

# The Education University of Hong Kong

## 2021-2022 Quality Education Fund Thematic Network – Tertiary Institutes

### STEM Project Team

---

SCHOOL: LOK WAH CATHOLIC PRIMARY (P5)

TOPIC: AUTOMATIC WINDOW CONTROL SYSTEM

# 智能窗口

= 落雨閃窗

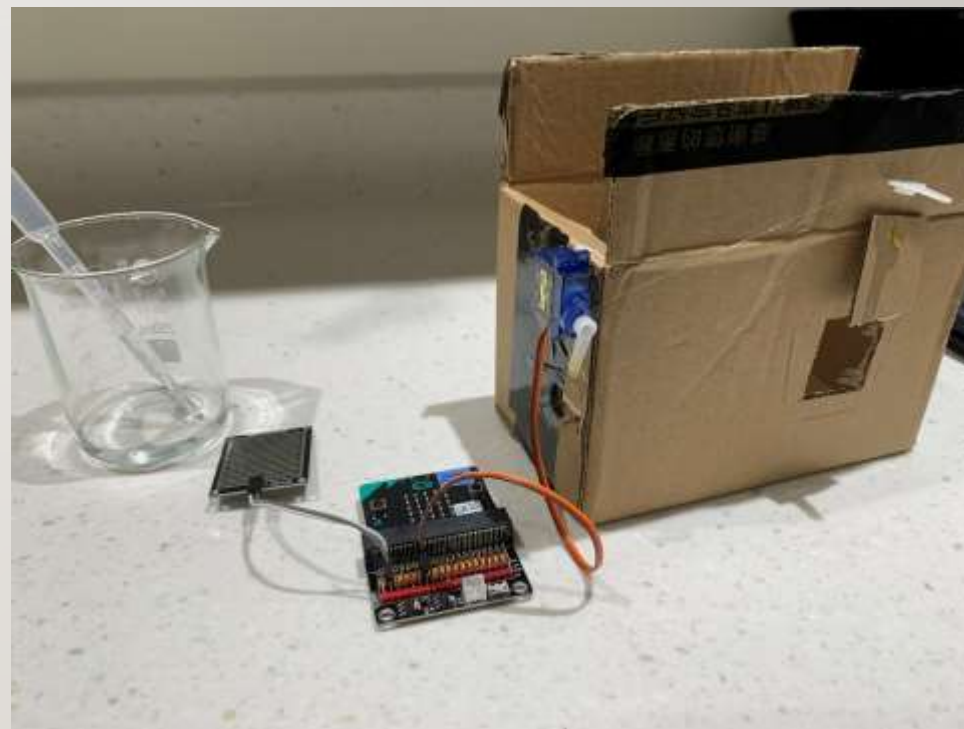
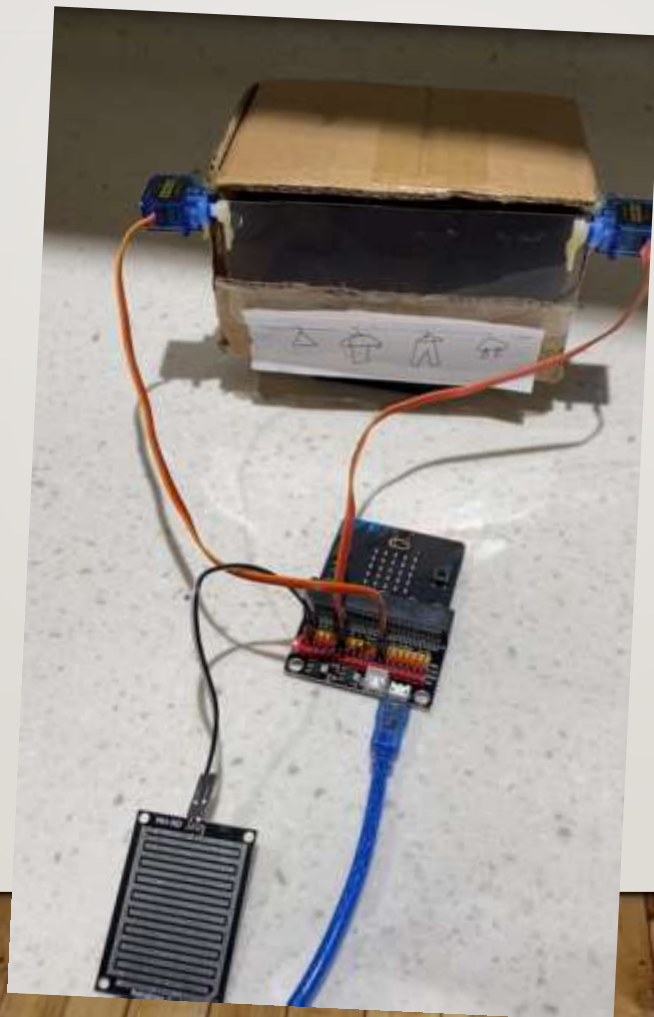
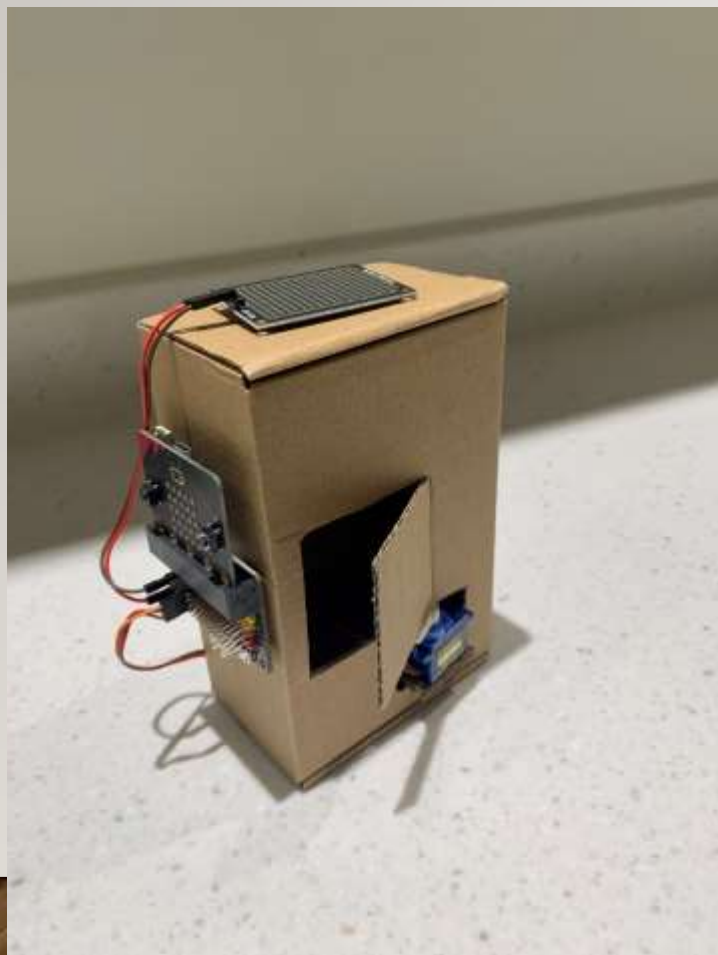


