

AI x SI 課程
人面識別的自動化電子閘
編程範例

1. Collect face data (taking photos)

```
### START IMPORTS ###
from face_recognition_helpers import (
    collect_face_data,
    train_face_recognizer,
    face_recognition
)

import time
import brickpi3

collect_face_data(3,200)

BP = brickpi3.BrickPi3()

BP.set_sensor_type(BP.PORT_1,BP.SENSOR_TYPE.TOUCH)

def action1():
    print("Hello,Principal,please go")
    BP.set_motor_power(BP.PORT_A,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_A,40)
    BP.set_motor_power(BP.PORT_B,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_B,40)
def action2():
    print("Hello,HSC,please go")
    BP.set_motor_power(BP.PORT_A,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_A,40)
    BP.set_motor_power(BP.PORT_B,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_B,40)
```

```
def action3():
    print("Hello, Frankie, please go")
    BP.set_motor_power(BP.PORT_A, -40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_A, 40)
    BP.set_motor_power(BP.PORT_B, -40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_B, 40)
id_name_action_list=[
    (1, "Principal", action1),
    (2, "HSC", action2),
    (3, "Frankie", action2),
]
face_recognition(id_name_action_list)
```

2. Train models

```
### START IMPORTS ###
from face_recognition_helpers import (
    collect_face_data,
    train_face_recognizer,
    face_recognition
)

import time
import brickpi3

train_face_recognizer()

BP = brickpi3.BrickPi3()

BP.set_sensor_type(BP.PORT_1,BP.SENSOR_TYPE.TOUCH)

def action1():
    print("Hello,Principal,please go")
    BP.set_motor_power(BP.PORT_A,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_A,40)
    BP.set_motor_power(BP.PORT_B,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_B,40)
def action2():
    print("Hello,HSC,please go")
    BP.set_motor_power(BP.PORT_A,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_A,40)
    BP.set_motor_power(BP.PORT_B,-40)
    time.sleep(3)
    BP.set_motor_power(BP.PORT_B,40)
def action3():
    print("Hello,Frankie,please go")
    BP.set_motor_power(BP.PORT_A,-40)
    time.sleep(3)
```

```
BP.set_motor_power(BP.PORT_A,40)
BP.set_motor_power(BP.PORT_B,-40)
time.sleep(3)
BP.set_motor_power(BP.PORT_B,40)
id_name_action_list=[
    (1,"Principal",action1),
    (2,"HSC",action2),
    (3,"Frankie",action2),
]
face_recognition(id_name_action_list)
```