4.1 Light up LED

1. Learning goal:

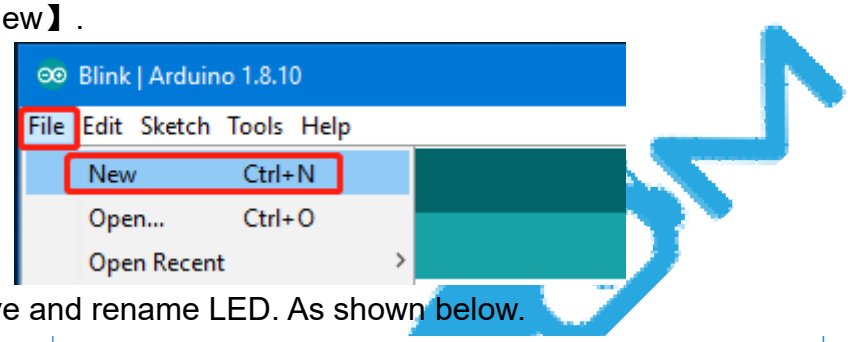
Configure the digital output of the IO port (high level HIGH=1, low level LOW=0) to illuminate the LED light.

2. Experimental phenomena:

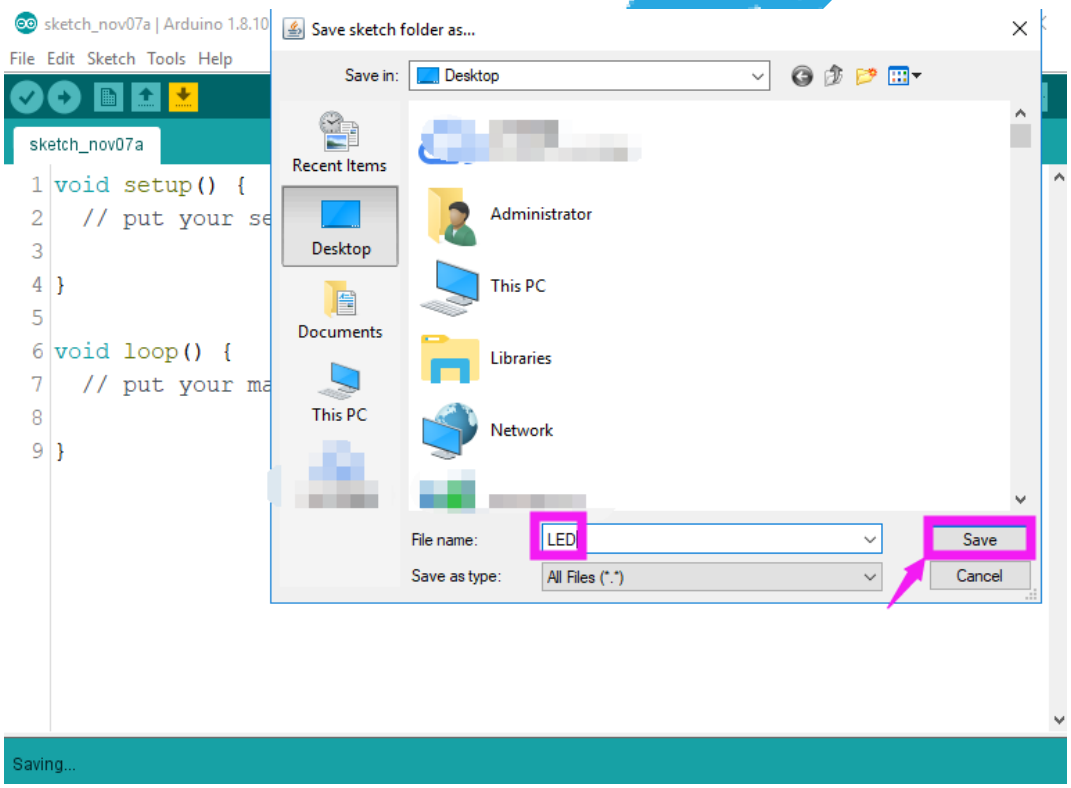
After the power is turned on, the LED D9 will on for 0.5s ---> off for 0.5s. And keep looping in this state.

3. Create new project

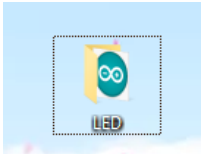
3.1 Click【File】-->【New】.



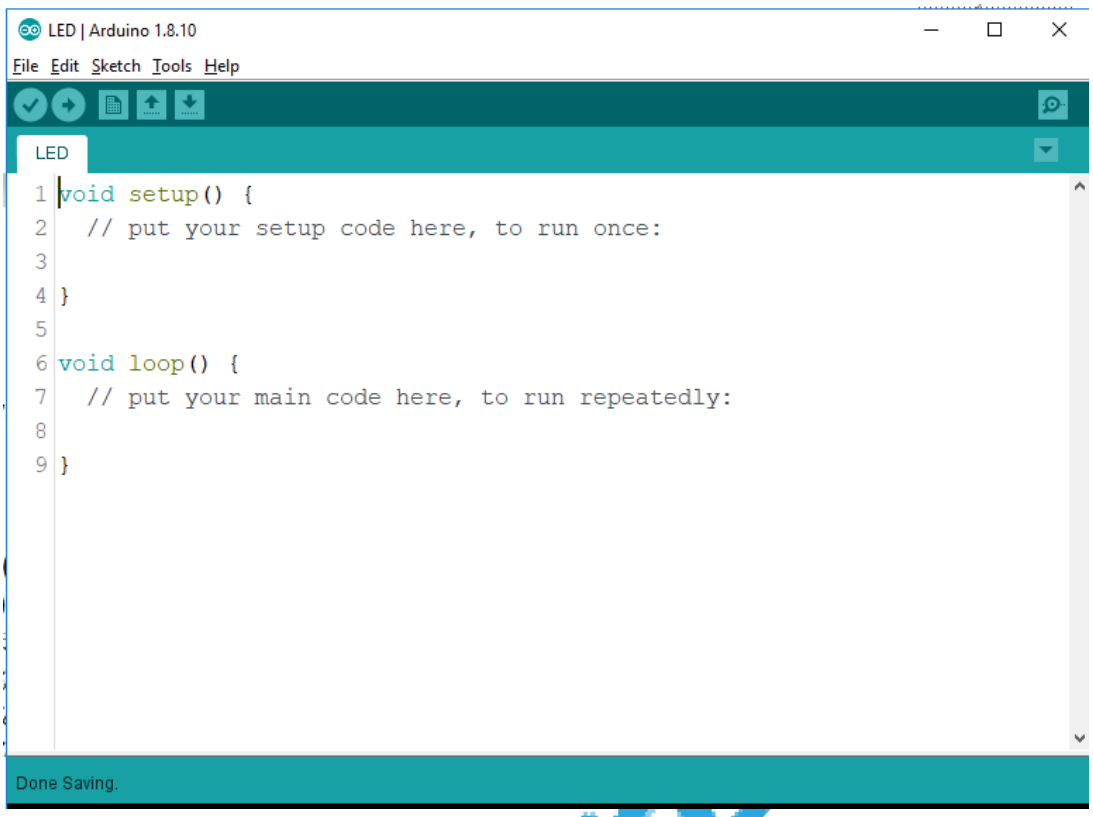
3.2 Press **Ctrl+S** to save and rename LED. As shown below.



3.3 We can see that there is a LED folder with **LED.ino** on the computer desktop.



3.4 We will **LED.ino** as shown below.



The setup() function only runs once when the car is turned on or when the reset button is pressed, and the program for initializing the relevant content can be written;

The loop() function is the main loop function of the car and most of the data processing and logic processing are done in this function.

4. Programming

4.1Define LED D9 pin

From the hardware manual, we can see that the pin corresponding to LED D9 is pin 5, so we create a new create definition and define LED D9 pin as pin 5

```
//Define LED light(D9)pin
#define LED_PIN 5
```

4.2 Initialize the LED D9 pin in the setup() function and set the pin mode to output mode.

```
void setup() {
  // put your setup code here, to run once:
  // set LED pin to output mode
  pinMode(LED_PIN, OUTPUT);
}
```

4.3 About loop() function

It can be known from the hardware manual that when LED_PIN outputs low level, LED D9 is on; when LED_PIN outputs high level, LED D9 is off.

