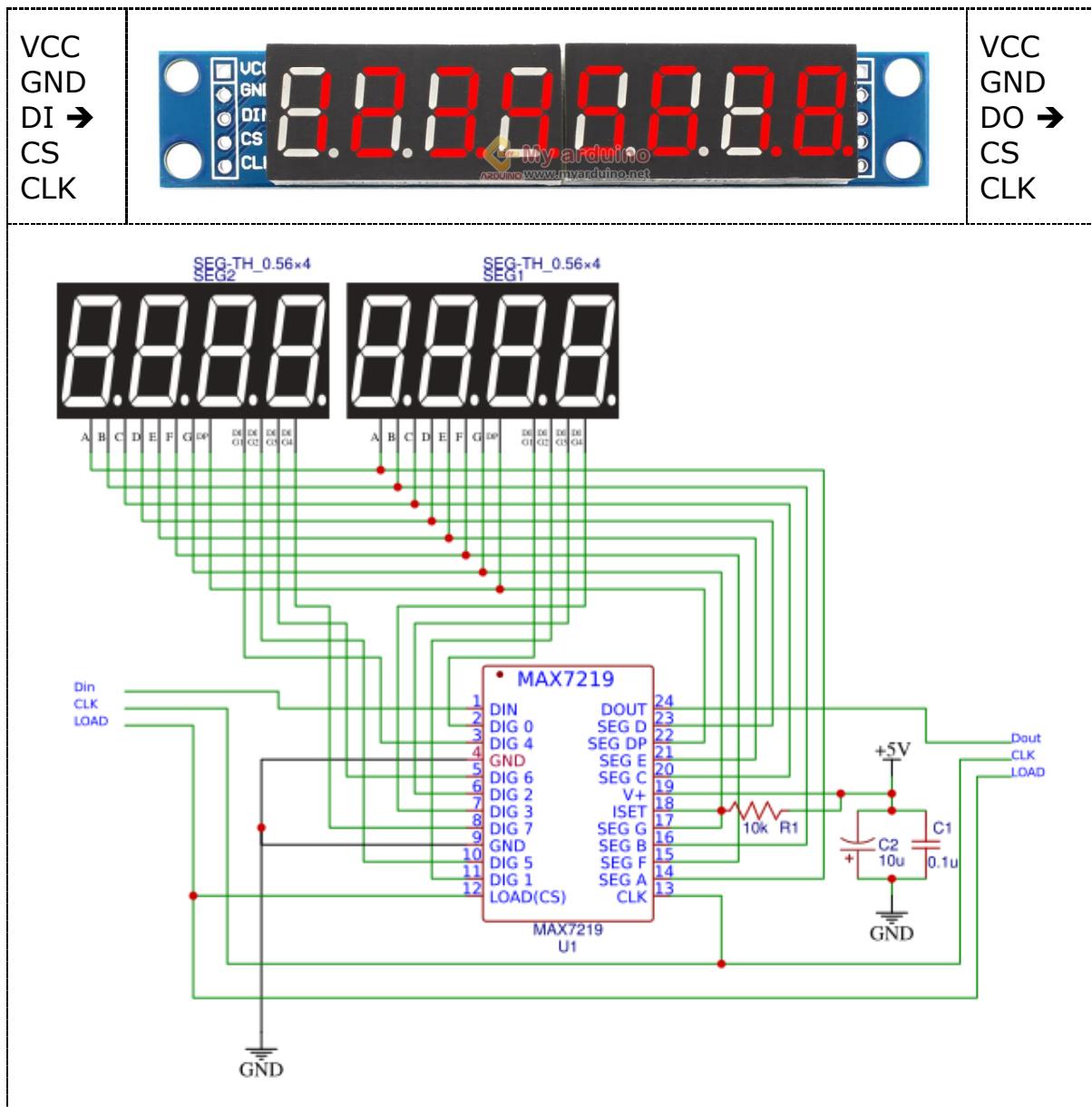


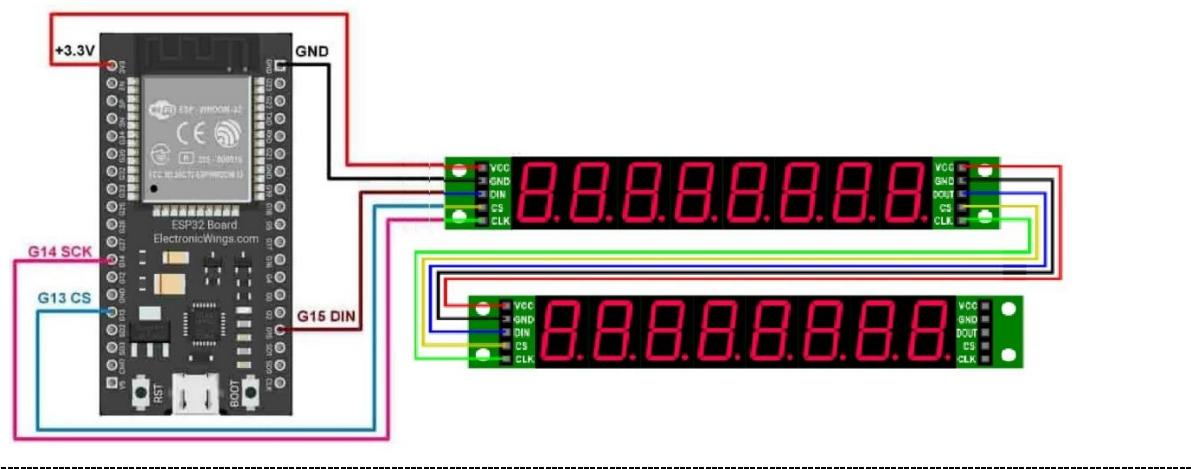
Getting Start ESP32: ESP32 GPIO + ESP32 Interface

Mission 6/12 – ESP32 + 8Digit 7Segment with MAX7219

1. Read <https://www.cybertice.com/p/715>
2. Read <https://www.arduino.cc/p/1553>



Cascade 2 Module



3. Add Library: Sketch → Include Library → Manage
4. Filter with “max7219”, Select LedControl by Noa Sakurajin Version 2.0.2

The screenshot shows the Arduino IDE Library Manager. In the search bar, "max7219" is typed. On the left, under "LIBRARY MANAGER", the "max7219" library is listed with version 1.0.6 and an "INSTALL" button. Below it, the "LedController" library by Noa Sakurajin is listed with version 2.0.2 and a status of "2.0.2 installed". The main area shows the code for "sketch_dec25a.ino". The "Output" panel at the bottom shows the process of installing the library:

```
Downloading LedController@2.0.2
LedController@2.0.2
Installing LedController@2.0.2
Installed LedController@2.0.2
```

LedController
by Noa Sakurajin Version 2.0.2 INSTALLED
The better LedControl library for the MAX7219 and the MAX7221 Led display drivers. !!Version 2.0.0 comes with a lot of changes please check the readme on more information!! It can do everything LedControl can, works with more boards (like esp32) and makes working with LedMatrices easier. You can move your displayed data around, set whole segments and have way more symbols for 7-segment displays. If you still miss a feature just create a pull request and I will do my best to add it ASAP.
[More info](#)

