愛動智教育系統

CUHK iCar Experiment Manual
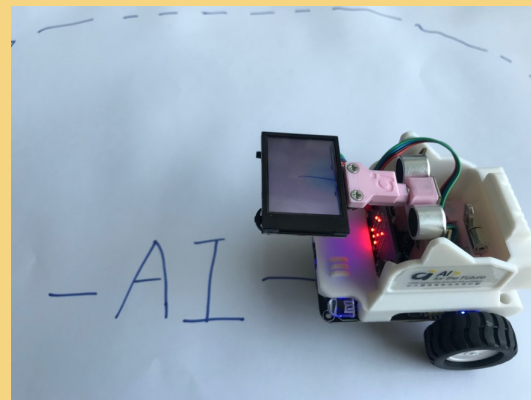**Experiment 2: Line Tracking Experiment**

Code Cloning
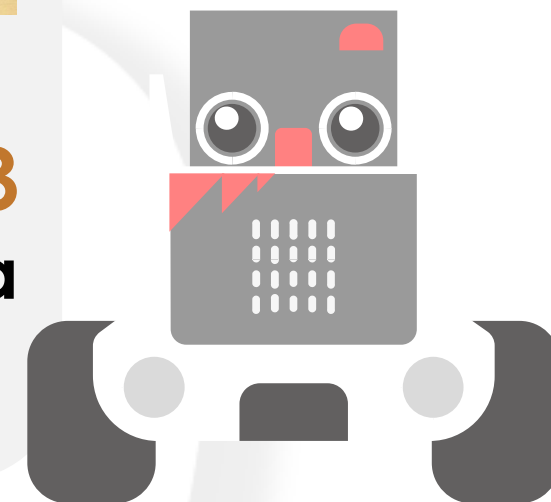
CUHK iCar

Experiment 1
Face Following

Experiment 2
Line Tracking

Experiment 3
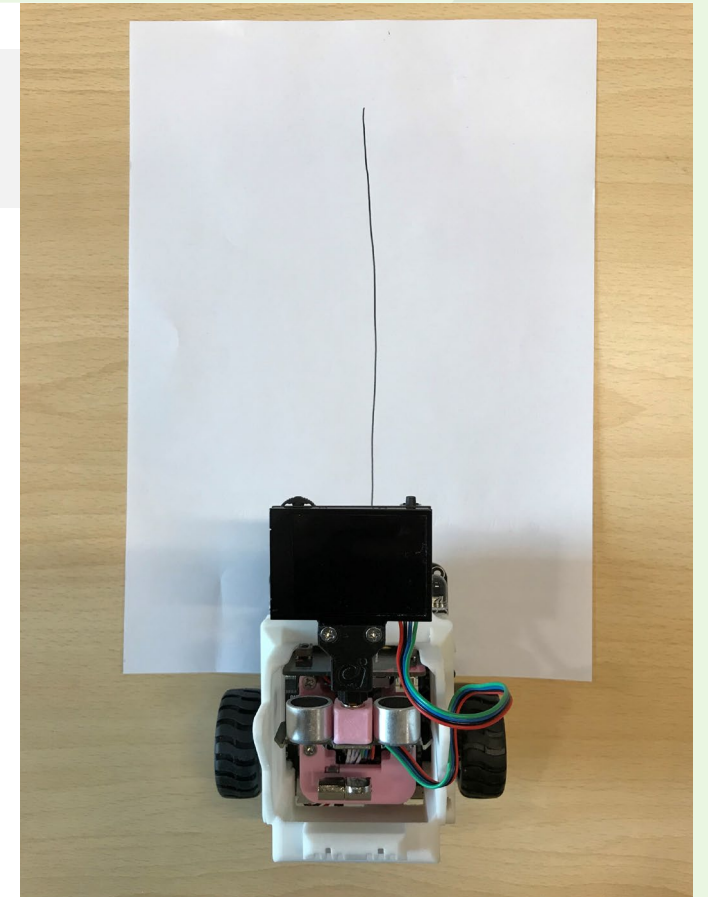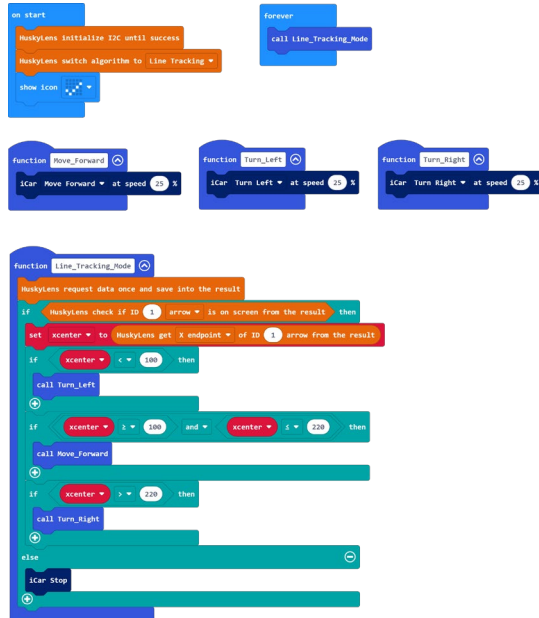**Moral Dilemma**

