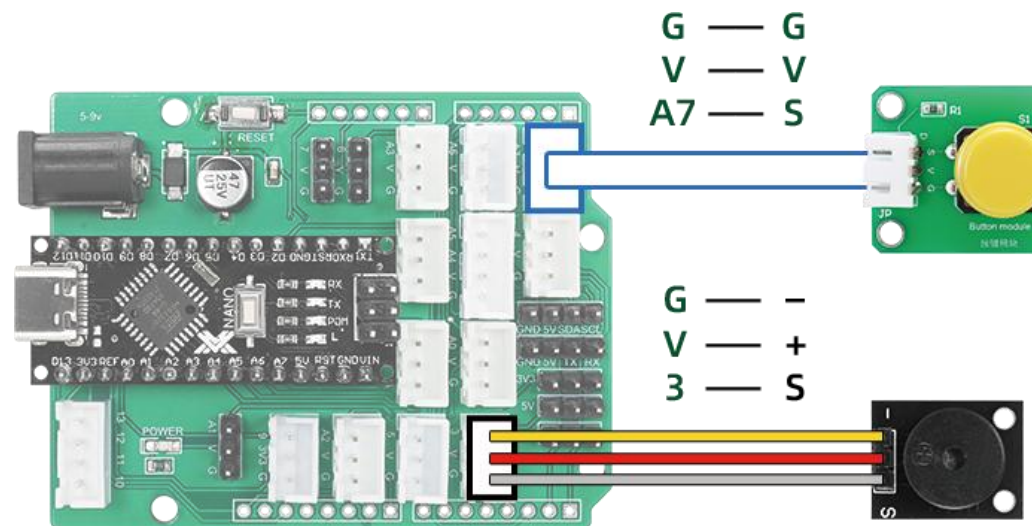


Project 5 – Button Doorbell

1. project description

With this project, you can learn how to make a passive buzzer module sound through a button press . The function of this program is that the buzzer sounds when the button is pressed and stops when the button is released .

