

## Code Explanation: Lift Door with Limit Switch Control

### 1. Import libraries

```
import time
from adafruit_crickit import crickit
```

- `time` → lets us use `time.sleep()` to pause the program.
- `crickit` → gives access to **motor/servo control** and **limit switch pins**.

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### 2. Setup Seesaw object

```
ss = crickit.seesaw
```

- `ss` = shortcut to **Crickit seesaw chip**.
- Used to **read digital signals** from limit switches.

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### 3. Pin definitions (limit switches)

```
L1 = crickit.SIGNAL1    # Limit switch 1 (fully open)
L2 = crickit.SIGNAL8    # Limit switch 2 (fully closed)
```

- `L1` → Detects when **door is fully open**.
- `L2` → Detects when **door is fully closed**.

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### 4. Set pin modes

```
ss.pin_mode(L1, ss.INPUT_PULLDOWN)
ss.pin_mode(L2, ss.INPUT_PULLDOWN)
```

- Configures pins as **inputs** with pulldown resistors.
- Switch = **pressed (1)** or **not pressed (0)**.

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### 5. Motor control functions

```
STOP_VALUE = -0.05    # adjust if servo creeps when stopped
```

Small value to stop servo "creeping".

```
def motor_stop():
```

```
crickit.continuous_servo_1.throttle = STOP_VALUE
print("Motor STOP")
```

Stops motor.

```
def motor_reverse():    # opening
    crickit.continuous_servo_1.throttle = -0.7
    print("Motor FORWARD (OPENING)")
```

Moves motor in **reverse direction** → **OPEN** door.

```
def motor_forward():    # closing
    crickit.continuous_servo_1.throttle = 0.7
    print("Motor REVERSE (CLOSING)")
```

Moves motor in **forward direction** → **CLOSE** door.

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## 6. Start with motor stopped

```
motor_stop()
```

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## 7. Main Loop

```
while True:
```

Runs **forever**.

### a) Open the door

```
print("Opening door...")
motor_reverse()
```

Starts opening the door.

```
while ss.digital_read(L1) == 1:
    time.sleep(0.01)
```

Keeps opening **until L1 is triggered** (door fully open).

```
motor_stop()
print("Door fully open → waiting")
time.sleep(2)
```

Stop motor and wait 2 sec.

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### b) Close the door

```
print("Closing door...")
motor_forward()
```

Starts closing the door.

```
while ss.digital_read(L2) == 1:  
    time.sleep(0.01)
```

Keeps closing **until L2 is triggered** (door fully closed).

```
motor_stop()  
print("Door fully closed - waiting")  
time.sleep(2)
```

Stop motor and wait 2 sec.