

Detect temperature and humidity

1. Purpose

In this course, we mainly learn to use Arduino, vibration motor module and limit switch module to realize limit switch control vibration motor.

2. Preparation

Wiring diagram as shown below.

vibration motor module	Arduino
IN	6
VCC	5V
GND	GND

limit switch module	Arduino
OUT	3
VCC	5V
GND	GND

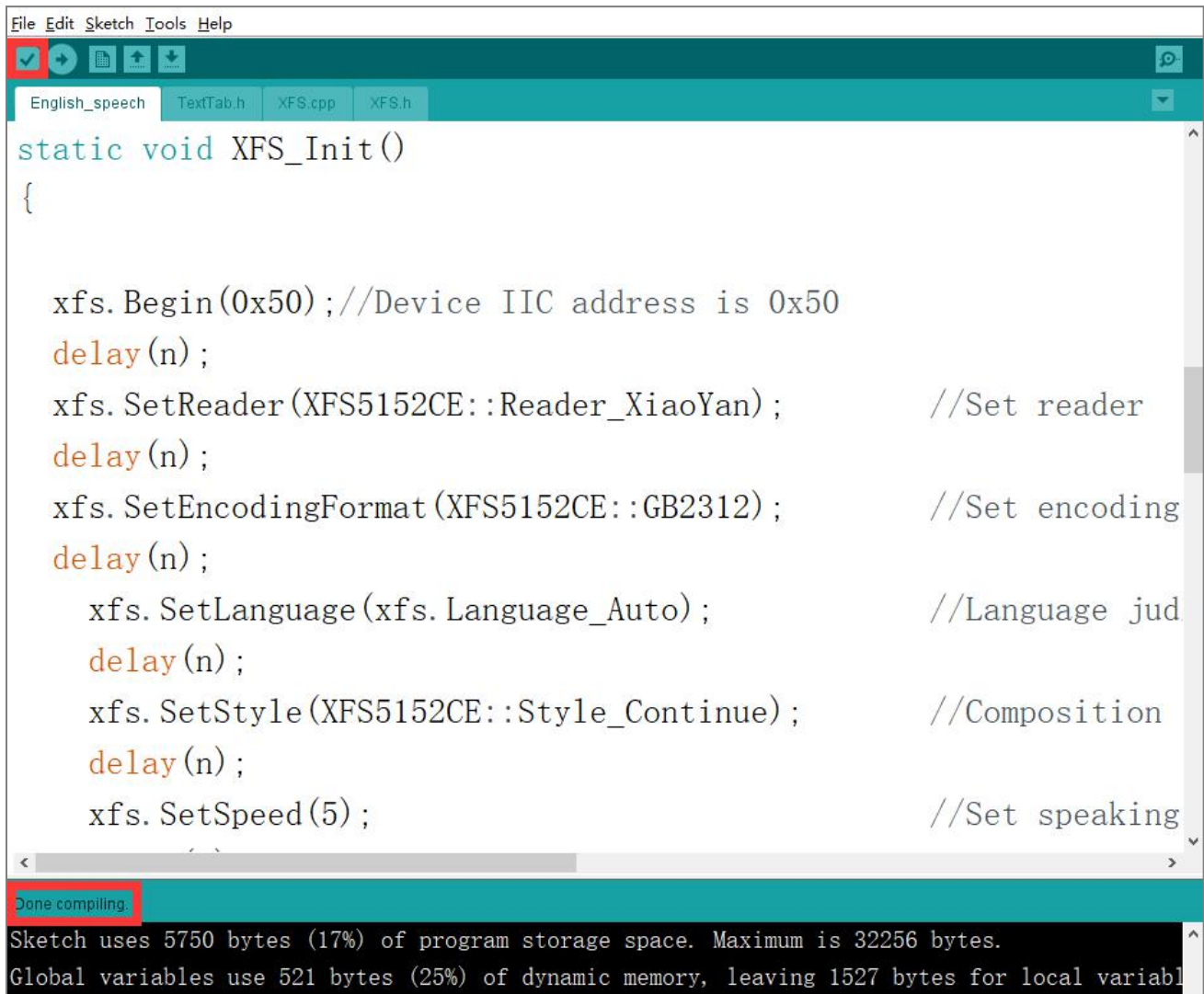
Note: As shown in the figure below, we use the Uno sensor expansion board. If you don't have an expansion board, you can connect the Arduino board and the sensor module by DuPont lines.

3. About code

Please check .ino file.

