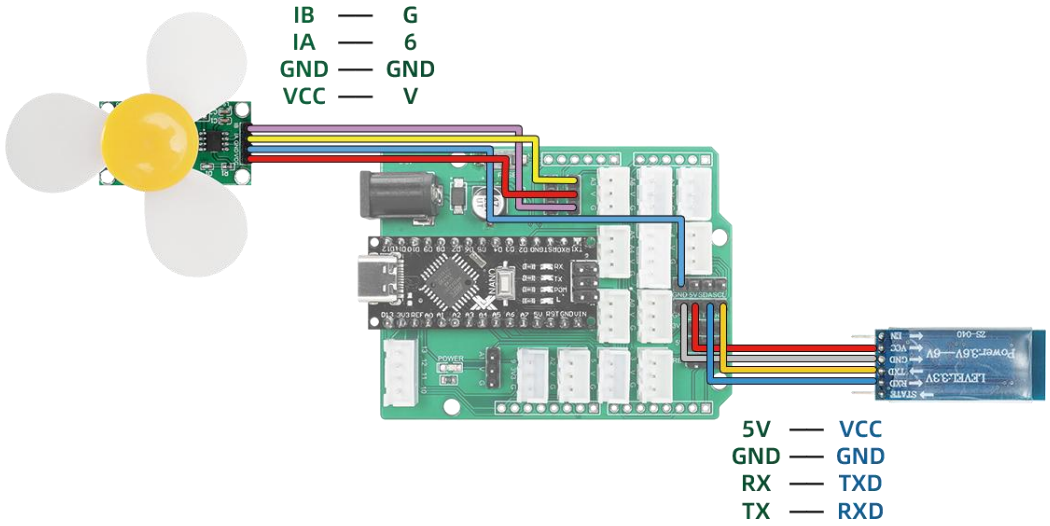
Project 28 - Bluetooth Controlled Fan

1. project description

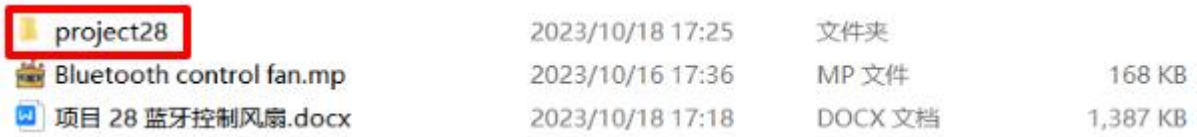
Through this project, you can learn how to use ZY -type-c Nano combined with Bluetooth APP to control the fan . The function of this program is to connect via Bluetooth device and control the start, stop and speed adjustment of the fan through buttons .

2. Project wiring diagram



3. Download Arduino code

Open the project Arduino code file (path: Project 28 Bluetooth Control Fan\project28\project28.ino)



Connect the main control board to the computer using USB, select the board type as Nano, select the newly displayed COM number, click "Download" to start compiling and downloading the program to the main control board. (At the same time, you should unplug the Bluetooth before downloading, and then plug the Bluetooth back in after the download is successful.)

Code analysis:

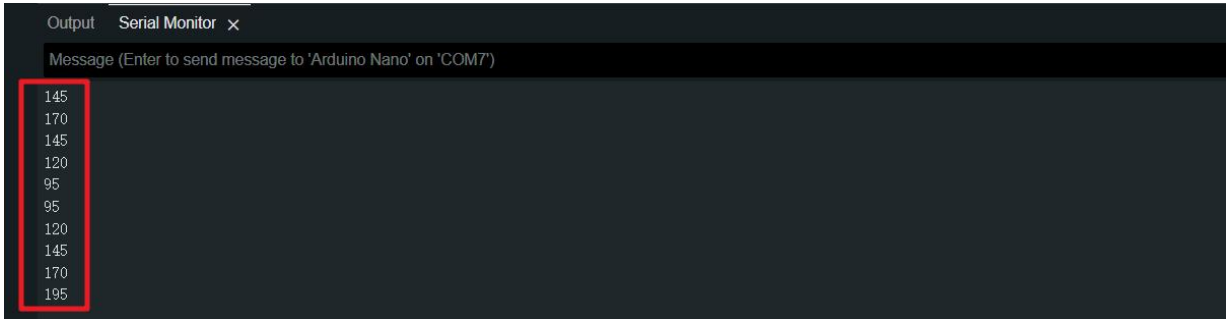
```
#define FanPinA 6       //定义风扇引脚5 Define fan pin 6
int speed = 145;        //设置初始速度 Set the initial speed
bool fan_switch = false;//设置风扇开关状态 Set the fan switch status

void setup() {
  Serial.begin(9600);
  pinMode(FanPinA, OUTPUT);
  analogWrite(FanPinA,LOW); //初始设置引脚6为低电平 Set pin 6 to low
}

void loop() {
  if(Serial.available() > 0)
  {
    char ser_val = Serial.read();//读取蓝牙数据 Read Bluetooth data
    if(ser_val == 'G')    //如果接收到的数据是G If the received data is G
    {
      speed = 145;        //每次开关都重置速度，该行可删除并保留上一速度值
      fan_switch = !fan_switch;//状态转换 State transitions
    }
```

```
20      if(fan_switch)        //如果开关状态为"真" If the switch state is "ture"
21      {
22        if(ser_val == 'U')  //如果接收到的数据是U If the received data is U
23        {
24          speed += 25;      //速度增加25 Speed increased by 25
25          if(speed >= 245)  //如果速度大于等于245就等于245 If the speed is greater than or equal to 245, it is equal to 245
26          {
27            speed = 245;
28          }
29        }
30        if(ser_val == 'D')  //如果接收到的数据是D If the received data is D
31        {
32          speed -= 25;      //减少速度25 Reduce the speed by 25
33          if(speed <= 95)   //如果速度小于等于95就等于95 If the speed is less than or equal to 95, it is equal to 95
34          {
35            speed = 95;
36          }
37        }
38        analogWrite(FanPinA, speed);
39      }else {analogWrite(FanPinA, LOW);}
40      Serial.println(speed);
```

You can see the speed value during speed adjustment in real time on the serial port monitor:



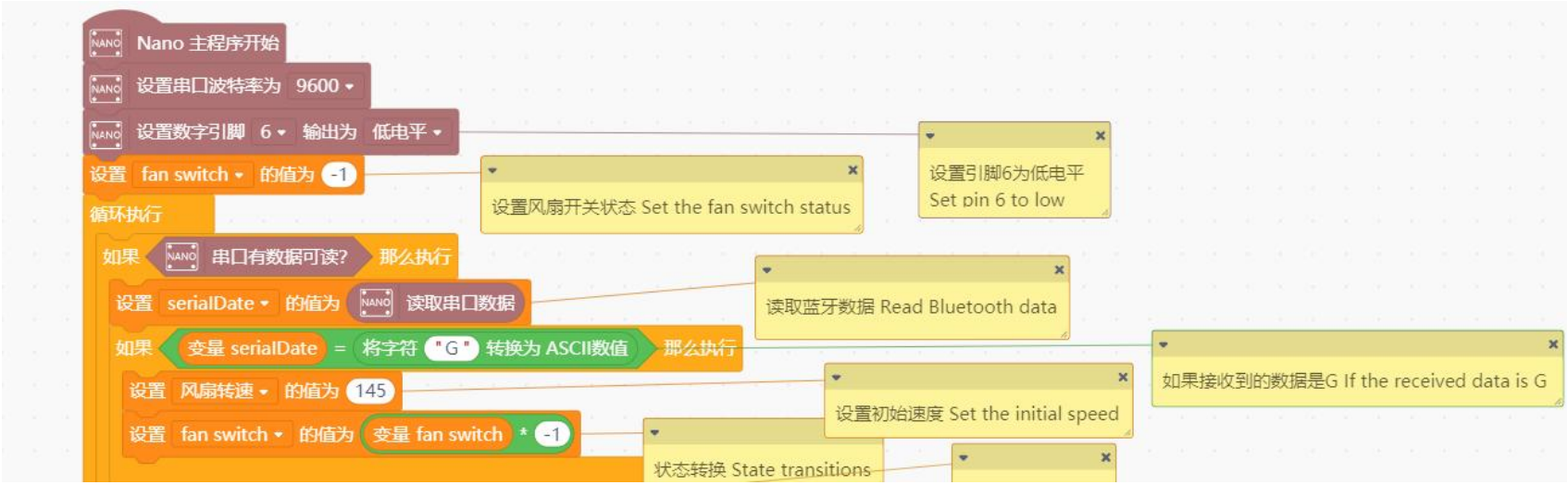
4. Download Mind+ graphical code

Open the project Mind+ code file (path: Project 28 Bluetooth control fan\Bluetooth control fan.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.

Complete code:

Initialize the fan switch status and invert it by multiplying it with (-1) as in the previous project.




