香港教育大學
The Education University of Hong Kong

FACULTY OF LIBERAL ARTS AND SOCIAL SCIENCES
博文及社會科學學院

科學與環境學系
Department of Science and Environmental Studies

2024-2025 Quality Education Fund Thematic Network - Tertiary Institutes

Progressive Development of STEAM Literacy through STEAM Education and Self-directed Learning

透過STEAM教育自主學習有序發展STEAM素養

自動灌溉系統

薔色園主辦可譽中學暨可譽小學

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目錄

所需配件

Micro:bit

IoT擴展板

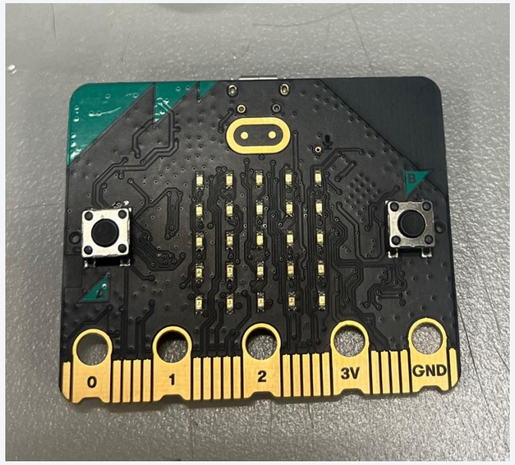
