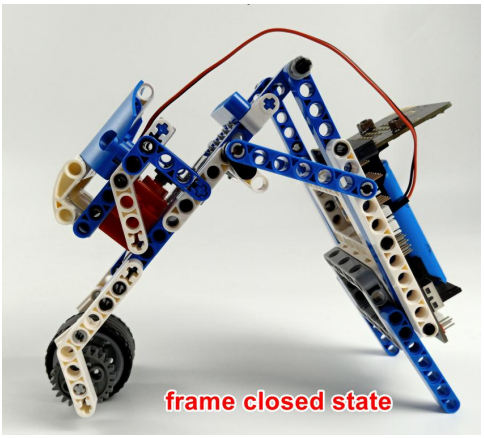
We can change the friction of the front wheels by adjusting the 1# bolt connection snap ratchet to control the direction of the unicycle.

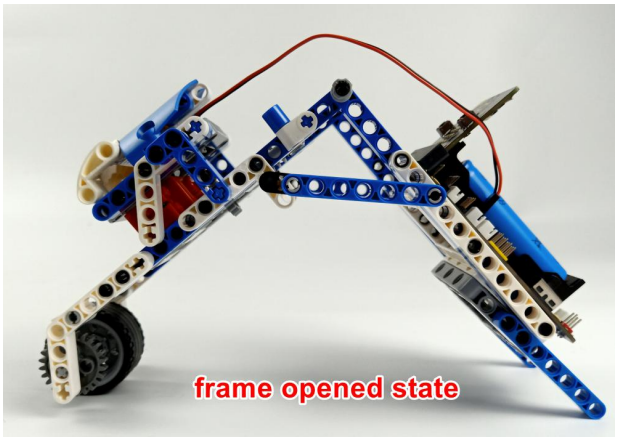
When the 1# bolt connector is located on the front side of the 24-tooth gear, the front wheel can only move forward, so the unicycle forward;
When the 1# bolt connector is located on the rear side of the 24-tooth gear, the front wheels can only move backwards, and the unicycle backwards.

2.Building block assembly steps

For the building block construction steps, please refer to the installation manual or building block installation picture of [Assembly course]-[Unicycle].

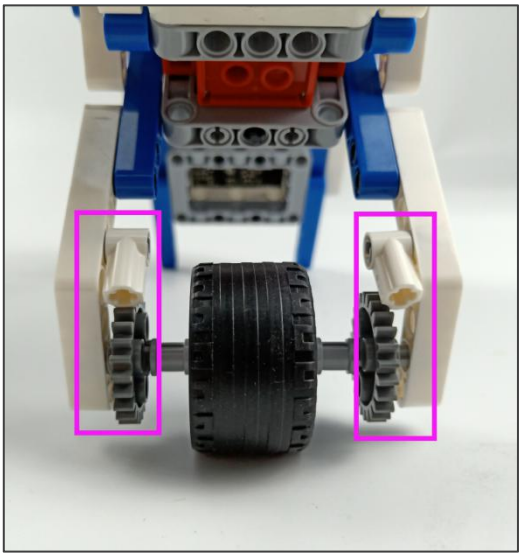
After the assembly is completed, the frame of the unicycle needs to be adjusted to a closed state.



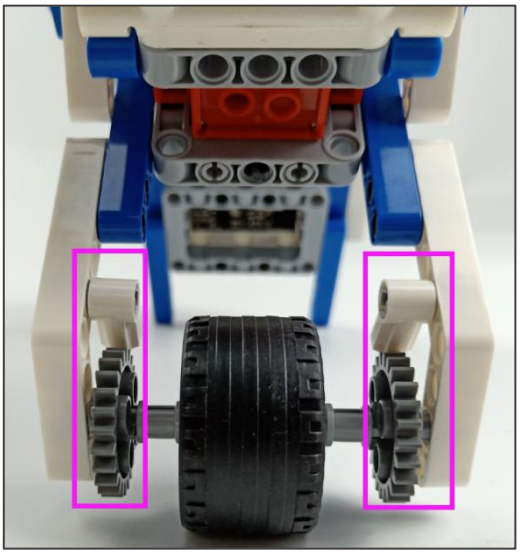


! Note

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.



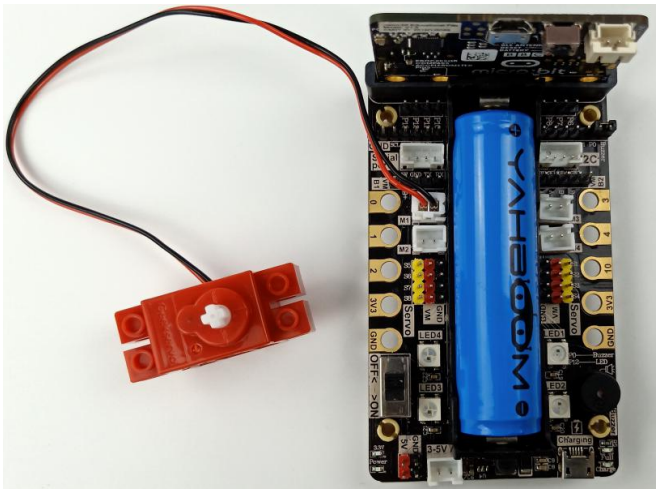
【1# bolt connector are placed in front of the 24-tooth gear】



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

3.Wiring of motor

The motor wiring is inserted into the M1 interface of the Super:bit expansion board, and the black wire is close to the battery side;
As shown below.



4.Programming method

Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: http://microbit.org/ to enter the programming interface. Add the Yahboom package **https://github.com/lzty634158/SuperBit** to program.

Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: **https://github.com/lzty634158/SuperBit**, you can program.

5.About code

The summary program of this course can be viewed by opening the hex we provided on the MakeCode programming interface.

6.Download APP

Android users scan the following QR code by browser to download APP;
iOS users scan the following QR code by camera or search "Mbit" in App Store to download APP.

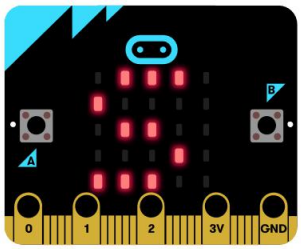
IOS

Android

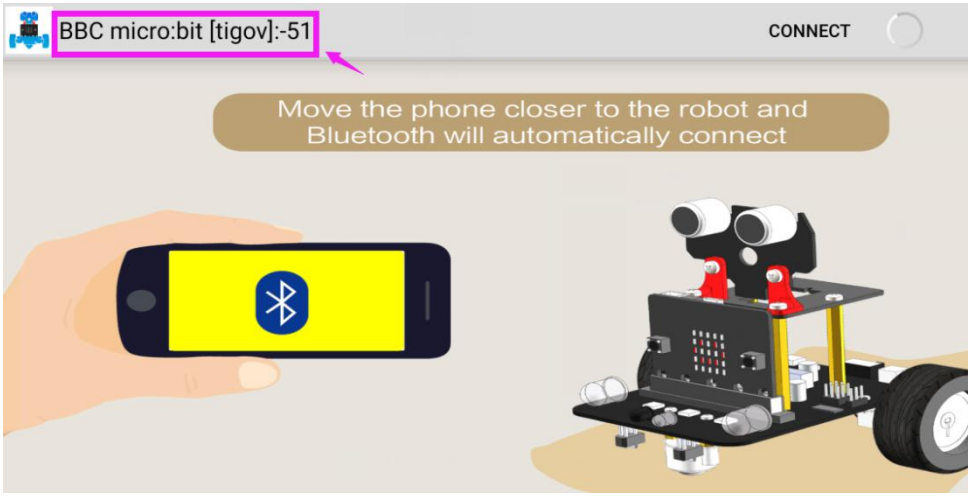
Note: If there are any prompts on the phone during installation, please select "Allow".

7. APP remote control

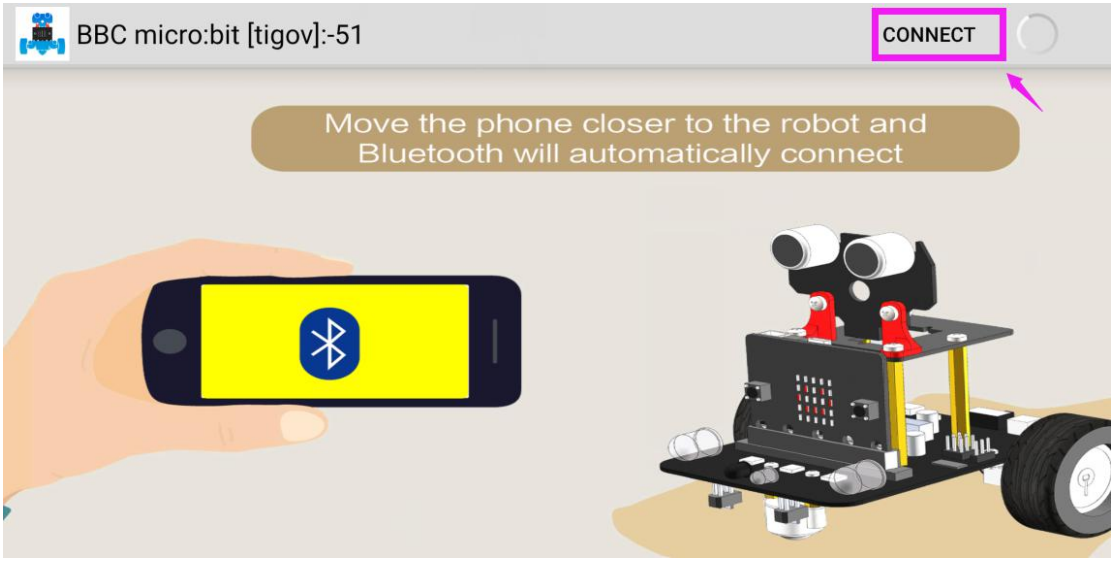
1) After the program is downloaded successfully, turn on the power switch of the car, the micro: bit dot matrix will display the "S" pattern, as shown below, this is the state of Bluetooth not connected.



