Assignment 3 if for while conditions structure

Released Date: Oct 15th

Version 1.0

Format: Name the document in the combination of name、ID and No. of Assignment.

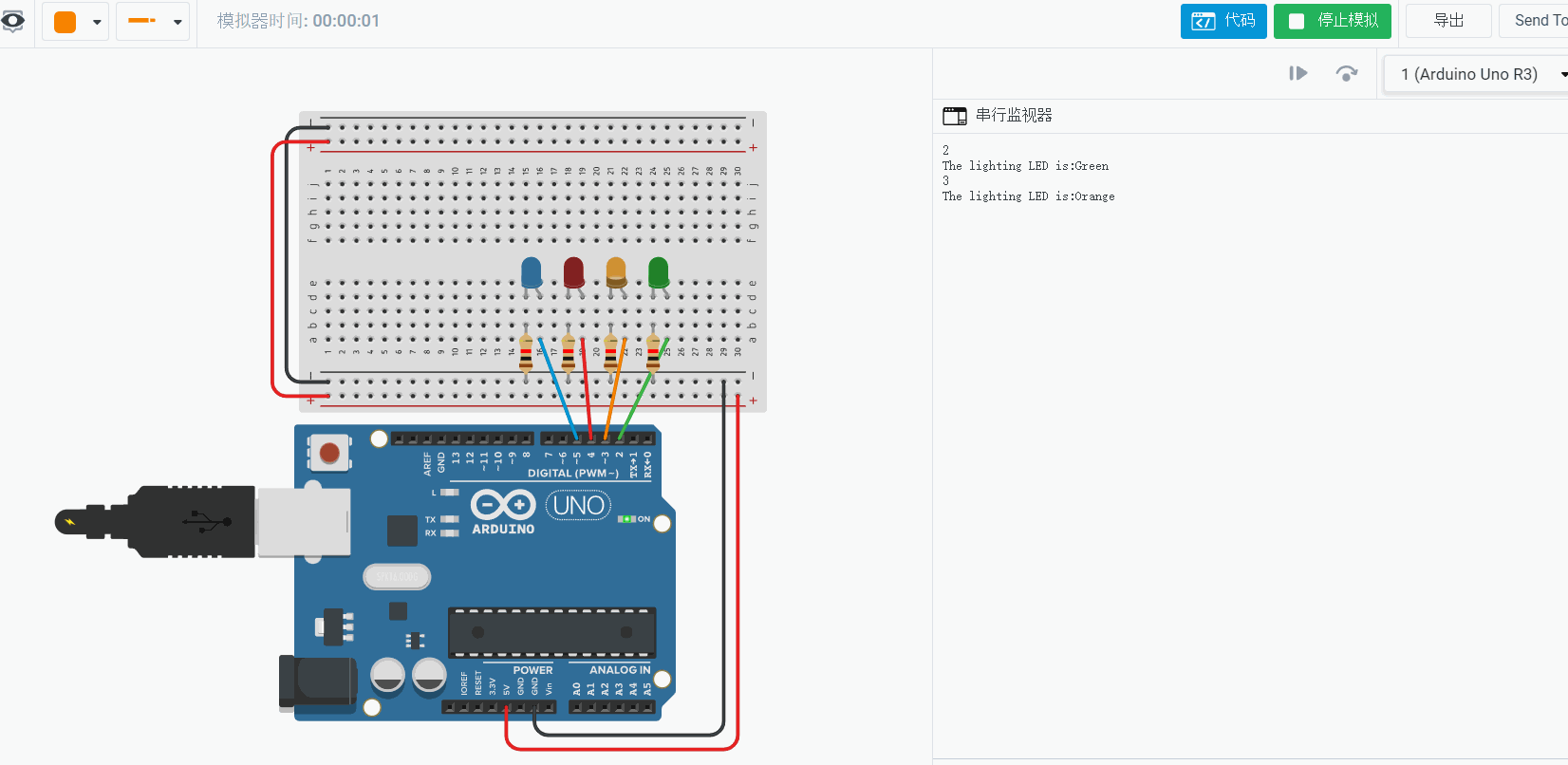
**Example: Ping Yi\_23\_Assignment1.doc**

**Email the document to “pingy@wxit.edu.cn” before Oct 18th.**

**Task 1** 4 LEDs are connected to Arduino Uno, try to use for cycle structure to make a 1s shift effect.

任务1 使用4个LED连接至Arduino Uno，尝试使用for循环结构，实现1s位移点亮的效果。

**You could use Tinker CAD or Proteus for the verifying.可使用在线工具Tinker CAD或Proteus进行仿真。**



**Fig 1 LED Shift Light**

**Answer:**

1. **int** i;
2. **int** timer = 1000;
3. **void** setup() {
4. **for** (**int** i= 2;i<=5;i++) {
5. pinMode(i, OUTPUT);
6. }
7. }
8. **void** loop() {
9. **for** (**int** i=2; i <= 5; i++) {
10. digitalWrite(i, HIGH);
11. delay(timer);
12. digitalWrite(i, LOW);
13. }
14. }

**Task 2** One LED and a POT are connected to Arduino, define a function named getVoltage to calculate the real time voltage of the POT, if the value is larger than 2.5V, then turn on the LED.

任务2 一个LED和一个电位器与Arduino Uno相连，定义一个函数名为getVoltage，用于计算POT段子的实时电压，若电压大于2.5V，则点亮LED。

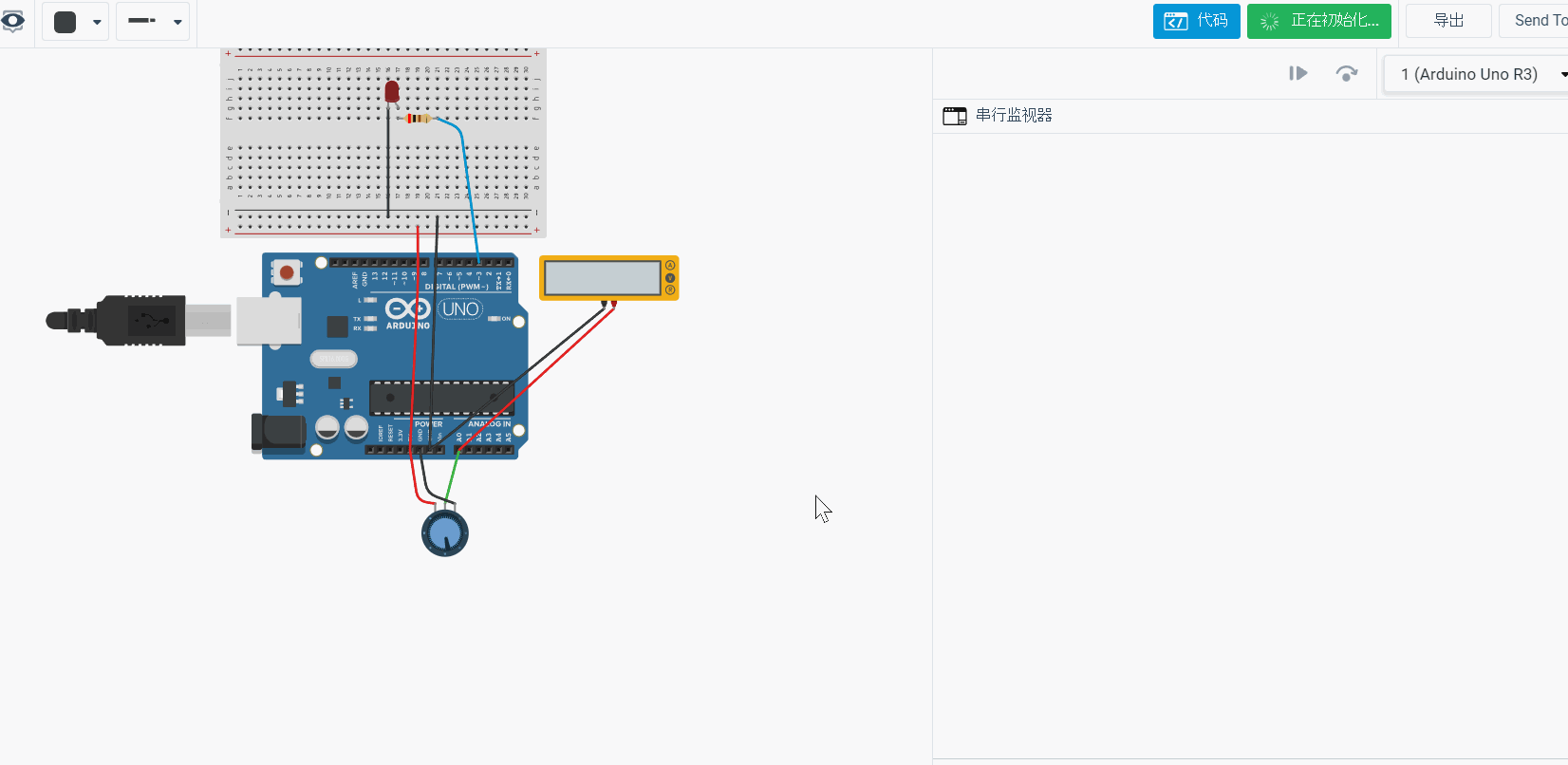


Fig 2 LED Indicator

**Answer:**

1. **int** val;
2. **void** setup() {
3. pinMode(3,OUTPUT);
4. Serial.begin(9600);
5. }
6. **void** loop() {
7. val=analogRead(A0);
8. val=map(val,0,1023,0,255);
9. **if** (val<50)
10. {
11. digitalWrite(3,LOW);
12. }
13. **else**
14. {
15. analogWrite(3,val);
16. }
17. }