繼電器

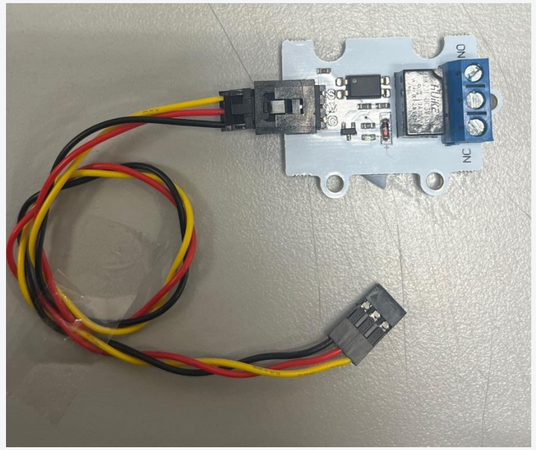
土壤濕度計

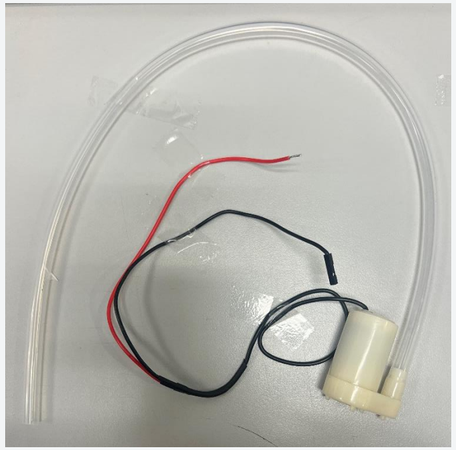
水泵

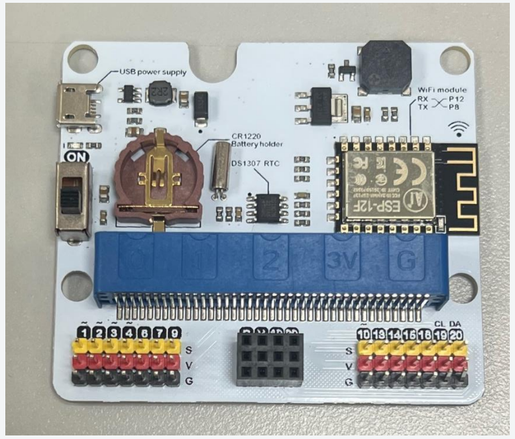
杜邦線

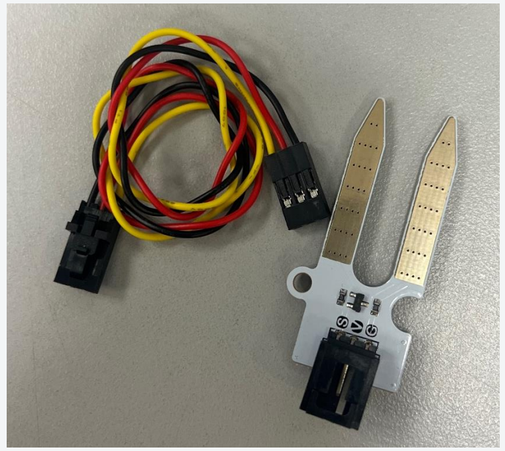
供電裝置

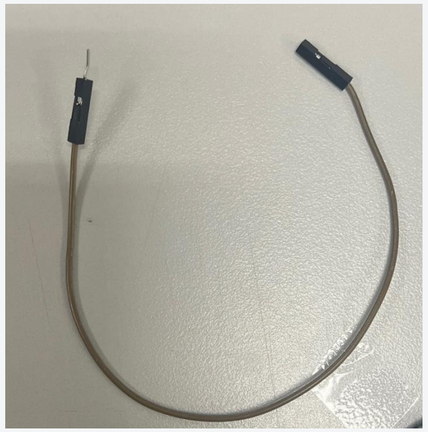












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How to connect with ThingSpeak?

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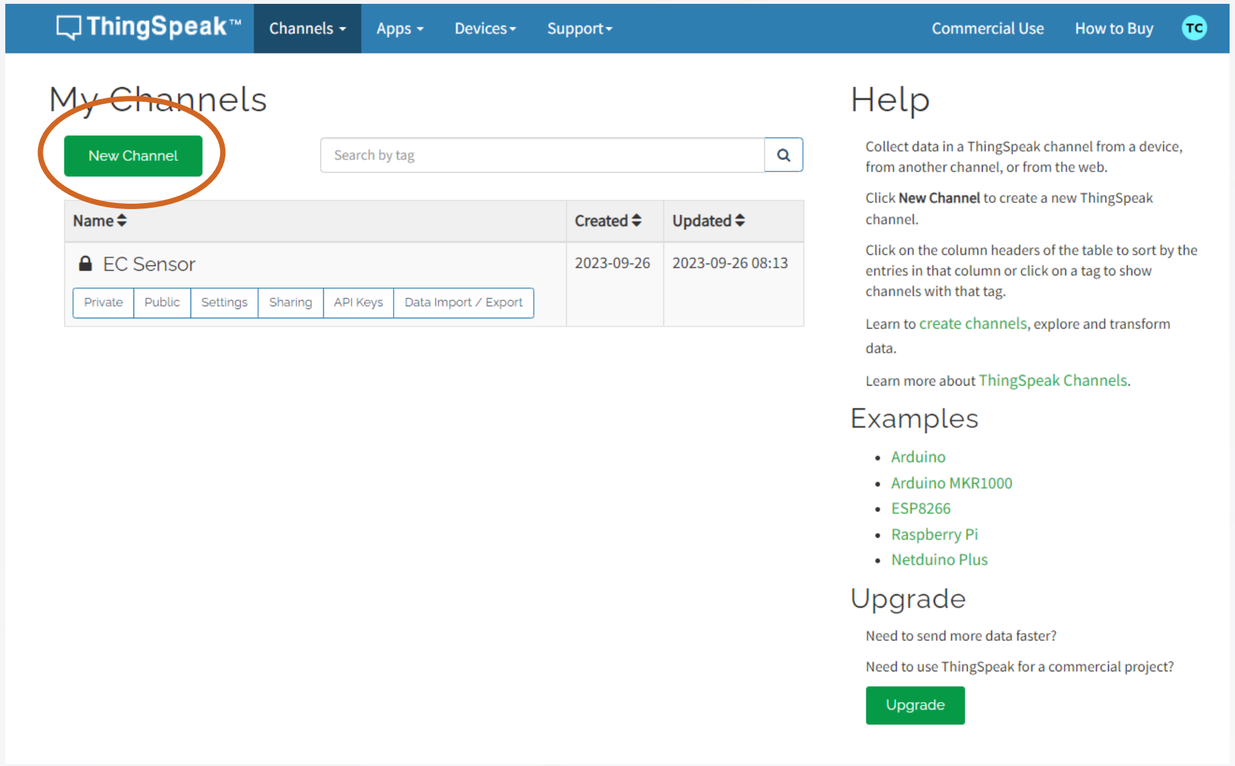
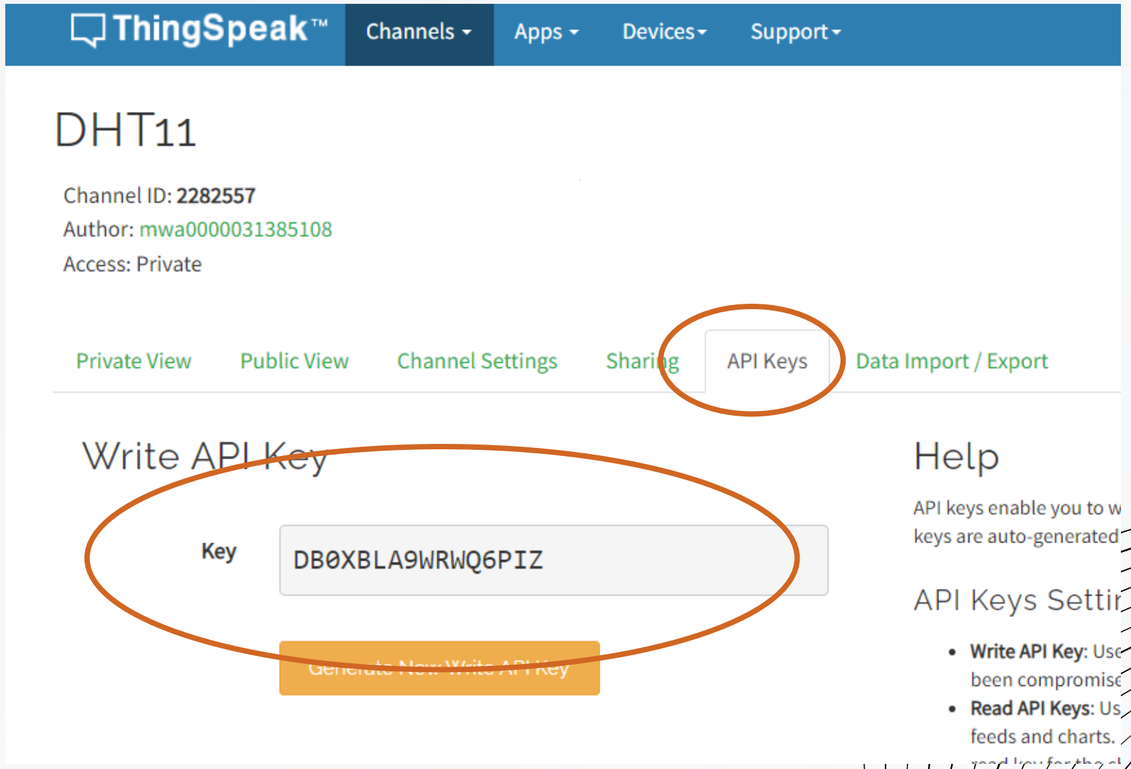
Login to ThingSpeak