Line Tracking Experiment

Introduction Of The Experiment

This experiment showcases how the self-driving car tracks a black line.
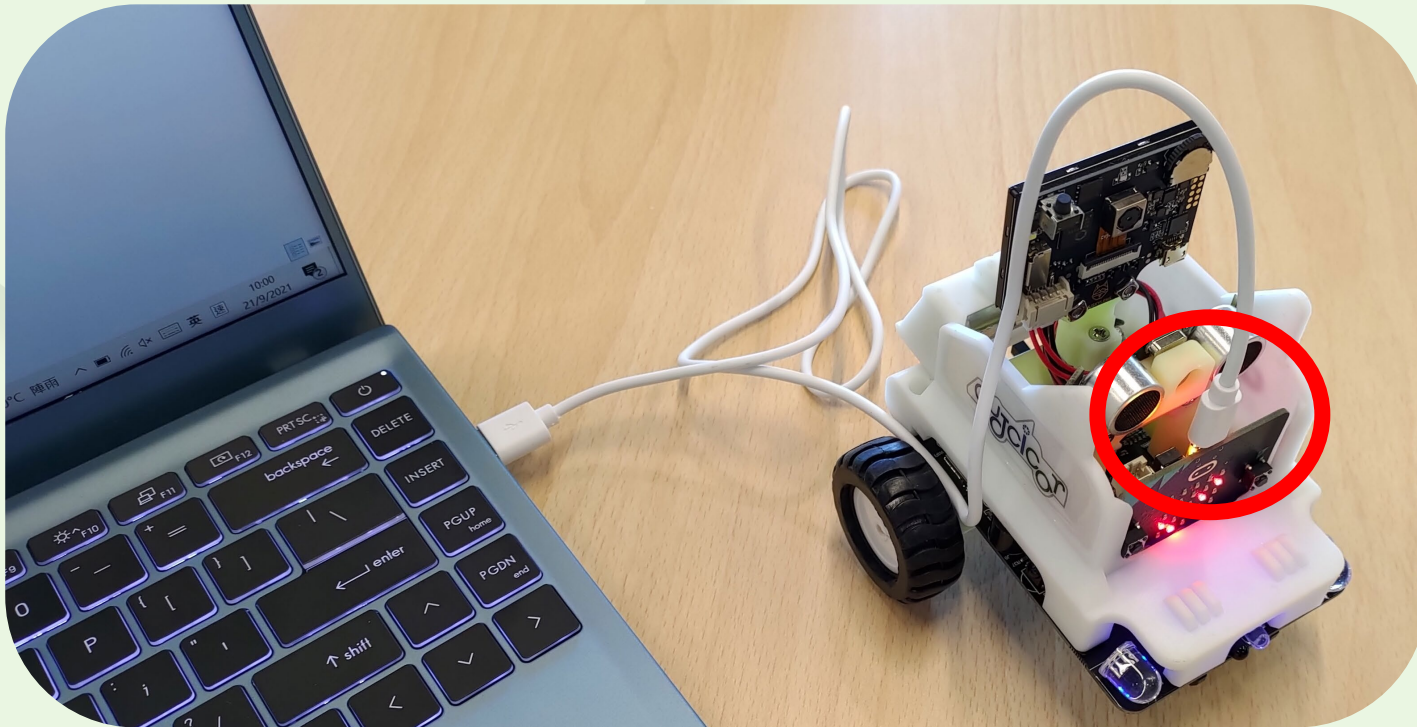
Download Program To micro:bit
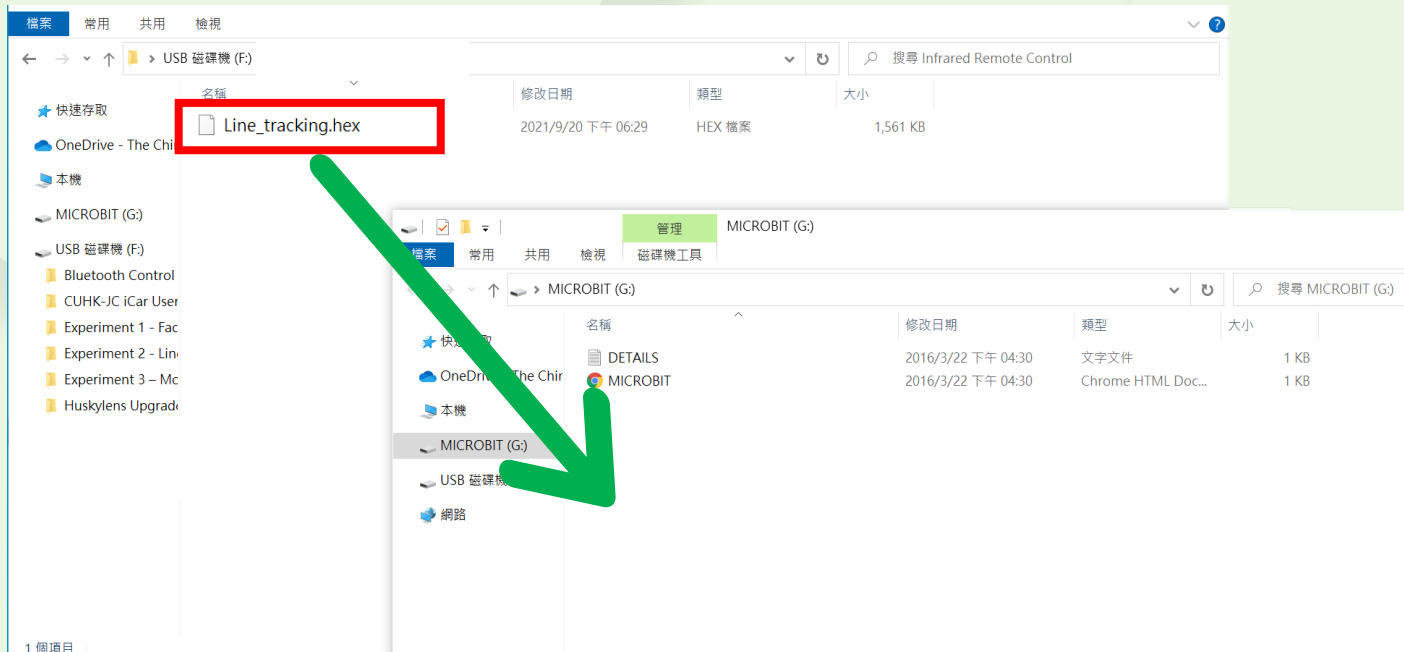