Raindrop Sensor Module  
– Water Sensor

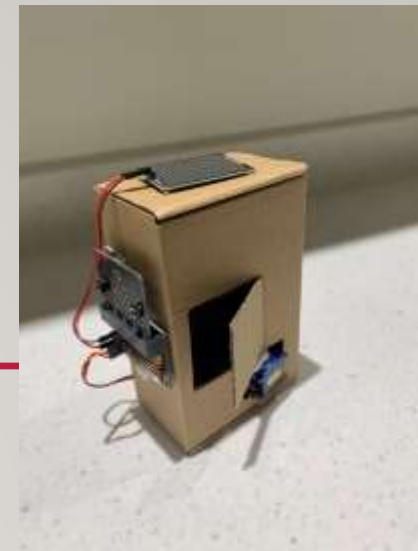
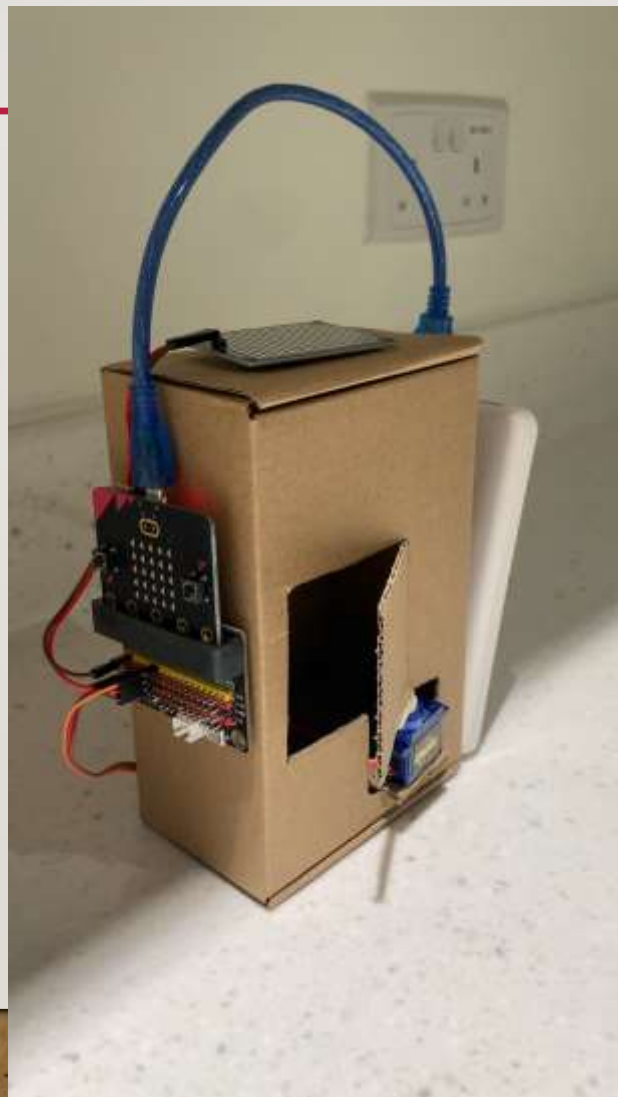


Micro Servo 9g  
SG90 ANALOG

# 3 DESIGN

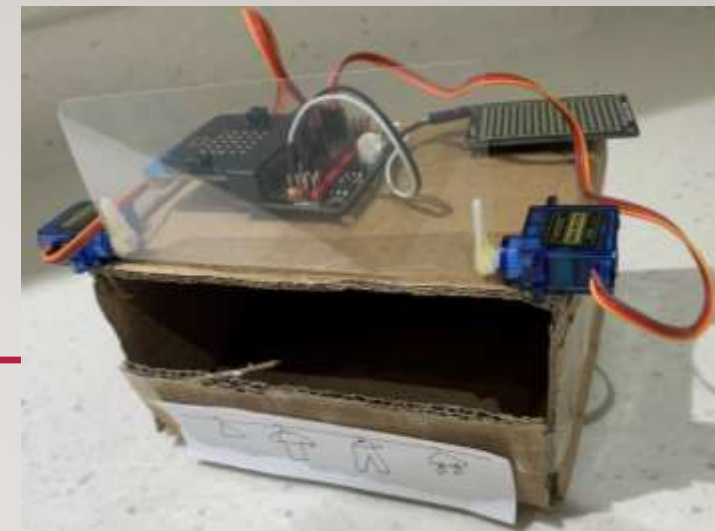
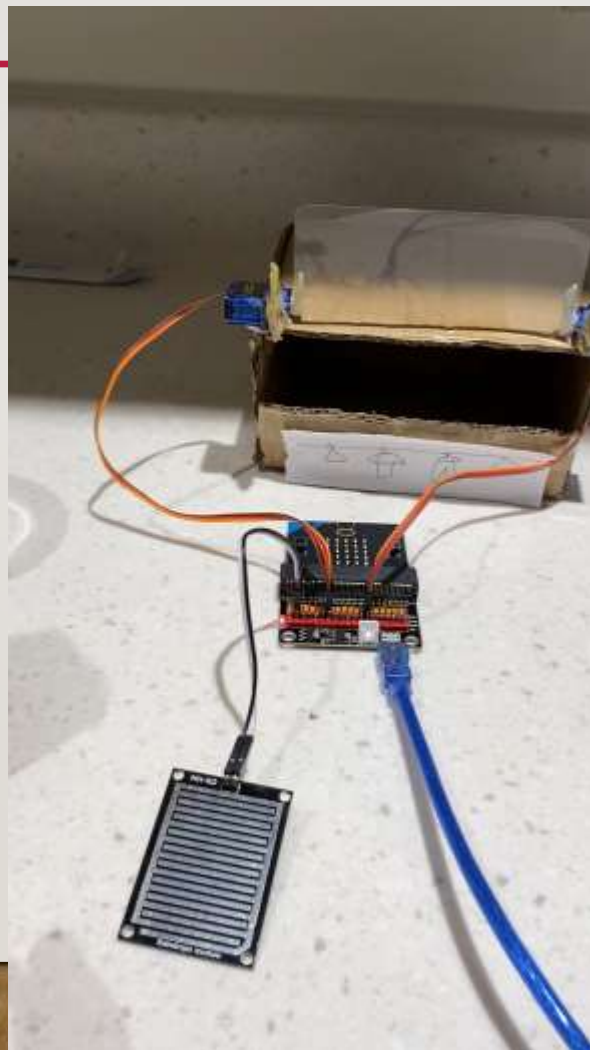


