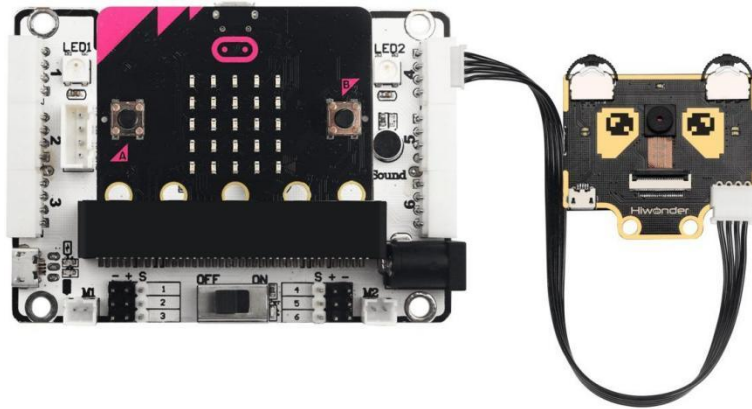


Lesson 8 Feature Learning Integration with micro:bit

1. Preparation

Connect WonderCam to micro:bit Expansion Board Port 4.



2. Learning Objective

- ① To know the connectivity of WonderCam on micro:bit Expansion Board
- ② To understand the program logic.

3. Programming Plan

In this lesson, we will integrate the Vision module Feature Learning function with the output from micro:bit Expansion Board. The program will first initialize the Vision module following by recording the features of an item and do comparison between real time image and the learned images. Output the corresponding results according to signs.

4. Programming

◆ Adding Extension

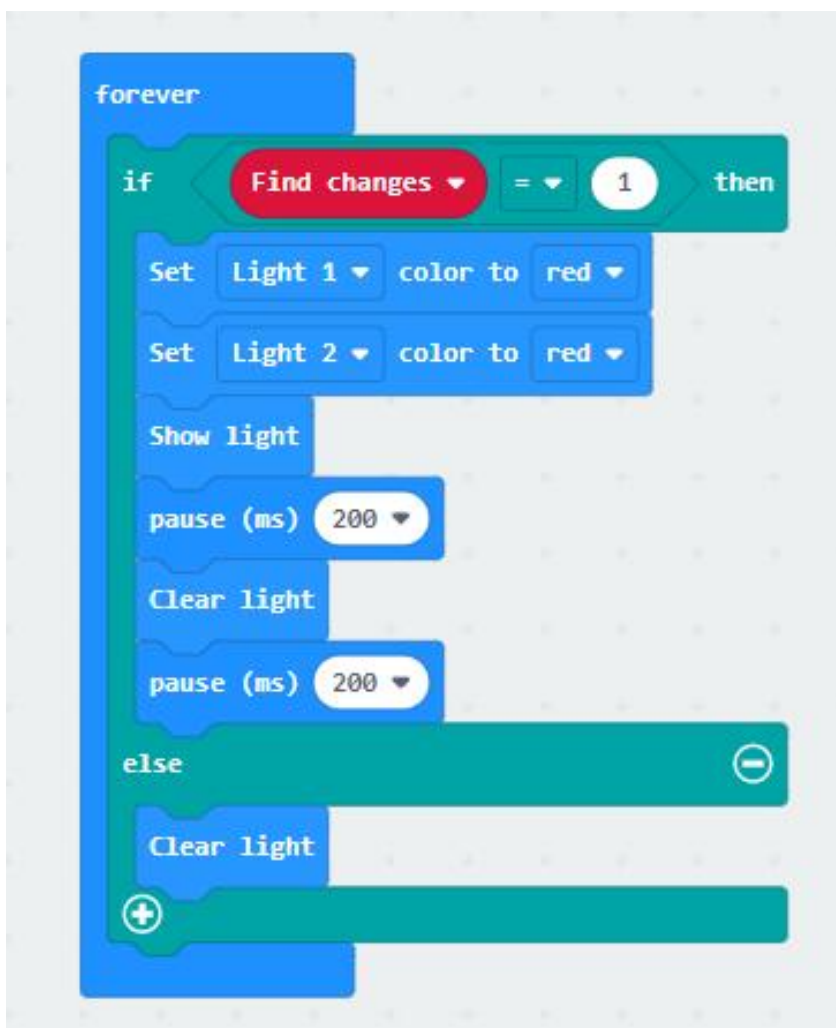
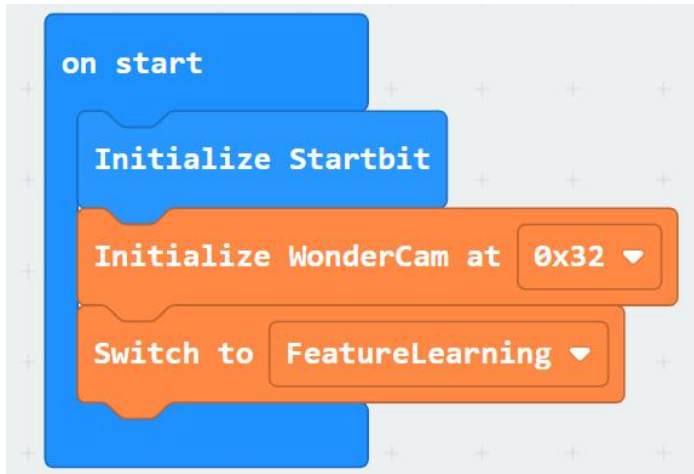
Go to <https://makecode.microbit.org/> and create New Project. In the MakeCode Toolbox, select Advanced, click on Extensions to add the

