

Embedded System Lab2

Group 10

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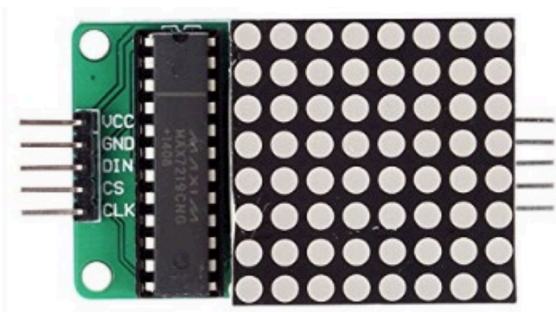
61375079H 李柏叡

Lab2:

Components used:

1. Raspberry Pi 5 & power supply
2. MAX7219 8x8 LED Display Module
3. Breadboard & Wire

Process:



VCC -> 5V power supply

GND -> GND

DIN -> SPI MOSI (GPIO 10, Pin19)

CS -> SPI CE0 (GPIO 8, Pin24)

CLK -> SPI SCLK (GPIO 11, Pin23)

Code:

```
from luma.led_matrix.device import max7219
from luma.core.interface.serial import spi, noop
from luma.core.render import canvas
from luma.core.virtual import viewport
from luma.core.legacy import text, show_message
from luma.core.legacy.font import (
    proportional,
    CP437_FONT,
    TINY_FONT,
    SINCLAIR_FONT,
    LCD_FONT)
import time

#Create a serial instance and specify SPI bus parameters
serial = spi(port=0, device=0, gpio=noop())
device = max7219(serial, cascaded=1, block_orientation=0)
#cascaded=1 means only one device is connected, block_orientation=[0, 90, -90],
Corrects block orientation when wired vertically.
```

```
#show message
time.sleep(1)
msg = "61275041H"
show_message(device, msg, fill="white", font=proportional(LCD_FONT),
scroll_delay=0.1) #white means LED is illuminated
time.sleep(1)
```

Video: <https://www.youtube.com/watch?v=X28beyYHtH4>

Review of Experience: None