# BASIC



基礎：  
閉合電路、編程、  
Sensor基本應用

# WITH CLOTHES



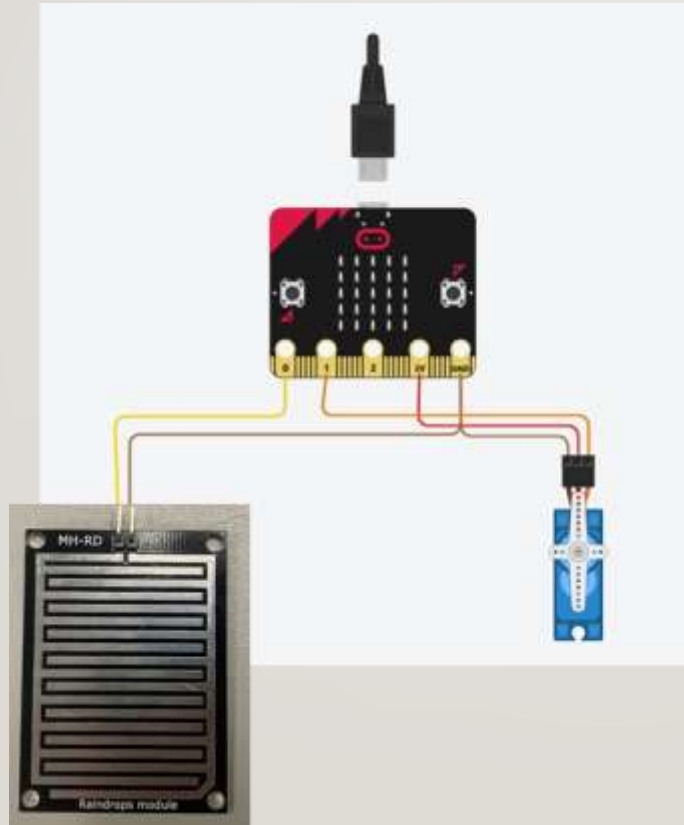
引入情景、  
應用於現實  
生活

# BY ROPE



進階：  
可應用不同的原理如：  
槓桿原理、齒輪、滑  
輪等

# CIRCUIT



P0 = Raindrop Sensor  
PI = Micro Servo

# CODE (BASIC)

The screenshot displays the Scratch IDE interface. On the left, a micro:bit board is connected to a blue servo motor. The code editor contains the following blocks:

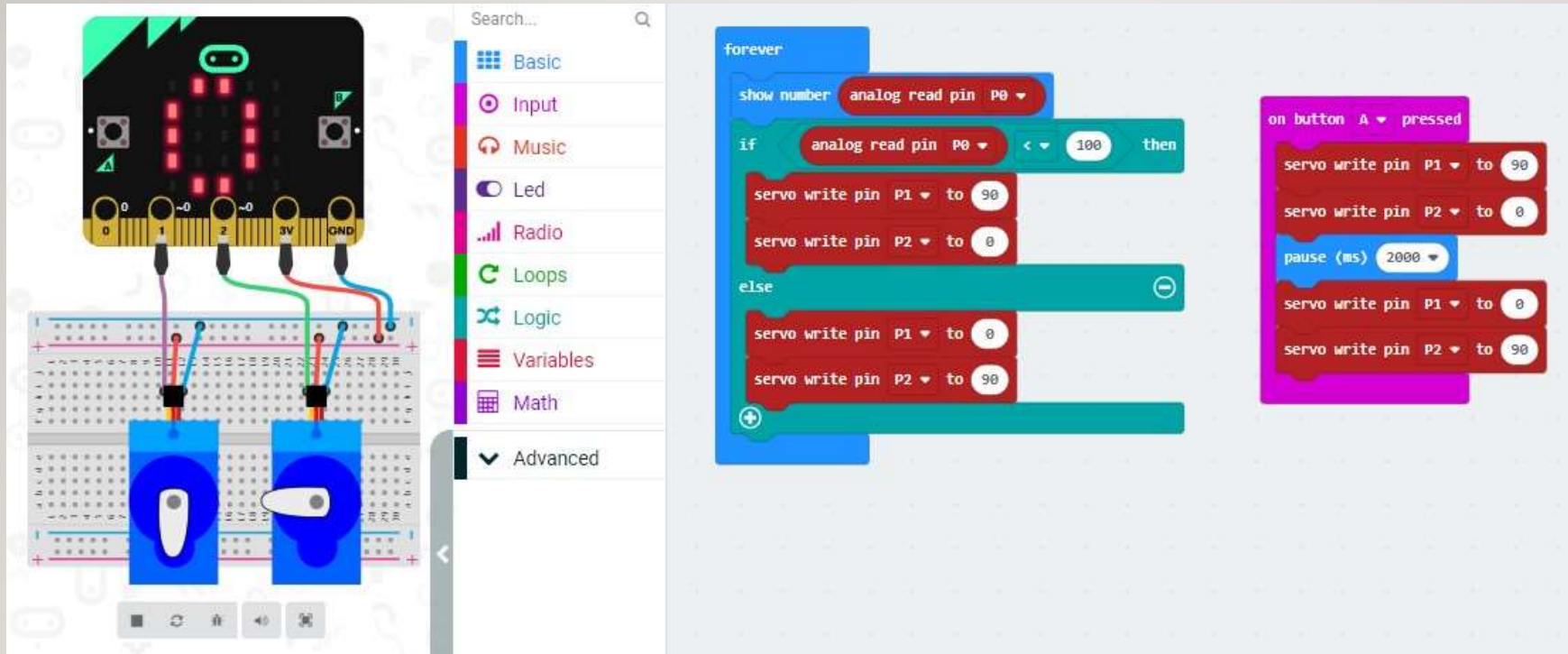
```
forever loop
  show number analog read pin P0
  if analog read pin P0 > 100 then
    servo write pin P1 to 45
  else
    servo write pin P1 to 0
  +

on button A pressed
  servo write pin P1 to 45
  pause (ms) 2000
  servo write pin P1 to 0
```

P0 = Raindrop Sensor  
P1 = Micro Servo



# CODE (AUTO CLOTHES WINDOW)



The screenshot displays a Scratch-like programming environment. On the left, a circuit diagram shows a microcontroller board connected to a breadboard. Two blue servo motors are mounted on the breadboard. The code editor on the right contains the following blocks:

```
forever loop
  show number analog read pin P0
  if analog read pin P0 < 100 then
    servo write pin P1 to 90
    servo write pin P2 to 0
  else
    servo write pin P1 to 0
    servo write pin P2 to 90
  end if
end forever
```

Additionally, there is a separate block for button A:

```
on button A pressed
  servo write pin P1 to 90
  servo write pin P2 to 0
  pause (ms) 2000
  servo write pin P1 to 0
  servo write pin P2 to 90
end on button A pressed
```

P0 = Raindrop Sensor  
P1&2 = Micro Servo

# CODE (AUTO ROPE WINDOW)

```
forever
  show number analog read pin P0
  if analog read pin P0 > 100 then
    servo write pin P1 to 180
  else
    servo write pin P1 to 0

on button A pressed
  servo write pin P1 to 180
  pause (ms) 2000
  servo write pin P1 to 0
```

P0 = Raindrop Sensor  
P1 = Micro Servo

90 or 180

# 學生探索 計分裝置比較