4. Compiling and downloading code

4.1 We need to open the .ino file by Arduino IDE software. Then click "V" under the menu bar to compile the code, and wait for the word "Done compiling " in the lower left corner, as shown in the figure below.



The screenshot shows the Arduino IDE interface. The menu bar includes File, Edit, Sketch, Tools, and Help. The toolbar contains icons for saving, running, and other functions. The file explorer shows tabs for English_speech, TextTab.h, XFS.cpp, and XFS.h. The main editor displays the XFS_Init() function with the following code:

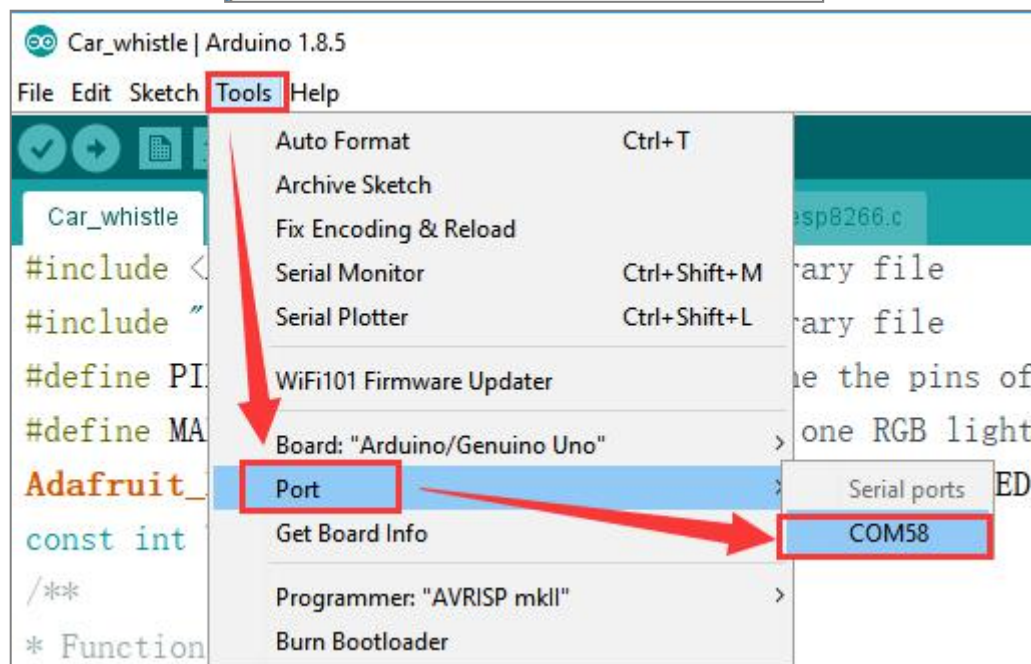
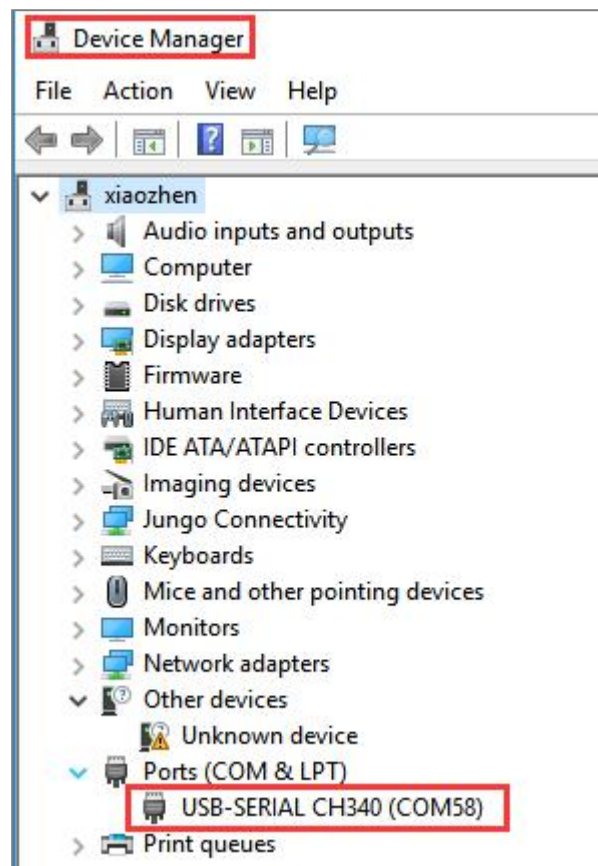
```
static void XFS_Init()
{

    xfs.Begin(0x50); //Device IIC address is 0x50
    delay(n);
    xfs.SetReader(XFS5152CE::Reader_XiaoYan); //Set reader
    delay(n);
    xfs.SetEncodingFormat(XFS5152CE::GB2312); //Set encoding
    delay(n);
    xfs.SetLanguage(xfs.Language_Auto); //Language jud
    delay(n);
    xfs.SetStyle(XFS5152CE::Style_Continue); //Composition
    delay(n);
    xfs.SetSpeed(5); //Set speaking

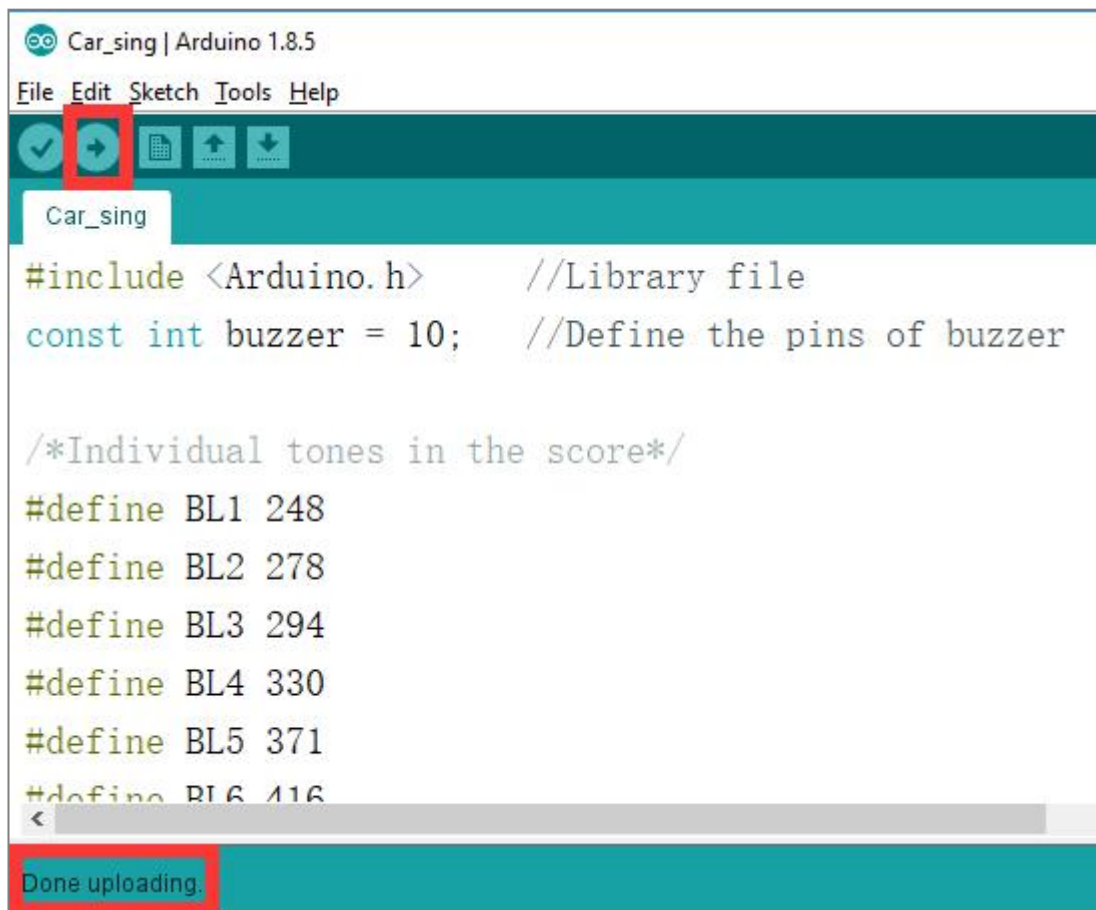
}
```

Below the editor, a status bar indicates "Done compiling." and provides memory usage information: "Sketch uses 5750 bytes (17%) of program storage space. Maximum is 32256 bytes. Global variables use 521 bytes (25%) of dynamic memory, leaving 1527 bytes for local variables."

4.2 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.



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



5. Phenomenon

After the program is downloaded successfully. The serial port prints Temp: temperature value, Humidity: humidity value every 1s.

Open the serial port debugging assistant and set the baud rate to 115200. Open the serial port and observe the interface as shown below.