如果 变量 fan switch = 1 那么执行
如果 变量 serialDate = 将字符 "U" 转换为 ASCII数值 那么执行
将 风扇转速 增加 25
如果 变量 风扇转速 >= 245 那么执行
设置 风扇转速 的值为 245
如果 变量 serialDate = 将字符 "D" 转换为 ASCII数值 那么执行
将 风扇转速 增加 -25
如果 变量 风扇转速 <= 95 那么执行
设置 风扇转速 的值为 95
串口 字符串输出 变量 风扇转速 换行
设置pwm引脚 6 输出 变量 风扇转速
否则
设置数字引脚 6 输出为 低电平
如果开关状态为1 If the switch state is 1
如果接收到的数据是U If the received data is U
速度增加25 Speed increased by 25
如果速度大于等于245就等于245 If the speed is greater than or equal to 245, it is equal to 245
如果接收到的数据是D If the received data is D
减少速度25 Reduce the speed by
如果速度小于等于95就等于95 If the speed is less than or equal to 95, it is equal to 95
设置引脚6为低电平 Set pin 6 to low

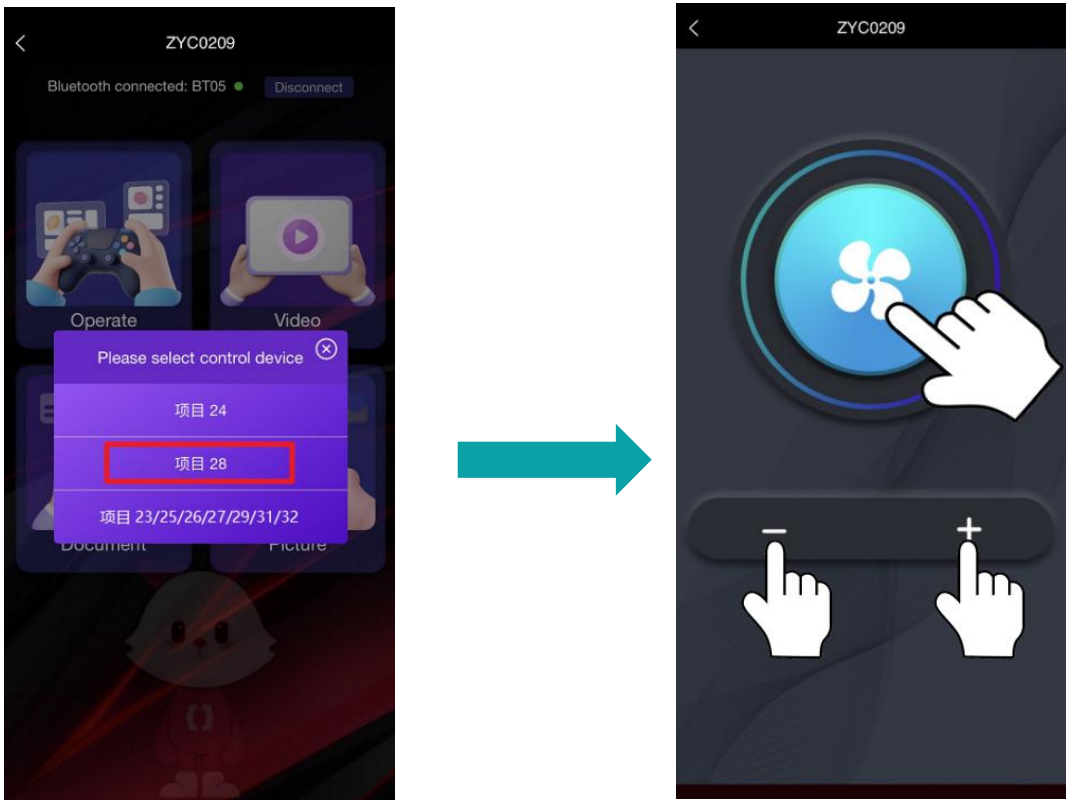
5. Operation on APP

5.1 Please confirm that TSCIBUNY.apk APP has been installed. If not, please go back to item 23 to see how to install the APP. Android users send "TSCINBUNY.apk" to their mobile phones and install it. There may be a newer version of the software when you see this tutorial. When prompted to upgrade, please allow the upgrade and keep your phone connected to the network.

For ios device users, please open the App Store, search and install TSCIBUNY

5.2 TSCINBUNY remote control APP enters the project interface

successfully connecting to Bluetooth . This project is 28, so please select the second column to enter. (How to search and connect Bluetooth? Please see item 23)



Project effect: When the "Fan" button is clicked on the APP, the fan rotates at the default speed. Each time you click "-", it will slow down once, and each time you click "+", it will speed up once. It will stop when the "Fan" button is clicked again.