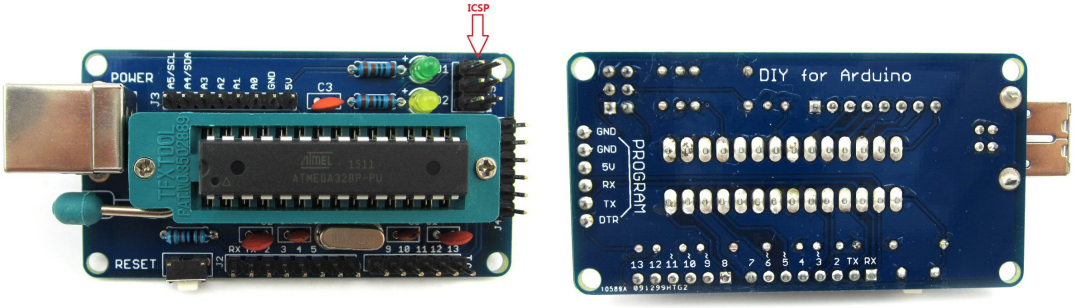
Arduino DIY Parts User manual



NAME: Arduino DIY Parts User manual

VERSION: v1.0

DATE: Aug 5, 2015

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0 Please read me first!

(1) According to <Arduino DIY Parts Soldering Guide.pdf> to solder all the parts of the kit.

(2) If you do not get the Arduino IDE, please down it here.

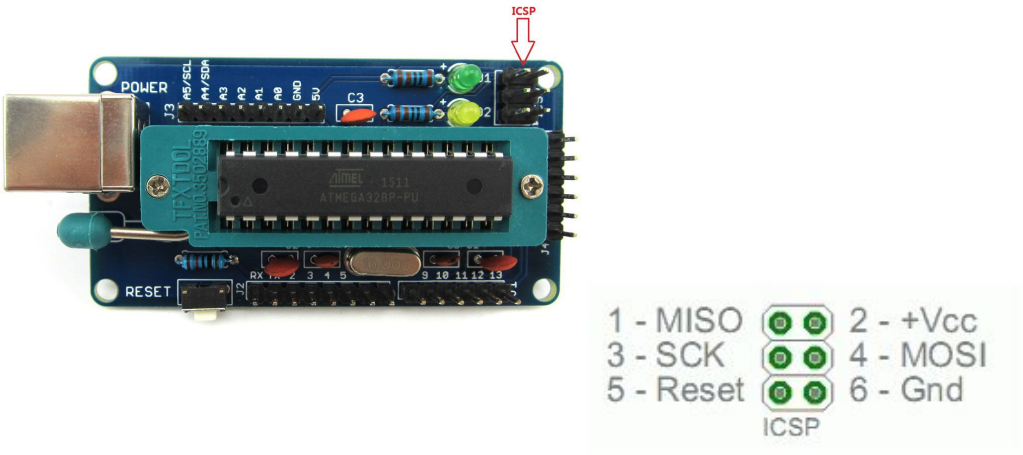
(3) You should get an Arduino UNO R3 board(You may borrow it from your friends) to burn the bootloader to this DIY board.

(4) You should get an USB to TTL module such as original FT232RL module / CH340G module(SKU: 379444) to upload Arduino code to this board.

1 Burn Arduino bootloader

(1)Make sure the ATmega328P is plugged onto the green locking seat.

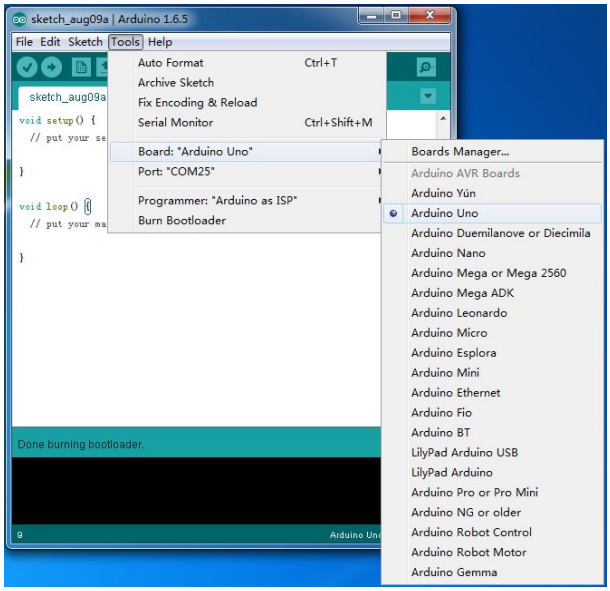
(2) The pin description of ICSP interface is as shown below:

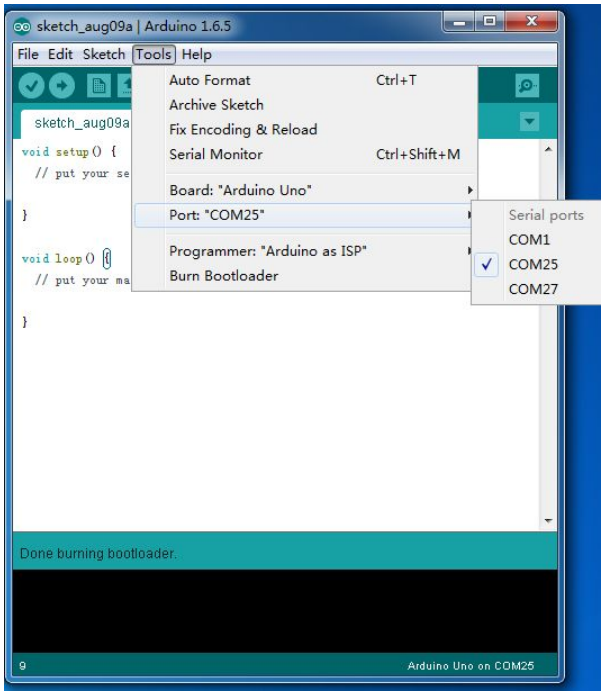


(3) Connect the ICSP interface of this board to your Arduino UNO R3 as shown in the following table.

ICSP	Arduino UNO R3
1 - MISO	12
2 - +Vcc	5V
3 - SCK	13
4 - MOSI	11
5 - Reset	10
6- Gnd	GND

(4) Connect the USB cable. Open the Arduino IDE and select the correct board (Arduino Uno), and the serial port that it occupies. And then select Arduino as ISP. Note that you should select AVRISP mkII when uploading the sketch.