Line_tracking.hex

Method 1

Clone the .hex to micro:bit directly
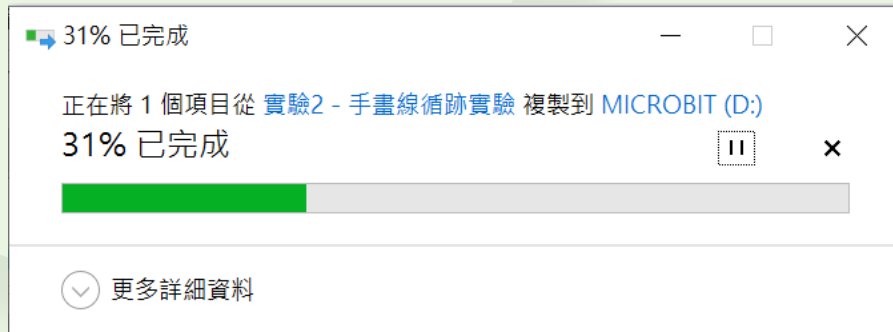
Method 2

Write your own code on MakeCode

Step 1:
Connect the micro:bit to computer by a micro USB cable

Step 2:
Drag the
"Line_tracking.hex"
file into the micro:bit window

Step 3:
Wait for the completion of cloning process

Caution:

- The micro:bit window will potentially disappear after the completion

- After the completion of cloning process, the hex file will not be displayed in the micro:bit window

Step 4:
Disconnect the micro:bit from your computer

If the connection between CUHK iCar and the computer is failed:

- Restart the computer

- Try another USB port
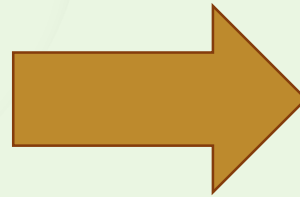
- Change the micro USB cable
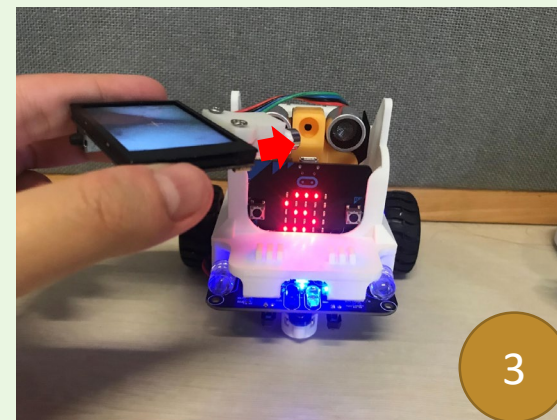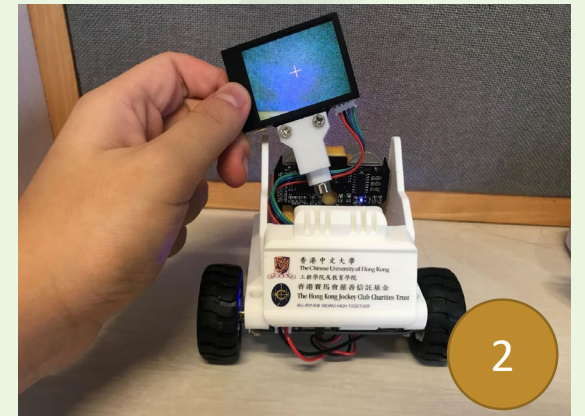
You have cloned the code successfully!
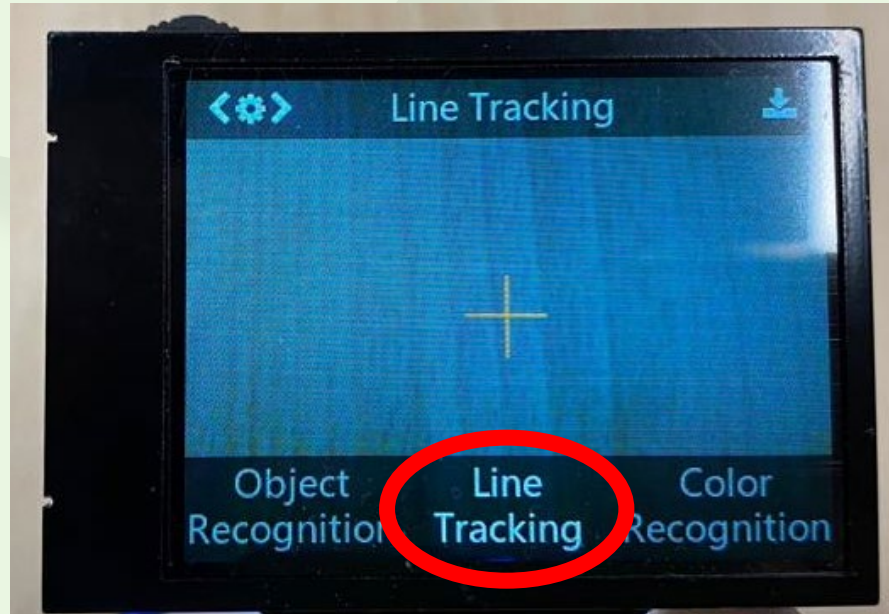
Let's start the experiment!

Switch On Your CUHK iCar

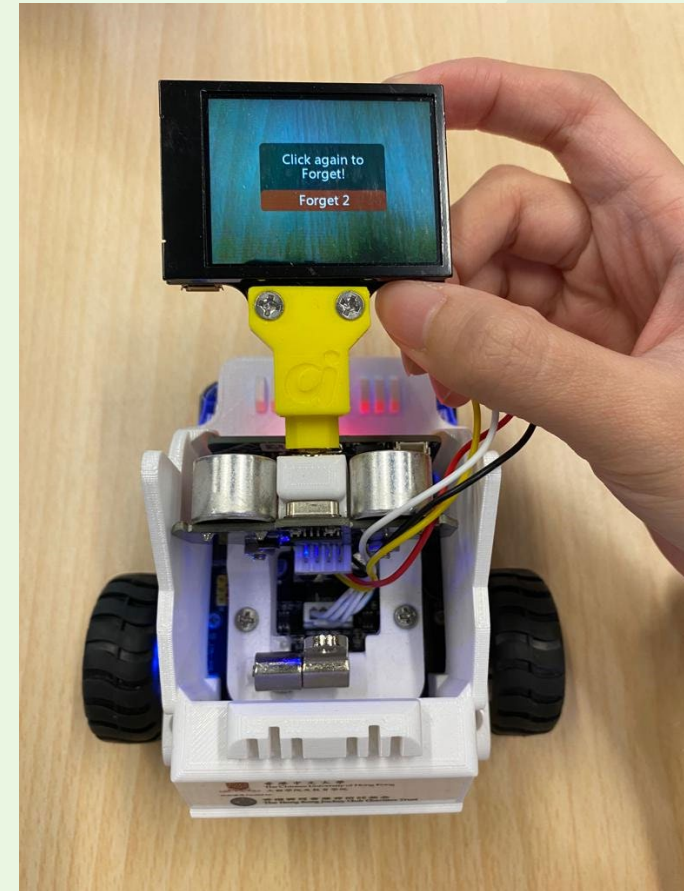Change the position of HuskyLens to face the ground.

