Lesson 9 Four Digital Segment Display

Introduction

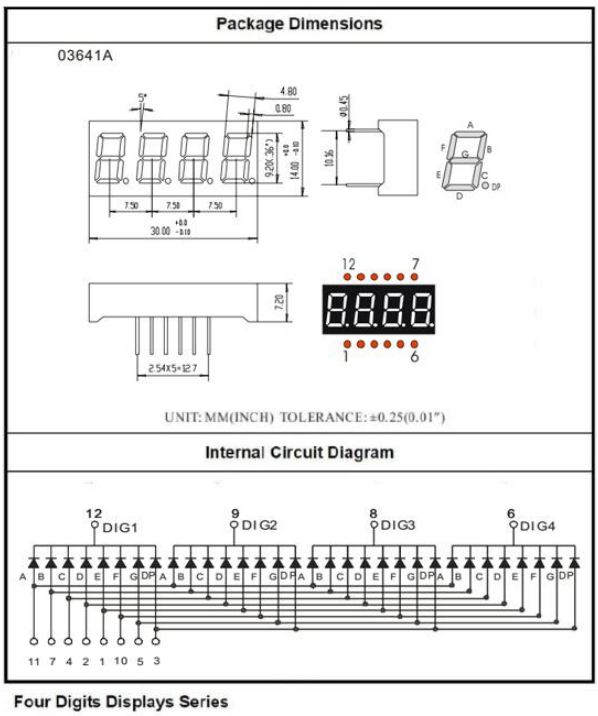
In this lesson, you will learn how to use a 4-digit 7-segment display.

Hardware Required

- ✓ 1 * RexQualis Mega 2560
- ✓ 1 * Breadboard
- ✓ 4 * 220 ohm Resistors
- ✓ 1 * 74hc595 IC
- ✓ 1 * 4 Digit 7-Segment Display
- ✓ 23 * M-M Jumper Wires

Principle

Four Seven Segment Display



Four Digits Displays Series

Code interpretation

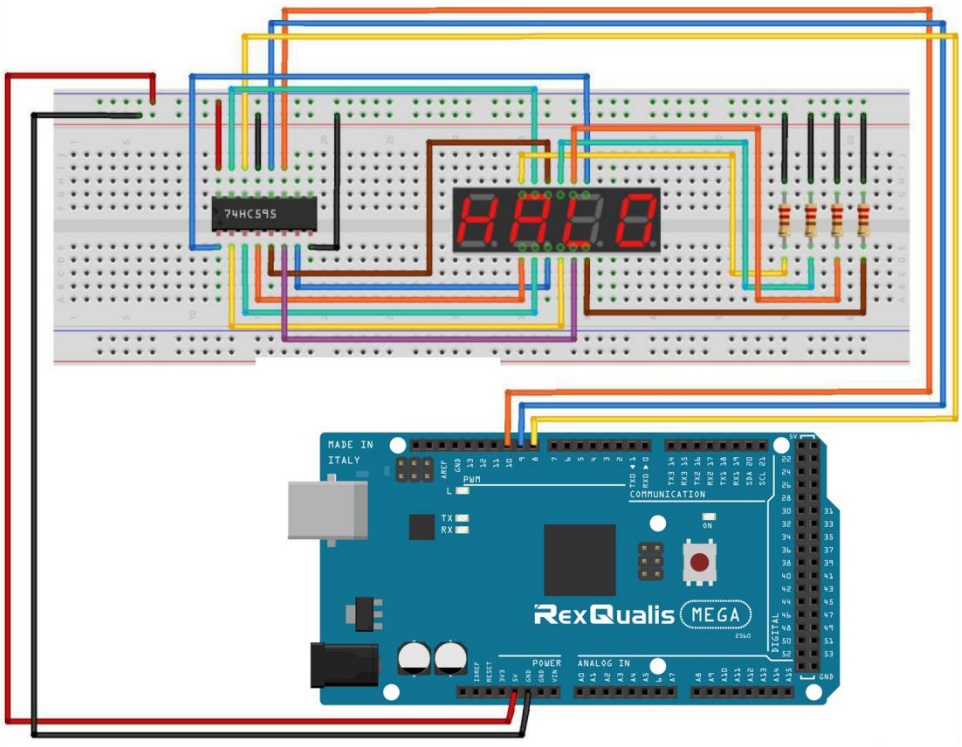
```
int latch=9;   //74HC595   pin 9 STCP

int clock=10; //74HC595   pin 10 SHCP

int data=8;    //74HC595   pin 8 DS

//Refer Table 7-Segment Decoding

unsigned char table[]=

{0x3f,0x06,0x5b,0x4f,0x66,0x6d,0x7d,0x07,0x7f,0x6f,0x77,0x7c

,0x39,0x5e,0x79,0x71,0x00};

//initialize the digital pin   as an outout

void setup() {

   pinMode(latch,OUTPUT);

   pinMode(clock,OUTPUT);

   pinMode(data,OUTPUT);

}

//Latch the data

void Display(unsigned char num)

{

   digitalWrite(latch,LOW);

   shiftOut(data,clock,MSBFIRST,table[num]);

   digitalWrite(latch,HIGH);

}

void loop() {
```

```
Display(1);
delay(2000);//delay 2 sencond
Display(2);
delay(2000);//delay 2 sencond
Display(3);
delay(2000);//delay 2 sencond
Display(4);
delay(2000);//delay 2 sencond
Display(5);
delay(2000);//delay 2 sencond
Display(6);
delay(2000);//delay 2 sencond
Display(7);
delay(2000);//delay 2 sencond
Display(8);
delay(2000);//delay 2 sencond
Display(9);
delay(2000);//delay 2 sencond
Display(10);
delay(2000);//delay 2 sencond
Display(11);
delay(2000);//delay 2 sencond
```