sketch_aug09a | Arduino 1.6.5
File Edit Sketch Tools Help
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board: "Arduino Uno"
Port: "COM25"
Programmer: "Arduino as ISP"
Burn Bootloader
Boards Manager...
Arduino AVR Boards
Arduino Yún
Arduino Uno
Arduino Duemilanove or Diecimila
Arduino Nano
Arduino Mega or Mega 2560
Arduino Mega ADK
Arduino Leonardo
Arduino Micro
Arduino Esplora
Arduino Mini
Arduino Ethernet
Arduino Fio
Arduino BT
LilyPad Arduino USB
LilyPad Arduino
Arduino Pro or Pro Mini
Arduino NG or older
Arduino Robot Control
Arduino Robot Motor
Arduino Gemma
Done burning bootloader.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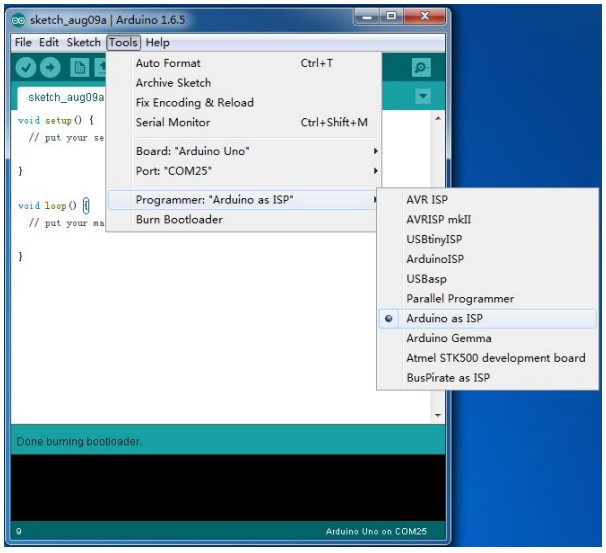
Board: "Arduino Uno"
Port: "COM25"
Programmer: "Arduino as ISP"
Burn Bootloader
Serial ports
COM1
COM25
COM27
Done burning bootloader.
9
Arduino Uno on COM25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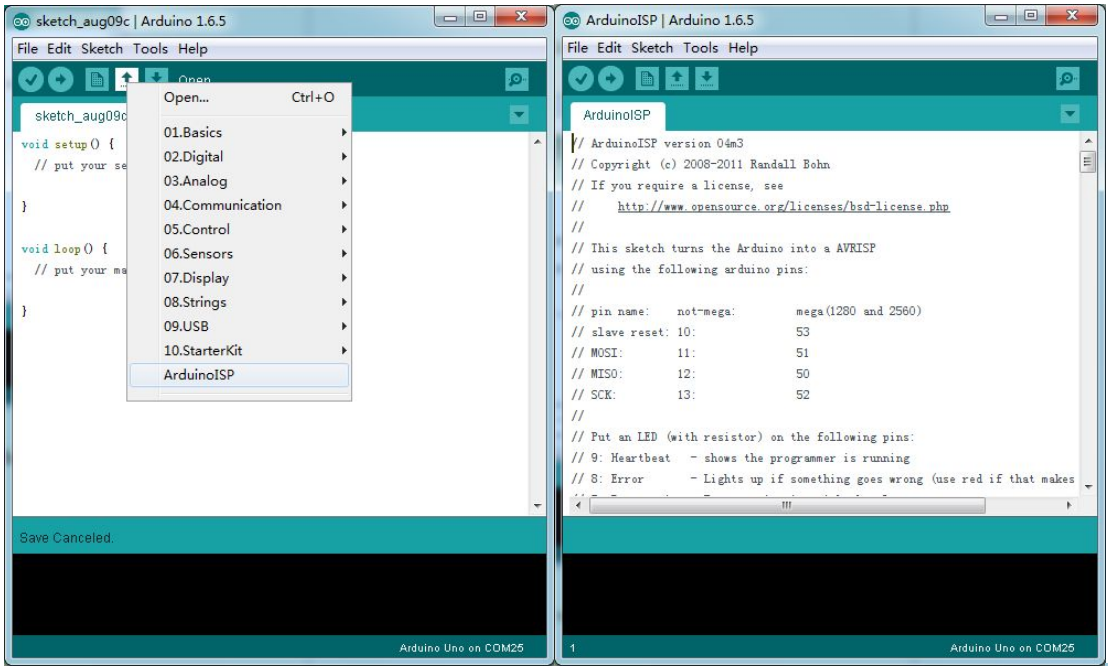
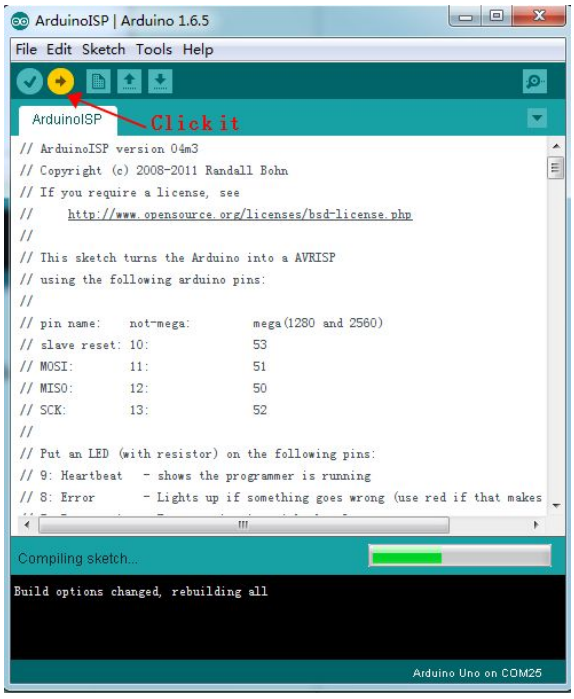
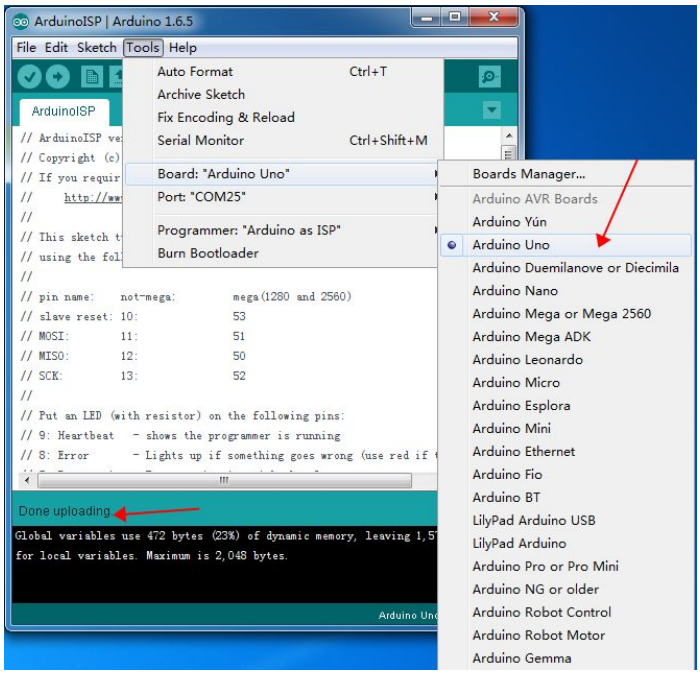
Burn Bootloader
AVR ISP
AVRISP mkII
USBtinyISP
ArduinoISP
USBasp
Parallel Programmer
Arduino as ISP
Arduino Gemma
Atmel STK500 development board
BusPirate as ISP
Done burning bootloader.
9
Arduino Uno on COM25