Once it is switched on, the HuskyLens will automatically adjust to Line Tracking Mode.
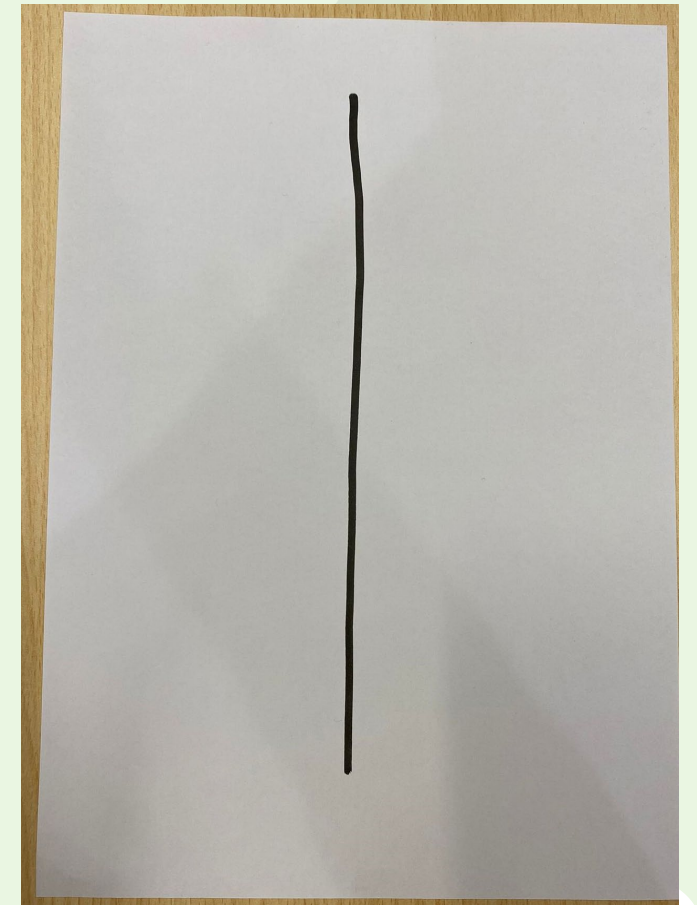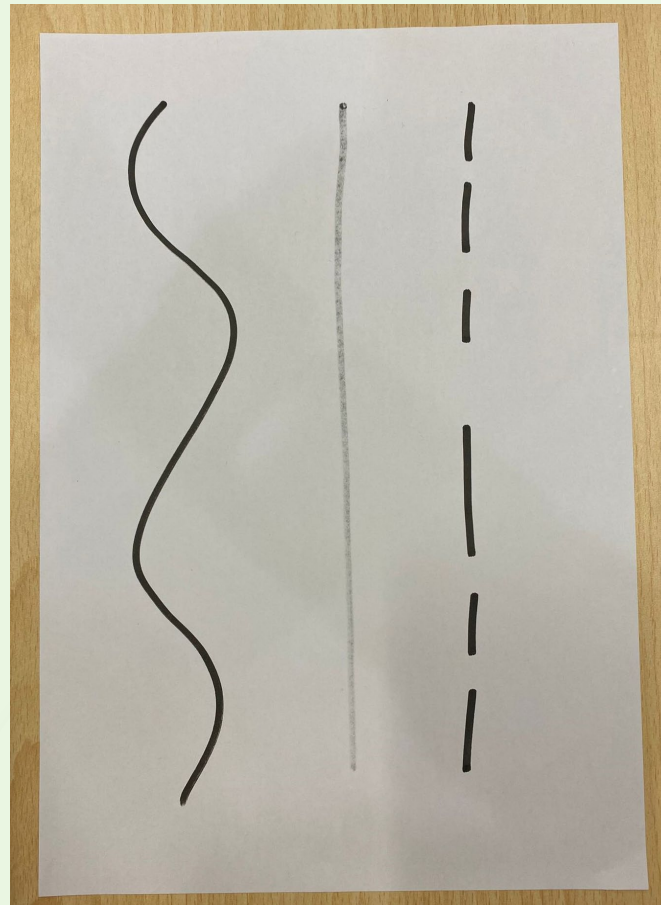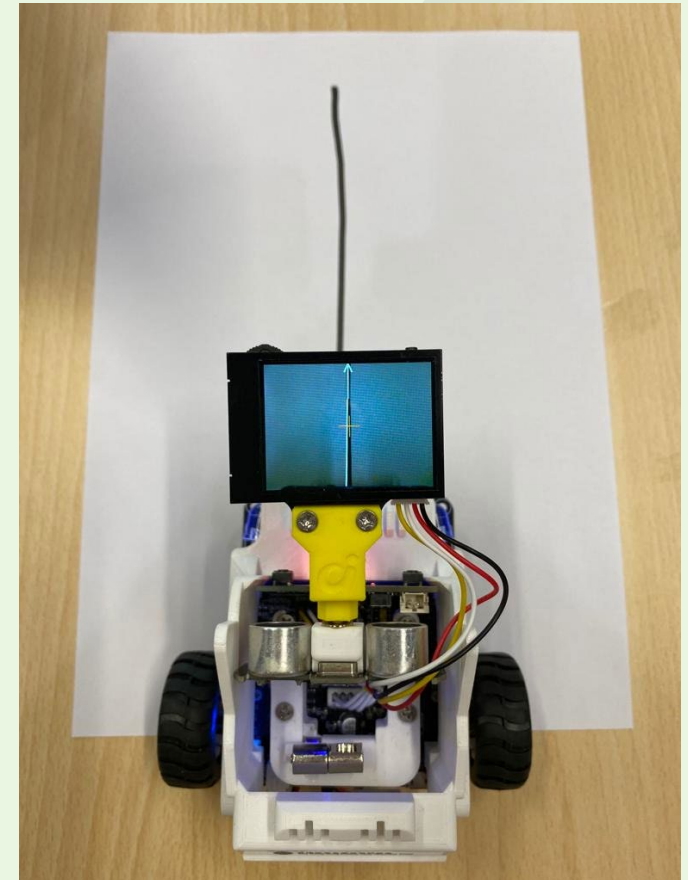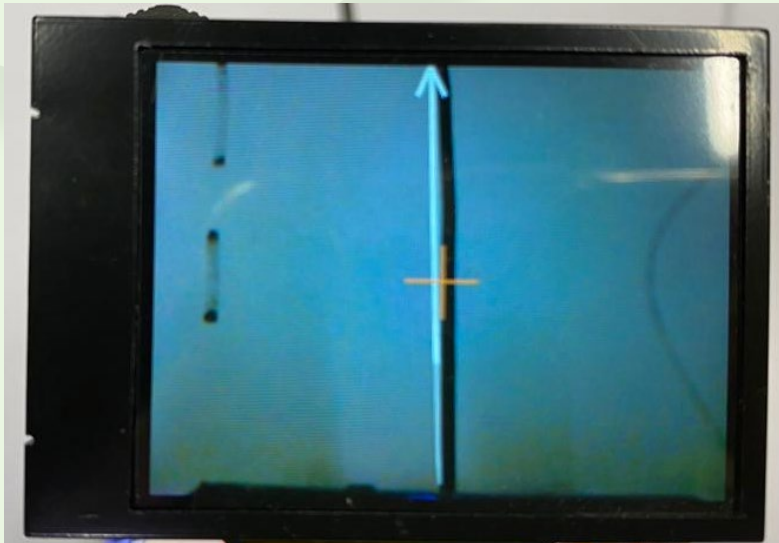
Clear The Previous Data

Press the learning button.
Then, press the button again when the confirmation box is appeared to "Forget" the data.

