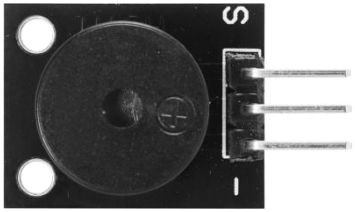
Project 4 - Passive Buzzer

1. project description

Through this project, you can learn how to use the ZY -type-c Nano main control board to make a passive buzzer module make sound. The function of this program is to make the active buzzer module sound intermittently at a speed of 1hz.

2. Introduction to modules

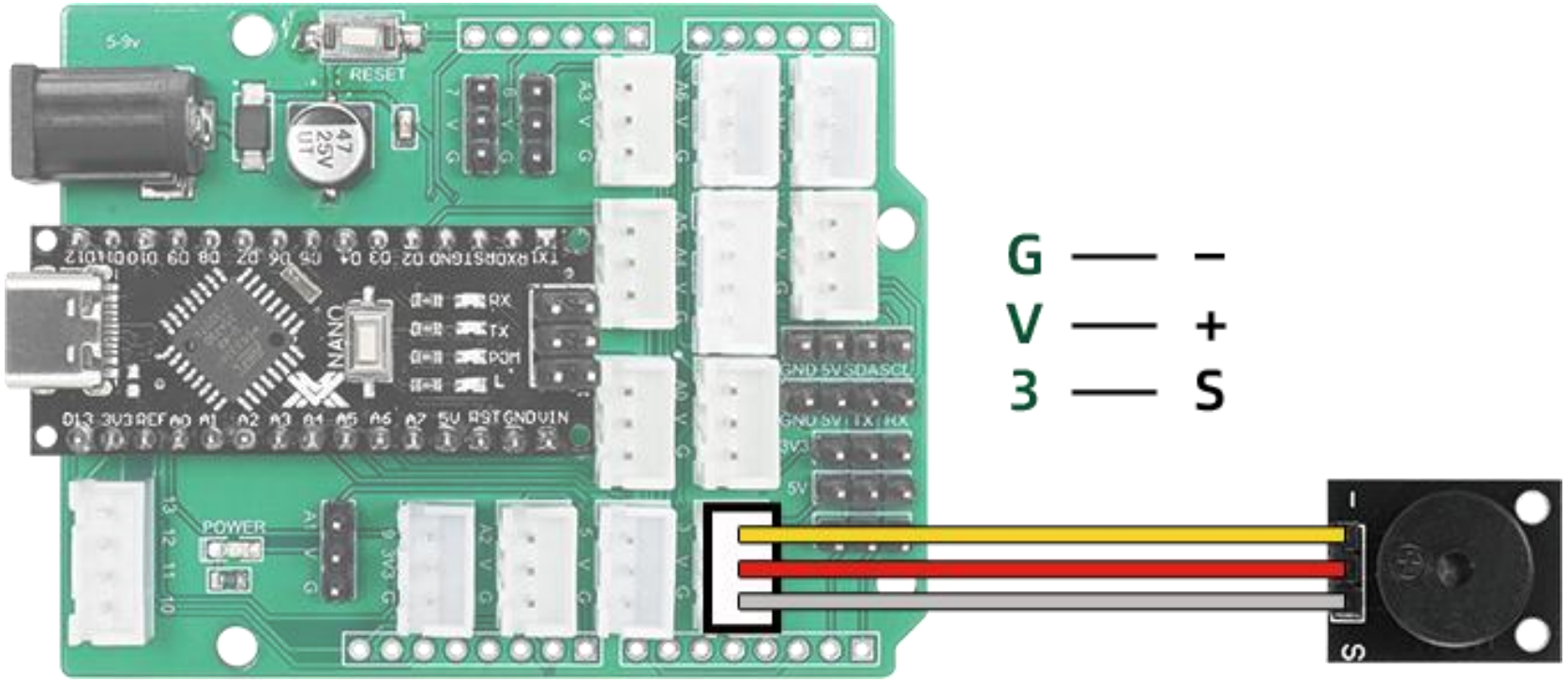
2.1 Passive buzzer



The working principle of the passive buzzer is to use PWM to generate audio frequency to vibrate the air. As long as the vibration frequency is appropriately changed, different sounds can be produced. When connected to a high level, a fixed sound is emitted, and when connected to a low level, the sound is turned off. The passive buzzer module has 3 pins, namely

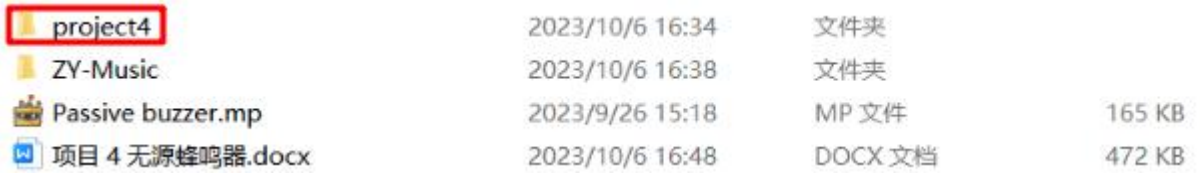
- , VCC, and S. Among them - Connect the negative pole of the power supply, the middle pin is connected to the 5v power supply or not, and S is connected to the signal pin.

