

4.3 Serial port print LED brightness value

1. Learning goal:

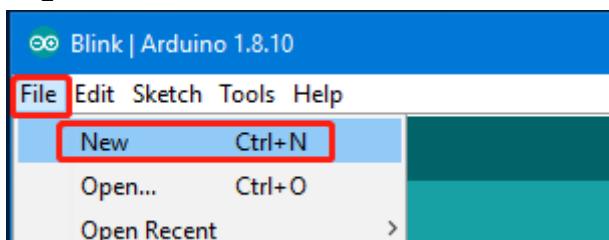
Serial port print data

2. Experimental phenomena:

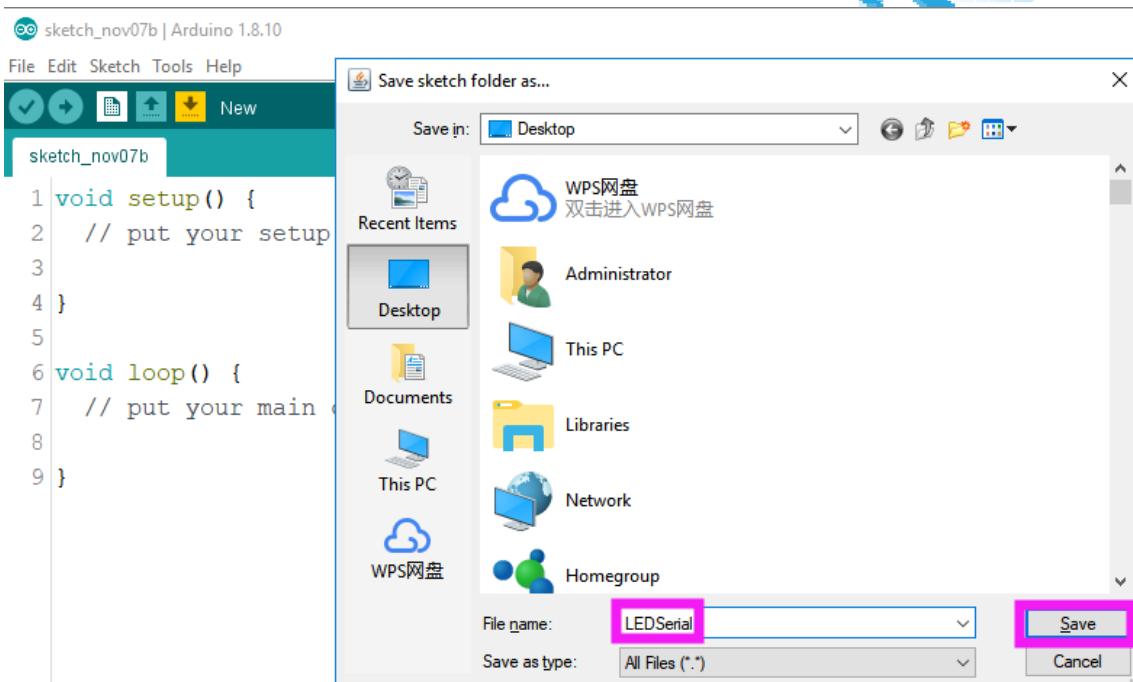
Print LED brightness value by serial port.

3. Create new project

3.1 Click 【File】 --> 【New】 .



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



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

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

```
void setup() {
    // put your setup code here, to run once:
}

void loop() {
    // put your main code here, to run repeatedly:
}
```

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

4.1 setup() function Initialize the serial port, the baud rate is 9600

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

    //Initialize the serial port, the baud rate is 9600
    Serial.begin(9600);
}
```

4.2 Print data in the loop() main loop function

```
//put your main code here, to run repeatedly:
//Write analog values to the LED_PIN pin
analogWrite(LED_PIN, brightness);

//Print current brightness value
Serial.println(brightness);
```

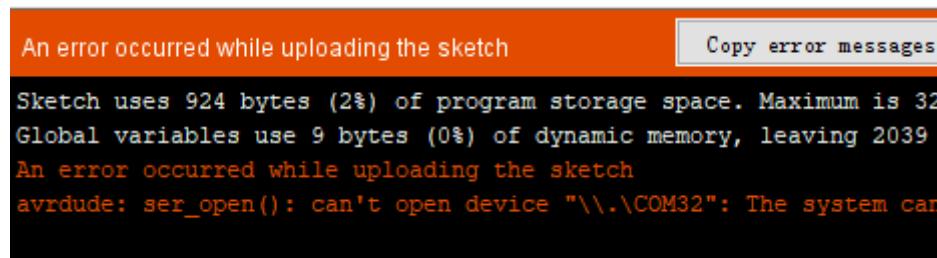
5. Compiling and downloading code

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).

```
File Edit Sketch Tools Help
LED
10 */
11 //Define LED light(D9)pin
12 #define LED_PIN 5
13
14 void setup() {
15     // put your setup code here, to run once:
16     // set LED pin to output mode
17     pinMode(LED_PIN, OUTPUT);
18 }
19
20 void loop() {
21     // put your main code here, to run repeatedly:
22     digitalWrite(LED_PIN, LOW);      //LED is on
23     delay(500);
24     digitalWrite(LED_PIN, HIGH);     //LED is off
25     delay(500);
26 }
```

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].

5.3 Open the serial port assistant

Set the baud rate to 9600 and the corresponding in the program.

```

15 int brightness = 0;
16 int fadeAmount = 5;
17
18 void setup() {
19     //put your setup code here
20     //set LED pin to output
21     pinMode(LED_PIN, OUTPUT);
22
23     //Initialize the serial port
24     Serial.begin(9600);
25 }
26
27 void loop() {
28     //put your main code here
29     //Write analog value to LED
30     analogWrite(LED_PIN, brightness);

```