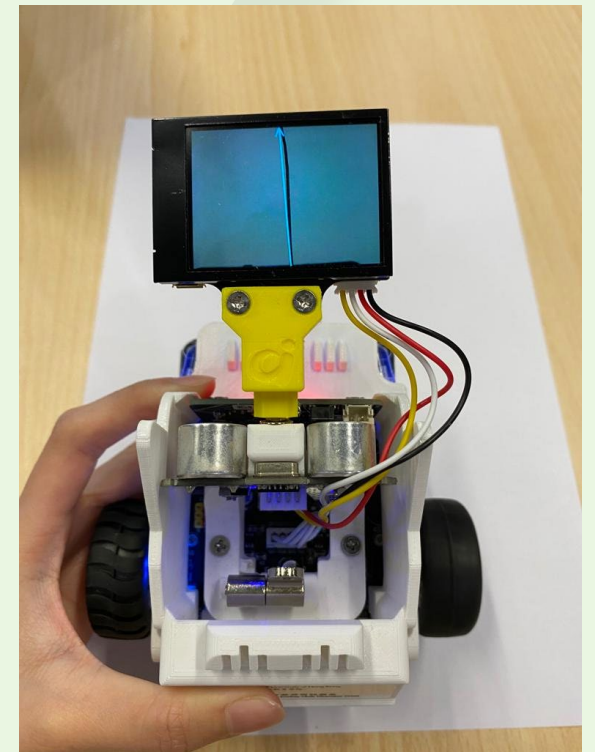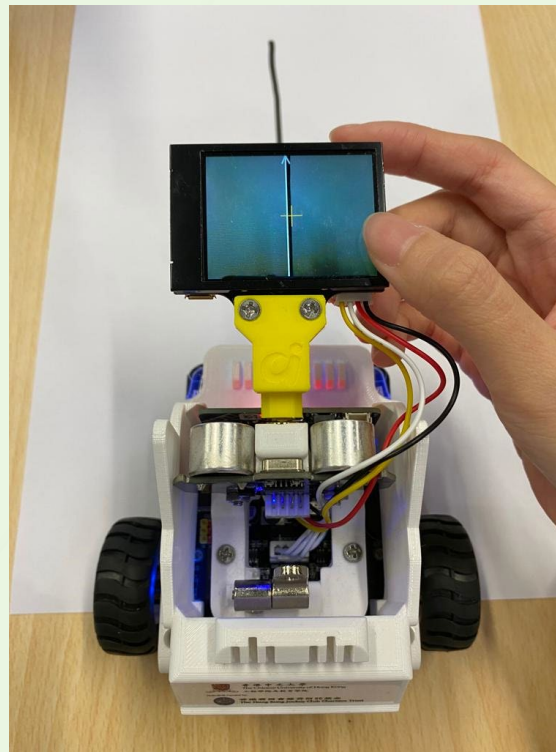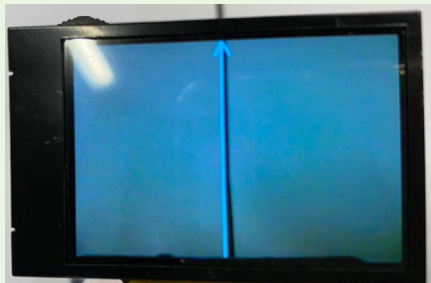Draw black lines on the white paper.

The line should be spotted by the camera of HuskyLens.
Make sure the white arrow on the monitor is aligned with the black line.

Once the line and the camera are aligned, press the learning button.

The white arrow will then change to blue arrow, and the CUHK iCar will track the line automatically.
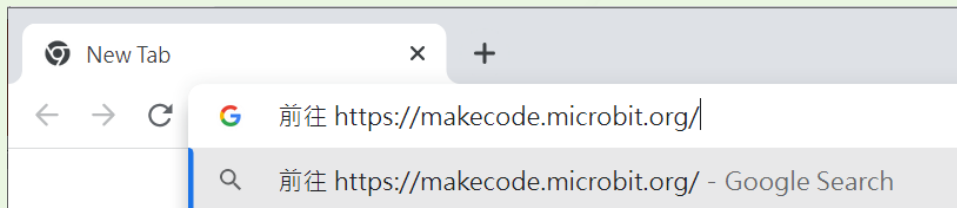
If CUHK iCar does not work as expected:

- Try to fully charge the CUHK iCar

- If the CUHK iCar still does not work as expected, then you can try to revise the provided program by yourself
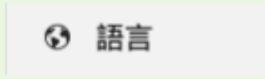
  🌐 Browse https://makecode.microbit.org/
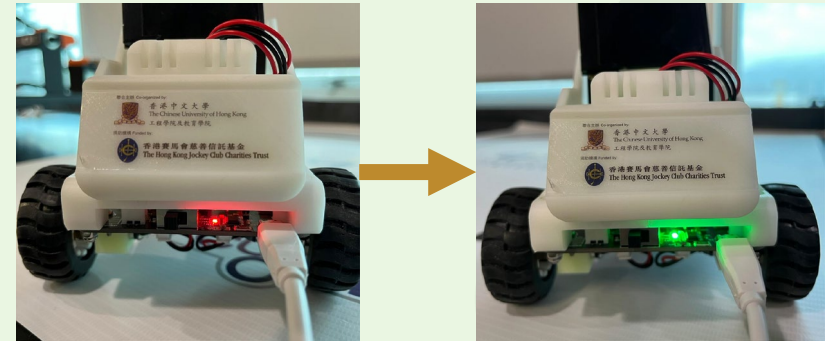
Caution
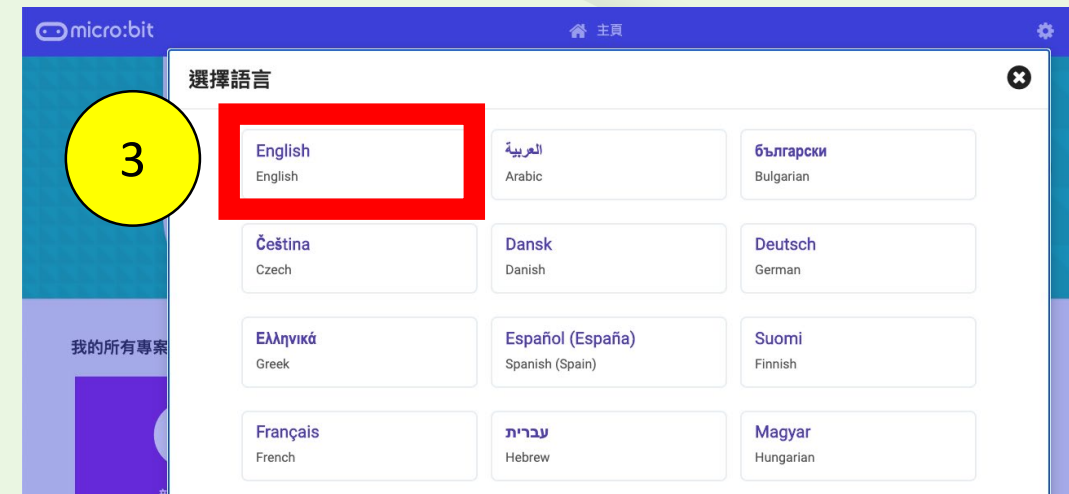## Please Set English As The Language!

1. Click ⚙

2. Click ⊕ 語言

3. Click English

English must be set as the language, otherwise the program may fail.

1. ⚙ Microsoft
2. ⊕ 語言

選擇語言

English English	العربية Arabic	български Bulgarian
Čeština Czech	Dansk Danish	Deutsch German
Ελληνικά Greek	Español (España) Spanish (Spain)	Suomi Finnish
Français French	עברית Hebrew	Magyar Hungarian