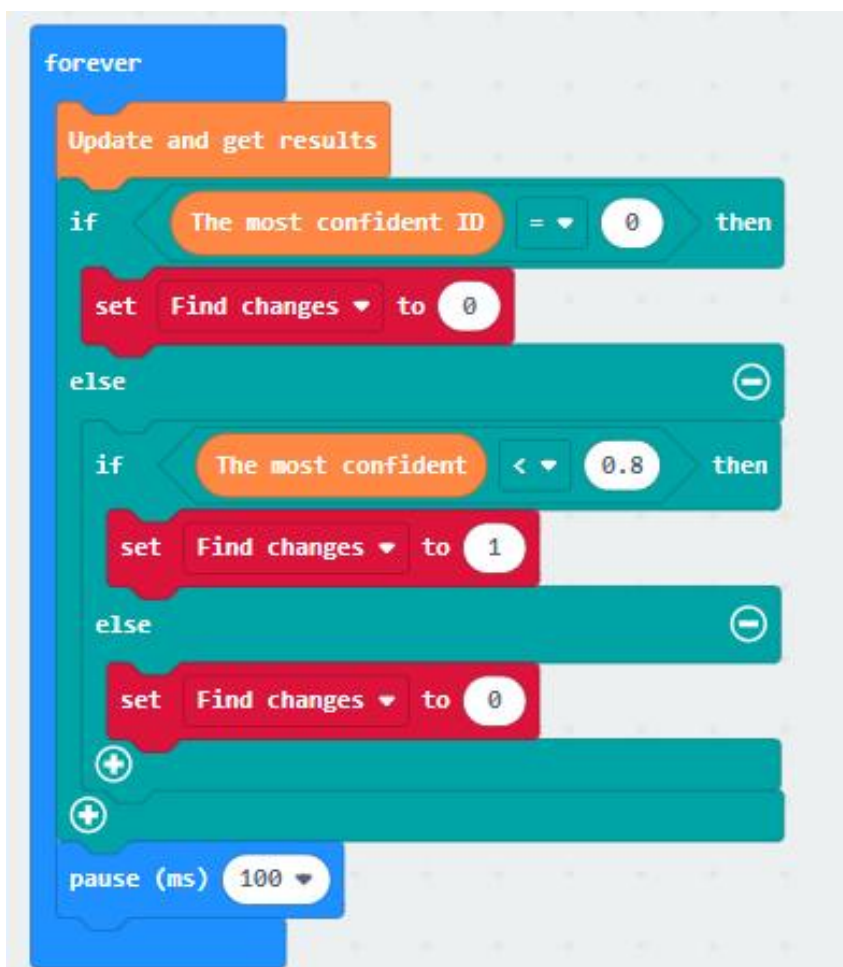
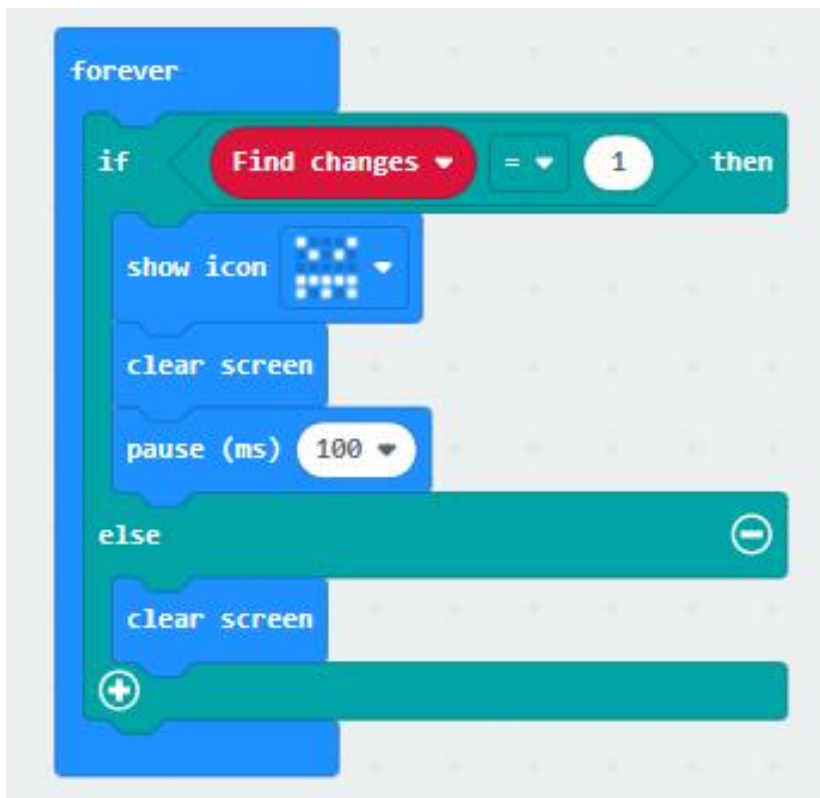
following two extension packs:

<https://github.com/hiwonder/wondercam>

<https://github.com/Hiwonder/Startbit>

◆ Command Blocks

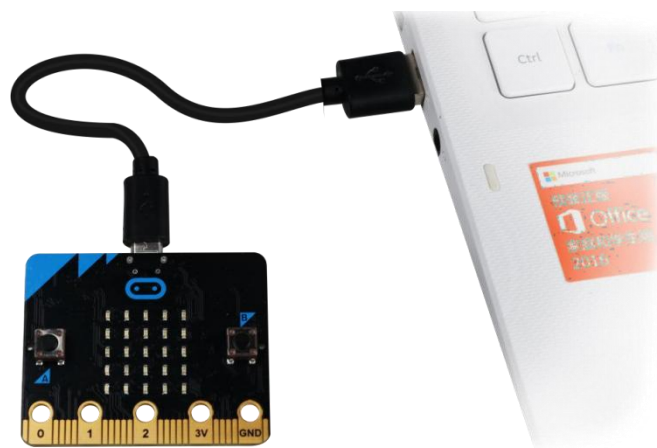




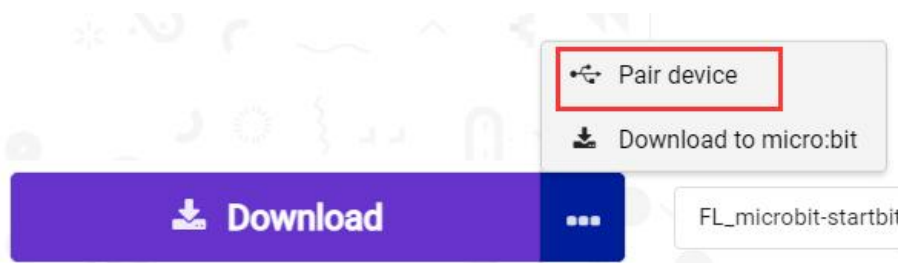


4.1 Pairing devices and program download

1) Connect micro:bit to computer.

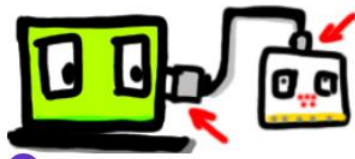


2) Click on “...” located beside “Download” and select “Pair device”.



3) Click on on “Pair device” on the Pop-up screen.

Pair device for one-click downloads



1 Connect the micro:bit to your computer with a USB cable
Use the microUSB port on the top of the micro:bit



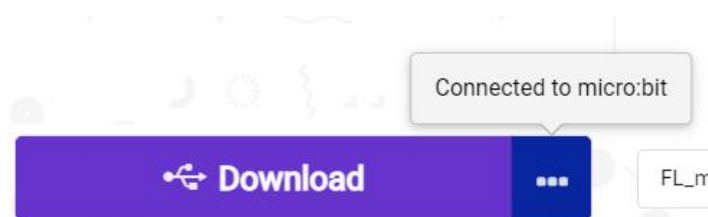
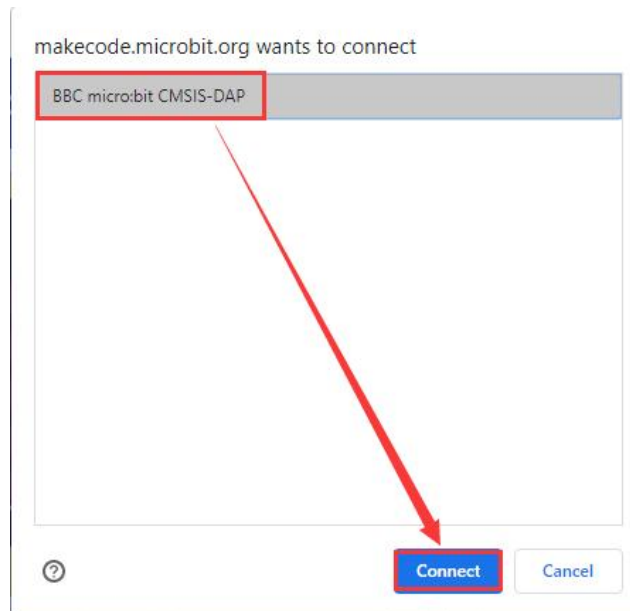
2 Pair your micro:bit
Click 'Pair device' below and select BBC micro:bit CMSIS-DAP or DAPLink CMSIS-DAP from the list



Pair device

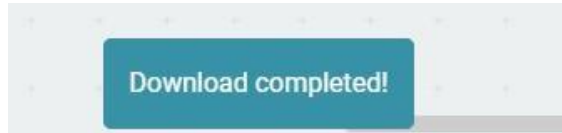


4) Click "Connect" as shown in image below.



5) Once connection is successful, click "Download". During downloading process, the yellow light on micro:bit will blink consistently, do not disconnect or change USB cable.

6) When download is finished, the light on micro:bit will remain on and screen will appear Download completed message.



This PC > MICROBIT (G:)

Name	Date modified	Type	Size
DETAILS.TXT	3/22/2016 4:30 PM	Text Document	1 KB
MICROBIT.HTM	3/22/2016 4:30 PM	Chrome HTML Do...	1 KB



Tips: In micro:bit drive there are two files as show in image above. DETAILS.TXT records the data information of the micro:bit board. MICROBIT.HTM links to micro:bit official web page (computer need to be online when click).

5. Results

After program is downloaded, connect micro:bit to Expansion board and switch power to ON. WonderCam will automatically start on Feature Learning function. Place the card in front of WonderCan, micro:bit will display corresponding item classification alphabet.

When WonderCam detected foreign object in screen, micro:bit Expansion Board buzzer will sound alarm, LED light blinks and micro:bit will display an emoticon.