Lesson 9 Four Digital Segment Display

Introduction

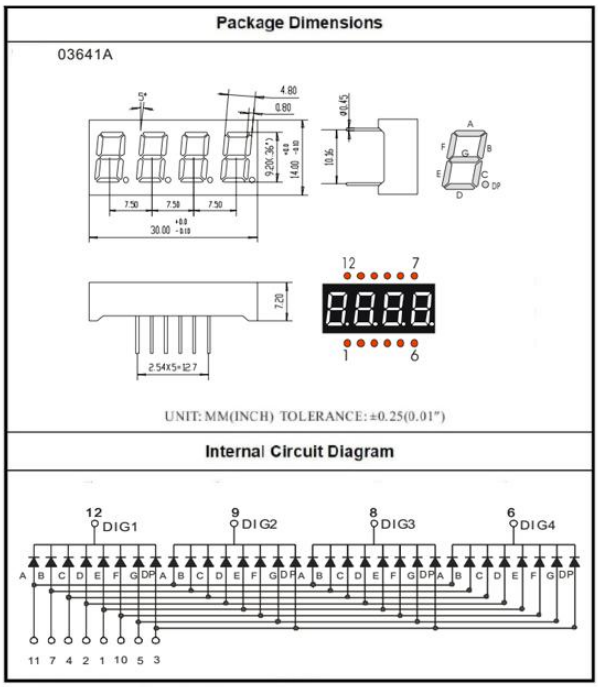
In this lesson, you will learn how to use a 4-digit 7-segment display.

Hardware Required

- ✓ 1 * RexQualis UNO R3
- ✓ 1 * Breadboard
- ✓ 4 * 220ohm 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

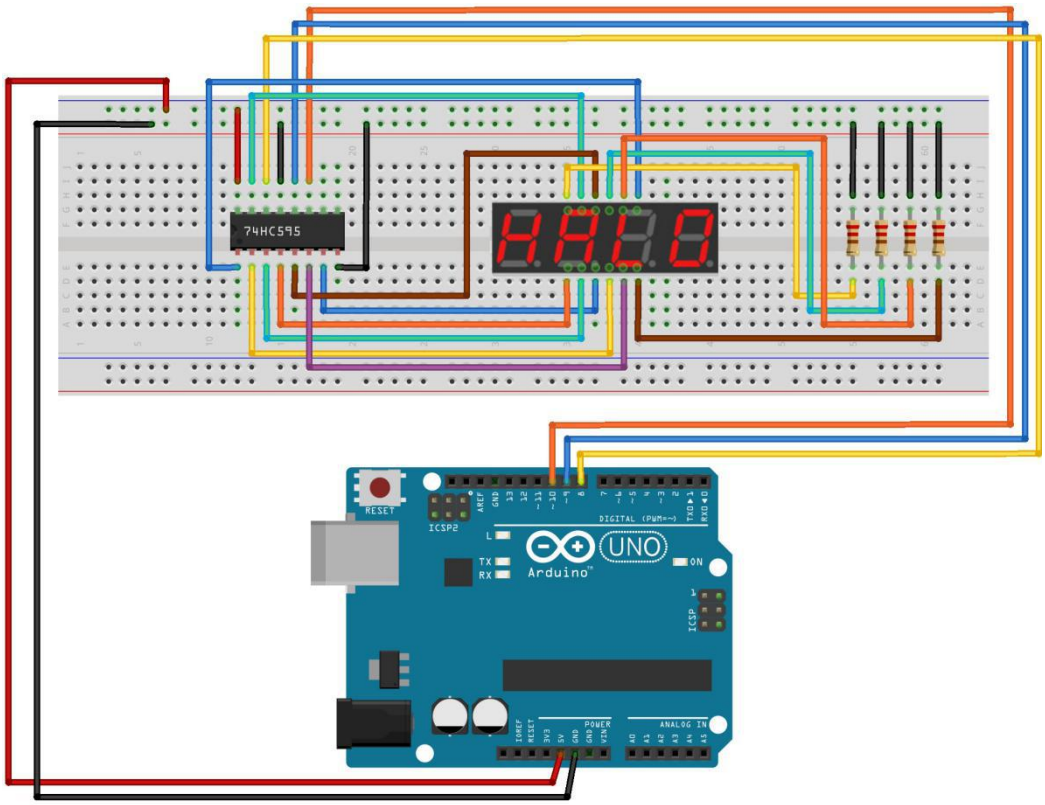
```
int latch=9;   //74HC595   pin 9 STCP

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);
```