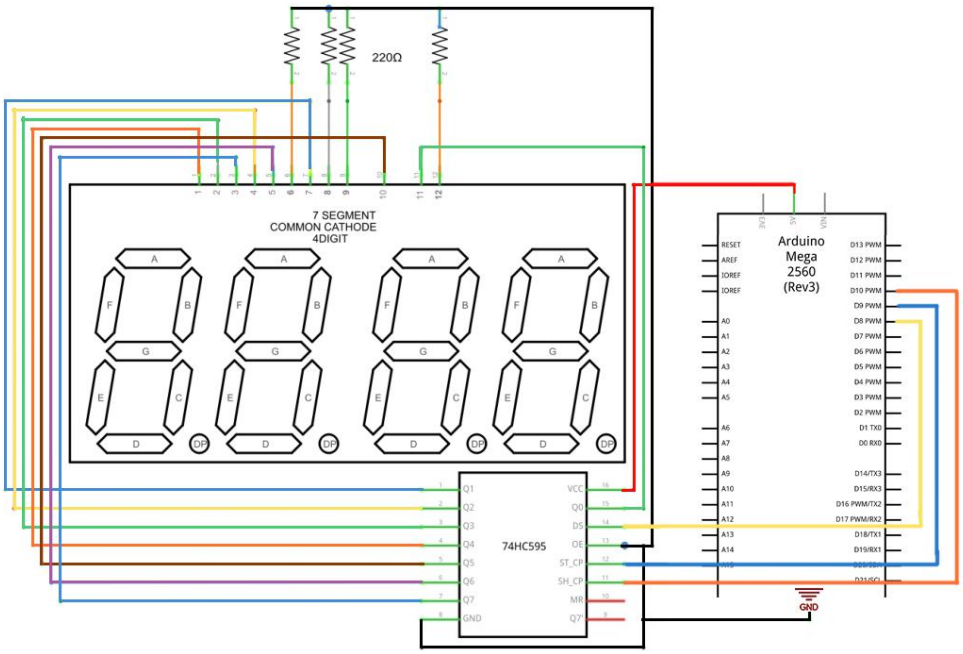
```
    Display(12);
    delay(2000);//delay 2 sencond
    Display(13);
    delay(2000);//delay 2 sencond
    Display(14);
    delay(2000);//delay 2 sencond
    Display(15);
    delay(2000);//delay 2 sencond
}
```

Experimental Procedures

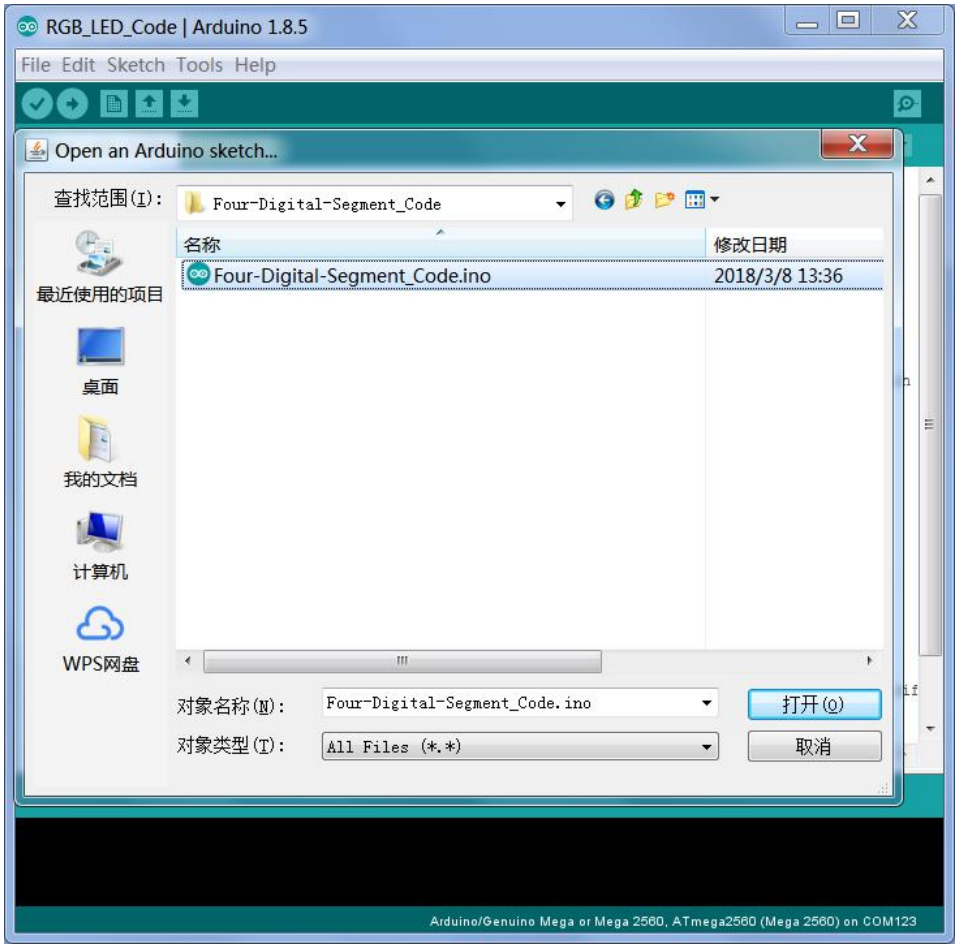
Step 1:Build the circuit



Schematic Diagram



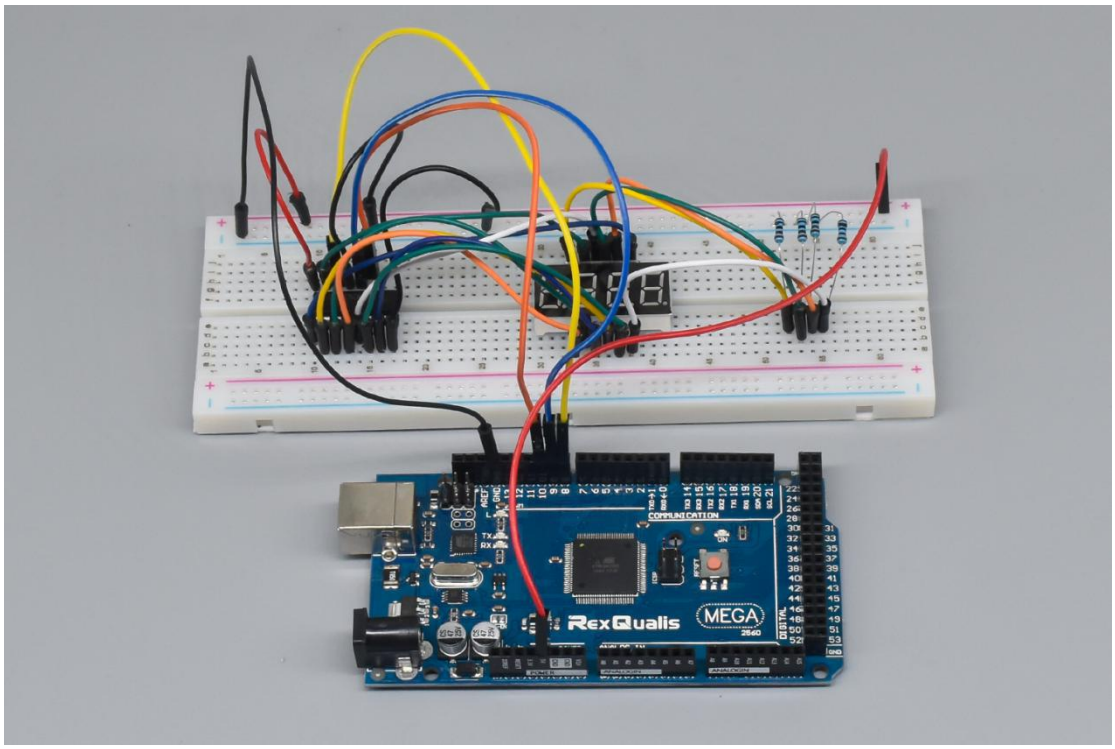
Step 2:Open the code：Four-Digital-Segment_Code



Step 3:Attach Arduino Mega 2560 board to your computer via USB cable and check that the 'Board Type' and 'Serial Port' are set correctly.

Step 4:Upload the code to the RexQualis Mega 2560 board.

Then, You can see the 4 Digital Seven Segment Display show the number from 1-F.



You can see the video of the experiment results on YouTube:

https://youtu.be/fM5pdf4WiCc

If it isn’t working, make sure you have assembled the circuit correctly, verified and uploaded the code to your board.For how to upload the code and install the library, check Lesson 0 Preface.