任务名称：路口交通灯	智能产品设计与制作	组员姓名：李羿东 舒涛 刘严发
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一、任务概述

按题目要求设计面包板，路口红灯亮时人行道红灯亮，路口绿灯亮时人行道绿灯亮。

二、硬件设计

```
int carRed = 12; //红灯输入
int carYellow = 11;//黄灯输入
int carGreen = 10;//绿灯输入
int pedRed = 9; //路口红灯输入
int pedGreen = 8;//路口绿灯输入
int button = 2; //初值
int crossTime = 5000;
unsigned long changeTime;
void setup() {
pinMode(carRed, OUTPUT);
pinMode(carYellow, OUTPUT);
pinMode(carGreen, OUTPUT);
pinMode(pedRed, OUTPUT);
pinMode(pedGreen, OUTPUT);
pinMode(button, INPUT);
digitalWrite(carGreen, HIGH);
digitalWrite(pedRed, HIGH);
}
void loop() {
int state = digitalRead(button);
if (state == HIGH && (millis() - changeTime) > 5000) {
```

```
changeLights();
}
}
void changeLights() {
digitalWrite(carGreen, LOW);
digitalWrite(carYellow, HIGH);
delay(3000);//延时三秒
digitalWrite(carYellow, LOW);
digitalWrite(carRed, HIGH);
delay(1000);
digitalWrite(pedRed, LOW);
digitalWrite(pedGreen, HIGH);
delay(crossTime);
for (int x=0; x<10; x++) {
digitalWrite(pedGreen, HIGH);
delay(250);
digitalWrite(pedGreen, LOW);
delay(250);
}
digitalWrite(pedRed, HIGH);
delay(500);
digitalWrite(carYellow, HIGH);
digitalWrite(carRed, LOW);
delay(1000);
digitalWrite(carGreen, HIGH);
digitalWrite(carYellow, LOW);
changeTime = millis();
}
```

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三、软件设计		

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```
int carRed = 12;
int carYellow = 11;
int carGreen = 10;
int pedRed = 9;
int pedGreen = 8;
int button = 2;
int crossTime = 5000;
unsigned long changeTime;
void setup() {
pinMode(carRed, OUTPUT);
pinMode(carYellow, OUTPUT);
pinMode(carGreen, OUTPUT);
pinMode(pedRed, OUTPUT);
pinMode(pedGreen, OUTPUT);
pinMode(button, INPUT);
digitalWrite(carGreen, HIGH);
digitalWrite(pedRed, HIGH);
}
void loop() {
int state = digitalRead(button);
if (state == HIGH && (millis() - cha
changeLights();
}
}
```

sketch_mar11a

```
digitalWrite(carGreen, LOW);
digitalWrite(carYellow, HIGH);
delay(3000);
digitalWrite(carYellow, LOW);
digitalWrite(carRed, HIGH);
delay(1000);
digitalWrite(pedRed, LOW);
digitalWrite(pedGreen, HIGH);
delay(crossTime);
for (int x=0; x<10; x++) {
digitalWrite(pedGreen, HIGH);
delay(250);
digitalWrite(pedGreen, LOW);
delay(250);
}
digitalWrite(pedRed, HIGH);
delay(500);
digitalWrite(carYellow, HIGH);
digitalWrite(carRed, LOW);
delay(1000);
digitalWrite(carGreen, HIGH);
digitalWrite(carYellow, LOW);
changeTime = millis();
}
```
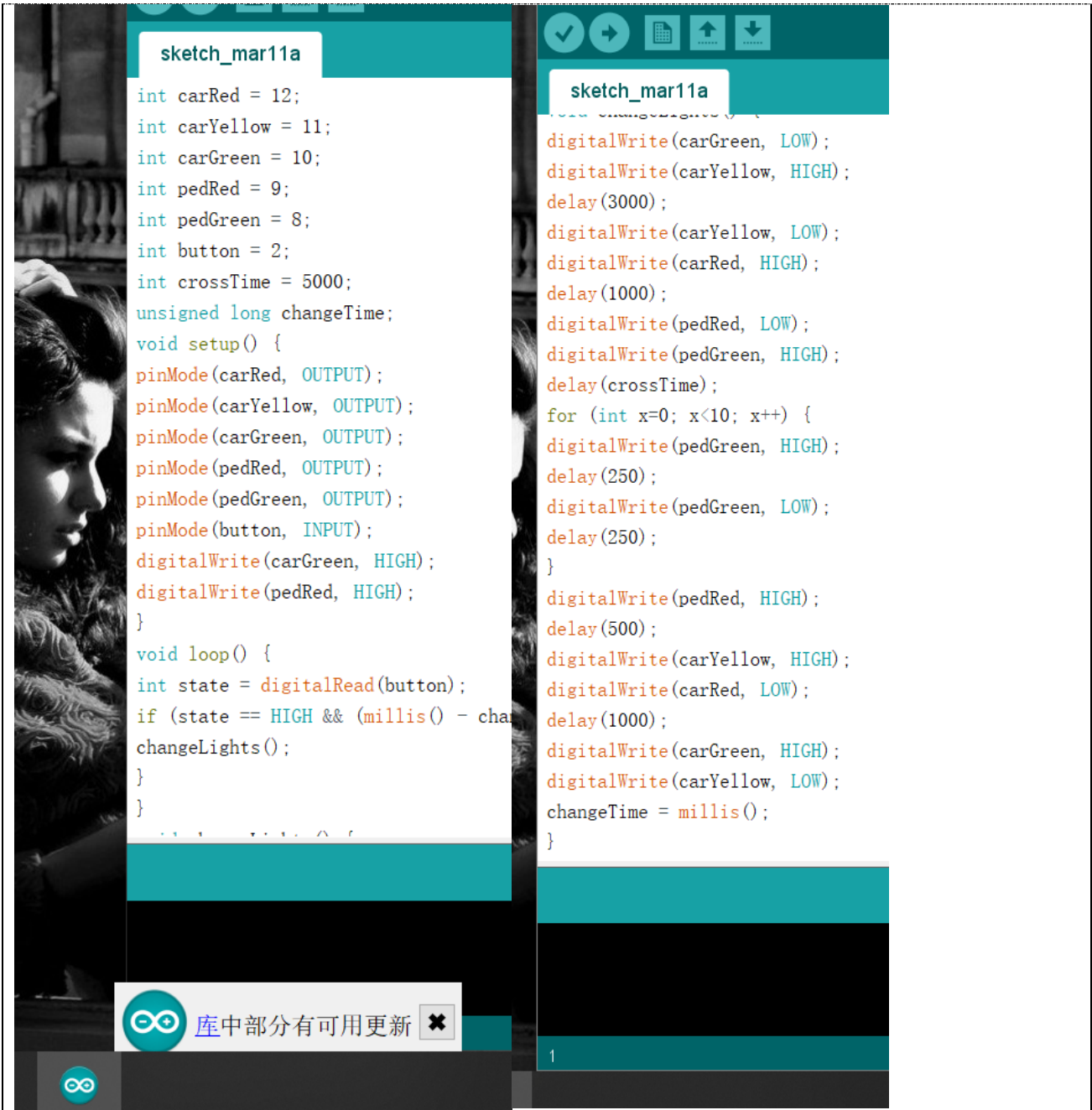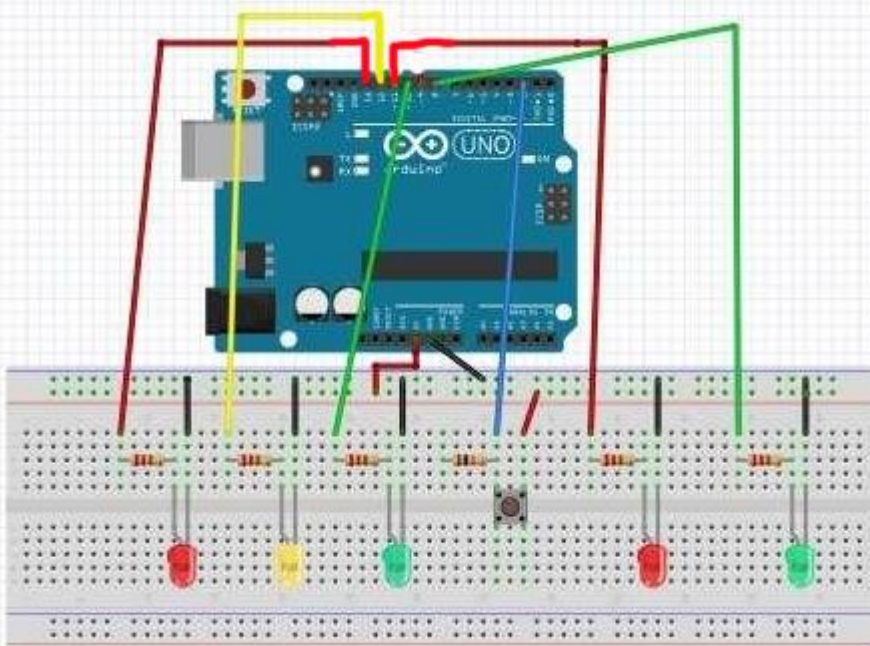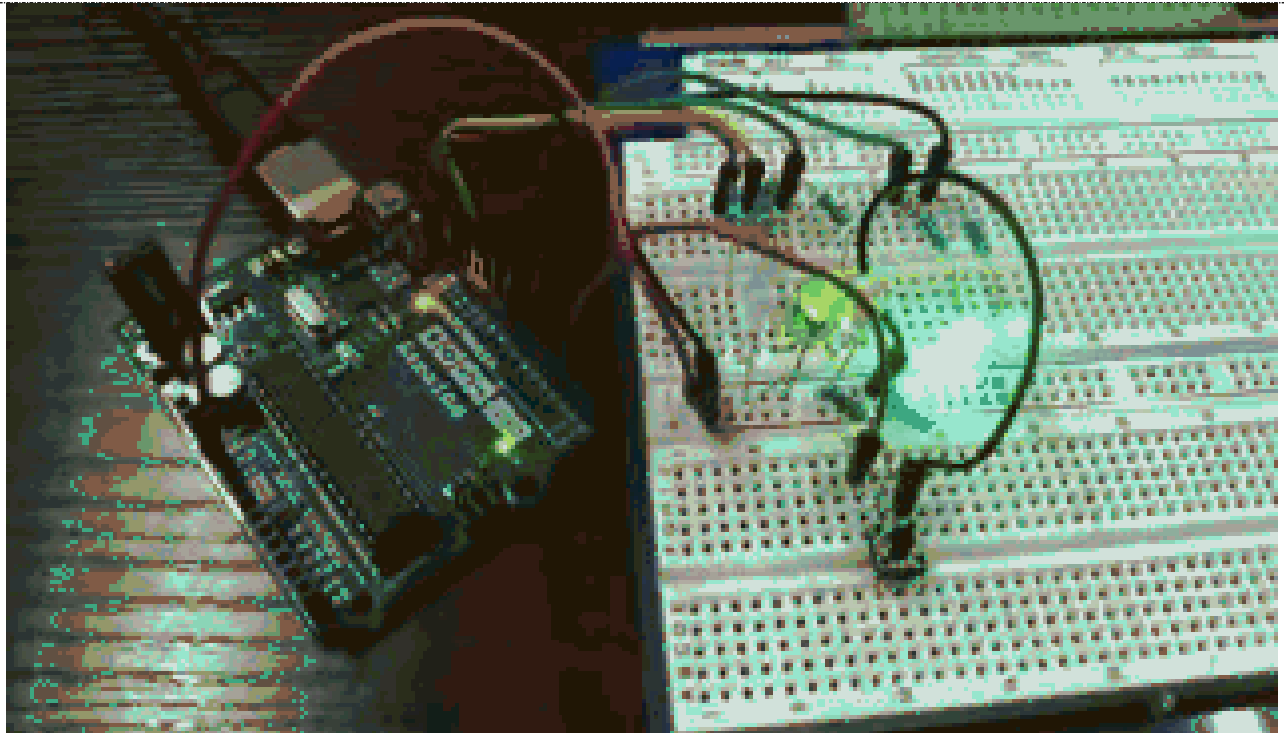
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四、实现效果

五、其它

（如有流程图或者思维导图，则复制粘贴于此，填写后删除此行）