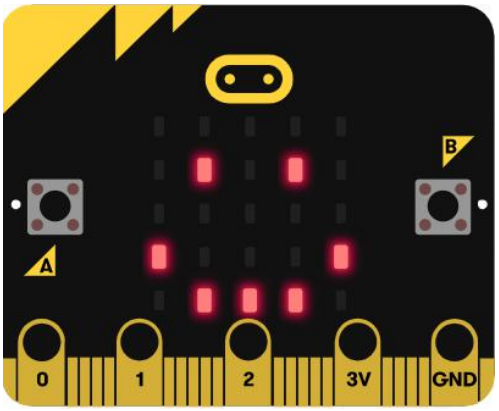
2)Open the Bluetooth of your mobile phone, and open the Bluetooth APP. You can see the interface as shown below. At the same time, you can see the Bluetooth signal in the upper left corner.



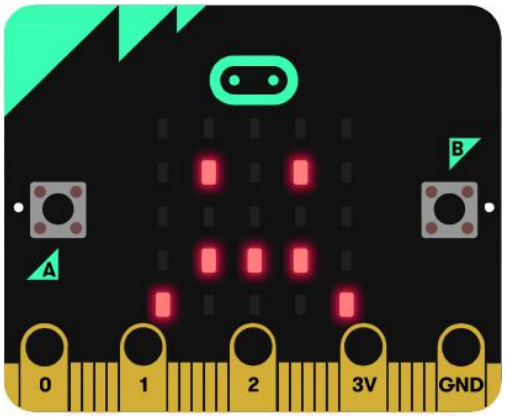
3)Mobile phone close to robot Bluetooth automatic connection. If Bluetooth can't connect automatically, you need to click 【CONNECT】to connect the Bluetooth between the phone and the robot.



After Bluetooth connection successfully, micro:bit dot matrix will display a smile pattern. If Bluetooth disconnect, it will display a cry pattern.