3. Project wiring diagram

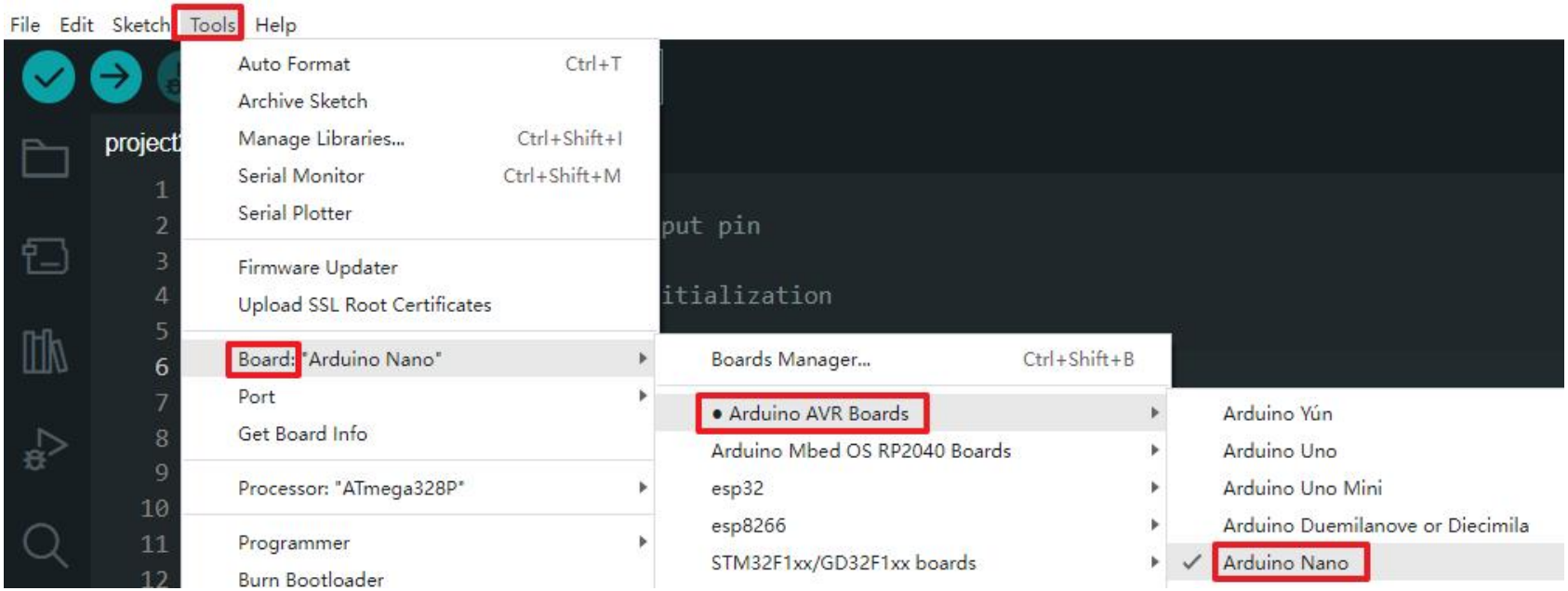


4. Download Arduino code

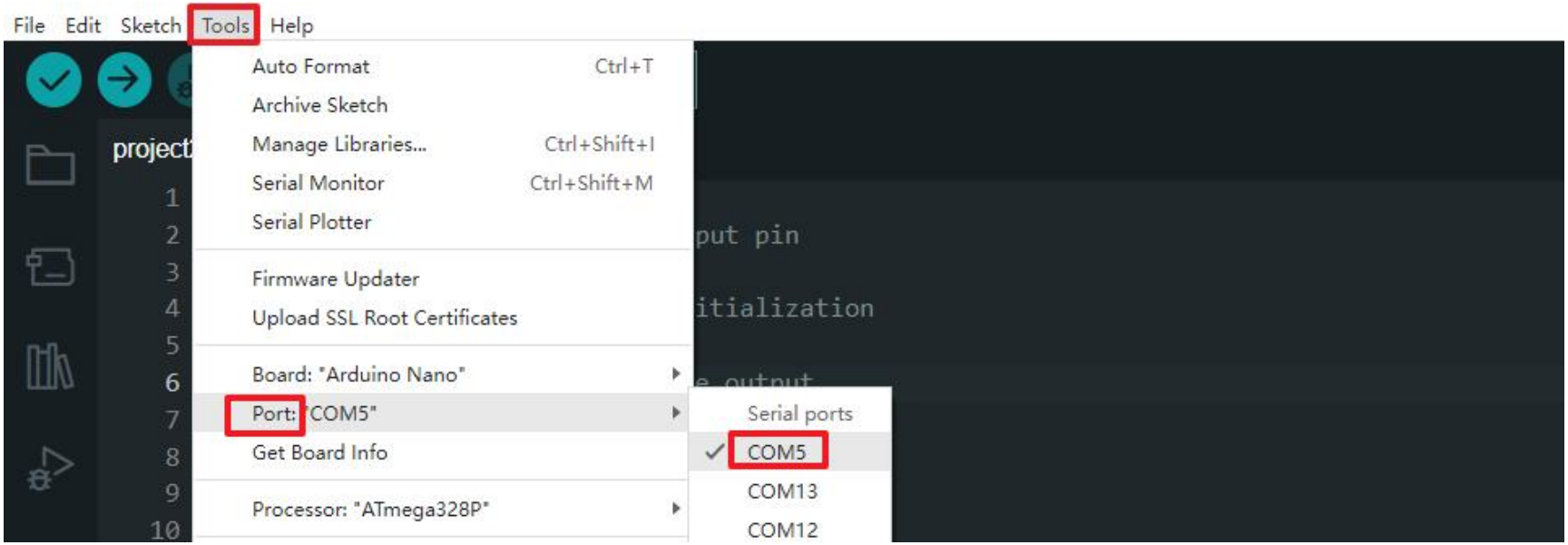
Open the project Arduino code file (path: project 4 passive buzzer\project4\project4.ino)



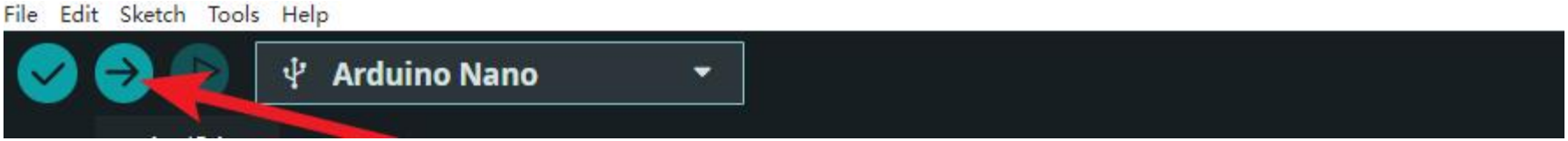
Select the board type as Nano as in the previous project



When connecting the main control board to the computer using USB, a new serial port number COM will appear. Just select the newly appeared COM. (COM5 is shown in the picture below, but everyone's actual COM number will be different)



Also click "Download" to start compiling and downloading the program to the main control board. After the code download is completed, you can see and hear the buzzer sounding every 0.5 seconds.



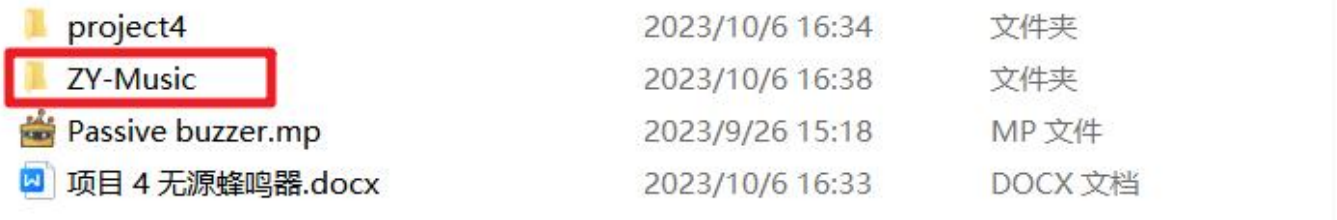
Code analysis:

There are two programming methods for sound production. The first one produces a fixed sound through high and low levels, and the second one produces different sounds by outputting different frequency PWM.

```
#define  buzzer 3          //定义蜂鸣器输出3引脚 Define buzzer output pin
void setup ()
{
  pinMode(buzzer,OUTPUT); //设置引脚为输出 Set pin to output
}

void loop()
{
  digitalWrite(buzzer,HIGH);//3引脚输出高电平 3 pin output high level
  delay(500);
  digitalWrite(buzzer,LOW); //3引脚输出低电平 3 pin output low level
  delay(500);
```

The second type of sound production: burn the Arduino code ZY-Music for playing music, and play a piece of music



5. Download Mind+ graphical code

Open the project Mind+code file (path: Project 3 Passive Buzzer\Passive buzzer.mp)

Connect the main control board to the computer with a USB cable and select the newly appeared CH340 serial port COM number.

Click "Upload to Device" to complete the code upload

When you want to program by yourself instead of using written code, drag the desired building blocks from the Nano main control board type code block on the left to splice them together.