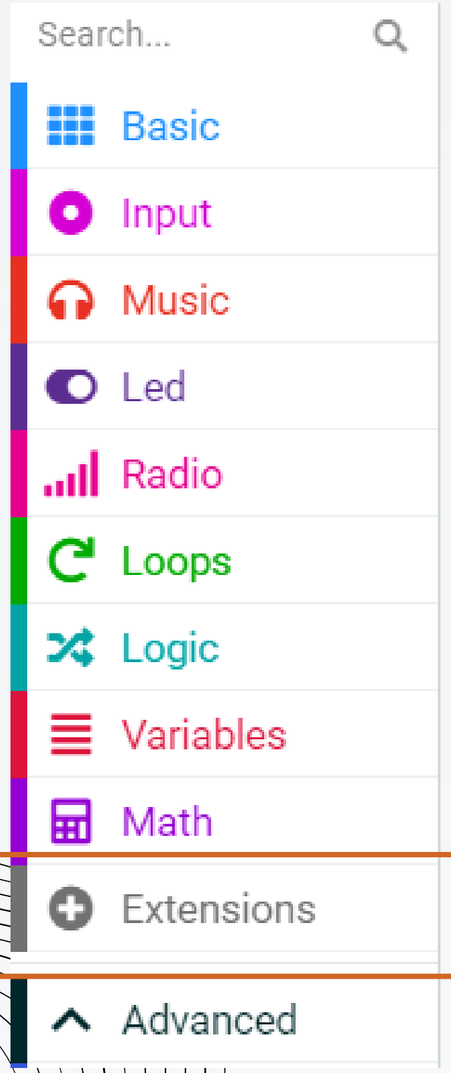
1. Add new channel



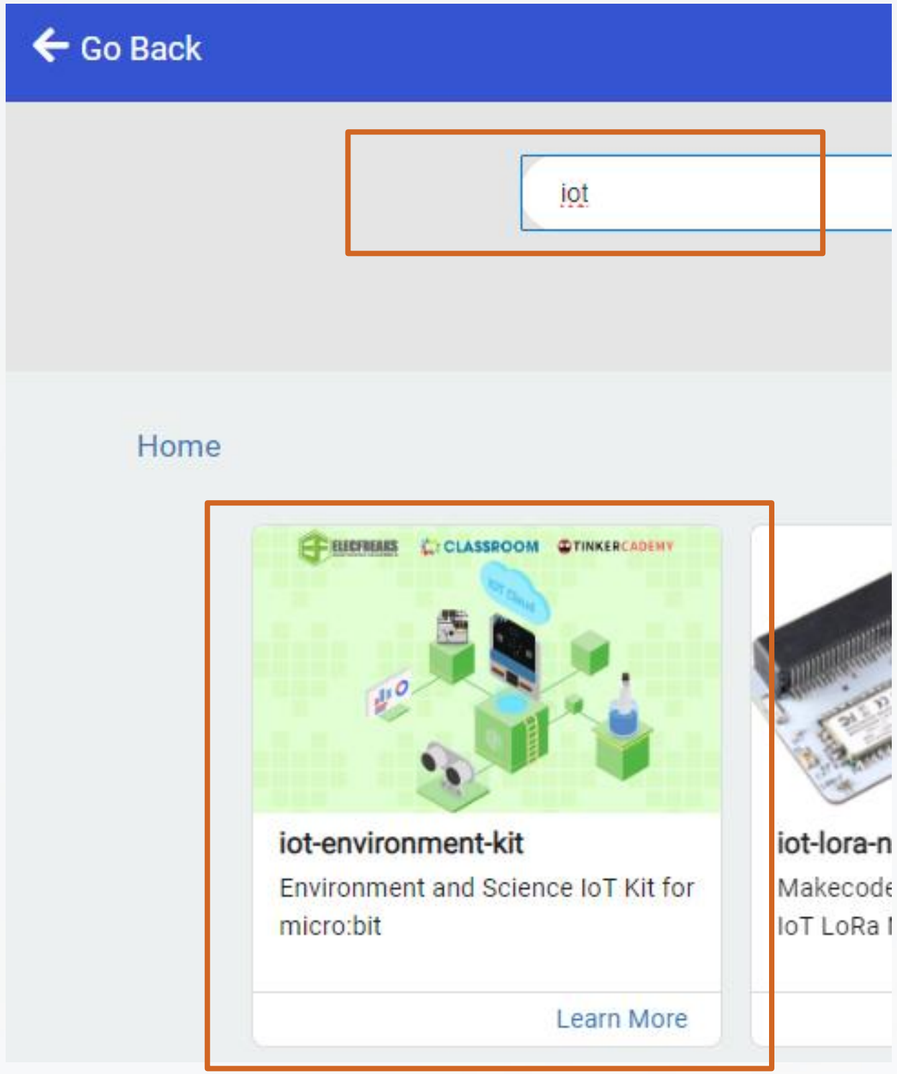
2. Find API Key

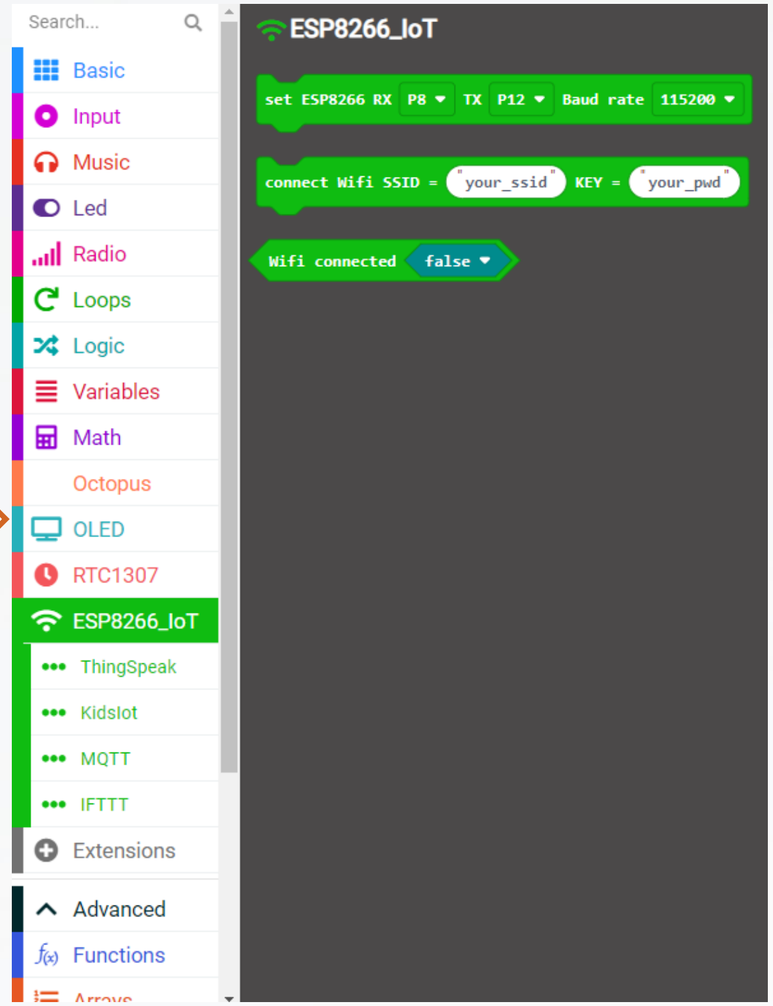
Add extensions to Makecode

1. Click "Extensions"



2. Search "iot" and choose "datalogger"





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編程

Step 1

Step 2

編程

Step 3


every 30000 ms
根據實際測試數據而定
if analog read pin P1 < 700 then
digital write pin P2 to 1
水泵：0-關, 1-開
pause (ms) 5000
digital write pin P2 to 0
else if analog read pin P1 ≥ 700 then
digital write pin P2 to 0