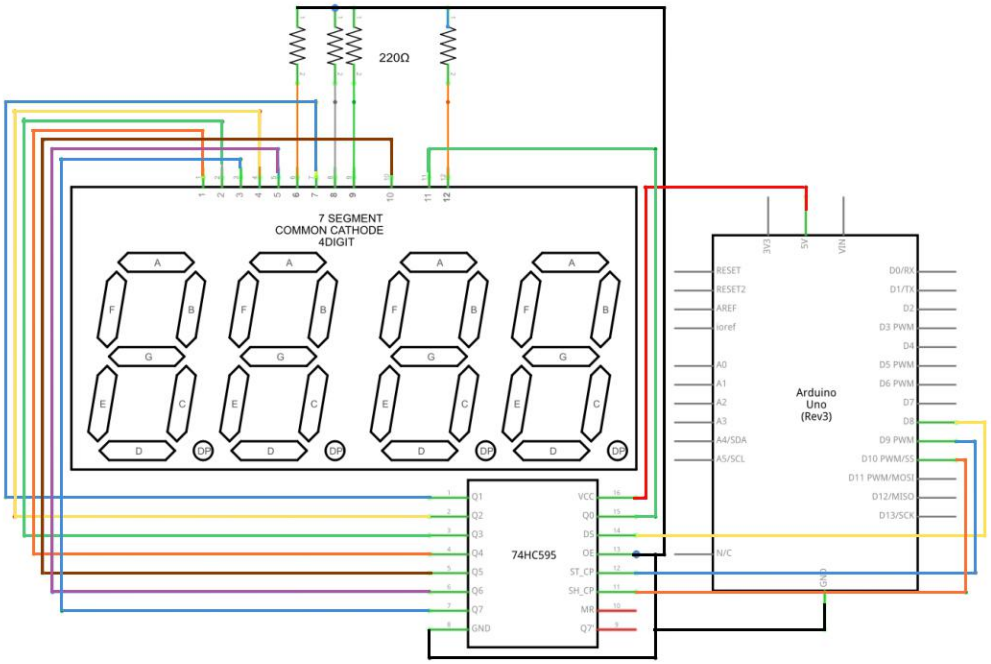
```
    delay(2000);//delay 2 sencond
    Display(7);
    delay(2000);//delay 2 sencond
    Display(8);
    delay(2000);//delay 2 sencond
    Display(9);
    delay(2000);//delay 2 sencond
    Display(10);
    delay(2000);//delay 2 sencond
    Display(11);
    delay(2000);//delay 2 sencond
    Display(12);
    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