3

18
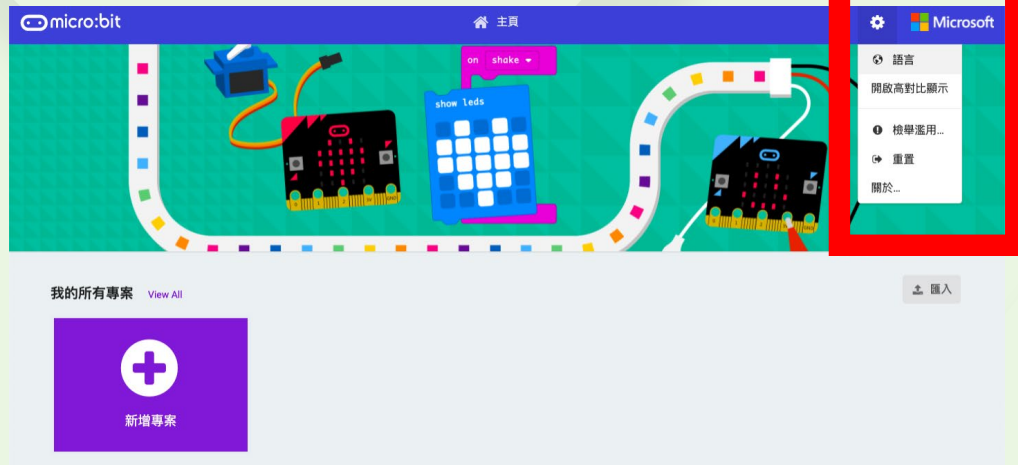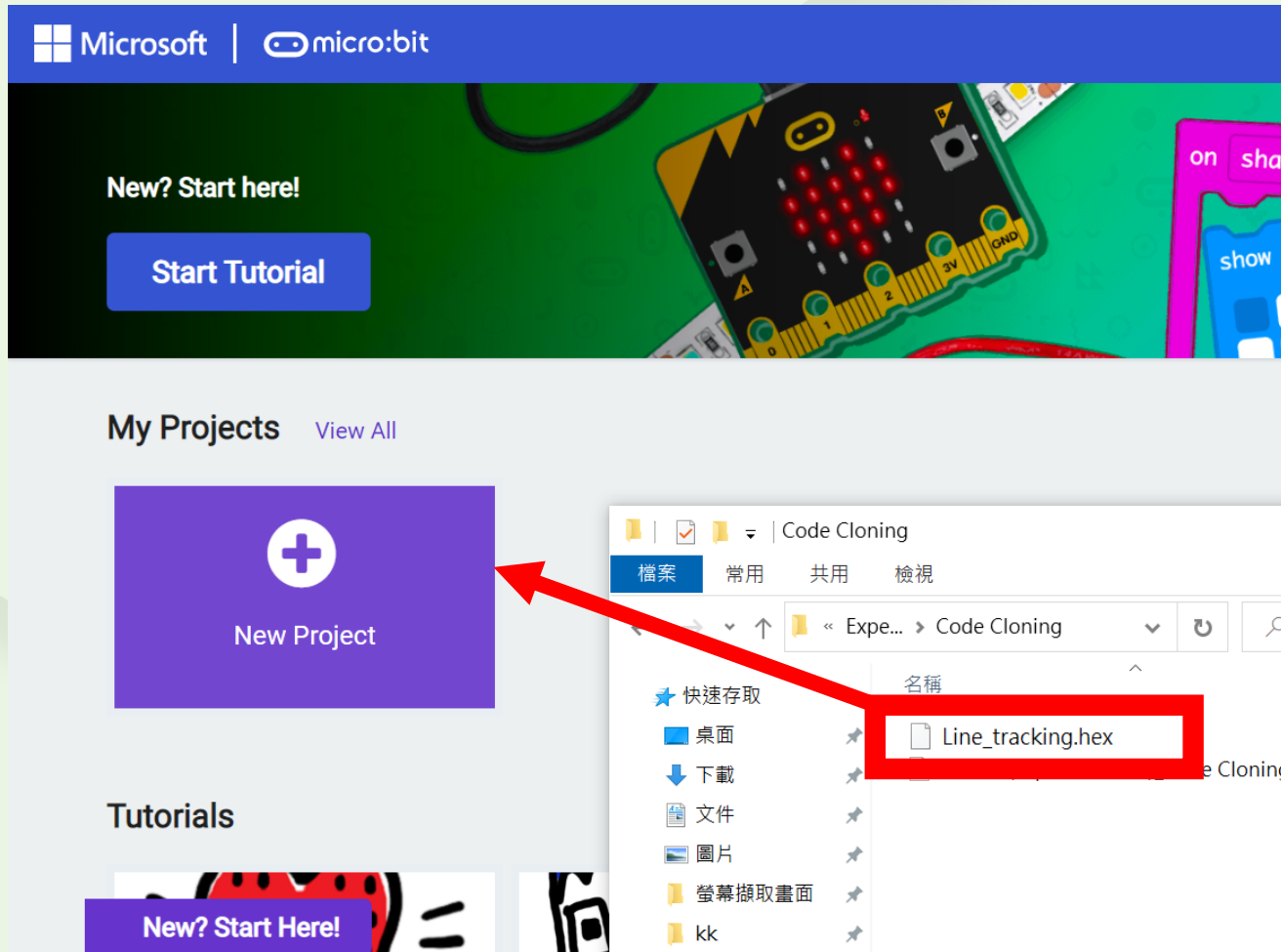
4. Drag the "Line_tracking.hex" file into the micro:bit window
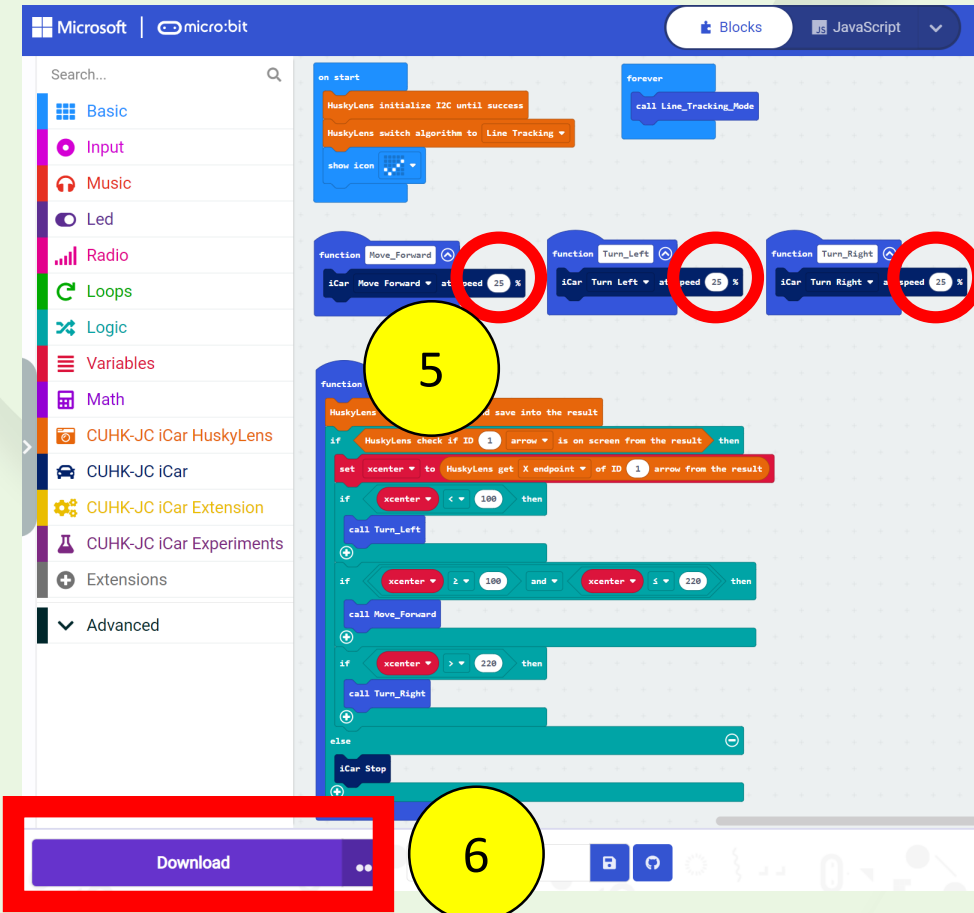
The numbers circled in red are the recommended speeds when the battery is fully charged

5. Please adjust the speed gradually by +/- 5 according to the battery capacity or battery age, then re-enter the adjusted value to the position marked by the red circle

6. After the adjustment, download the program to the micro:bit again. For details, please refer to slide 5