2. Project wiring diagram

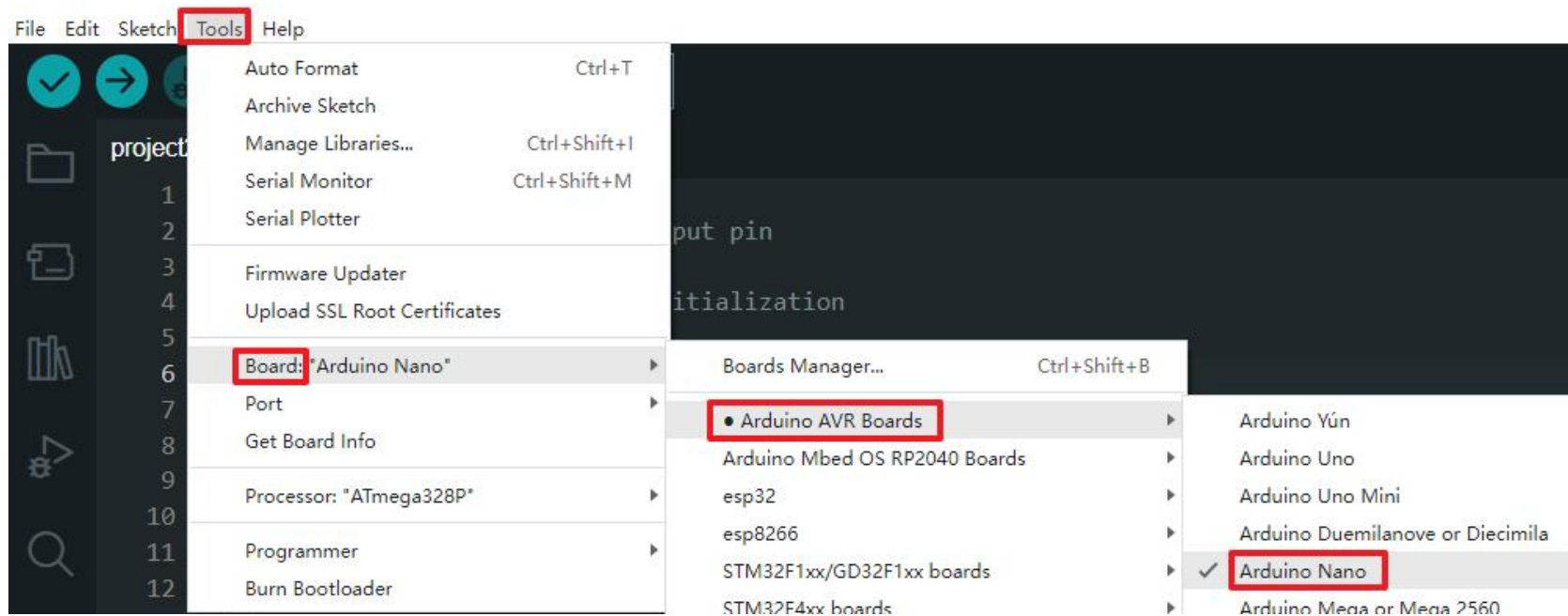


3. Download Arduino code

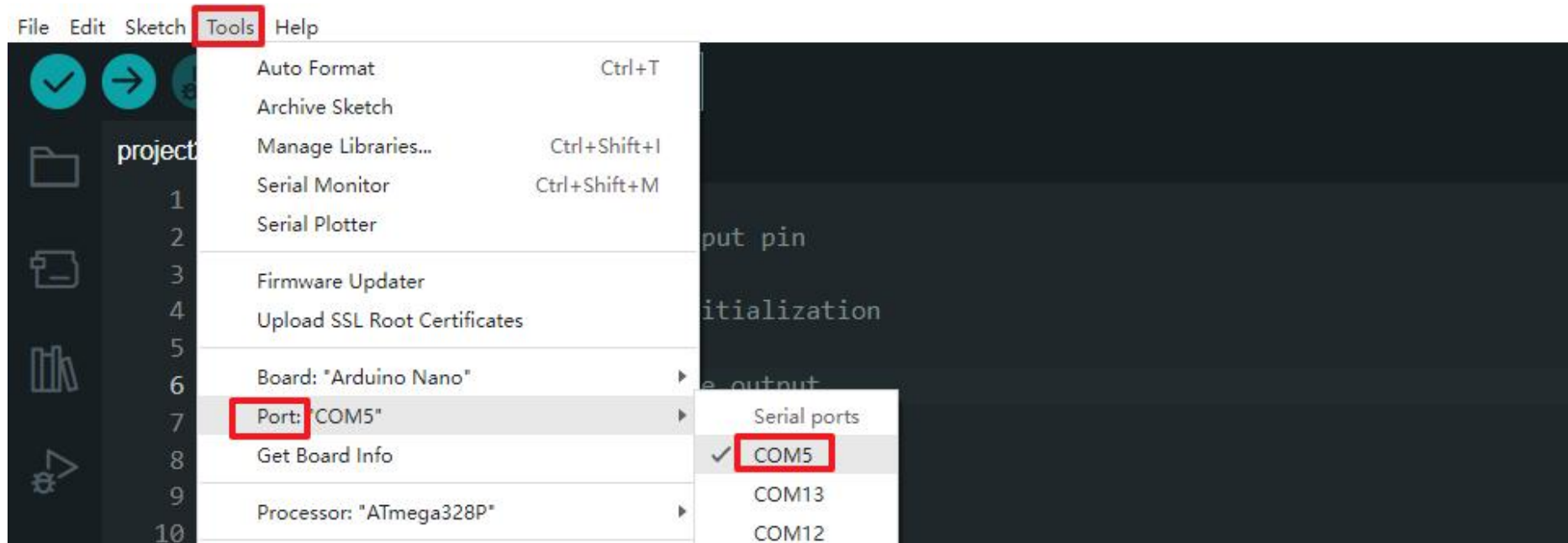
Open the project Arduino code file (path: project 5 passive buzzer\project5 \project5.ino)

project5	2023/10/13 18:32	文件夹	
Pushbutton doorbell.mp	2023/10/16 10:37	MP 文件	167 KB
项目 5 按钮门铃.docx	2023/10/16 10:46	DOCX 文档	395 KB

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.



Code analysis:

This program code also uses button debounce to prevent button jitter triggering by comparing the previous state of the button with the current state.




```

1  #define Buzzer 3      // 定义引脚3为Buzzer Define output pin
2  #define KEY A7       // 定义A7引脚为KEY Define input pin
3
4  bool buttonState=1;   //定义按钮状态 Define key status bits
5  bool lastButtonState=1; //前一刻按键状态 Last key press status
6
7  void setup ()        //设置函数 Function initialization
8  {
9      pinMode(Buzzer,OUTPUT); //定义LED引脚为输出 Define output
10     pinMode(KEY,INPUT);    //定义KEY引脚为输入 Define input
11
12
13 void loop() //Principal function
14 {
15     buttonState = analogRead(KEY); //读取按键状态 Reading key state (A7引脚只支持读取模拟值不支持读数字值)
16     if (buttonState != lastButtonState) { //检测按键状态是否发生改变 Detect if the key state has changed
17         delay(50); //等待一段时间以避免按键抖动 Wait a while to avoid key jitter
18         buttonState = analogRead(KEY); //再次读取按键状态进行确认 Read the key state again for confirmation
19         if (buttonState != lastButtonState) { //检测确认后的按键状态 Check the status of the key after confirmation
20             if (buttonState == LOW) { //按键被按下 The key is pressed
21                 tone(Buzzer,523); //蜂鸣器响 The buzzer sounded
22             }else{
23                 noTone(Buzzer); //蜂鸣器停 The buzzer stops
24             }
25         }
26     }
27     lastButtonState = buttonState; //更新上一次按键状态
28 }

```

4. Download Mind+ graphical code

Open the project Mind+code file (path: Project 5 Pushbutton Doorbell\Pushbutton doorbell.mp)

 project5	2023/10/13 18:32	文件夹	
 Pushbutton doorbell.mp	2023/10/16 10:37	MP 文件	167 KB
 项目 5 按钮门铃.docx	2023/10/16 10:46	DOCX 文档	395 KB

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.

Programming analysis:

The A7 pin can only read analog quantities but not digital quantities, so when you want to determine whether the button is pressed, you use the "read analog pin" code block and save it to the variable buttonState. The result is the same.

Overall procedure:

