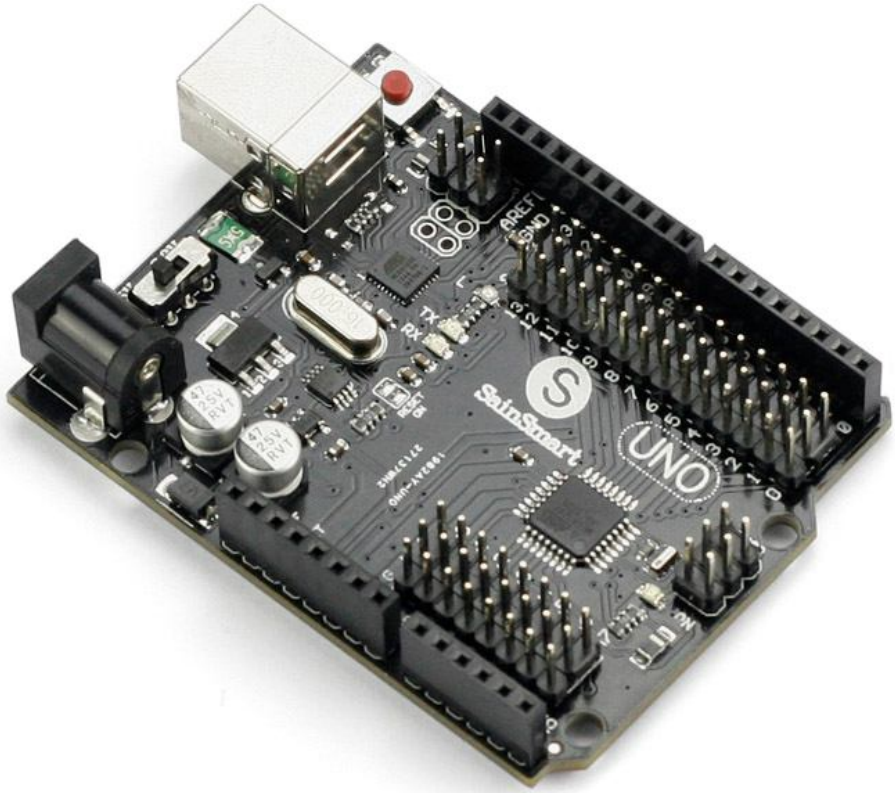
SainSmart UNO R3 Starter Kit



//SainSmart UNO R3

The SainSmart UNO R3 is one of several development boards based on the ATmega328-AU. We like it mainly because of its extensive support network and its versatility. It has 14 digital input/output pins (6 of which can be PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. Don't worry, you'll learn about all these later

Access the Internet

In order to get your Arduino up and running, you'll need to download some software first from www.arduino.cc (it's free!). This software, known as the Arduino IDE, will allow you to program the Arduino to do exactly what you want. It's like a word processor for writing programs. With an internet-capable computer, open up your favorite browser and type in the following URL into the address bar: www.arduino.cc/en/Main/Software

// Connect your SainSmart Uno to your Computer

Use the USB cable provided in the SIK kit to connect the UNO R3 to one of your computer's USB inputs.

// Install Drivers

Depending on your computer's operating system, you will need to follow specific instructions. Please consult the URLs below for specific instructions on how to install the drivers onto your SainSmart Uno.

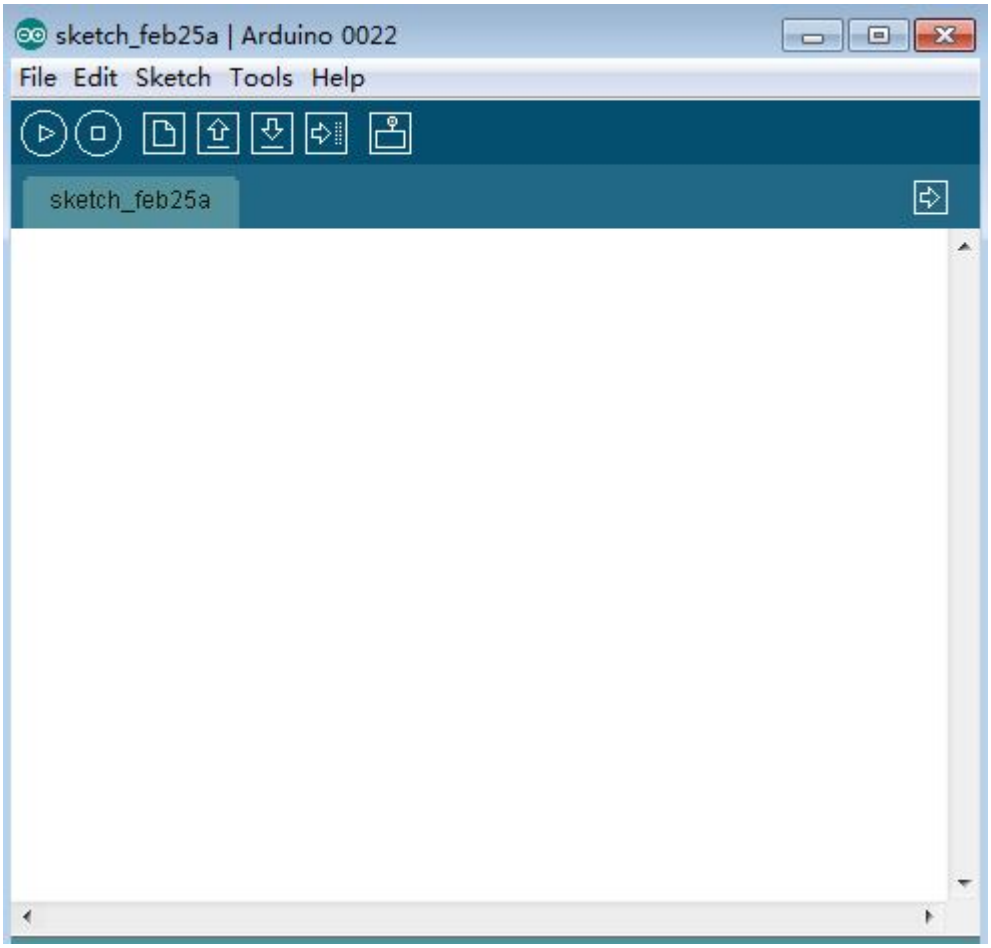
* You will need to scroll to the section labeled "Install the drivers".
Windows Installation Process
Go to the web address below to access the instructions for installations on a Windows-based computer.
http://arduino.cc/en/Guide/Windows

Macintosh OS X Installation Process
Macs do not require you to install drivers. Enter the following URL if you have questions. Otherwise proceed to next page.

http://arduino.cc/en/Guide/MacOSX

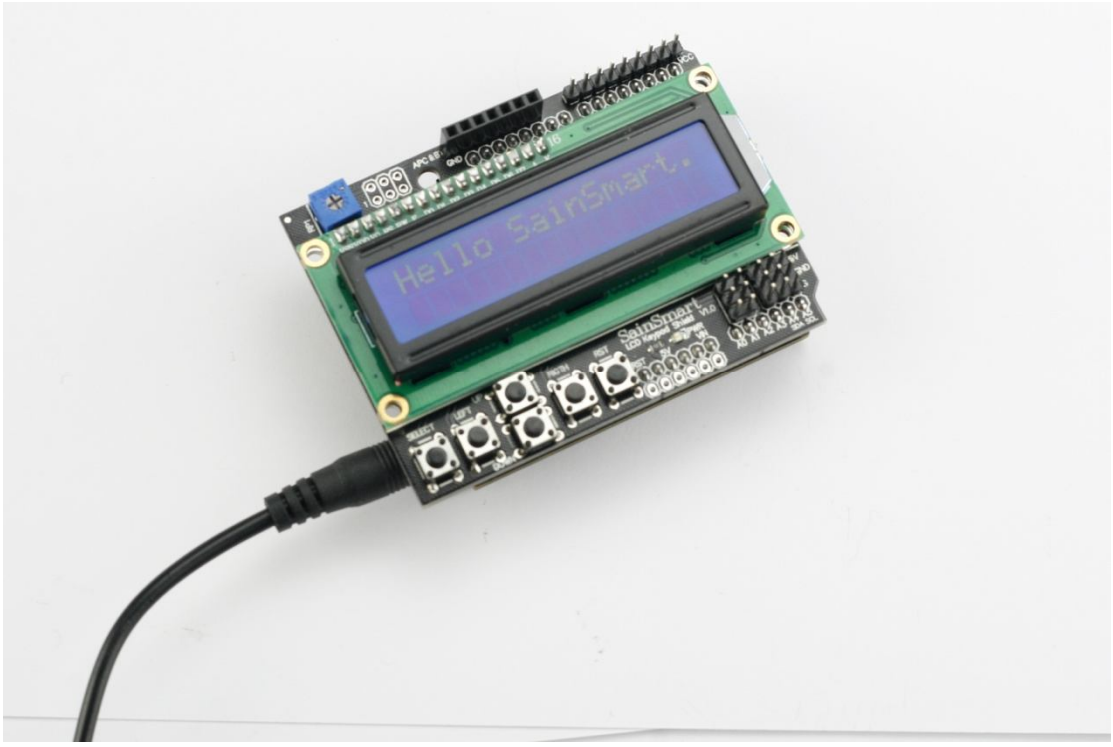
Linux: 32 bit / 64 bit, Installation Process
Go to the web address below to access the instructions for installations on a Linux-based computer.
http://www.arduino.cc/playground/Learning/Linux

Open the Arduino IDE software on your computer. Poke around and get to know
the interface. We aren't going to code right away, this is just an introduction. e
step is to set your IDE to identify your Uno R3.
// Open the Arduino IDE:

