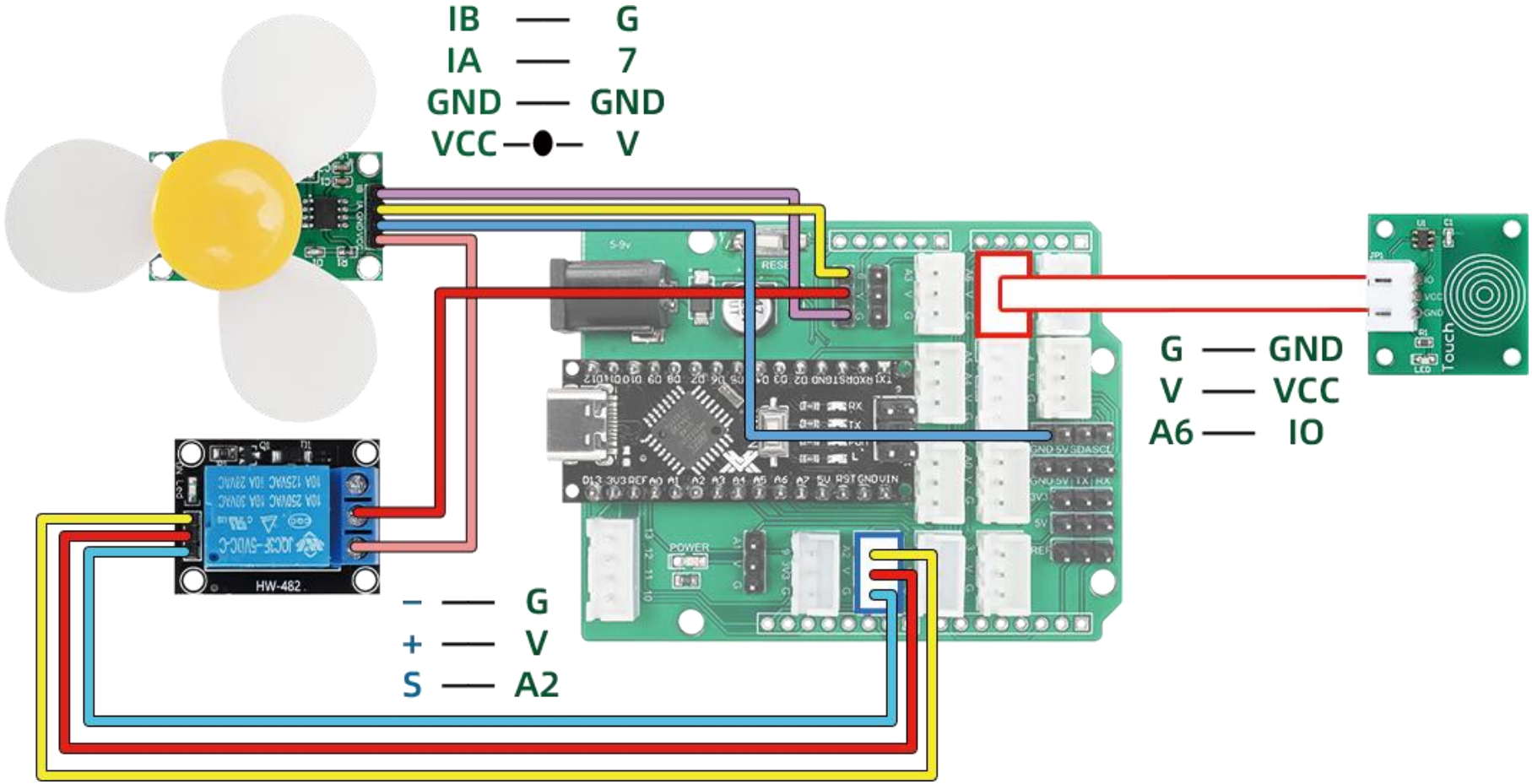
Project 16-Touch Fan

1. project description

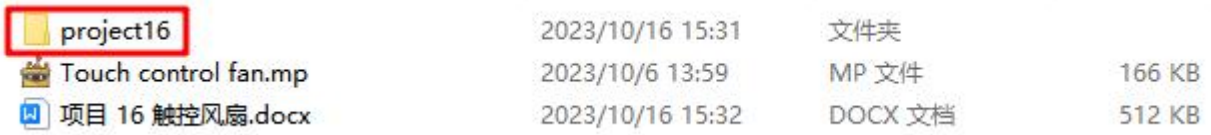
In this project , you will learn how to control a small DC motor to start and stop with the touch of a button . The program function of this project is that when the button is touched once, the relay closes and the fan turns on, and when the button is touched again, the relay opens and the fan stops.

2. Project wiring diagram


IB — G
IA — 7
GND — GND
VCC — V
G — GND
V — VCC
A6 — IO
– — G
+ — V
S — A2
HW-482
Touch

3. Download Arduino code

Open the project Arduino code file (path: project 16 touch fan\project16\project16.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.

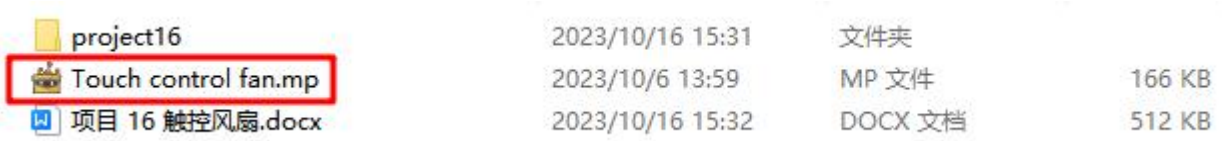
Code analysis:

```
#define RelayPin  A2      //定义继电器引脚A2  Relay A2
#define FanPinA   7       //定义风扇引脚1A  L9110 1A
#define touch     A6      //定义按钮引脚A6  Define input pin

int state = 1;            //继电器状态标志变量    Relay state flag variable
int Press = 1;            //触控按钮标志变量    Touch button flag variables
int value = 1;            //触控按钮值，触控感应>1000为触控状态，<300为松开状态
```

```
void setup()
{
  Serial.begin(9600);
  pinMode(RelayPin, OUTPUT);  //设置继电器引脚为输出    Set the relay pin as the output
  pinMode(FanPinA, OUTPUT);   //设置风扇引脚为输出    Set the fan pin as the output
  pinMode(touch , INPUT);     //设置按钮引脚为输入    Set the button pin as input
  analogWrite(FanPinA,HIGH);  //风扇信号引脚设置高电平    Set the fan pin as the high level
}

void loop()
{
  value = analogRead(touch);        //获取触控按钮值    Gets the touch button value
  // Serial.println(value);
  Serial.println(state);
  //Serial.println(Press);
  if(value < 300){                  //判断触控按钮没有在按下触控状态    Determine that the touch button is not
    Press = 1;
  }
  if((value > 1000)&&(Press == 1))  //触控按钮值>1000且Press == 1，触控按钮被触控一次   Touch button values &g
  {
    Press = 0;
    state = !state;
  }
  if(state == 1)digitalWrite(RelayPin,HIGH);  //继电器闭合风扇开启    Turn on the fan
  else digitalWrite(RelayPin, LOW);           //继电器断开风扇停止    Turn off the fan
```

4. Download Mind+ graphical code

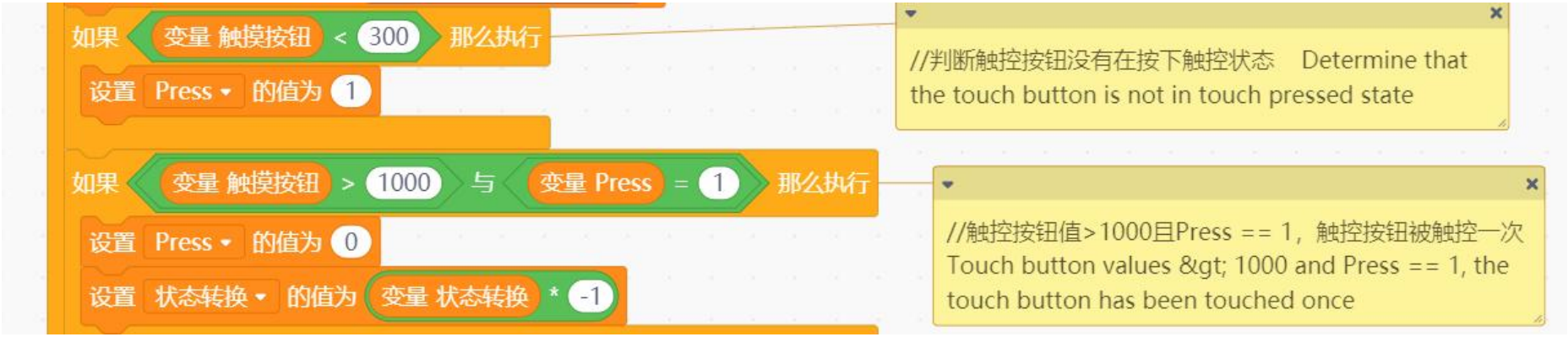
Open the project Mind+code file (path: Project 16 Touch Control Fan\Touch control fan.mp)



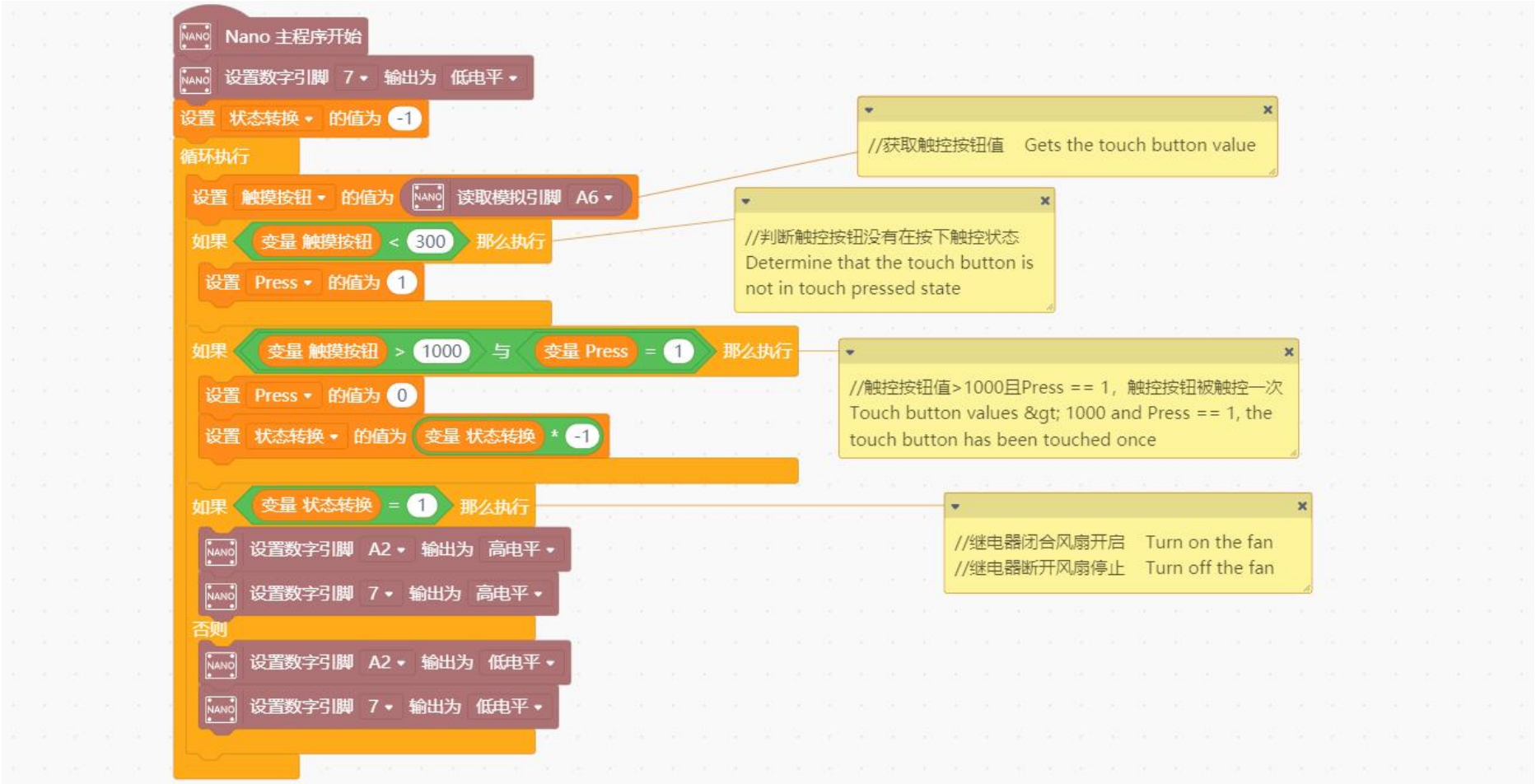
Connect the main control board to the computer with a USB cable and select the newly appeared CH340 serial port COM number. Click "Upload to Device" to complete the code upload.

Programming analysis:

This program also uses touch button debounce, which is different from the method used in the previous project. Here, the touch status flag Press is used to avoid repeated triggering, while the previous project uses the method of changing the status of the button before and after to debounce. .



Total code program:


Nano 主程序开始
设置数字引脚 7 输出为 低电平
设置 状态转换 的值为 -1
循环执行
设置 触摸按钮 的值为 读取模拟引脚 A6
如果 变量 触摸按钮 < 300 那么执行
设置 Press 的值为 1
如果 变量 触摸按钮 > 1000 与 变量 Press = 1 那么执行
设置 Press 的值为 0
设置 状态转换 的值为 变量 状态转换 * -1
如果 变量 状态转换 = 1 那么执行
设置数字引脚 A2 输出为 高电平
设置数字引脚 7 输出为 高电平
否则
设置数字引脚 A2 输出为 低电平
设置数字引脚 7 输出为 低电平
//获取触控按钮值 Gets the touch button value
//判断触控按钮没有在按下触控状态
Determine that the touch button is
not in touch pressed state
//触控按钮值>1000且Press == 1，触控按钮被触控一次
Touch button values > 1000 and Press == 1, the
touch button has been touched once
//继电器闭合风扇开启 Turn on the fan
//继电器断开风扇停止 Turn off the fan