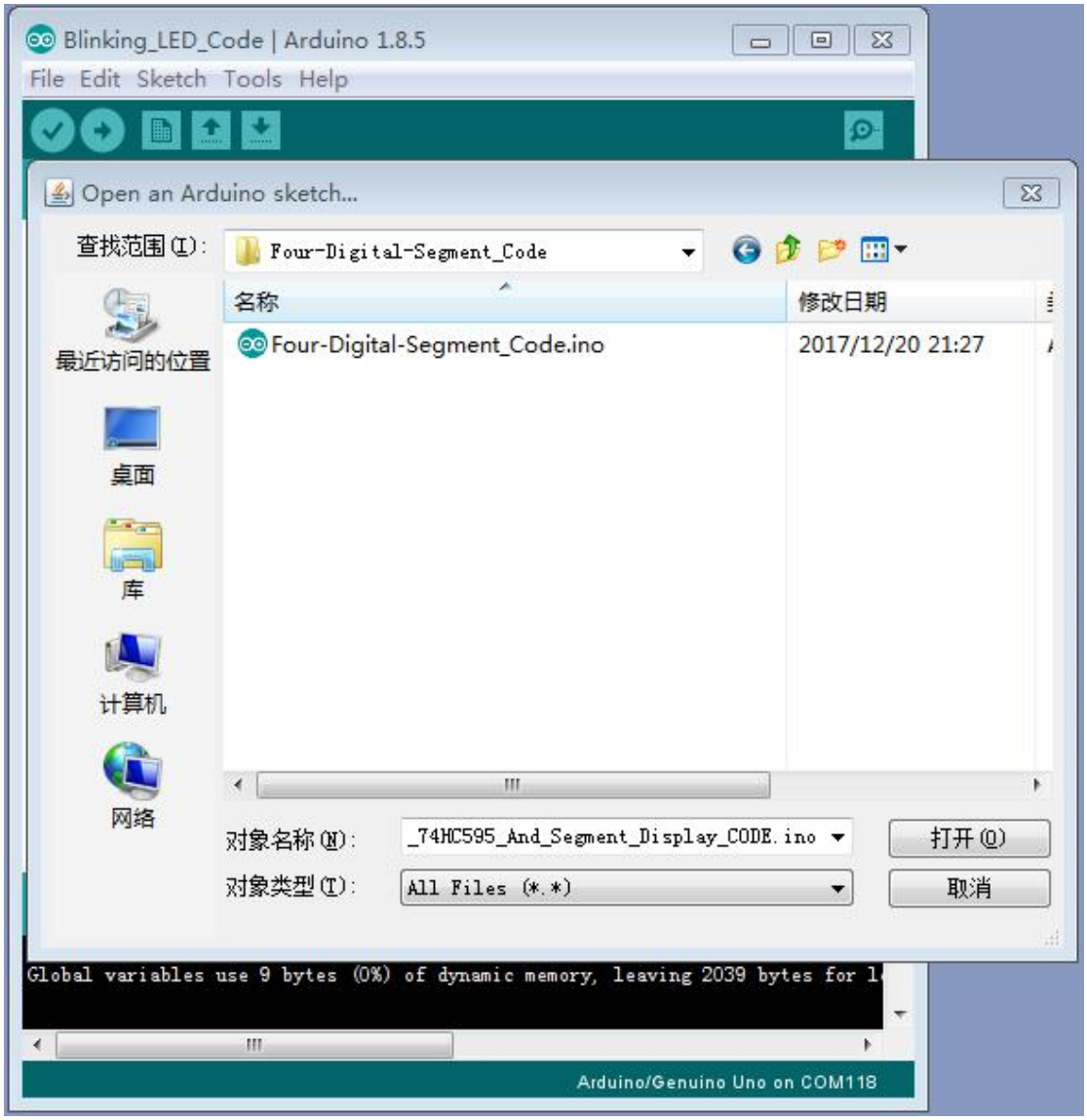
Step 1:Build the circuit



Schematic Diagram



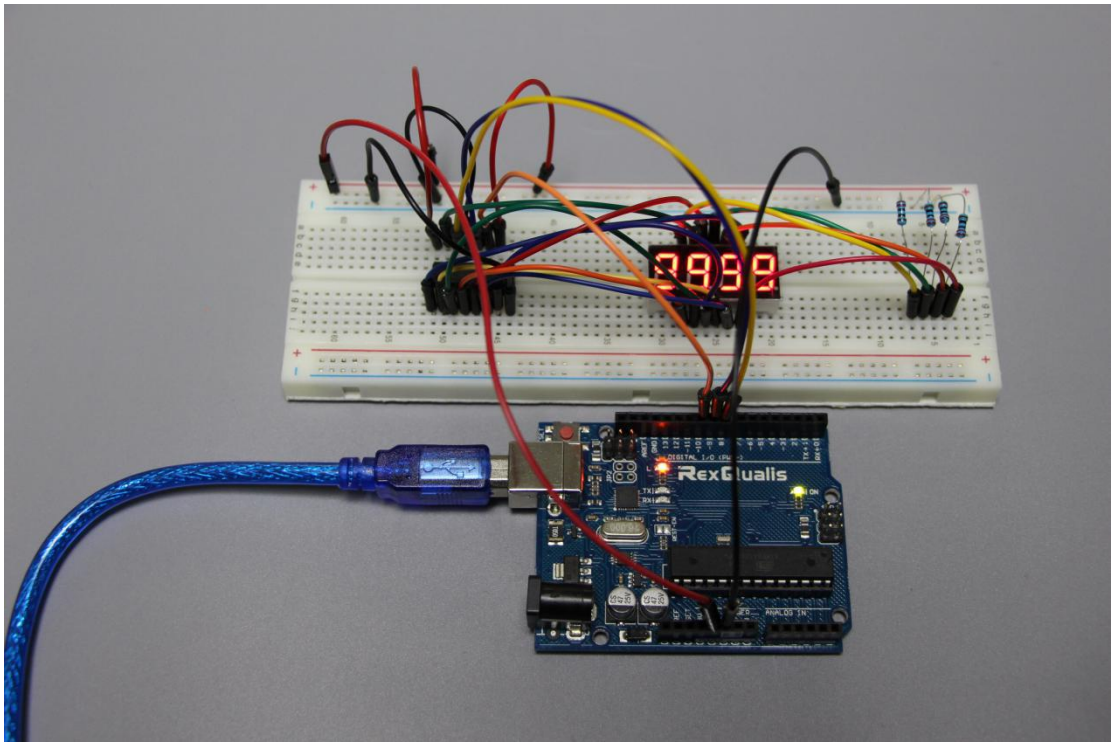
Step 2:Open the code：Four-Digital-Segment_Code



Step 3: Attach Arduino UNO R3 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 UNO R3 board.

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



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.