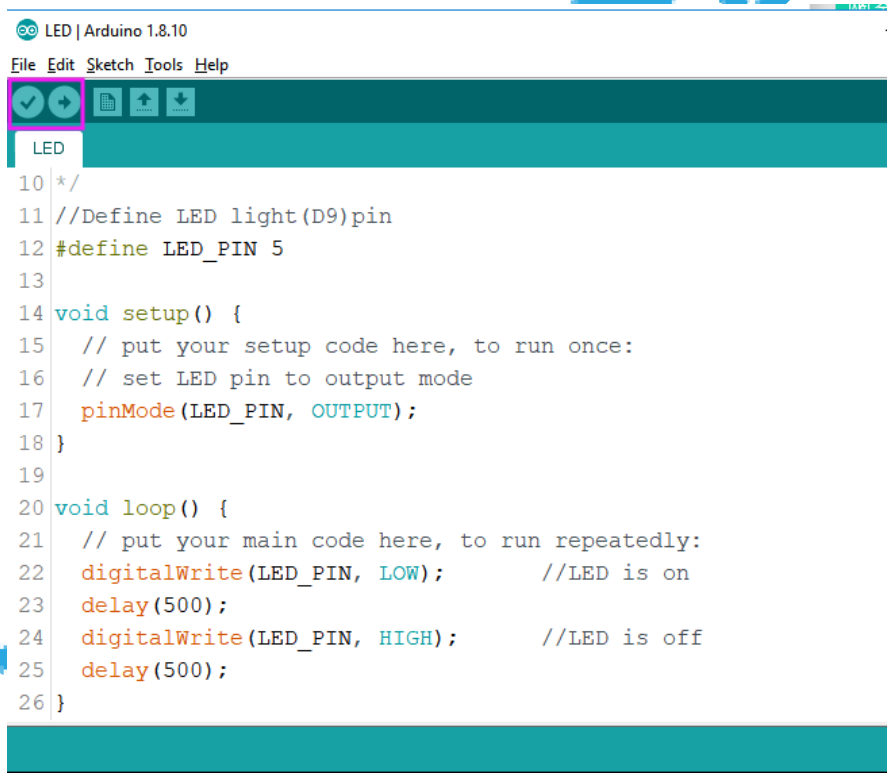
```
void loop() {
  // put your main code here, to run repeatedly:
  digitalWrite(LED_PIN, LOW);       //LED is on
  delay(500);
  digitalWrite(LED_PIN, HIGH);      //LED is off
  delay(500);
}
```

Since the loop() program executes very quickly, we need to add the delay function delay() to see the flashing effect of the light. delay(500) means delay of 0.5 seconds, if you want to delay 1 second, input delay(1000), and so on.

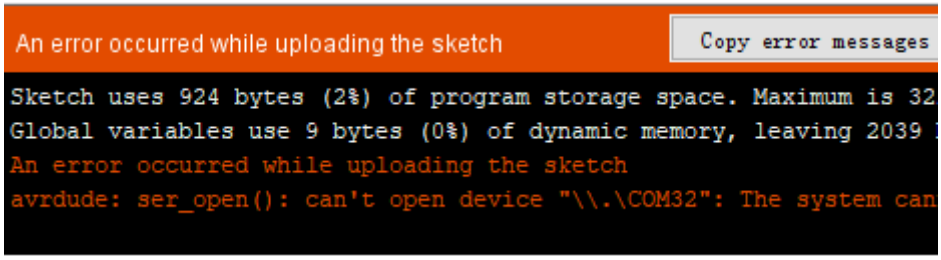
5. Compiling and downloading code

5.1 After the code is written, press Ctrl+S to save, then click the "√" button to compile. If there is no problem, click "→" to upload (the car must be connected to the computer via the USB cable).

After uploading, LED D9 will cycle for 0.5 seconds and extinguish for 0.5 seconds." And keep looping in this state.



5.2 If the compilation passes normally, but the following error occurs during uploading, the reason may be that the wrong serial port or the serial port is occupied.



Solution: Open the device manager to see if there is a serial port with CH340 tag. If not, please restart the Omniduino car, then, re-plug the USB cable or replace a USB cable;
If there is a serial port number, we need to close the other serial port or assistant software, avoid serial port occupation, and then re-select the serial port to ArduinoIDE【Tool】-->【Port】.