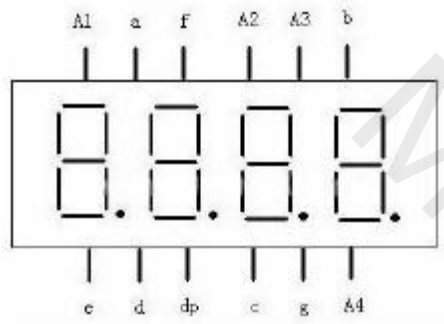
4 digit LED Segment Displays

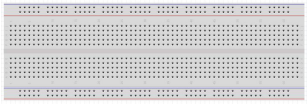
★ Overview

This experiment is similar to the LED experiment, the same is the control of LED, but the experiment can achieve time counting function.

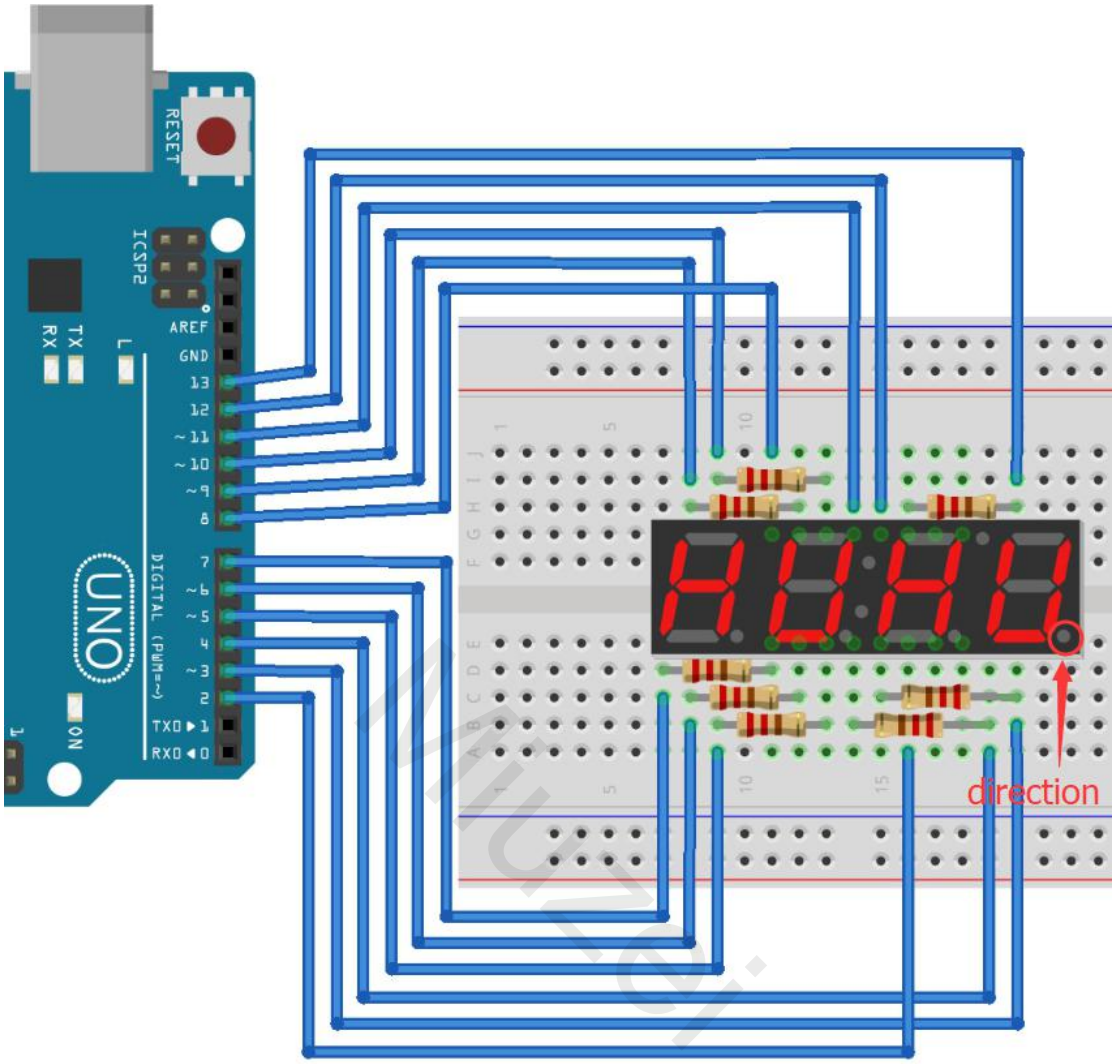
★ Pin definition



★ Hardware required

Material diagram	Material name	Number
	4 digit LED Segment Displays	1
	220/330Ω resistor	8
	USB Cable	1
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

★ Connection diagram



Note: Pay attention to the direction of digital tube.