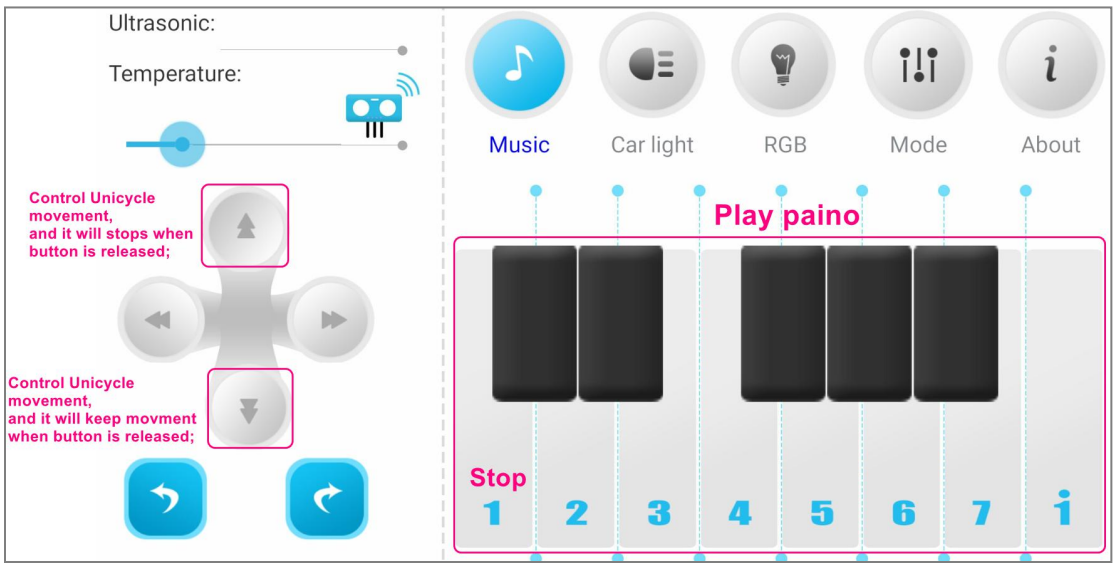
【Bluetooth be connected】



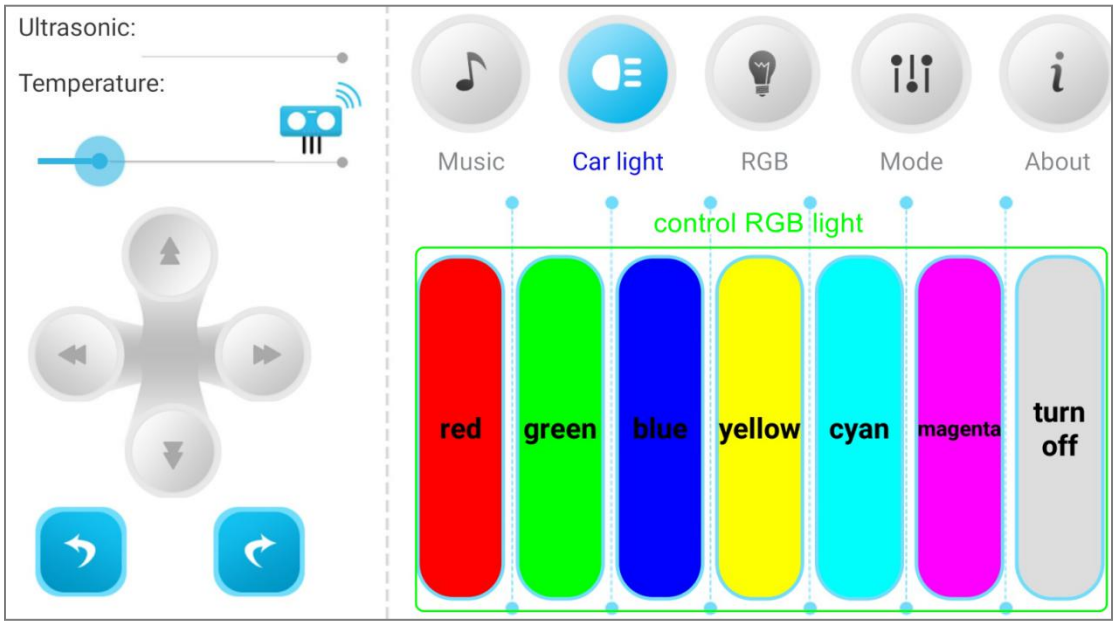
【Bluetooth disconnect】

Main control interface:

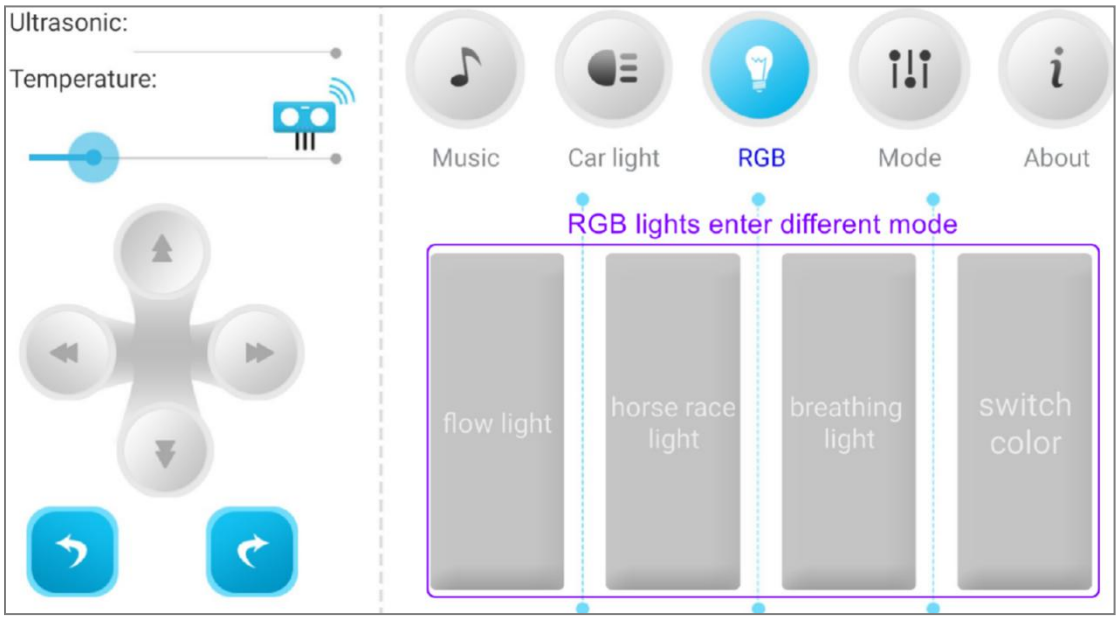
- Forward button controls the Unicycle movement, and it will stops when button is released;
- Back button controls the Unicycle movement, and it will keep movement when button is released;
- Press the piano key 1, the car stops moving;
- Press the piano keys to make buzzer play different tones.



Car light interface



RGB interface



!Note: Mode option is unavailable.