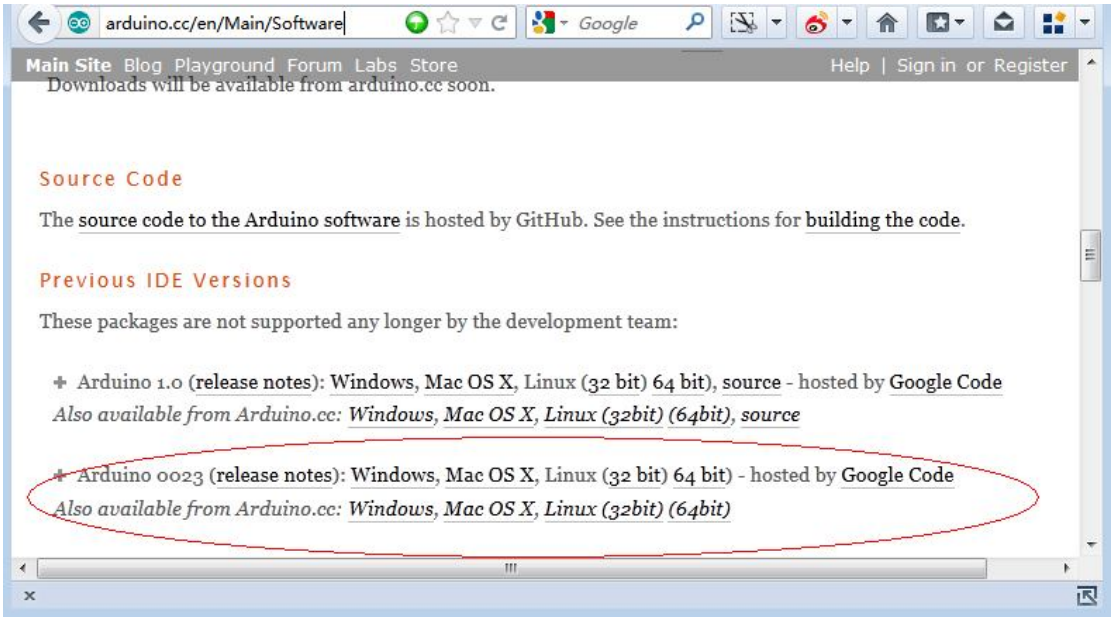


Example 1:

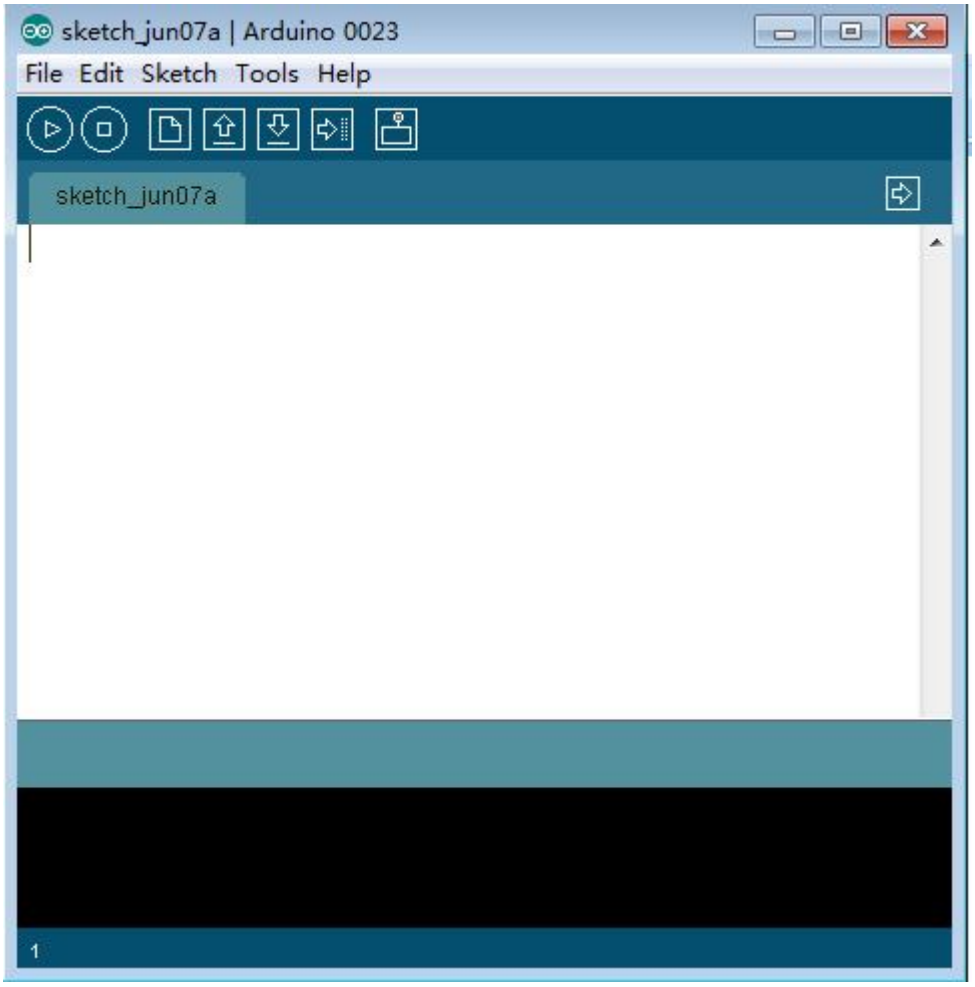
Mount the SainSmart 1602 LCD Keypad Shield on top of the SainSmart UNO R3 and connect the headers like this:



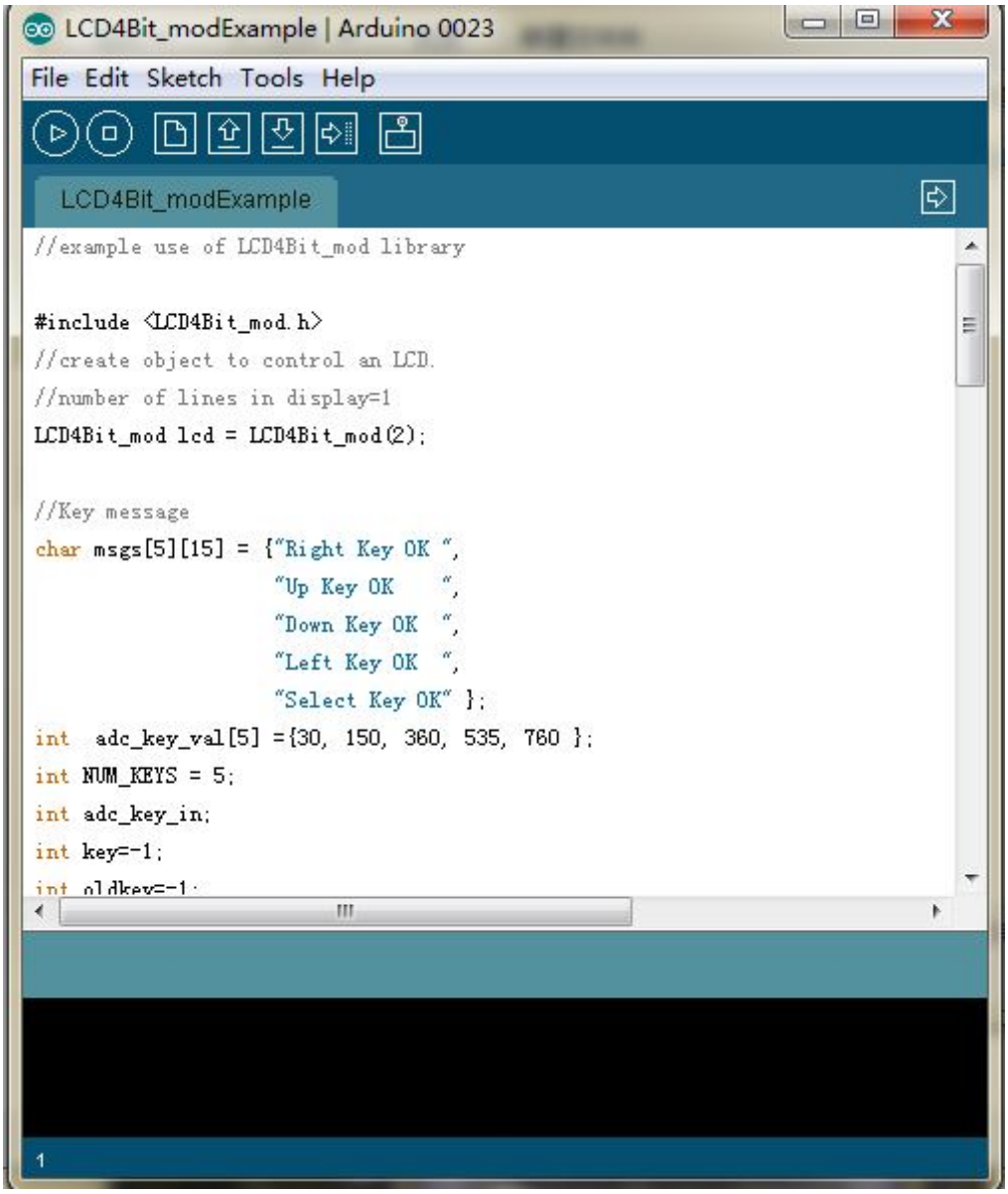
Then connect it to your computer using a USB cable as you normally would. Next, set up your development environment. Go to the Arduino website: www.arduino.cc and click up a software link and download the Arduino software Arduino 023. See the following figure:



When finish the download, unzip the “arduino0023.zip”, open the software and this application will pop up like this:



Then download the document “LCDkeypad.rar” provided by SainSmart, unzip it and put it under the “libraries” file. The path will be like this:
\arduino-0023\libraries\LCD4Bit_mod\examples\LCD4Bit_modExample
Here we have “LCD4Bit_modExample.pde”, click it and it will show like this:



Next click up the “upload”, then you will have the software in the SainSmart UNO R3 and we can test the button function on LCD.

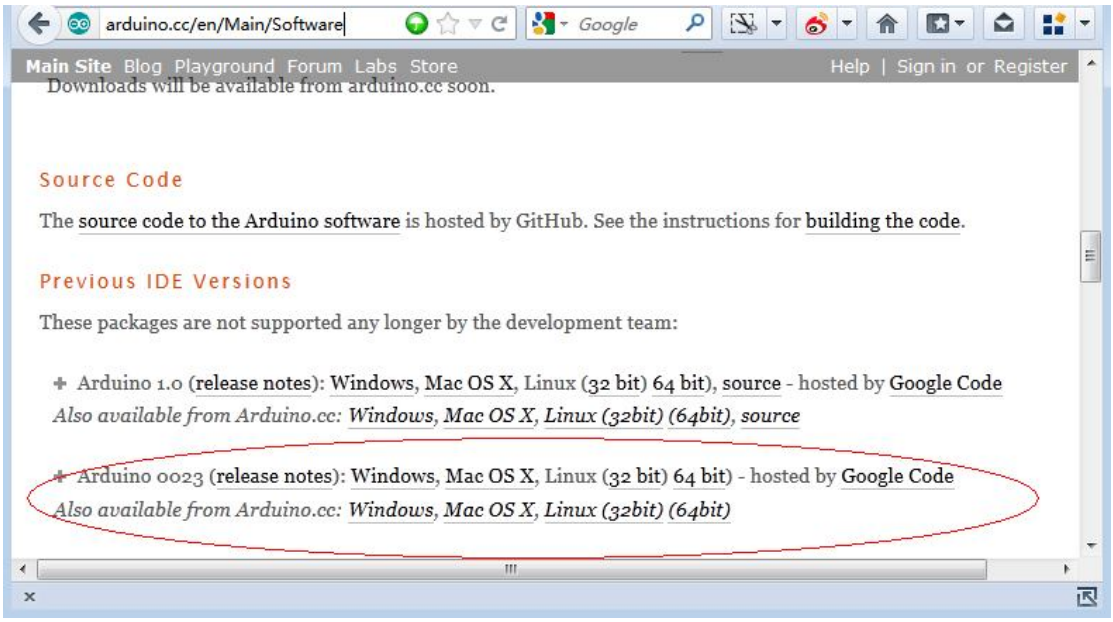
Press select key, "Select Key OK:”

Example 2:

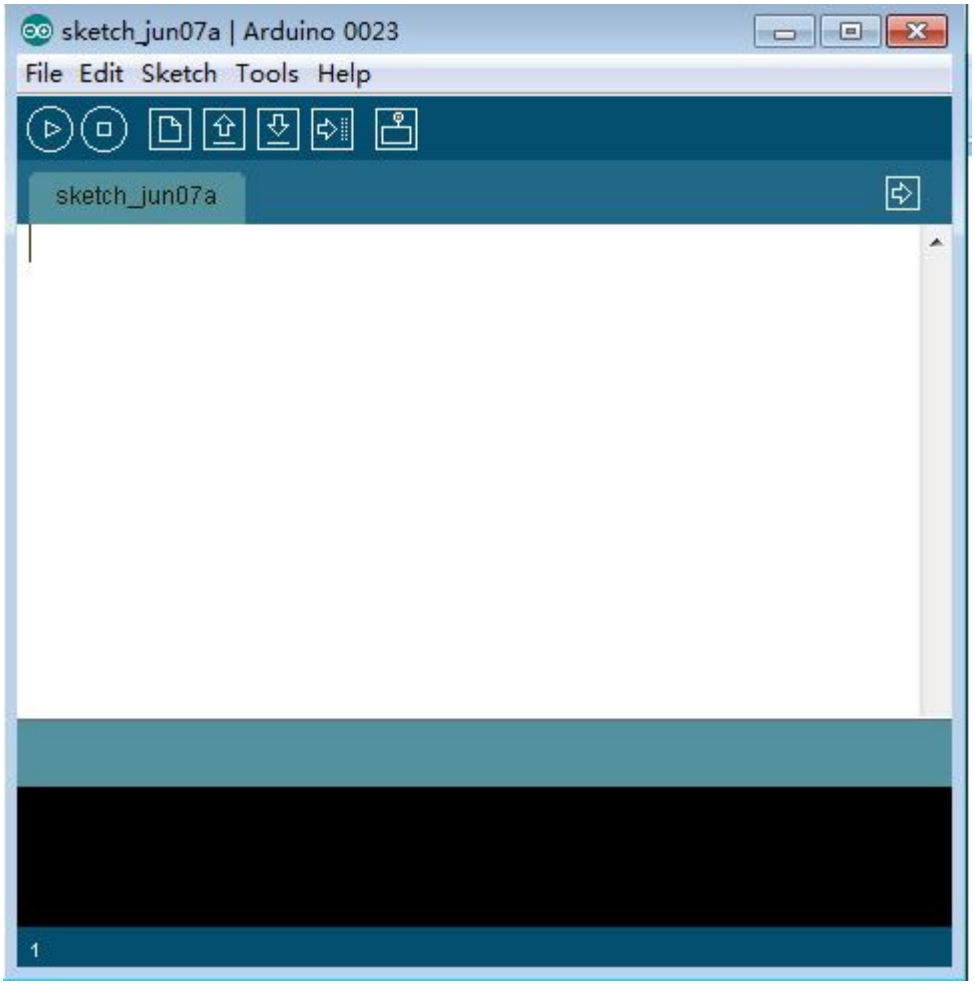
Mount the SainSmart Graphic LCD4884 Shield on top of the SainSmart UNO R3 and connect the headers. It will look like this:

Then connect it to your computer using a USB cable as you normally would.

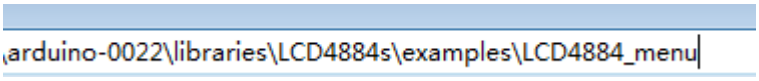
Next, set up your development environment. Go to the Arduino website: www.arduino.cc and click up a software link and download the Arduino software Arduino 023. See the following figure:



When finish the download, unzip the “arduino0023.zip”, open the software and this application will pop up like this:



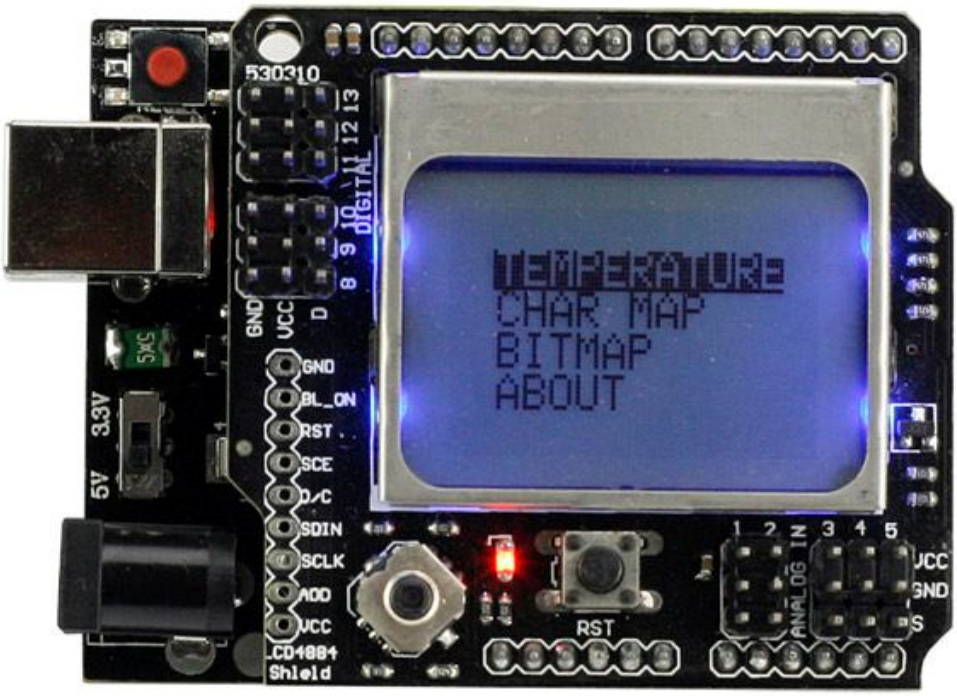
Then download the document “LCD4884S.rar” provided by Sainsmart , unzip it and put it under the “libraries” file. The path will be like this:



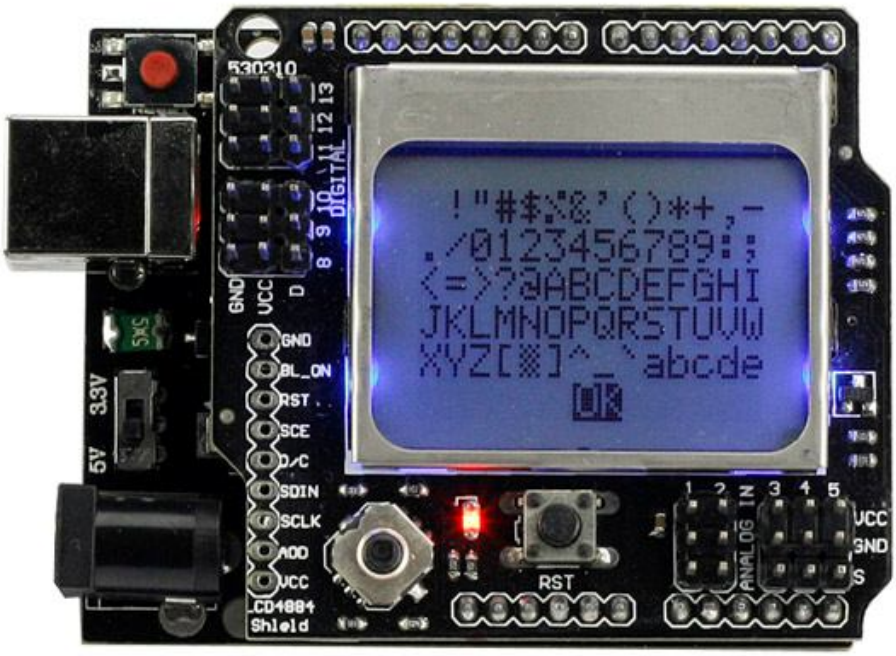
Here we have “lcd4884_mene.pde”, click it and it will show like this:

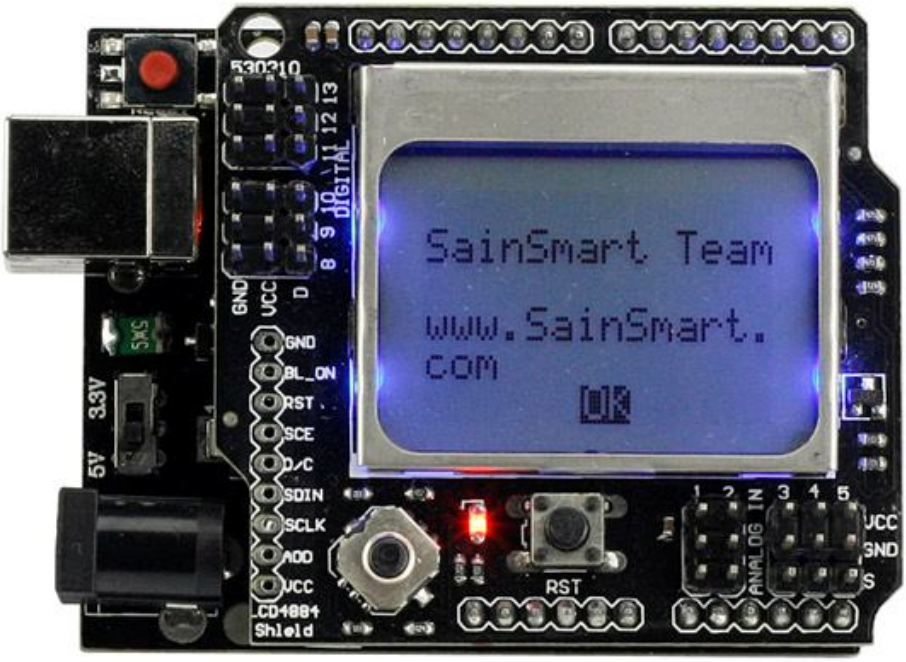
Next click up the “upload”, then you will have the software in the SainSmart UNO R3 and the LCD will show like this:

Press down the button, you will see the temperature like this:



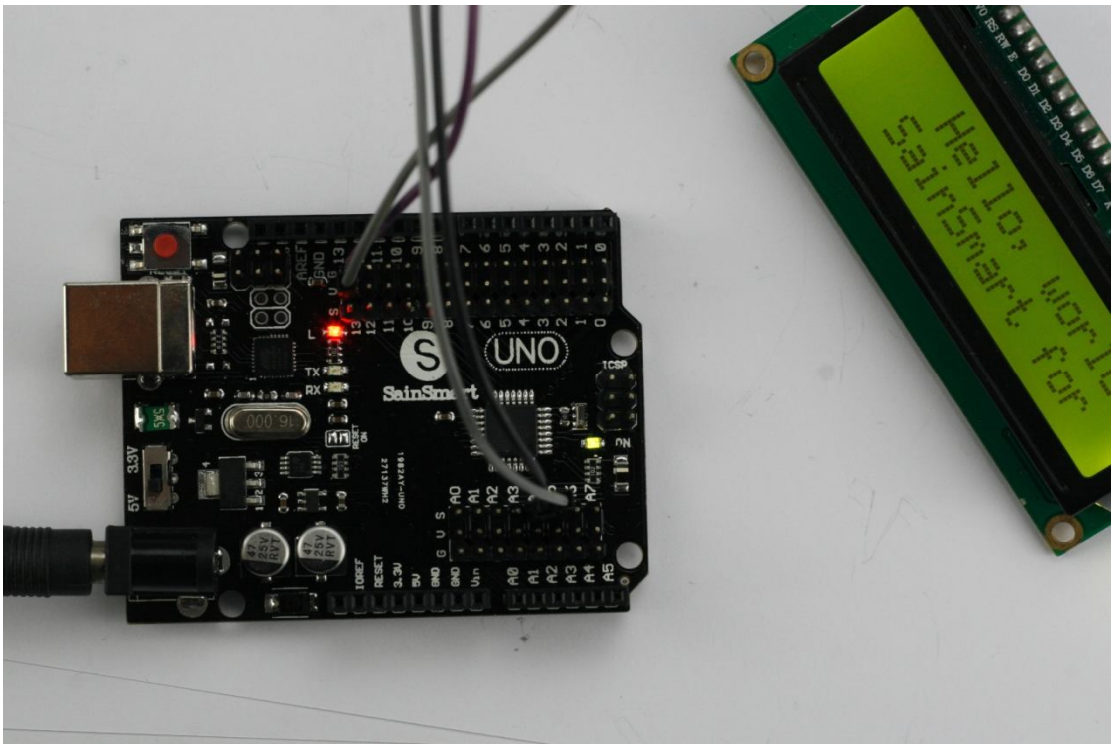
Then press up to go back to the menu table, press down again, it will go to the second choice “CHAR MAP”. See the following figure:


530310
DIGITAL
GND
VCC
GND
BL_ON
RST
SCE
D/C
SDIN
SCLK
VDD
VCC
PCD8544
Shield
5V
3.3V
RST
ANALOG IN
VCC
GND



Example 3:

we will have 4 cables to connect. We have GND, VCC, SDA(A4), SCL(A5) on the UNO R3. See the following figure:

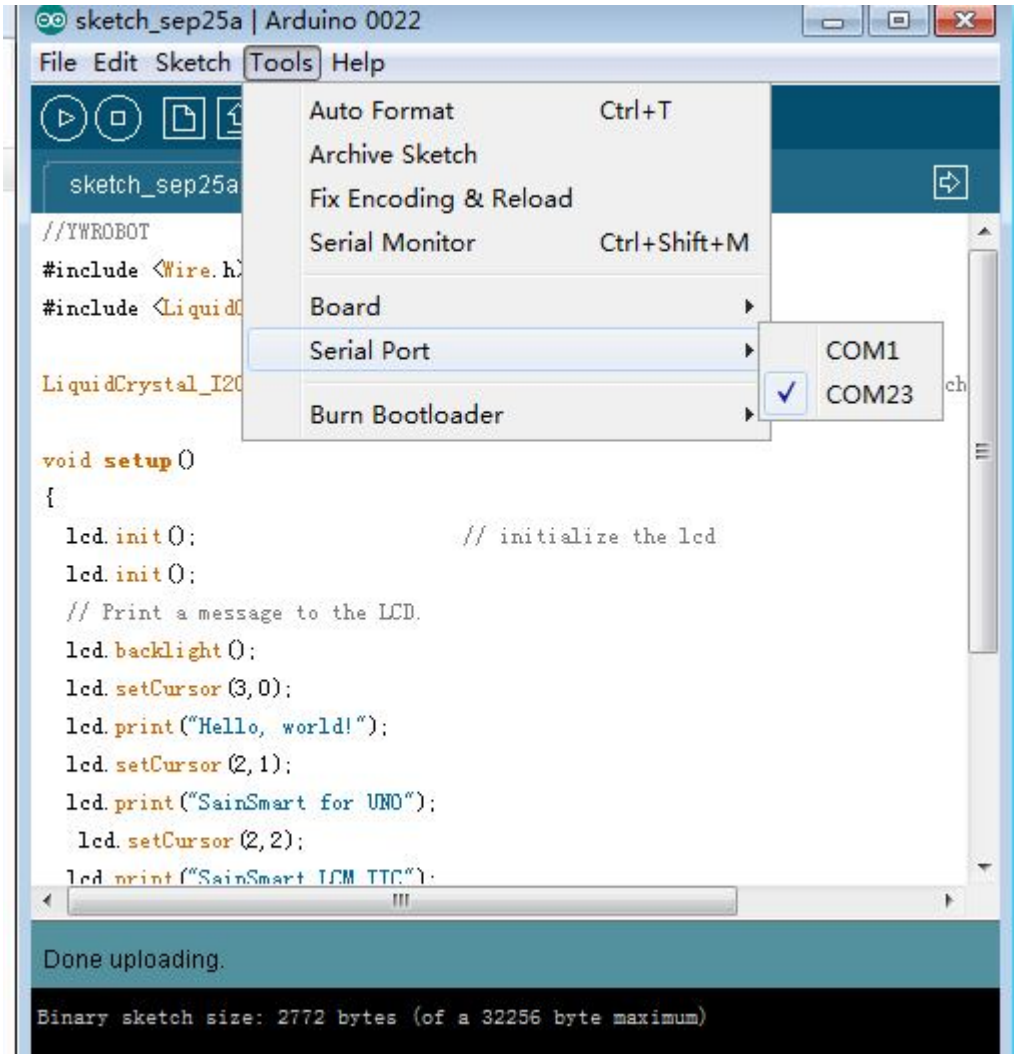


We also have the same four buckled ports on the back of LCD shield. See the following figure:

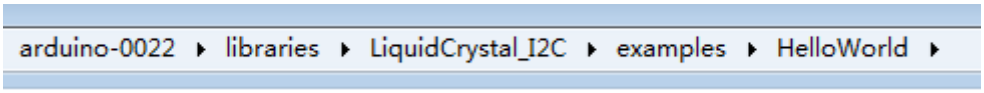
one end of the cable goes to GND, VCC, SDA, SCL, and the other end goes to the corresponding GND, VCC, SDA, SCL on the LCD module.

Then connect it to your computer using a USB cable as you normally would.

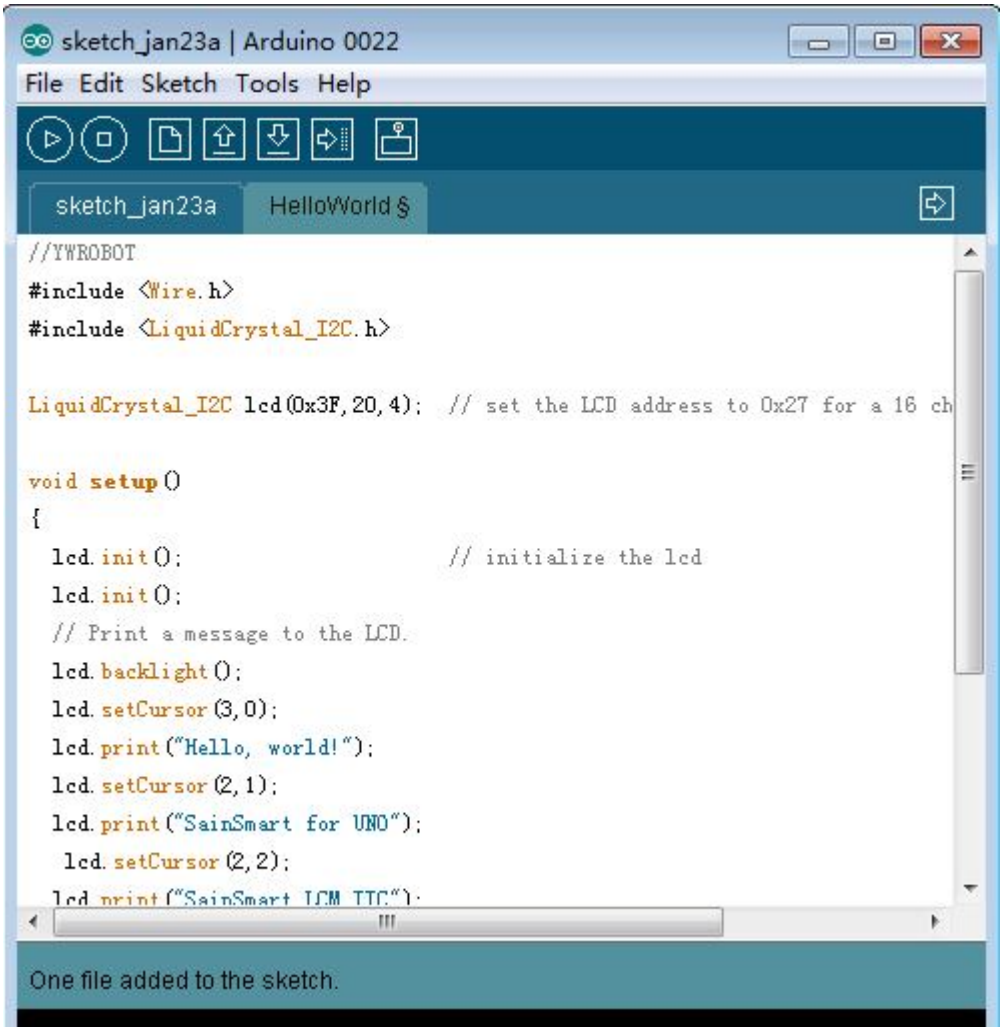
Next, set up your development environment is to go to the arduino website: www.arduino.cc and click up a software link and download the arduino software depending on what your platform it is. When finish the download, open the software and this application will pop up like this:



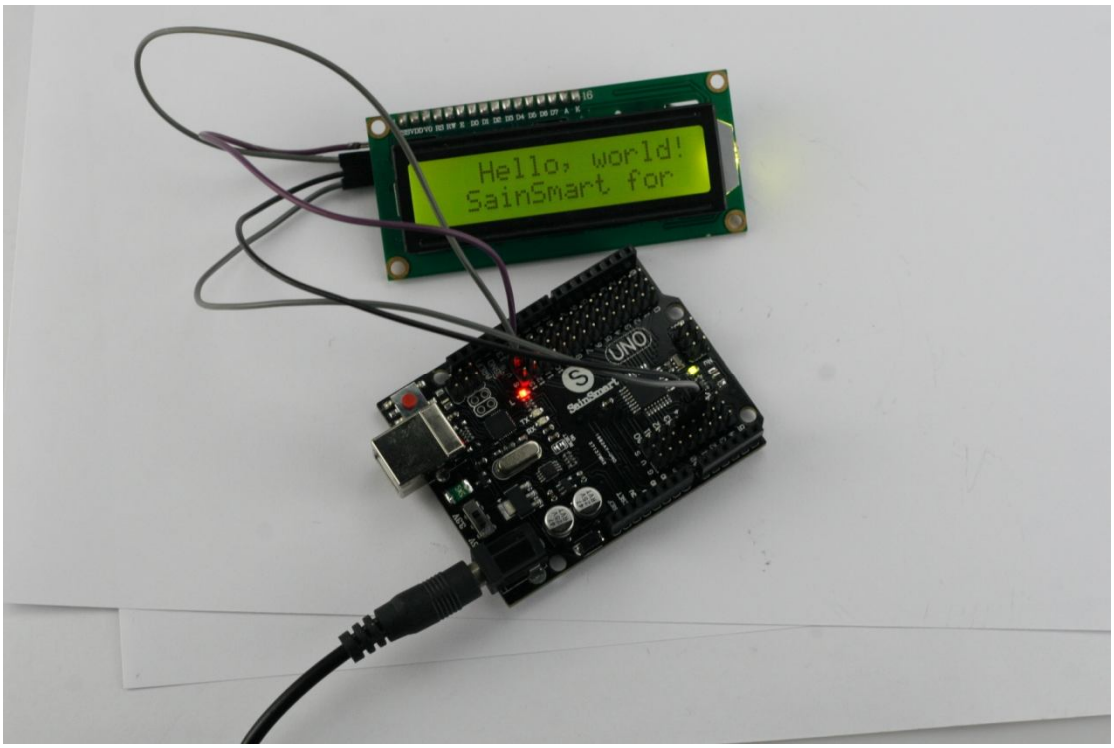
then download the document “LiquidCrystal_I2C.rar” provided by SainSmart , unzip it and put it under the “libraries” file. The path will be like this:



Here we have “HelloWorld”, click it and it will show like this:

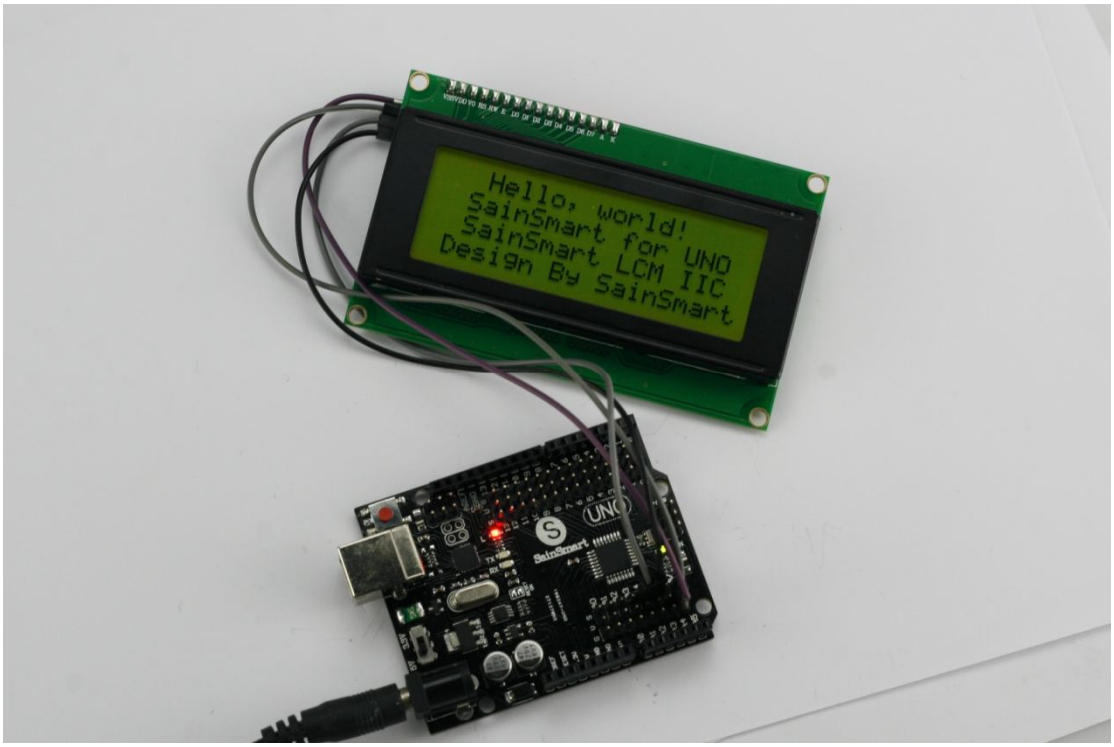


next click up the “upload”, then you will have the software in the SainSmart UNO R3 and the LCD will be on with the words showing.



Example 4:

we will have 4 cables to connect. We have GND, VCC, SDA(A4), SCL(A5) on the UNO R3. See the following figure:

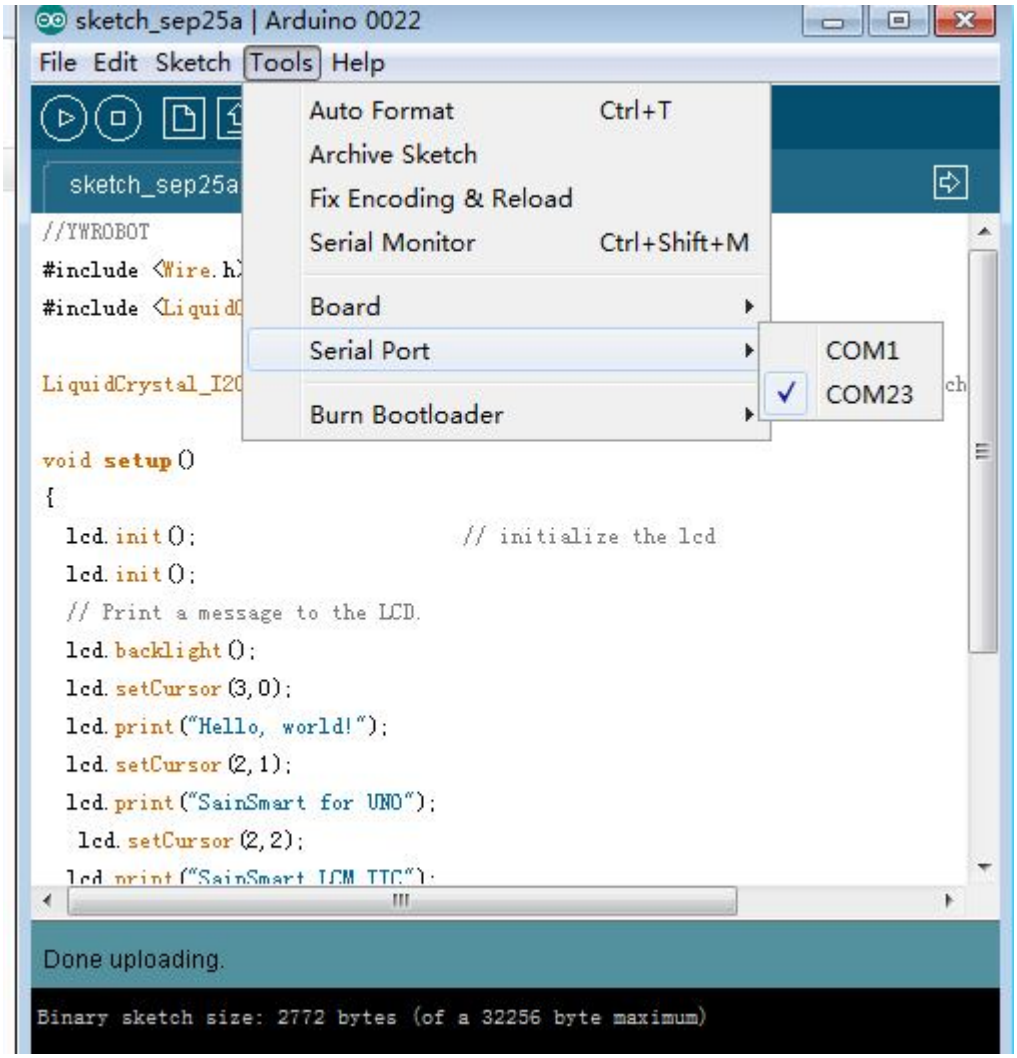


We also have the same four buckled ports on the back of LCD shield. See the following figure:

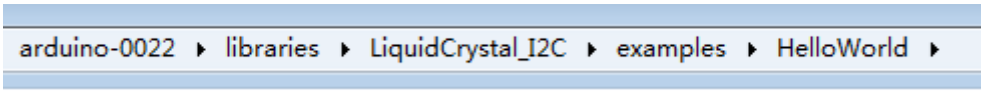
one end of the cable goes to GND, VCC, SDA, SCL, and the other end goes to the corresponding GND, VCC, SDA, SCL on the LCD module.

Then connect it to your computer using a USB cable as you normally would.

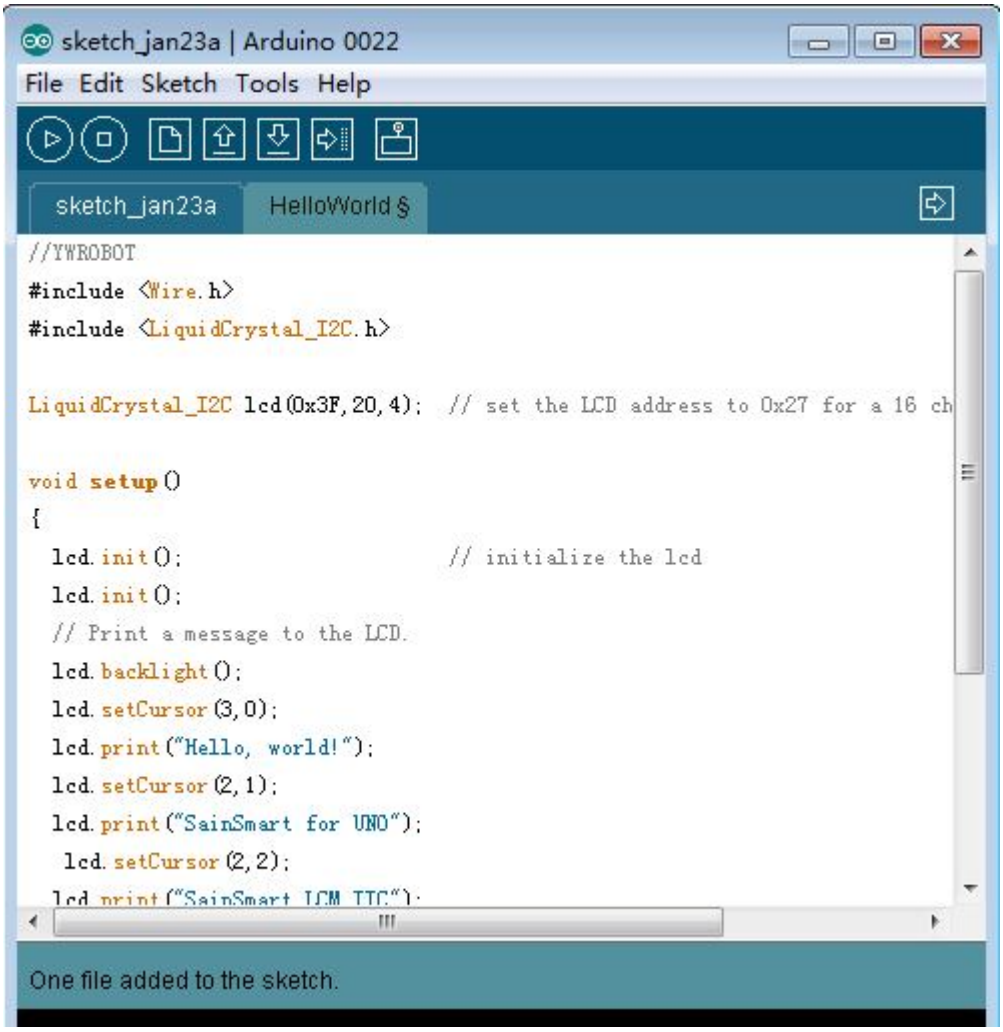
Next, set up your development environment is to go to the arduino website: www.arduino.cc and click up a software link and download the arduino software depending on what your platform it is. When finish the download, open the software and this application will pop up like this:



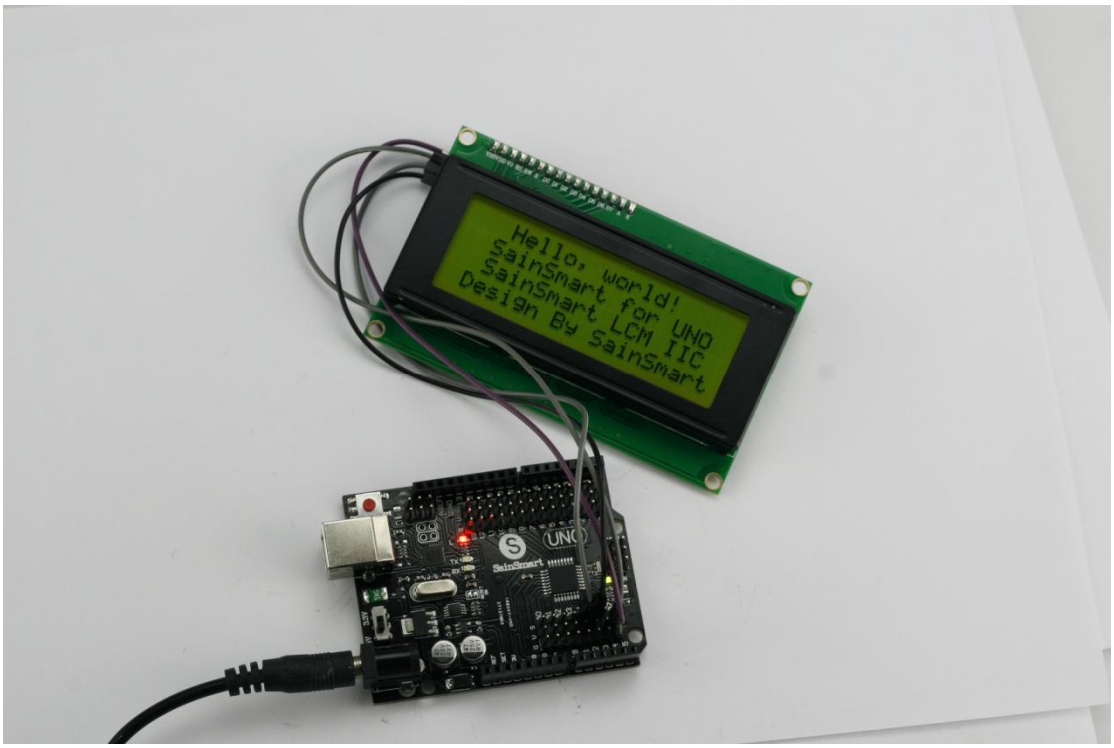
then download the document “LiquidCrystal_I2C.rar” provided by SainSmart , unzip it and put it under the “libraries” file. The path will be like this:



Here we have “HelloWorld ”, click it and it will show like this:

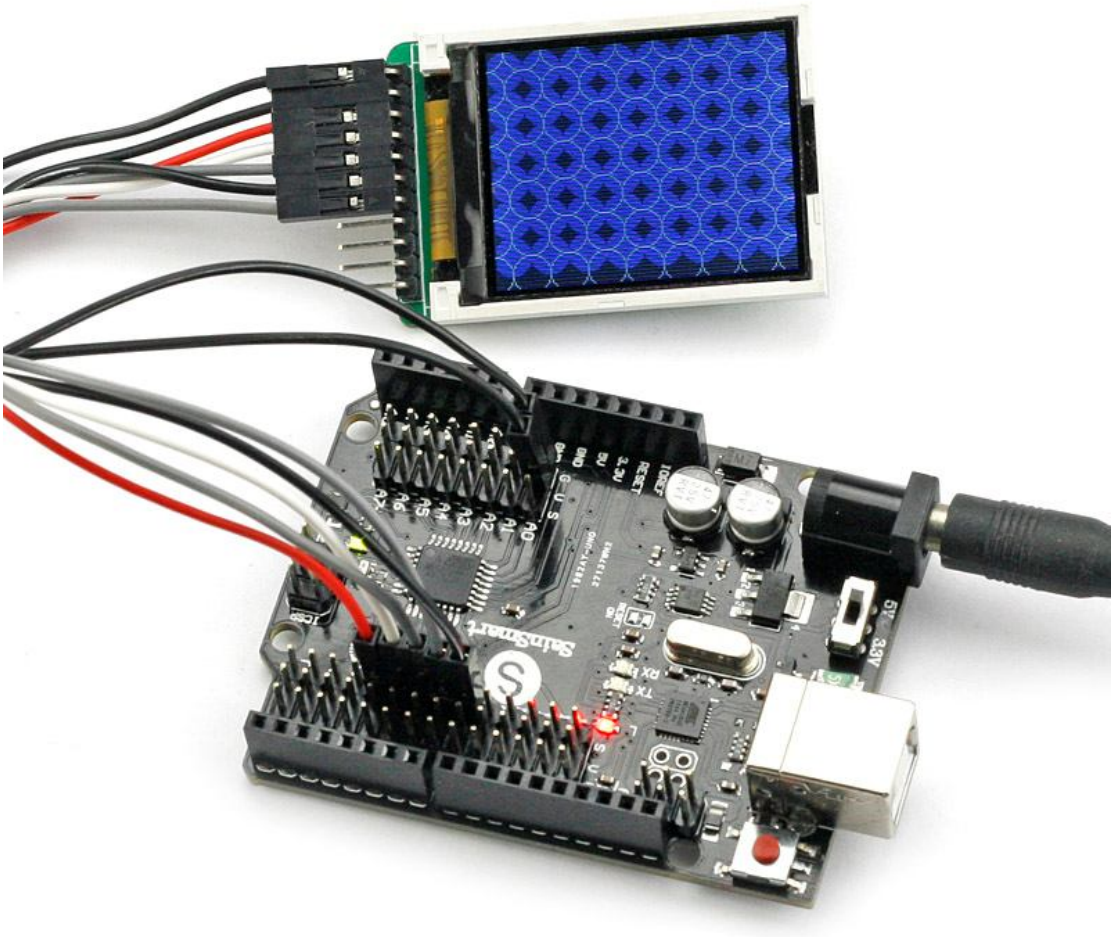


next click up the “upload”, then you will have the software in the SainSmart UNO R3 and the LCD will be on with the words showing.

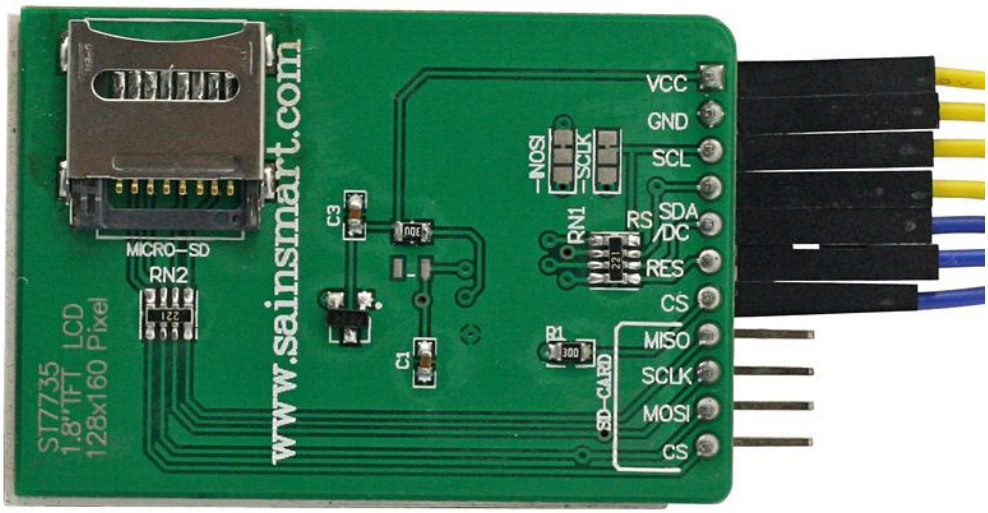


Example 5:

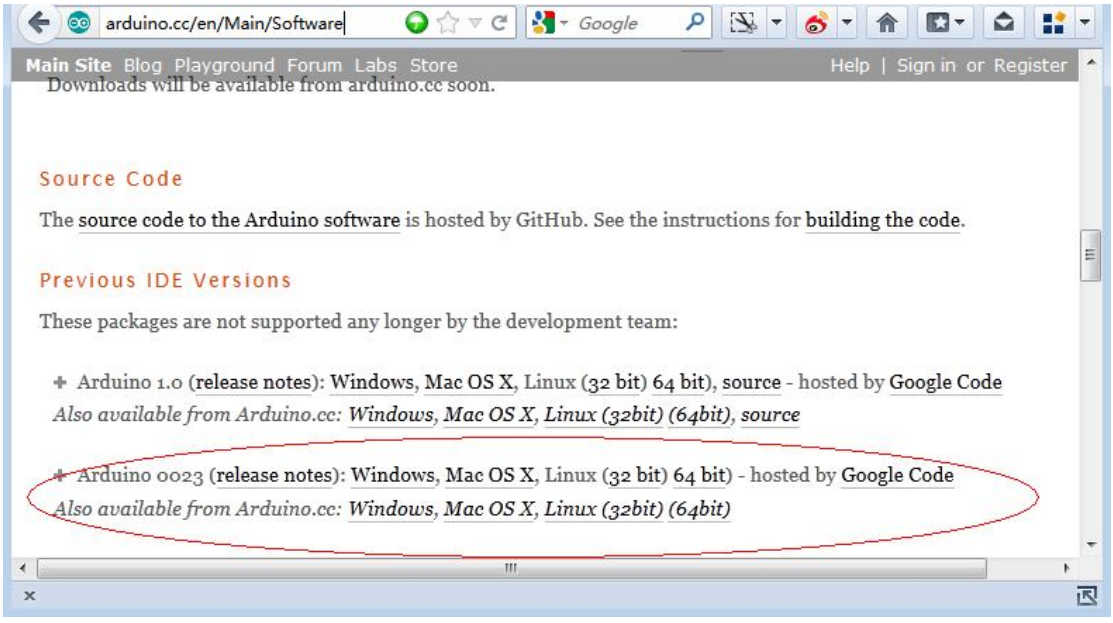
First of all, connect 7 Dupont Lines, plug one end of the lines in pin 4, 5, 6, 7, 8, G, and V on the UNO R3 ,See the following figure.



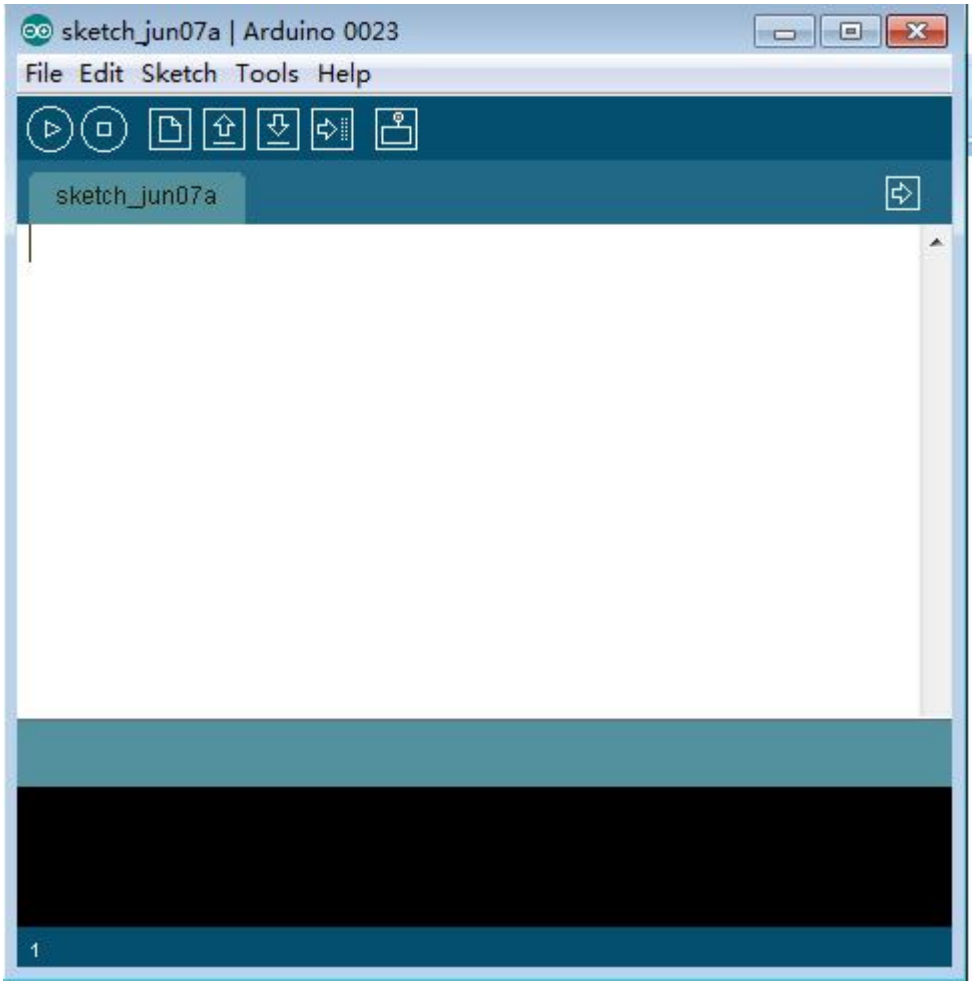
Then the one in pin 4 connects to SCL(SCLK) on the 1.8 SPI LCD, pin 5 connects SDA(MOSI), pin 6 connects CS, pin 7 connects DC, pin 8 connects to RES(RST), pin G connects to GND, and pin V connects to VCC(5V). See the following figure:



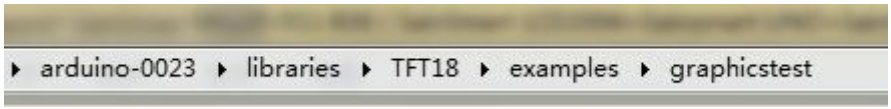
Then connect it to your computer using a USB cable as you normally would. Next, set up your development environment. Go to the Arduino website: www.arduino.cc and click up a software link and download the Arduino software Arduino 023. See the following figure:



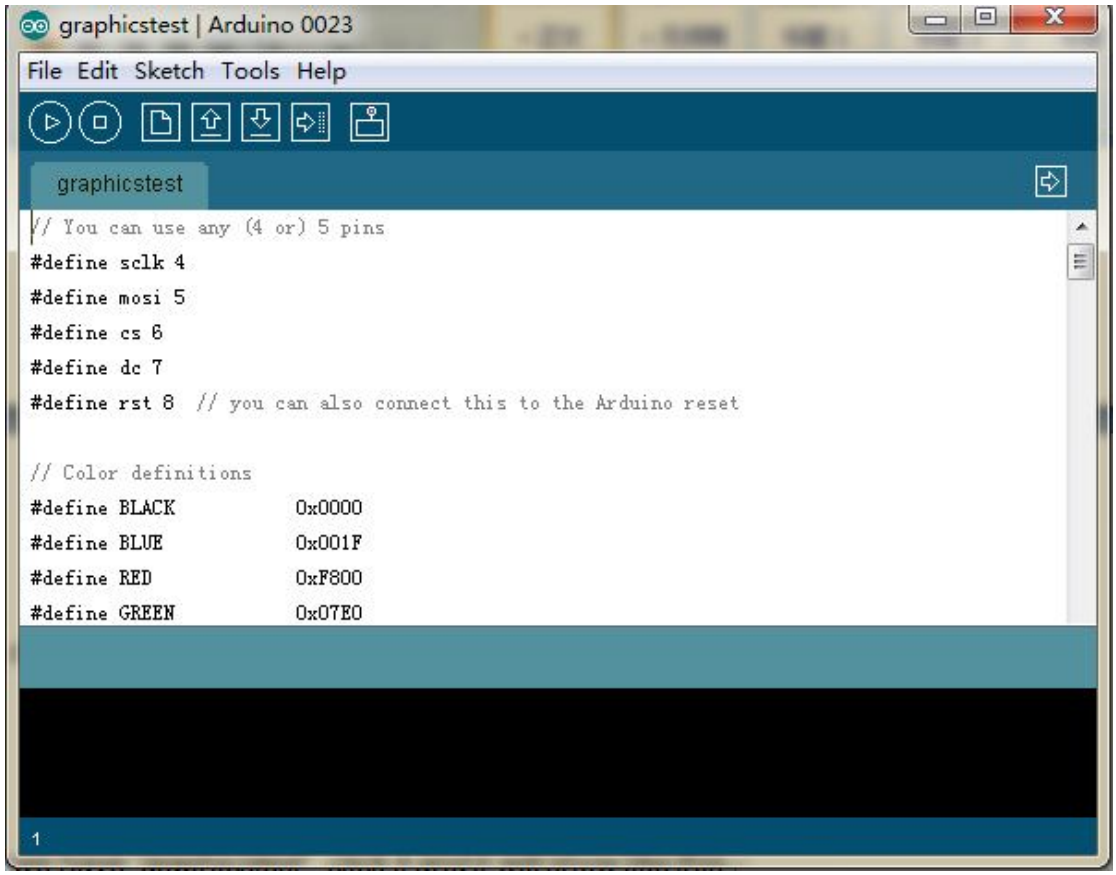
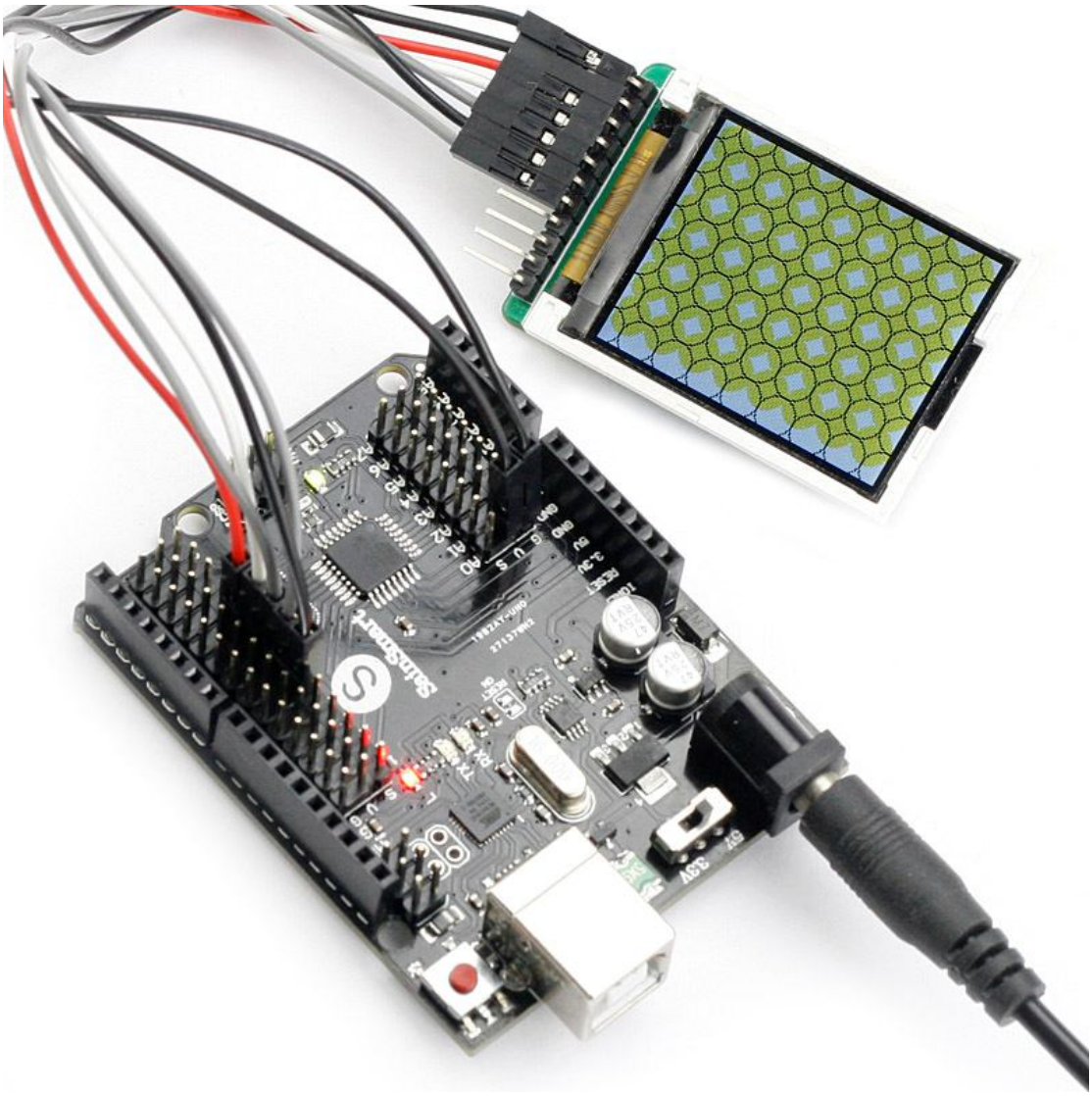
When finish the download, unzip the “arduino0023.zip”, open the software and this application will pop up like this:



then download the document “TFT18.rar” provided by SainSmart , unzip it and put it under the “libraries” file. The path will be like this:



Here we have “graphicstest”, click it and it will show like this:



next click up the “upload”, then you will have the software in the SainSmart UNO R3 and the LCD will show like this: