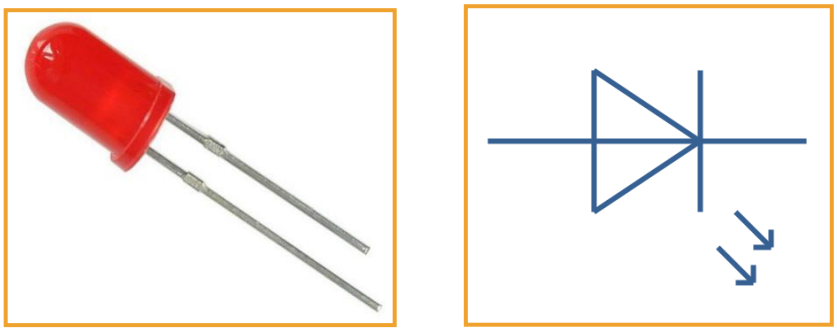
Four - way responder experiment

Introduction of the device

The meaning of the digital I/O port is the INPUT and OUTPUT interface. In the previous LED lamp experiment, we only used the OUTPUT function of GPIO. Now let's try using the I/O INPUT function in Arduino, which reads the output from an external device in this experiment. We used buttons and LED lights to complete the experiment using INPUT and OUTPUT as combinations.

Key structure diagram



The LED structure

The experiment purpose

For example, a knowledge contest was held, and a simple answer machine was made by light-emitting diode. The basic principle was to press the answer button and the circuit would be connected, the diode would be bright, and the circuit of other diodes would be cut off, so that the first person could press the button and the others would press the button again.

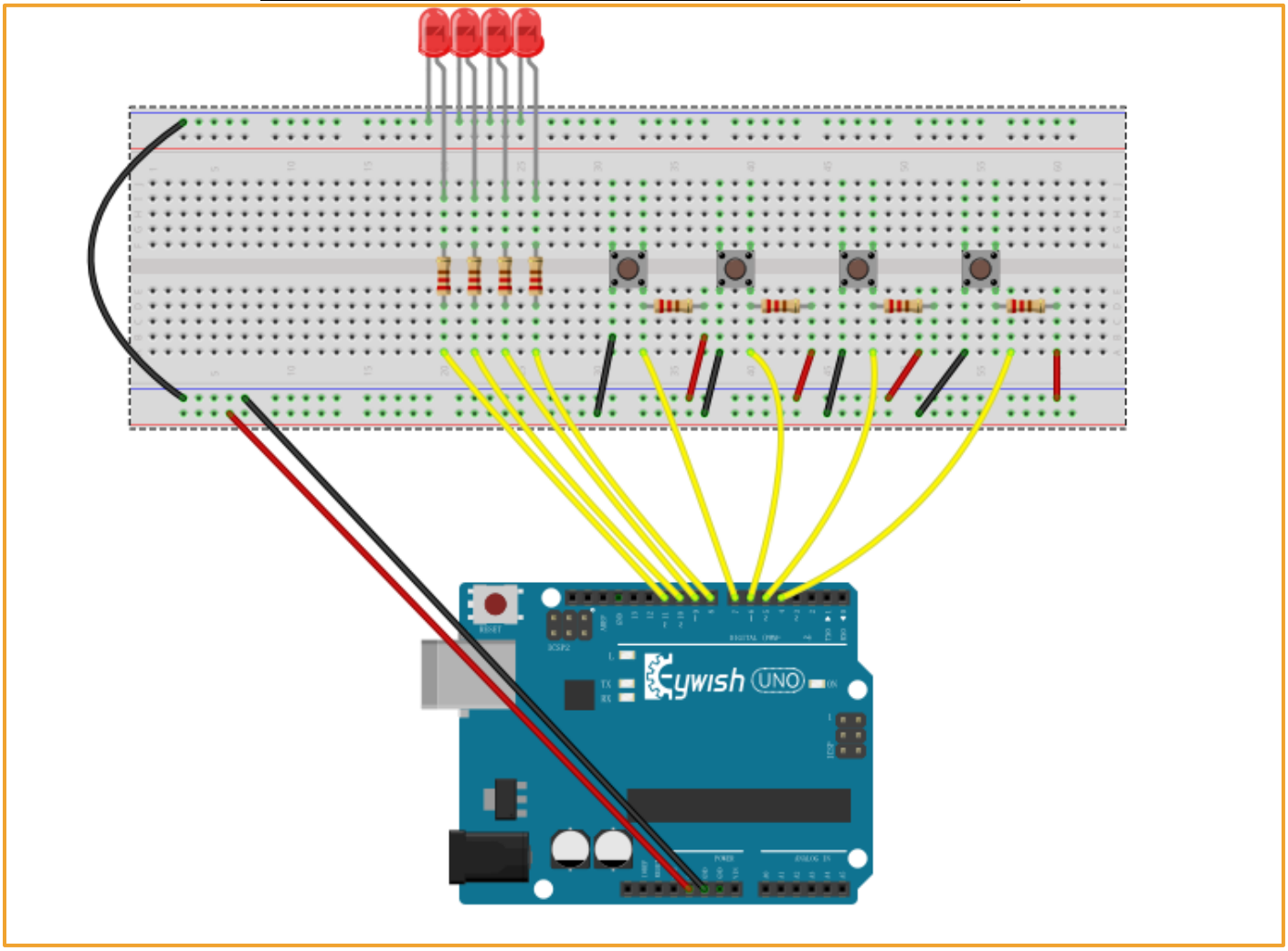
The component list

- Four LED lights (red, yellow, green and blue)
- Button switch *4
- 1K resistor *8
- Breadboard
- Bread jumper wires

- The Arduino board

Experimental wiring diagram

LED	Arduino UNOR3
Buleled（+）	11
Redled（+）	10
Yellow（+)	9
Green(+)	8
Button1	7
Button2	6
Button3	5
Button4	4



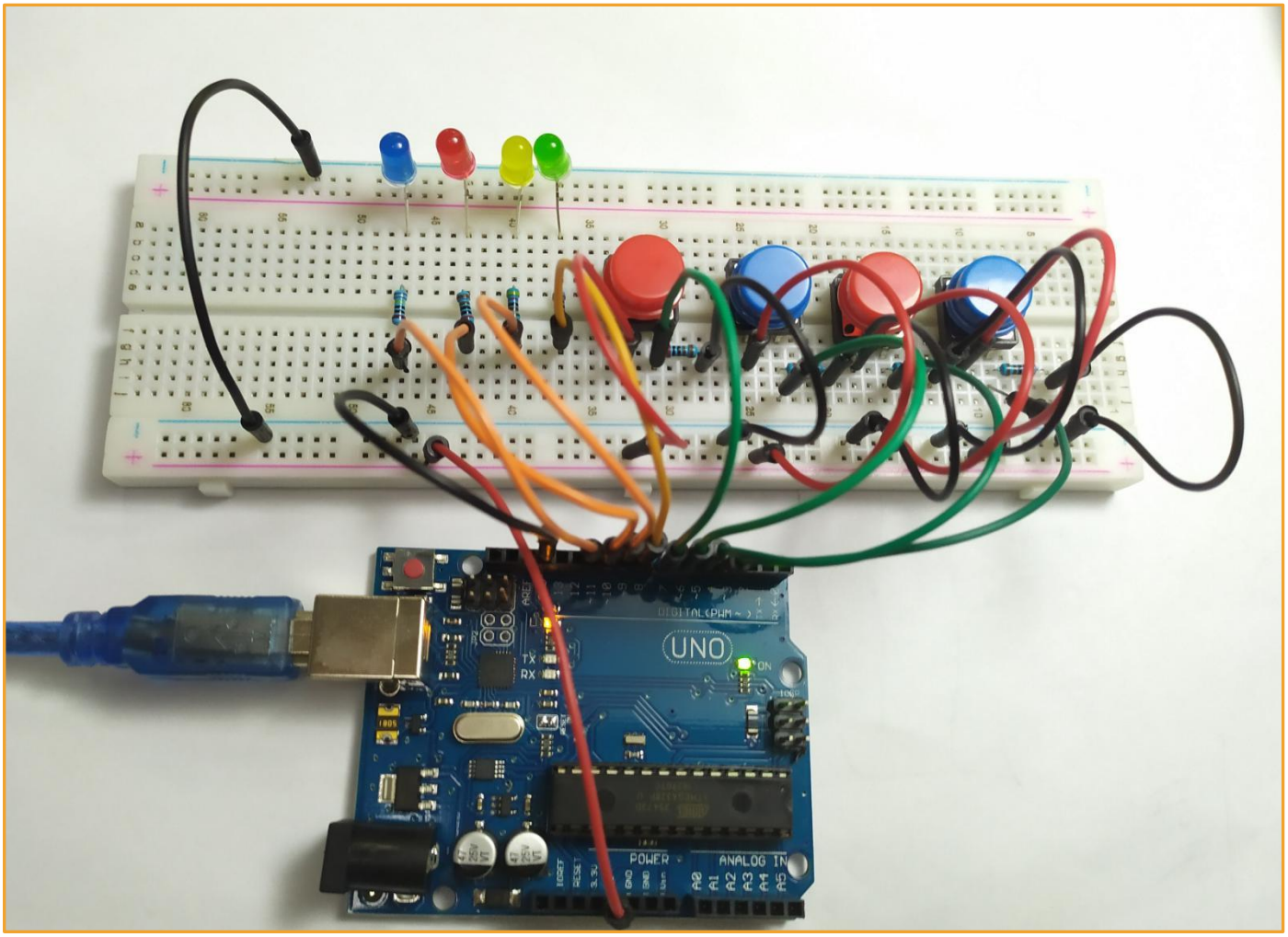
Code

```
int blueled=11;

int redled=10;
```

```
int yellowled=9;
int greenled=8;
int bluepin =7;
int redpin=6;
int yellowpin=5;
int greenpin=4;
int blue;
int red;
int yellow;
int green;
void setup()
{
pinMode(blueled,OUTPUT);
pinMode(redled,OUTPUT);
pinMode(yellowled,OUTPUT);
pinMode(greenled,OUTPUT);
pinMode(bluepin,INPUT);
pinMode(greenpin,INPUT);
pinMode(redpin,INPUT);
pinMode(yellowpin,INPUT);
}
void loop()
{
 blue=digitalRead(bluepin);
if(blue==LOW)
{ digitalWrite(blueled,LOW);}
else
{ digitalWrite(blueled,HIGH);}

red=digitalRead(redpin);
if(red==LOW)
{ digitalWrite(redled,LOW);}
else
{ digitalWrite(redled,HIGH);}
```