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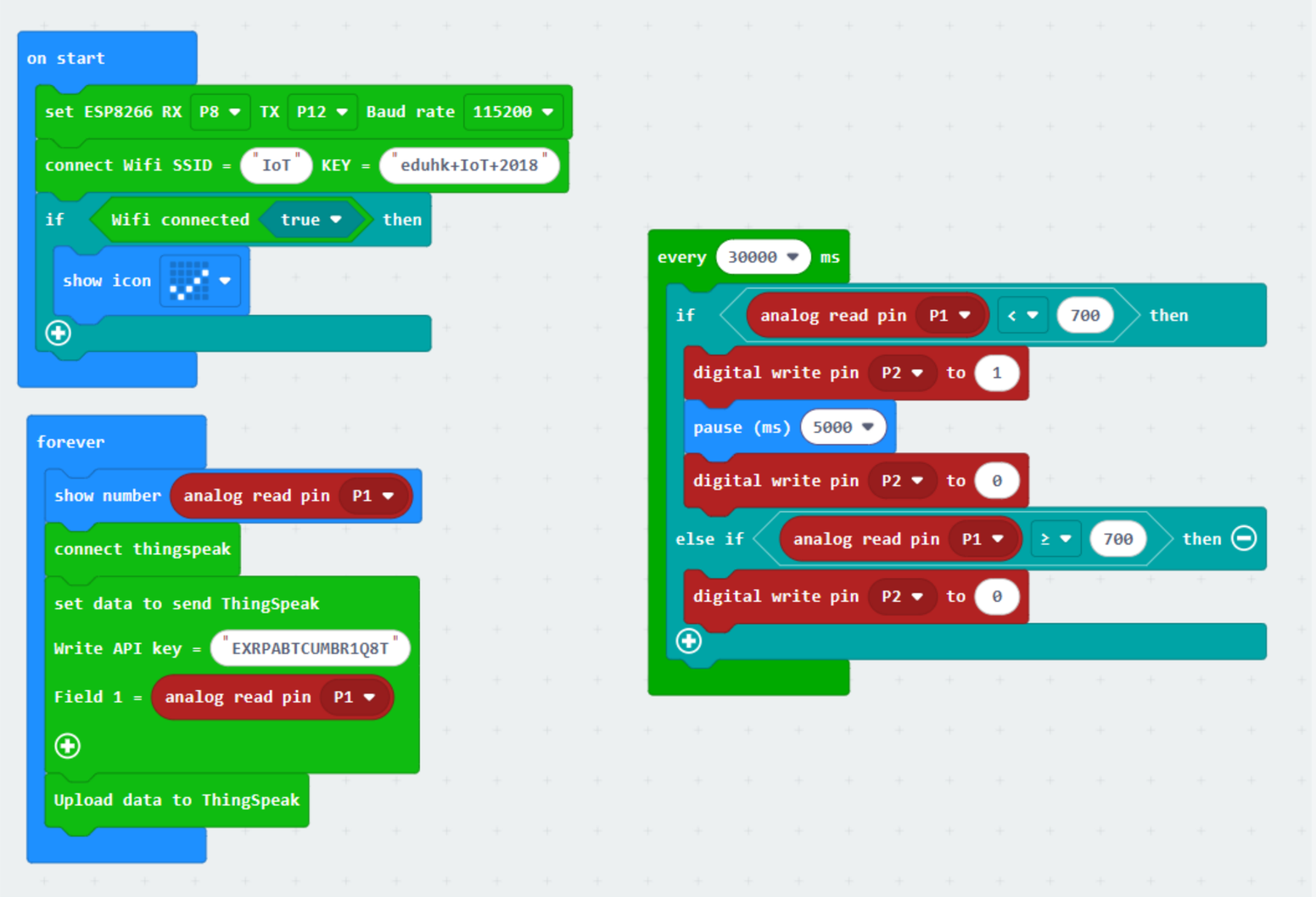
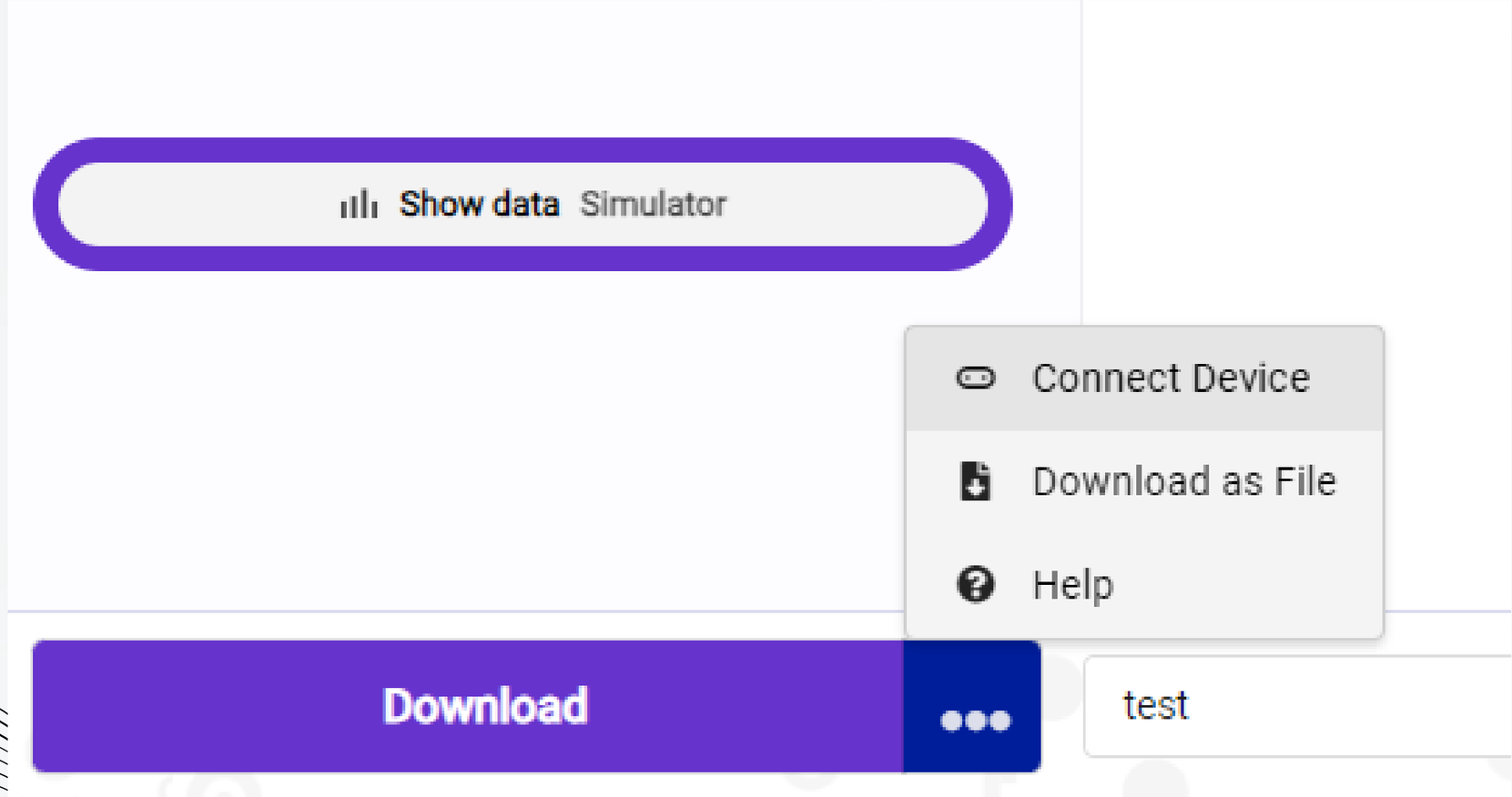
編程