Select version

LedController by Noa Sakurajin Version 2.0.2

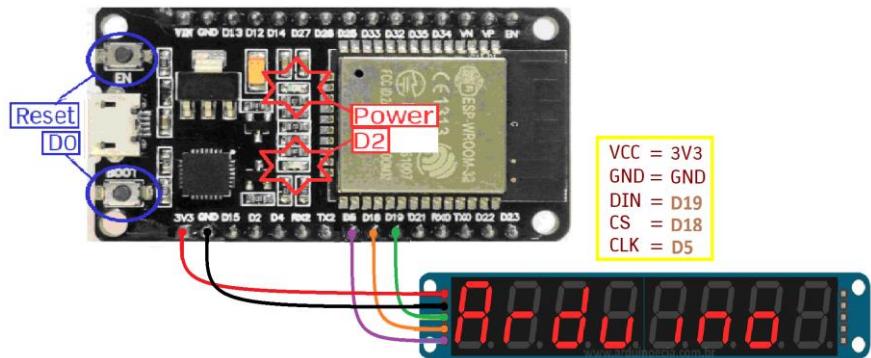
5. Test Code 1 “Test0501-Hello MAX7219”

```
#include "LedController.hpp"
#define Pin_DIN 19 // D19
#define Pin_CS 18 // D18
#define Pin_CLK 5 // D5

LedController<1, 1> lc;

void setup() {
lc = LedController<1, 1>(Pin_DIN,
Pin_CLK, Pin_CS);
lc.setIntensity(8);
lc.clearMatrix();
}

void loop()
{ lc.setDigit(0, 7, 1, false);
lc.setDigit(0, 6, 2, false);
lc.setDigit(0, 5, 3, false);
lc.setDigit(0, 4, 4, false);
lc.setDigit(0, 3, 5, false);
lc.setDigit(0, 2, 6, false);
lc.setDigit(0, 1, 7, false);
lc.setDigit(0, 0, 8, false);
delay(1000);
}
```



6. Test Code 2 “Test0502-Counter”

```
#include "LedController.hpp"
#define Pin_DIN 19 // D19
#define Pin_CS 18 // D18
#define Pin_CLK 5 // D5
long int nCounter = 87654321;
LedController<1, 1> lc;

void setup() {
lc = LedController<1, 1>(Pin_DIN, Pin_CLK, Pin_CS);
lc.setIntensity(8);
lc.clearMatrix();
Serial.begin(19200);
}

void loop()
{ long int Tempp;
int singleDigit;
Tempp = nCounter;
Serial.println(Tempp);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 0, singleDigit, false);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 1, singleDigit, false);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 2, singleDigit, false);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 3, singleDigit, false);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 4, singleDigit, false);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 5, singleDigit, false);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 6, singleDigit, false);
singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 7, singleDigit, false);
delay(100);
nCounter--;
}
```

- “lc.setDigit(0, 7, singleDigit, false);”
0 = Module Number 0
7 = Digit 7
Single Digit = Value Display
false = no dot display

7. Test Code 3 “Test0503-Switch Counter”

```
#include "LedController.hpp"

#define DebounceDelay 100
#define Counter_Switch 0 // D0 or BOOT
#define Pin_DIN 19 // D19
#define Pin_CS 18 // D18
#define Pin_CLK 5 // D5
int nCounter = 1234;
LedController<1, 1> lc;

void M7219_Display(int Tempp) {
    int singleDigit;
    singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 0, singleDigit, false);
    singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 1, singleDigit, false);
    singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 2, singleDigit, false);
    singleDigit = Tempp % 10; Tempp /= 10; lc.setDigit(0, 3, singleDigit, false);

    lc.setChar(0,7,'C',false);
    lc.setChar(0,6,'n',false);
    lc.setChar(0,5,'t',false);
    lc.setRow(0,4,B00001001); // tabc defg
}

void setup() {
    pinMode(Counter_Switch, INPUT_PULLUP);
    lc = LedController<1, 1>(Pin_DIN, Pin_CLK, Pin_CS);
    lc.setIntensity(8);
    lc.clearMatrix();
    Serial.begin(115200);
    M7219_Display(nCounter);
}

void loop()
{ if (digitalRead(Counter_Switch) == LOW) { // If Switch Press
    delay(DebounceDelay); // Debounce Delay H->L
    while (digitalRead(Counter_Switch) == LOW); // wait until release
    delay(DebounceDelay); // Debounce Delay L->H
    nCounter++;
    Serial.println(nCounter);
    M7219_Display(nCounter);
}
}
```

- How are the following commands different?
 - lc.setDigit(0, 3, singleDigit, false);
 - lc.setChar(0,5,'t',false);
 - lc.setRow(0,4,B00001001); // tabc defg