

## Lesson 27 74HC595 And Segment Display

### Overview

After learning Lesson 24、25 and Lesson 26, we will use the 74HC595 shift register to control the segment display. The segment display will show number from 9-0.

### Component Required:

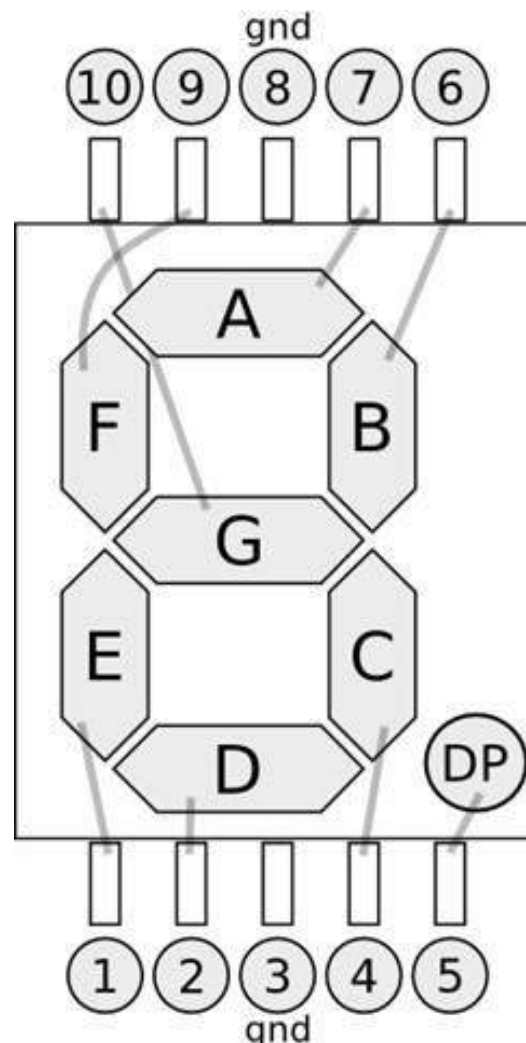
- (1) x Elegoo Uno R3
- (1) x 830 tie-points breadboard
- (1) x 74HC595 IC
- (1) x 1 Digit 7-Segment Display
- (8) x 220 ohm resistors
- (26) x M-M wires (Male to Male jumper wires)



### Component Introduction

#### Seven segment display

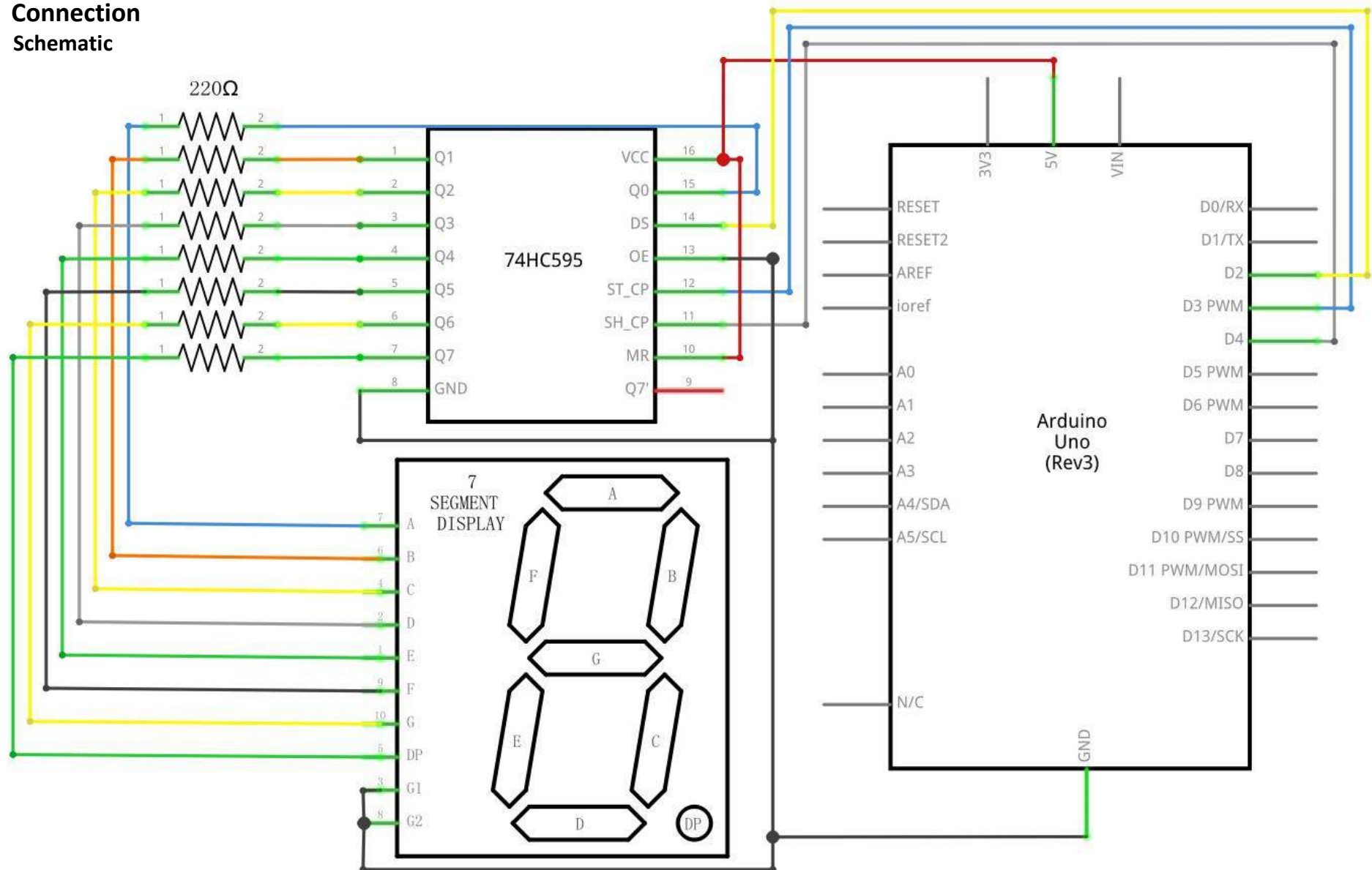
Below is the seven-segment pin diagram.



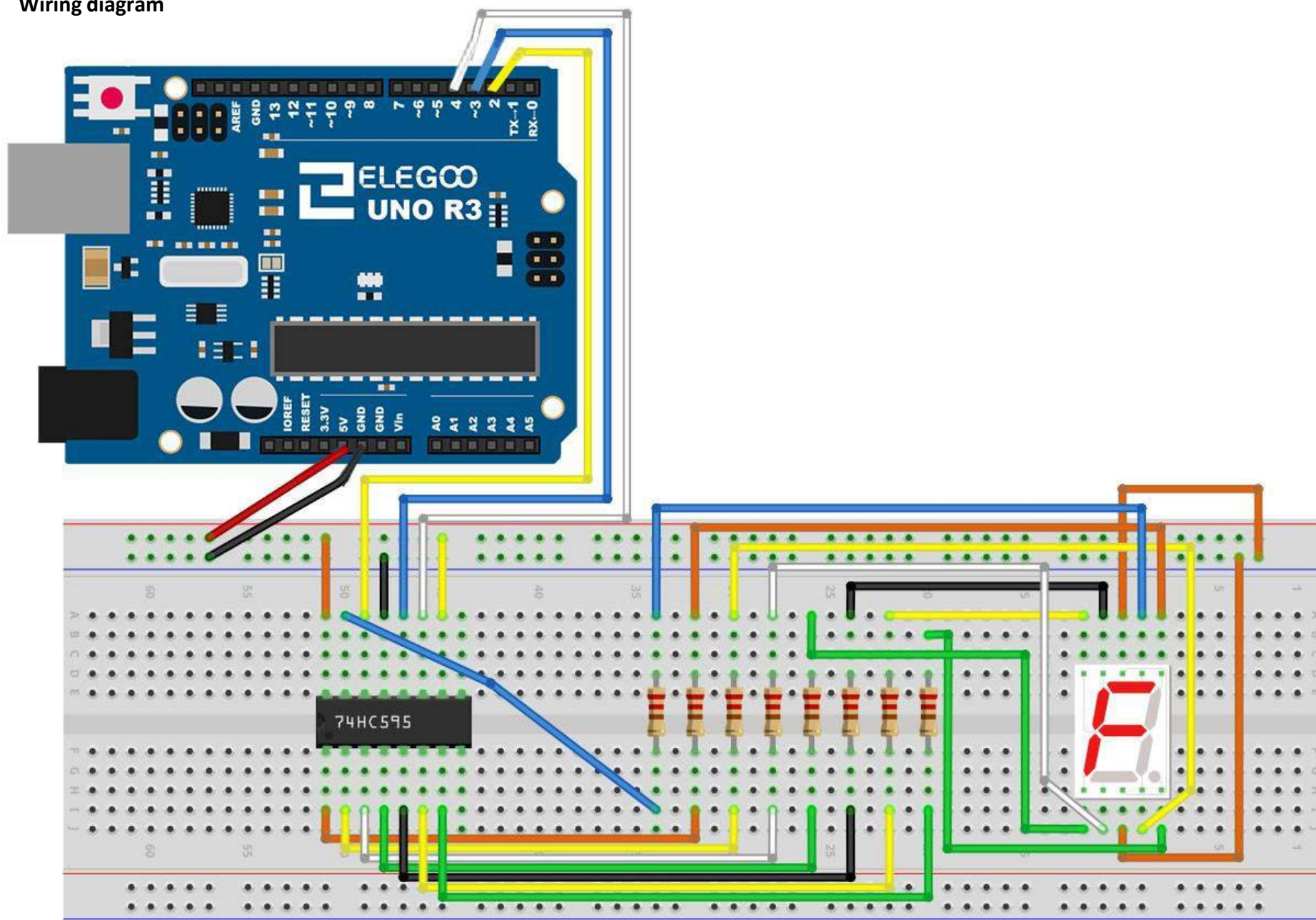
0-9 ten digits correspond with each segment are as follows (the following table applies common cathode seven segment display device, if you are using a common anode, the table should be replaced every 1 0 0 should all replaced by 1):

Display digital	dp	a	b	c	d	e	f	g
0	0	1	1	1	1	1	1	0
1	0	0	1	1	0	0	0	0
2	0	1	1	0	1	1	0	1
3	0	1	1	1	1	0	0	1
4	0	0	1	1	0	0	1	1
5	0	1	0	1	1	0	1	1
6	0	1	0	1	1	1	1	1
7	0	1	1	1	0	0	0	0
8	0	1	1	1	1	1	1	1
9	0	1	1	1	1	0	1	1

## Connection Schematic



Wiring diagram



The following table shows the seven-segment display 74HC595 pin correspondence table:

74HC595 pin	Seven shows remarkable control pin (stroke)
Q0	7 (A)
Q1	6 (B)
Q2	4 (C)
Q3	2 (D)
Q4	1 (E)
Q5	9 (F)
Q6	10 (G)
Q7	5 (DP)

Step one: Connect 74HC595

First, the wiring is connected to power and ground:

**VCC** (pin 16) and **MR** (pin 10) connected to 5V

**GND** (pin 8) and **OE** (pin 13) to ground

Connection **DS**, **ST\_CP** and **SH\_CP** pin:

**DS** (pin 14) connected to UNO R3 board pin 2 (the figure below the yellow line)

**ST\_CP** (pin 12, latch pin) connected to UNO R3 board pin 3 (FIG blue line below)

**SH\_CP** (pin 11, clock pin) connected to UNO R3 board pin 4 (the figure below the white line)

Step two: Connect the seven segment display

The seven-segment display 3, 8 pin to UNO R3 board GND (This example uses the common cathode, if you use the common anode, please connect the 3, 8 pin to UNO R3 board + 5V)

According to the table above, connect the 74HC595 Q0 ~ Q7 to seven-segment display corresponding pin (A ~ G and DP), and then each foot in a 220 ohm resistor in series.



## Code

After wiring, please open the program in the code folder- Lesson 27 74HC595 And Segment Display and click UPLOAD to upload the program. See Lesson 2 for details about program uploading if there are any errors.

## Example picture

