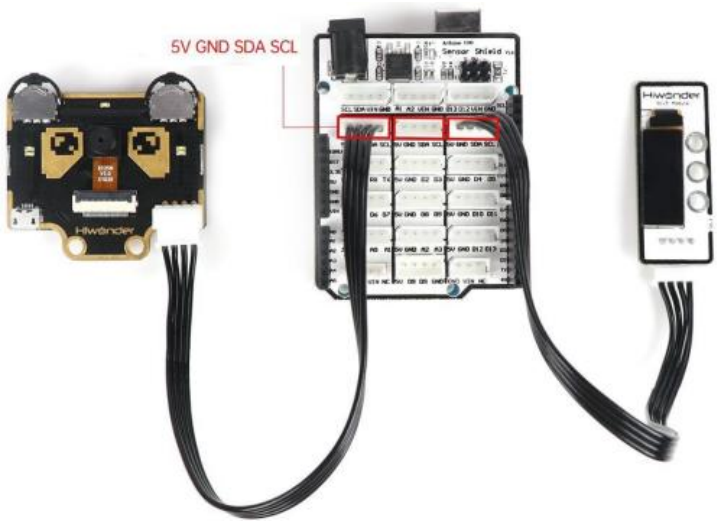
Lesson 4 Visual Line Following Integration with Arduino

1. Preparation

Connect WonderCam and OLED Display Module to Arduino Expansion Board using 4-Pin cable.

WonderCam and OLED Display Module can be connected to any IIC port (5V GND SDA SCL).



2. Learning Objectives

① To know the connectivity of WonderCam and OLED Display Module on Arduino Expansion Board

② To understand the program logic.

3. Programming Plan

In this lesson,we are using the Visual Line Following function to integrate with Arduino to conduct Line Recognition. The program will initialize the Visual module follow by detecting Line. When Line is detected, it will proceed to identifiy the Line and present the identified Line track on OLED display module.

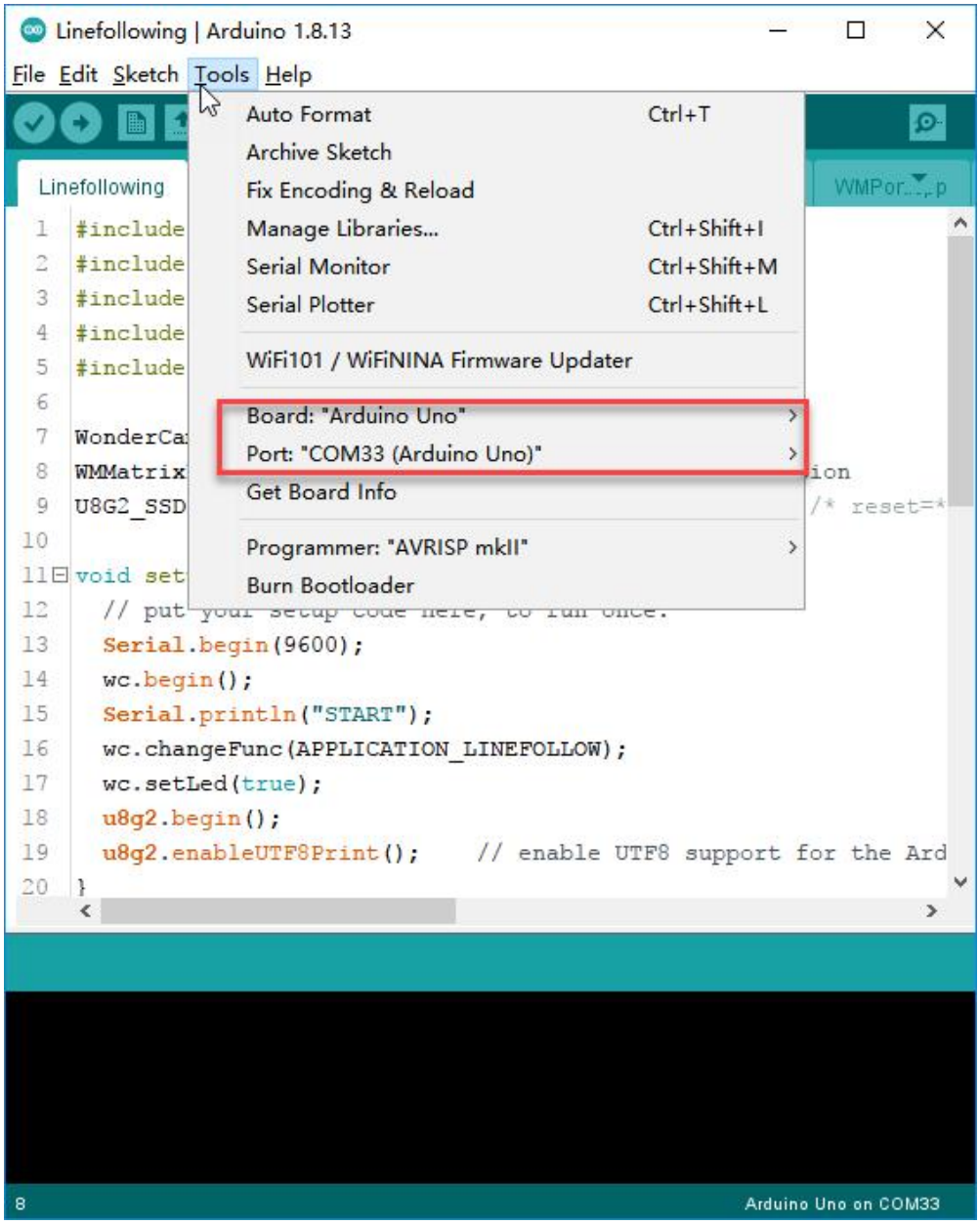
4. Compiling Program and Upload

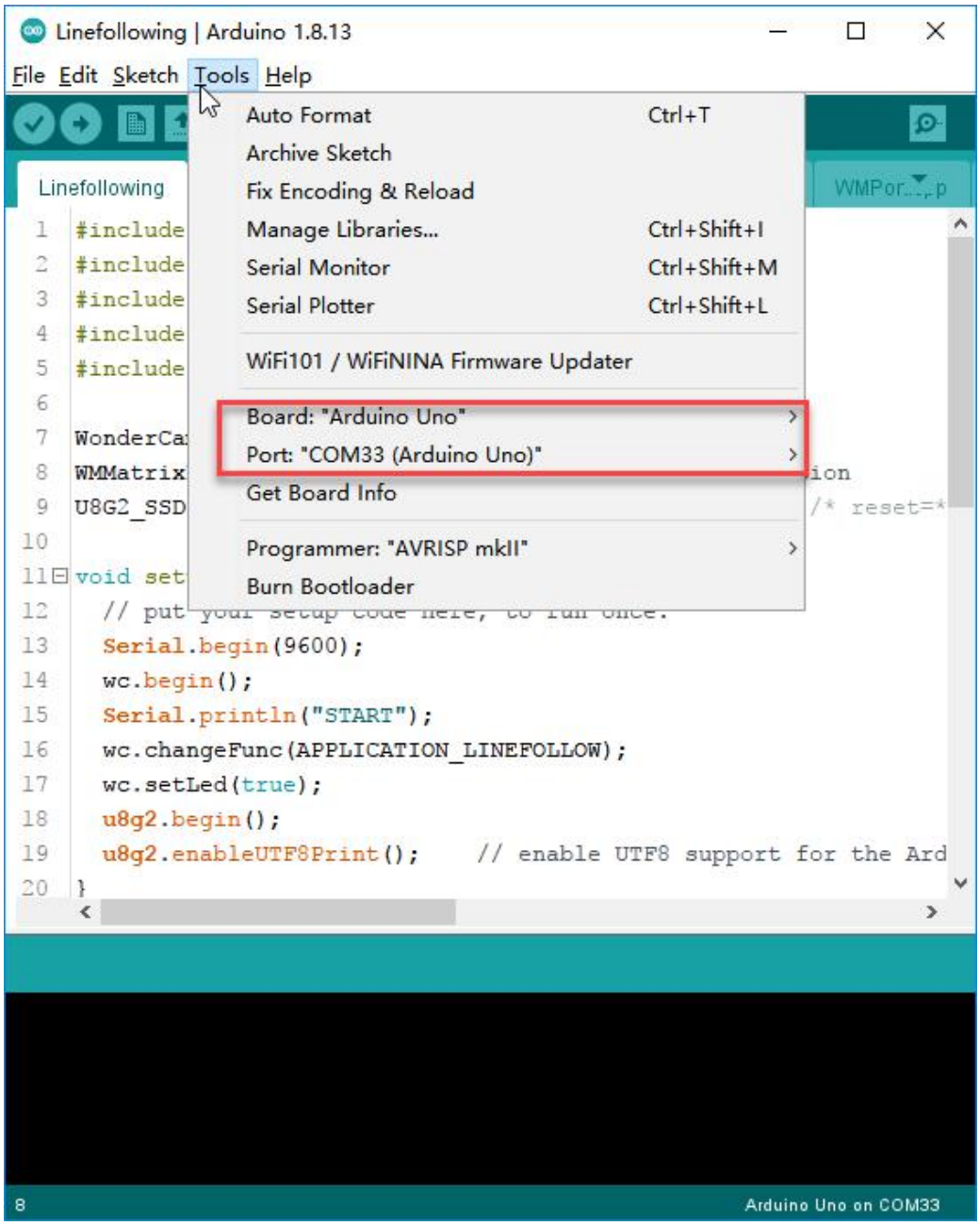
This full program code can be found in folder “Visual Line Following Program” in “06_LineFollow”.

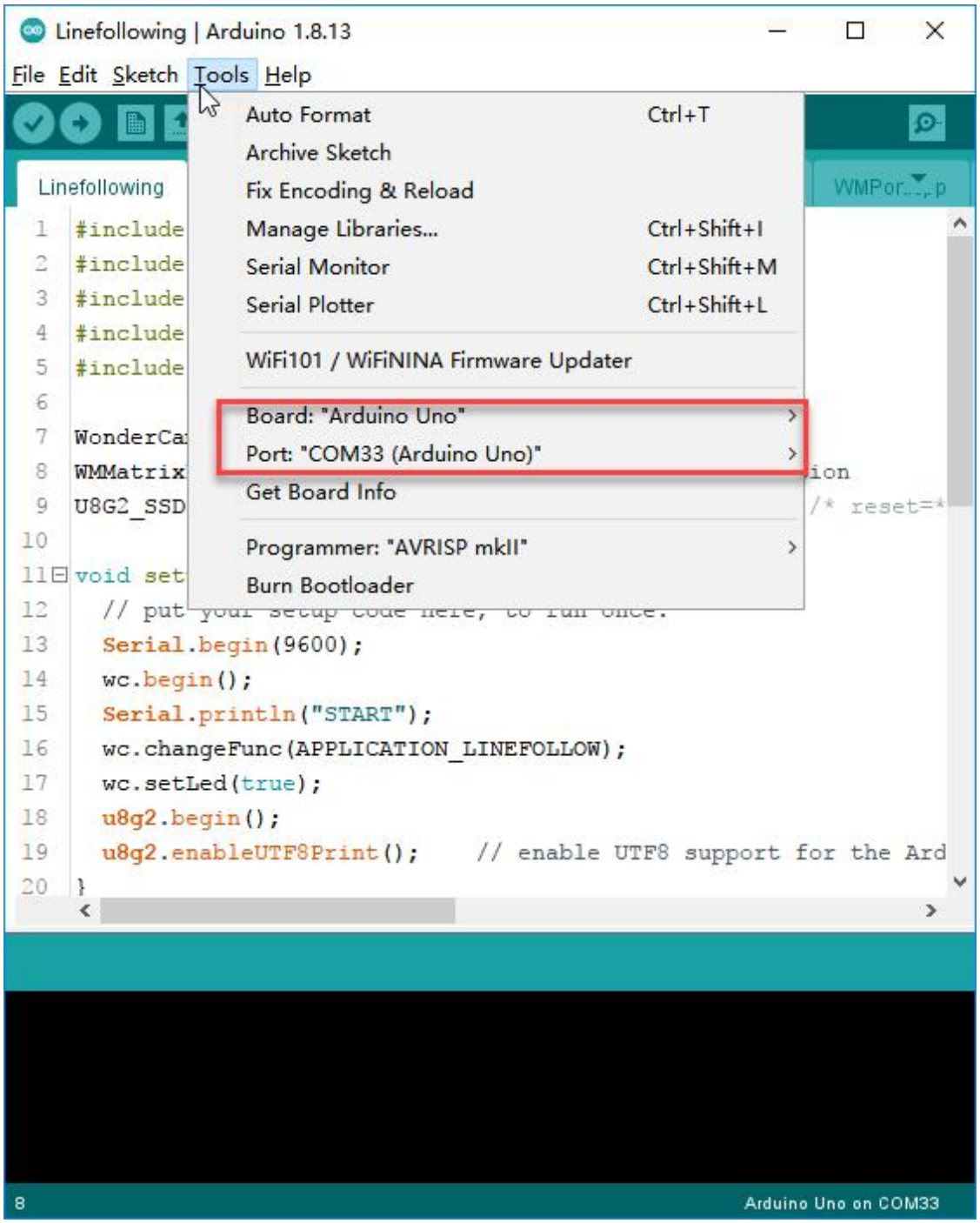
1) Connect Arduino UNO board to computer.

2) In “Visual Line Following Program” in “06_LineFollow”, double click ino program.

3) In Arduino IDE program, open Tools in menu and select corresponding Development Board and port. (Port number shown in this lesson may differs in individual computer environment).

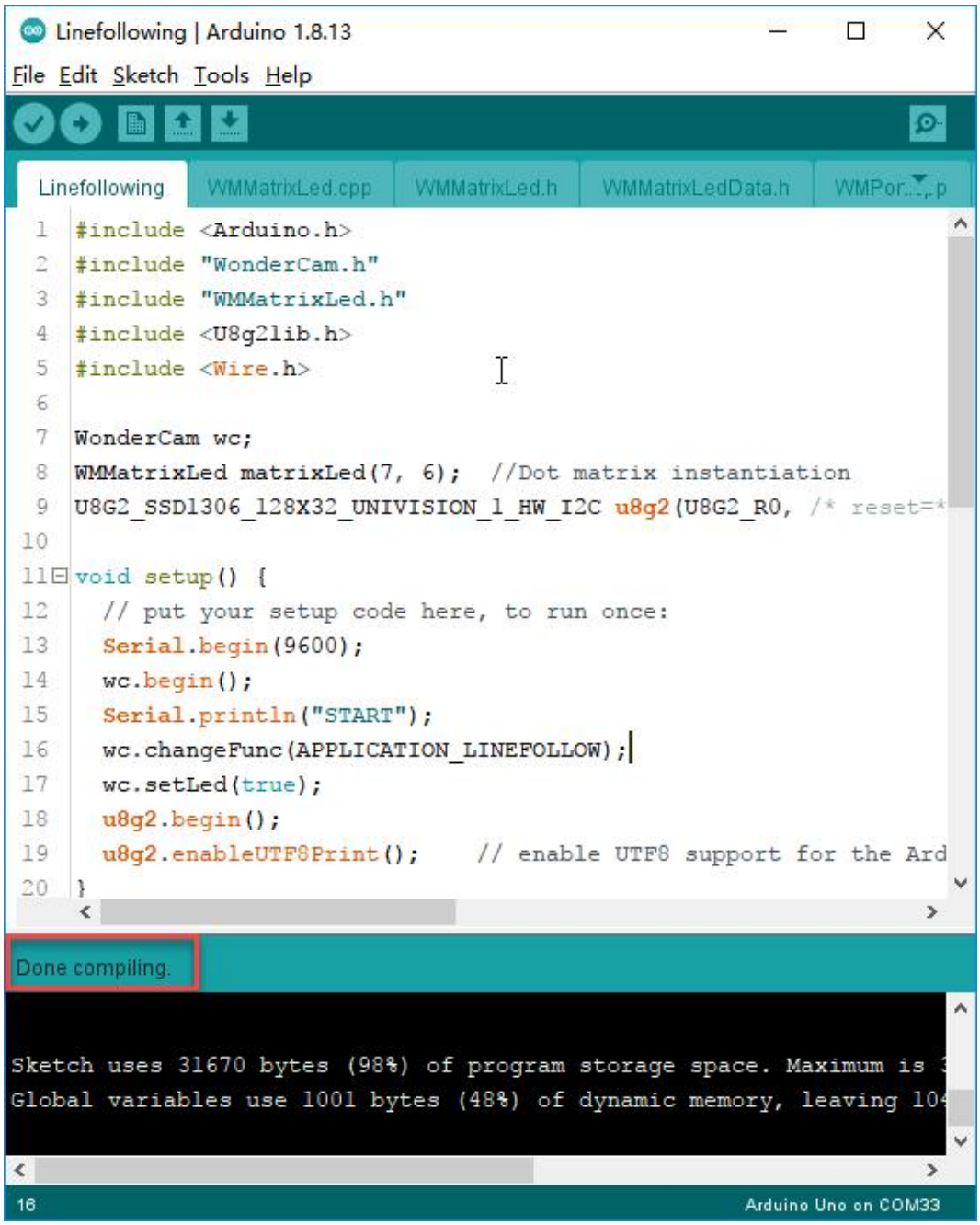



Linefollowing | Arduino 1.8.13
File Edit Sketch Tools Help
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Manage Libraries... Ctrl+Shift+I
Serial Monitor Ctrl+Shift+M
Serial Plotter Ctrl+Shift+L
WiFi101 / WiFiNINA Firmware Updater
Board: "Arduino Uno"
Port: "COM33 (Arduino Uno)"
Get Board Info
Programmer: "AVRISP mkII"
Burn Bootloader
Linefollowing
#include
#include
#include
#include
#include
WonderCa
WMMatrix
U8G2_SSD
void set
// put your setup code here, to run once:
Serial.begin(9600);
wc.begin();
Serial.println("START");
wc.changeFunc(APPLICATION_LINEFOLLOW);
wc.setLed(true);
u8g2.begin();
u8g2.enableUTF8Print(); // enable UTF8 support for the Ard
}
8
Arduino Uno on COM33



4) Click button to upload program to UNO Development Board. Wait for uploading process to complete.

5) During Uploading process, do not unplug or move the USB Cable to prevent transmission failure.



5. Result

Please refer to Lesson 4 Visual Line Following on how to program Visual Line Following.

Once program had been uploaded, WonderCam will automatically switch to Visual Line Following interface. Proceed to Learn line. When done, once WonderCam recognized the line, the line track data will display on the OLED Display Module.