Course 7 ---Answering machine

The purpose of the experiment:

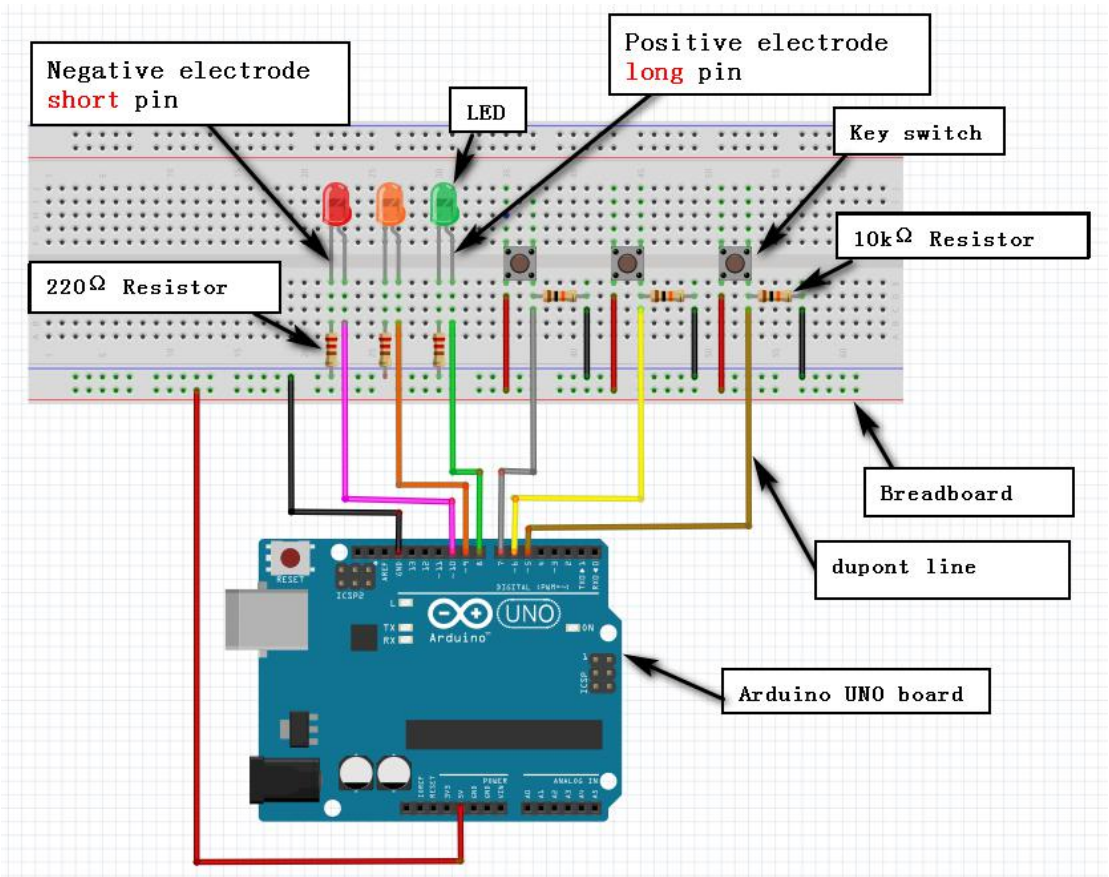
This experiment is to extend the experiment of button control LED lights in the previous class into 3 buttons corresponding to 3 LED lights, which requires 6 digital I/O interfaces of Arduino.

List of components required for the experiment:

Arduino UNO board *1
USB cable *1
LED*3（Color random）
220Ω Resistor *3
10kΩ Resistor *3
Key switch *3
Breadboard *1
Dupont line *1bunch

Actual object connection diagram:

We need to connect the circuit as shown in the figure below.



Experimental code analysis:

int redled=10;　　//set IO 10 to red LED

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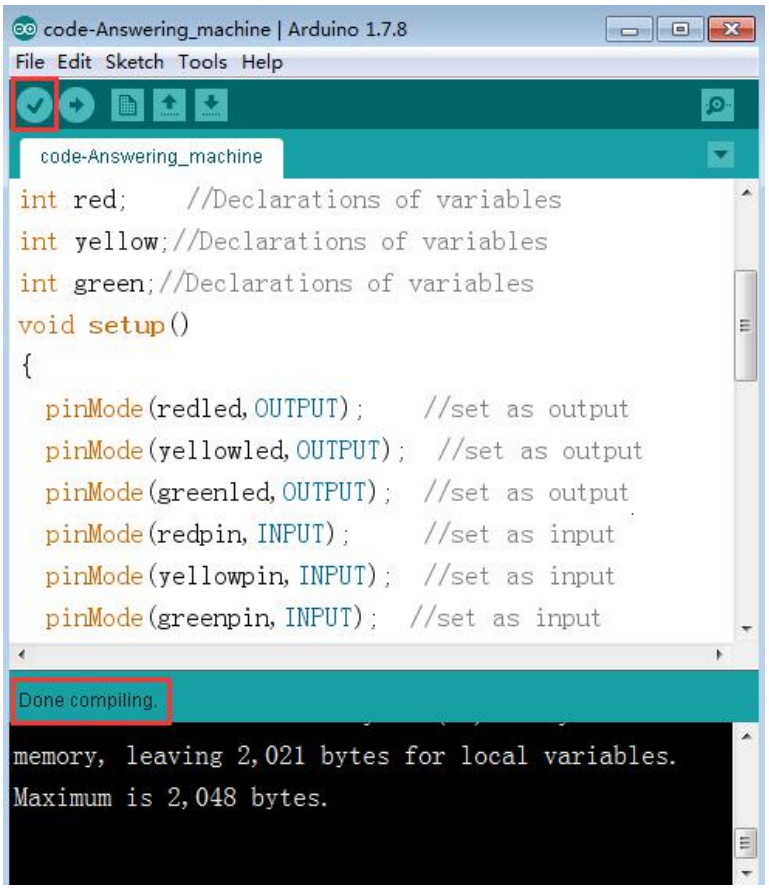
int yellowled=9;//set IO 10 to yellow LED
int greenled=8;//set IO 10 to green LED
int redpin=7;        //red key pin    IO 7
int yellowpin=6;//yellow key pin    IO 6
int greenpin=5;//green key pin    IO 5
int red;        //Declarations of variables
int yellow;//Declarations of variables
int green;//Declarations of variables
void setup()
{
   pinMode(redled,OUTPUT);        //set as output
   pinMode(yellowled,OUTPUT);    //set as output
   pinMode(greenled,OUTPUT);    //set as output
   pinMode(redpin,INPUT);          //set as input
   pinMode(yellowpin,INPUT);    //set as input
   pinMode(greenpin,INPUT);    //set as input
}
void loop()
{
   red=digitalRead(redpin);//Reading key state
   if(red==LOW)              //Key state is LOW
   { digitalWrite(redled,LOW);}//LED turn off
   else                        //Key state is HIGH
   { digitalWrite(redled,HIGH);}//LED turn on

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

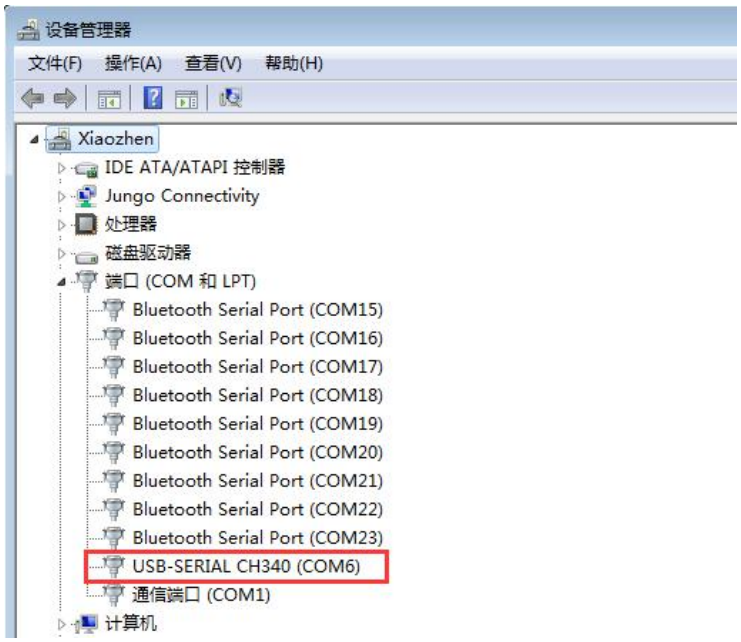
   green=digitalRead(greenpin);
   if(green==LOW)
   { digitalWrite(greenled,LOW);}
   else
   { digitalWrite(greenled,HIGH);}
}
```

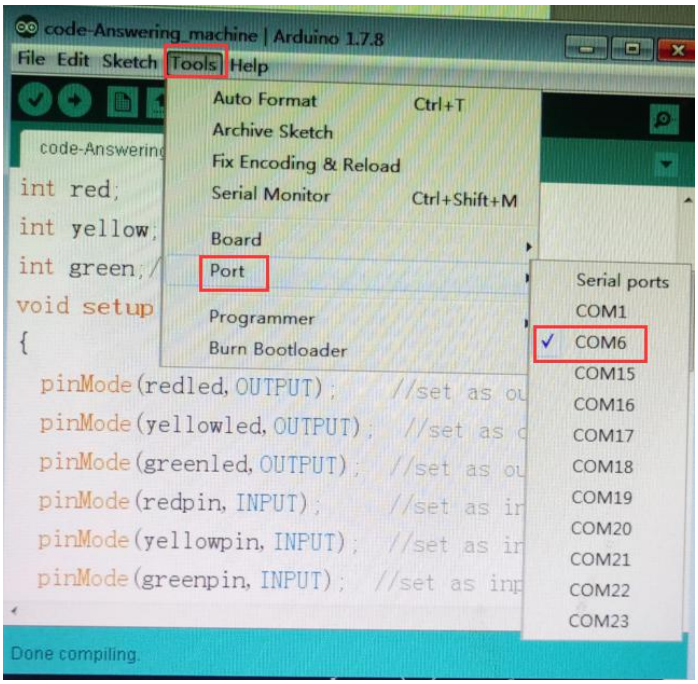
Experimental steps:

1. We need to open the code of this experiment: **code-Answering machine.ino**, click “ √ ” under the menu bar to compile the code, and wait for the word "**Done compiling** " in the lower right corner, as shown in the figure below.

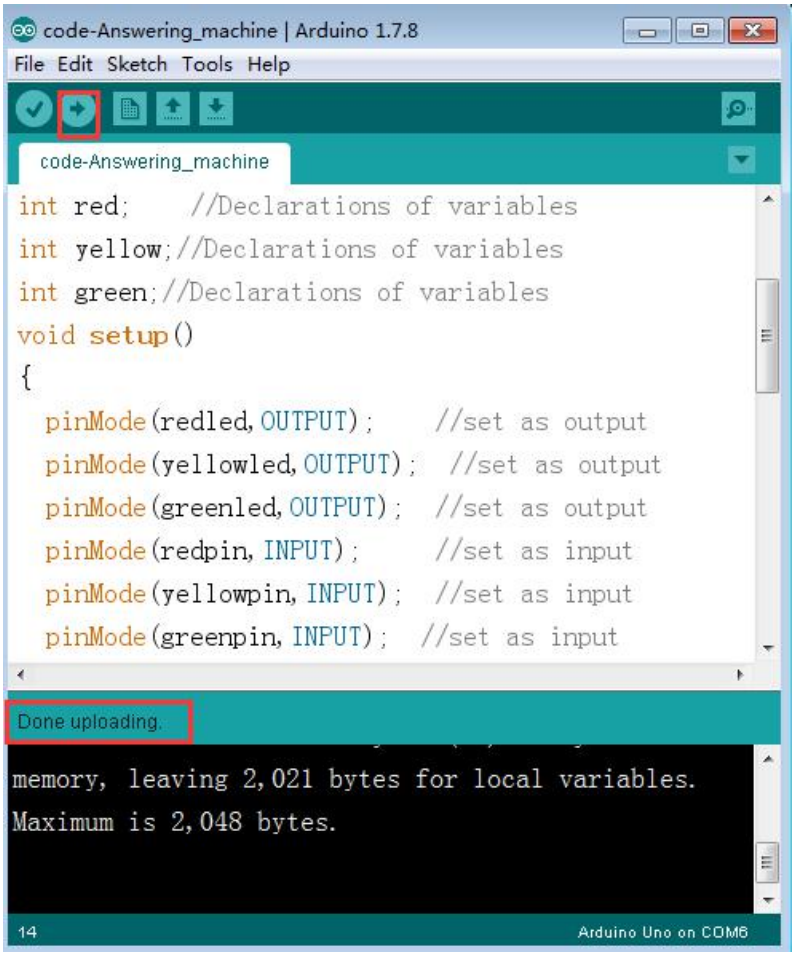


2.In the menu bar of Arduino IDE, we need to select 【Tools】---【Port】--- selecting the port that the serial number displayed by the device manager just now, as shown in the figure below. for example:COM6,as shown in the following figure.

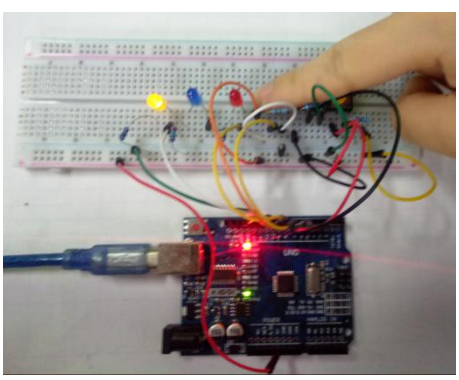
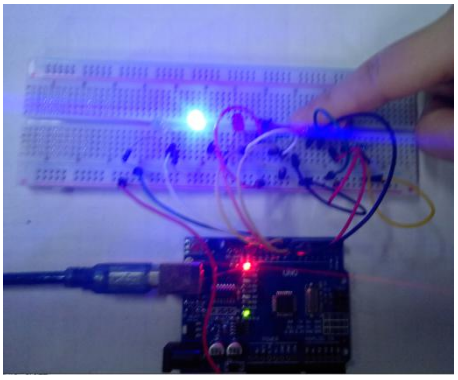
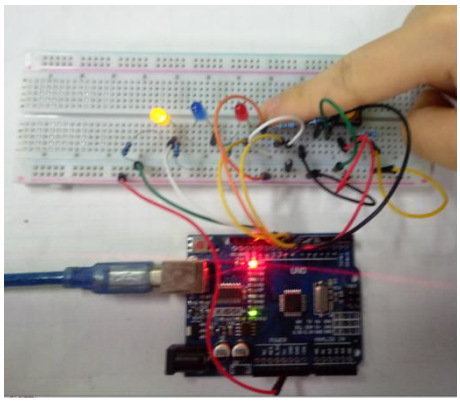




3.After the selection is completed, you need to click "→"under the menu bar to upload the code to the Arduino UNO board. When the word "**Done uploading**" appears in the lower left corner, the code has been successfully uploaded to the Arduino UNO board, as shown in the figure below.



4.After the code is uploaded, when different buttons are pressed, the LED lights of different colors will be turned on and the LED lights will be extinguished when the button is released, as shown in the figure below.

The code of the experiment: