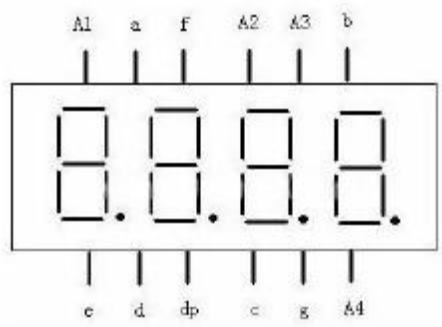
4 digit LED Segment Displays

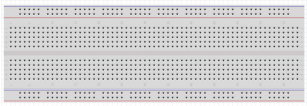
Overview

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

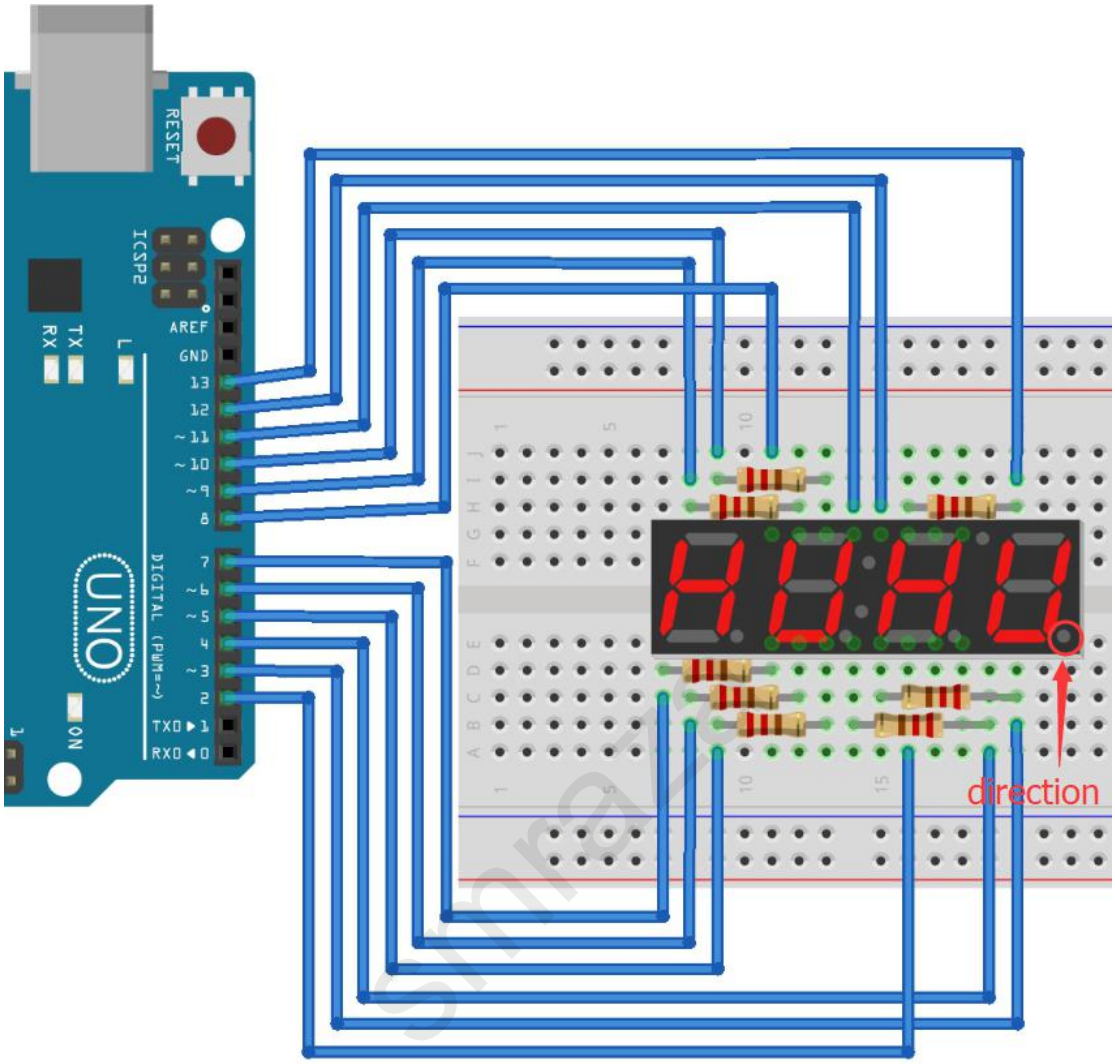
Pin definition



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);
```

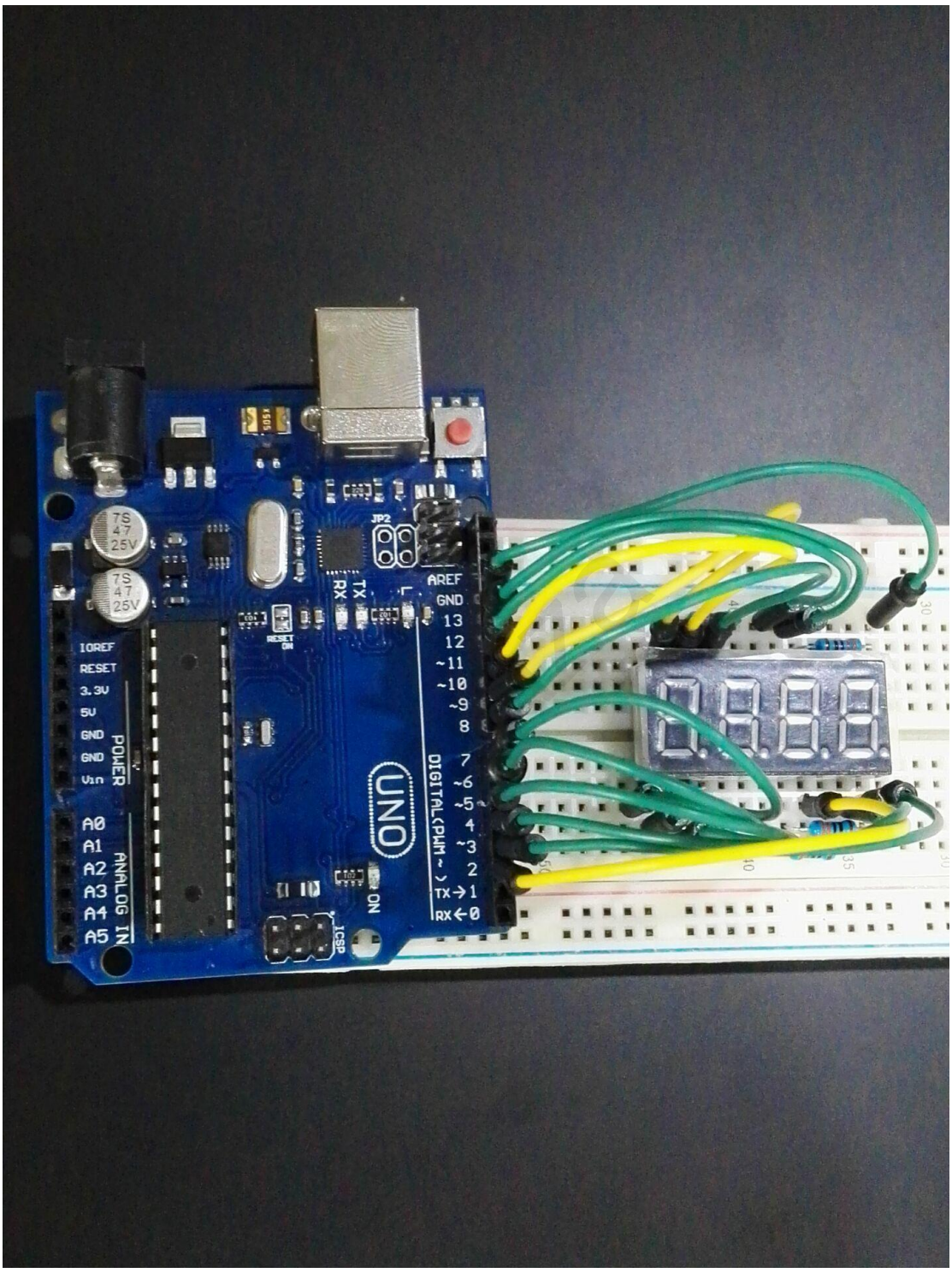
```
}
void three() {
      digitalWrite(ASeg, LOW);
      digitalWrite(BSeg, LOW);
      digitalWrite(CSeg, LOW);
      digitalWrite(DSeg, LOW);
      digitalWrite(ESeg, HIGH);
      digitalWrite(FSeg, HIGH);
      digitalWrite(GSeg, LOW);
}
void four() {
      digitalWrite(ASeg, HIGH);
      digitalWrite(BSeg,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

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