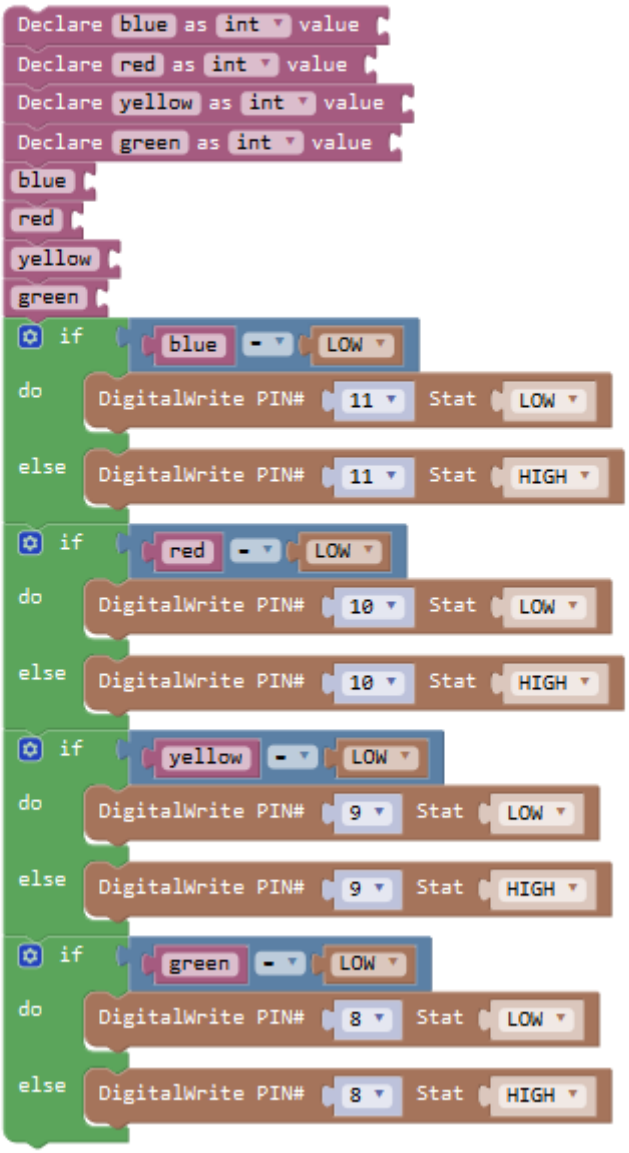
```
yellow=digitalRead(yellowpin);
if(yellow==LOW)
{ digitalWrite(yellowled,LOW);}
else
{ digitalWrite(yellowled,HIGH);}

green=digitalRead(greenpin);
if(green==LOW)
{ digitalWrite(greenled,LOW);}
else
{ digitalWrite(greenled,HIGH);}

}
```

Experiment result



Mblock programming program

Mixly programming program



Mixly programming program