★ Sample code

Note: sample code under the **Sample code** folder

```
int ASeg = 9;
int BSeg = 13;
int CSeg = 4;
int DSeg = 6;
int ESeg = 7;
int FSeg = 10;
int GSeg = 3;

int a1 = 8;
int a2 = 11;
int a3 = 12;
int a4 = 2;
// set variable
long n = 0;
int x = 100;
int del = 54; // fine adjustment for clock

void setup()
{
	pinMode(a1, OUTPUT);
	pinMode(a2, OUTPUT);
	pinMode(a3, OUTPUT);
	pinMode(a4, OUTPUT);
	pinMode(ASeg, OUTPUT);
	pinMode(BSeg, OUTPUT);
	pinMode(CSeg, OUTPUT);
	pinMode(DSeg, OUTPUT);
	pinMode(ESeg, OUTPUT);
	pinMode(FSeg, OUTPUT);
	pinMode(GSeg, OUTPUT);
}

void loop()
{
	clearLEDS(); // Eliminating ghost
	pickDigit(1);
	pickNumber((n/x/1000)%10); // Display number
	delayMicroseconds(del);

	clearLEDS();
	pickDigit(2);
	pickNumber((n/x/100)%10);
	delayMicroseconds(del);
```

```
    clearLEDS();
    pickDigit(3);
    pickNumber((n/x/10)%10);
    delayMicroseconds(del);

    clearLEDS();
    pickDigit(4);
    pickNumber(n/x%10);
    delayMicroseconds(del);
    n++;
}
// Select display position
void pickDigit(int x)
{
    digitalWrite(a1, LOW);
    digitalWrite(a2, LOW);
    digitalWrite(a3, LOW);
    digitalWrite(a4, LOW);

    switch(x)
    {
        case 1:
        digitalWrite(a1, HIGH);
        break;
        case 2:
        digitalWrite(a2, HIGH);
        break;
        case 3:
        digitalWrite(a3, HIGH);
        break;
        case 4:
        digitalWrite(a4, HIGH);
        break;
    }
}
// select display number
void pickNumber(int x)
{
    switch(x) {
    case 1: one(); break;
    case 2: two(); break;
    case 3: three(); break;
    case 4: four(); break;
    case 5: five(); break;
    case 6: six(); break;
    case 7: seven(); break;
```

```
        case 8: eight(); break;
        case 9: nine(); break;
        default: zero(); break;
        }
}

void clearLEDS()
{
        digitalWrite(ASeg, HIGH);
        digitalWrite(BSeg, HIGH);
        digitalWrite(CSeg, HIGH);
        digitalWrite(DSeg, HIGH);
        digitalWrite(ESeg, HIGH);
        digitalWrite(FSeg, HIGH);
        digitalWrite(GSeg, HIGH);
}

//Display function  '0-9'
void zero() {
        digitalWrite(ASeg, LOW);
        digitalWrite(BSeg, LOW);
        digitalWrite(CSeg, LOW);
        digitalWrite(DSeg, LOW);
        digitalWrite(ESeg, LOW);
        digitalWrite(FSeg, LOW);
        digitalWrite(GSeg, HIGH);
}

void one() {
        digitalWrite(ASeg, HIGH);
        digitalWrite(BSeg, LOW);
        digitalWrite(CSeg, LOW);
        digitalWrite(DSeg, HIGH);
        digitalWrite(ESeg, HIGH);
        digitalWrite(FSeg, HIGH);
        digitalWrite(GSeg, HIGH);
}

void two() {
        digitalWrite(ASeg, LOW);
        digitalWrite(BSeg, LOW);
        digitalWrite(CSeg, HIGH);
        digitalWrite(DSeg, LOW);
        digitalWrite(ESeg, LOW);
        digitalWrite(FSeg, HIGH);
        digitalWrite(GSeg, LOW);
```

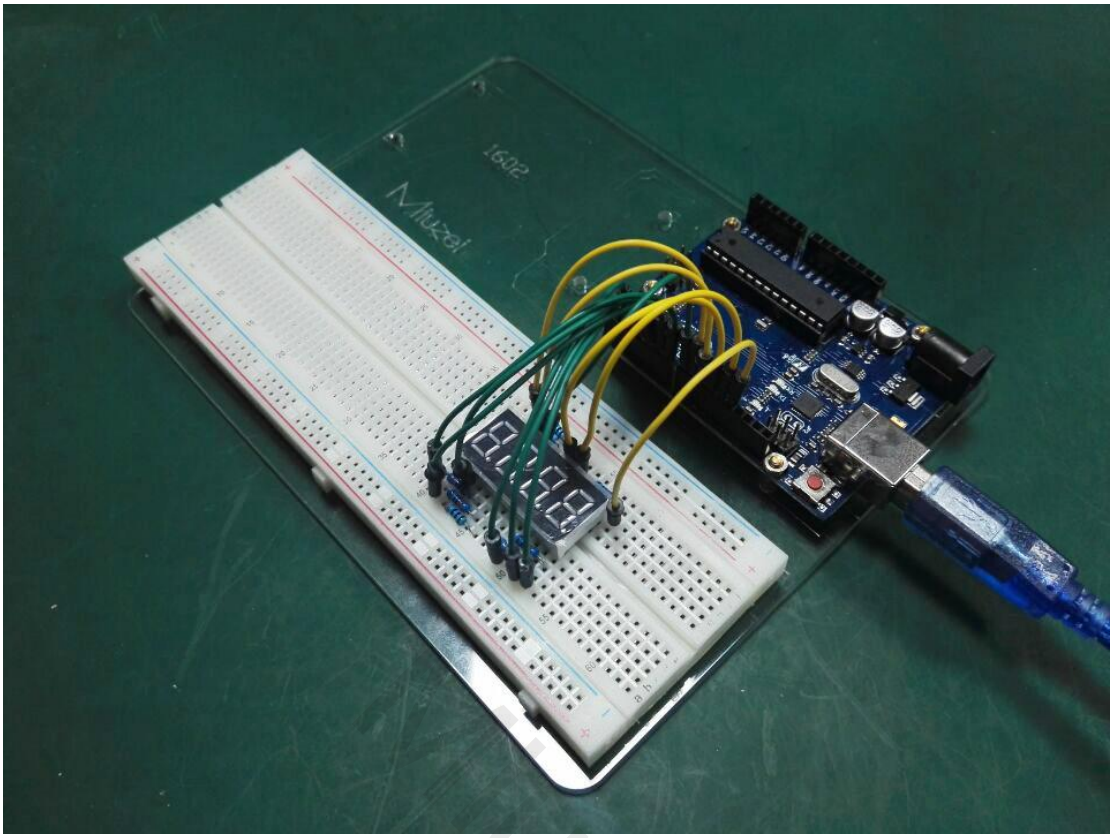
```
}
void three() {
	digitalWrite(ASeg, LOW);
	digitalWrite(BSeg, LOW);
	digitalWrite(CSeg, LOW);
	digitalWrite(DSeg, LOW);
	digitalWrite(ESeg, HIGH);
	digitalWrite(FSeg, HIGH);
	digitalWrite(GSeg, LOW);
}
void four() {
	digitalWrite(ASeg, HIGH);
	digitalWrite(BSeg, LOW);
	digitalWrite(CSeg, LOW);
	digitalWrite(DSeg, HIGH);
	digitalWrite(ESeg, HIGH);
	digitalWrite(FSeg, LOW);
	digitalWrite(GSeg, LOW);
}
void five() {
	digitalWrite(ASeg, LOW);
	digitalWrite(BSeg, HIGH);
	digitalWrite(CSeg, LOW);
	digitalWrite(DSeg, LOW);
	digitalWrite(ESeg, HIGH);
	digitalWrite(FSeg, LOW);
	digitalWrite(GSeg, LOW);
}
void six() {
	digitalWrite(ASeg, LOW);
	digitalWrite(BSeg, HIGH);
	digitalWrite(CSeg, LOW);
	digitalWrite(DSeg, LOW);
	digitalWrite(ESeg, LOW);
	digitalWrite(FSeg, LOW);
	digitalWrite(GSeg, LOW);
}
void seven() {
	digitalWrite(ASeg, LOW);
	digitalWrite(BSeg, LOW);
	digitalWrite(CSeg, LOW);
	digitalWrite(DSeg, HIGH);
	digitalWrite(ESeg, HIGH);
```

```
    digitalWrite(FSeg, HIGH);
    digitalWrite(GSeg, HIGH);
}

void eight() {
    digitalWrite(ASeg, LOW);
    digitalWrite(BSeg, LOW);
    digitalWrite(CSeg, LOW);
    digitalWrite(DSeg, LOW);
    digitalWrite(ESeg, LOW);
    digitalWrite(FSeg, LOW);
    digitalWrite(GSeg, LOW);
}

void nine() {
    digitalWrite(ASeg, LOW);
    digitalWrite(BSeg, LOW);
    digitalWrite(CSeg, LOW);
    digitalWrite(DSeg, LOW);
    digitalWrite(ESeg, HIGH);
    digitalWrite(FSeg, LOW);
    digitalWrite(GSeg, LOW);
}
```

★ Example picture



★ Language reference

Long
switch()
case

★ Application effect

In order to achieve the time counting function, you will see the number of digital tube display increasingly.

About Miuzei:

Miuzei found in 2011，which is a professional manufacturer and exporter that concerned with open-source hardware research & product development, We have more than hundred engineers devote to developing open source hardware like Arduino, Raspberry pi ,3d printers，robots.

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