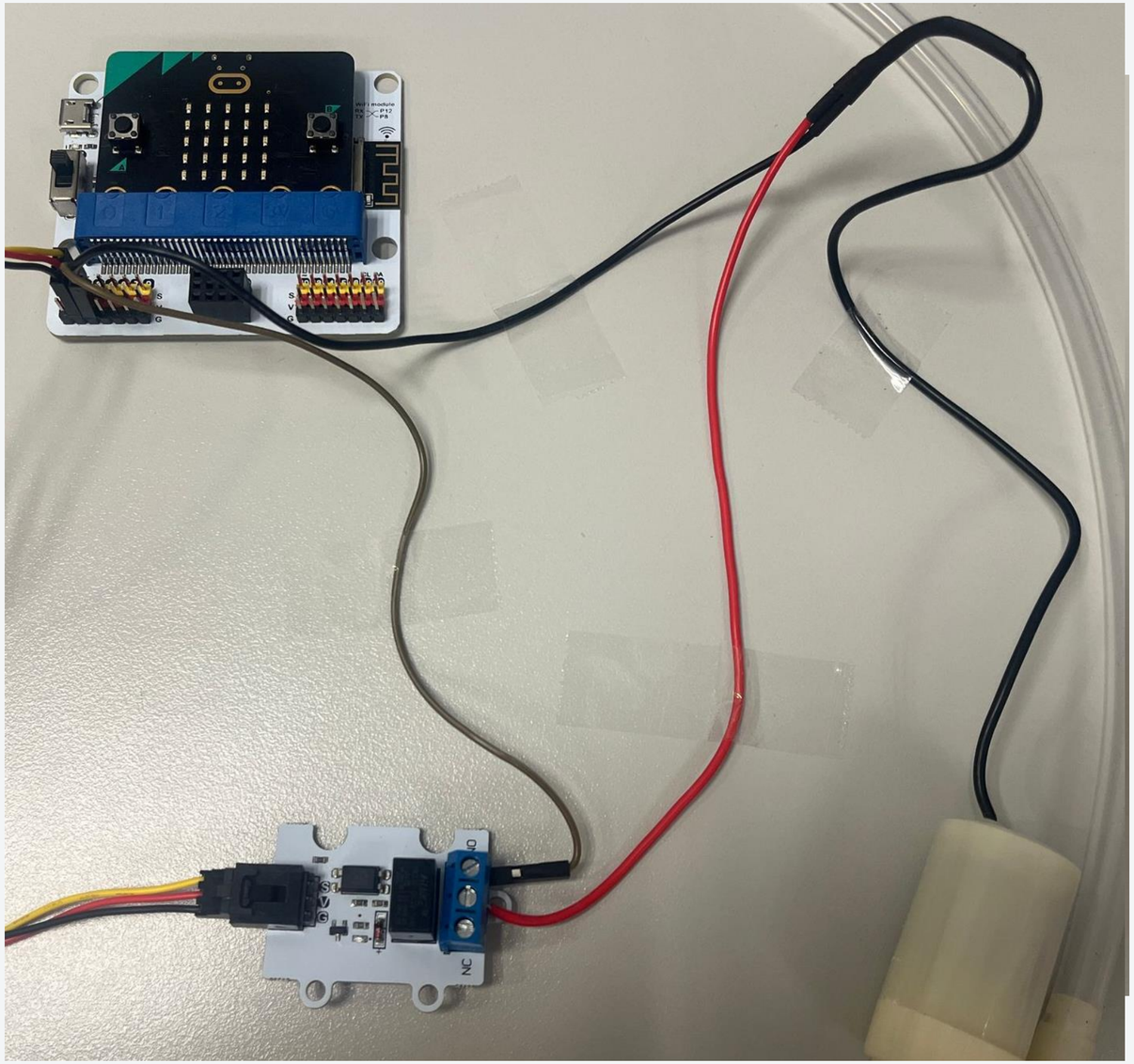


https://makecode.microbit.org/S06157-49144-03922-94573



1. Connect Device
2. Download

接駁裝置



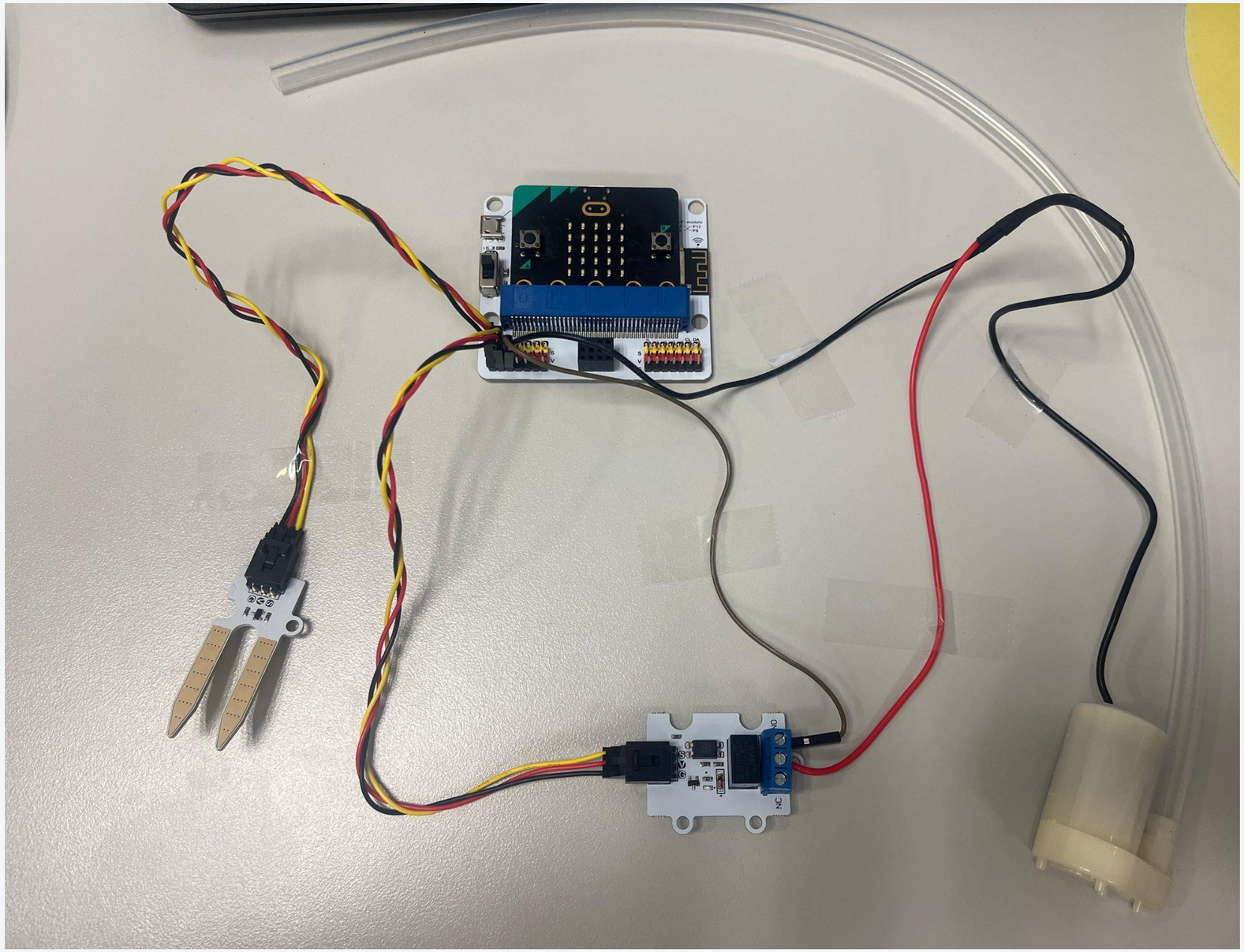
1. 將濕度sensor駁入P1

2. 將繼電器駁入P2

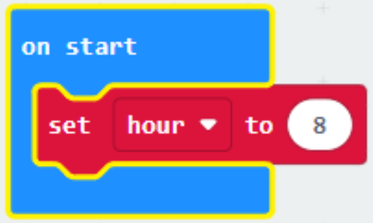
3. 將水泵紅色線駁入繼電器中間Pin位

4. 將水泵黑色線 駁入P3 GND位（黑色）

5. 另取一條杜邦線，針位駁入繼電器NO位，插位駁入擴展板P3 VCC位（紅色）


S
V
G
NC

其他編程設定



根據植物的特性設定灌溉時間

通過控制水泵開啟時間來控制灌溉水量

灌溉間隔時間

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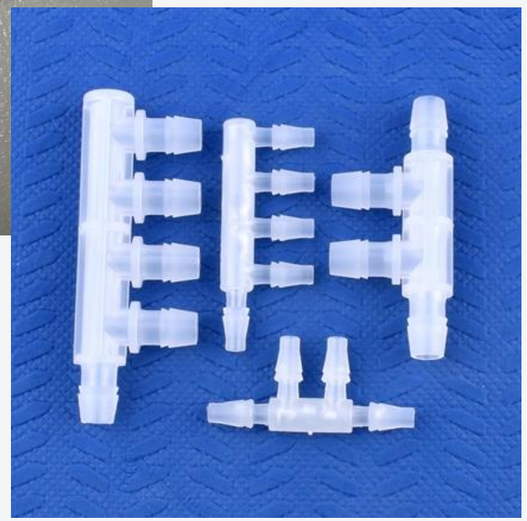
水泵



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水泵

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Thanks for your attention