(5) Open ArduinoISP sketch, and upload the sketch to the Arduino UNO R3 to use it as an in-system program (ISP).

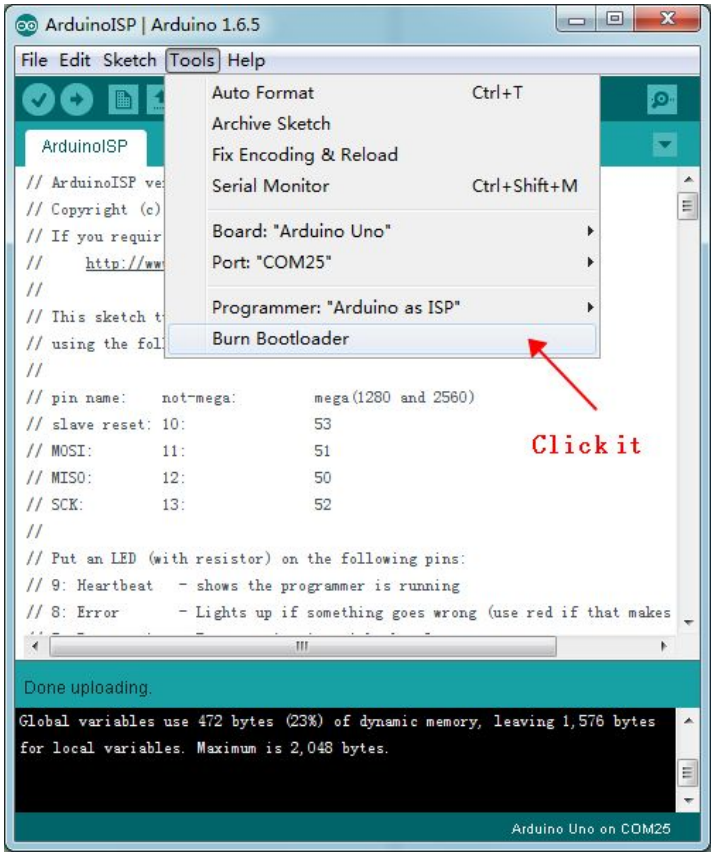


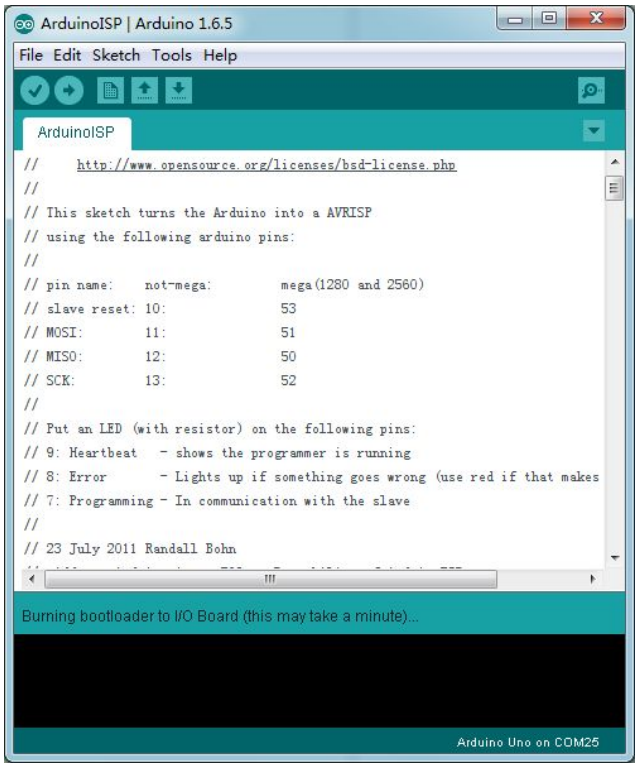


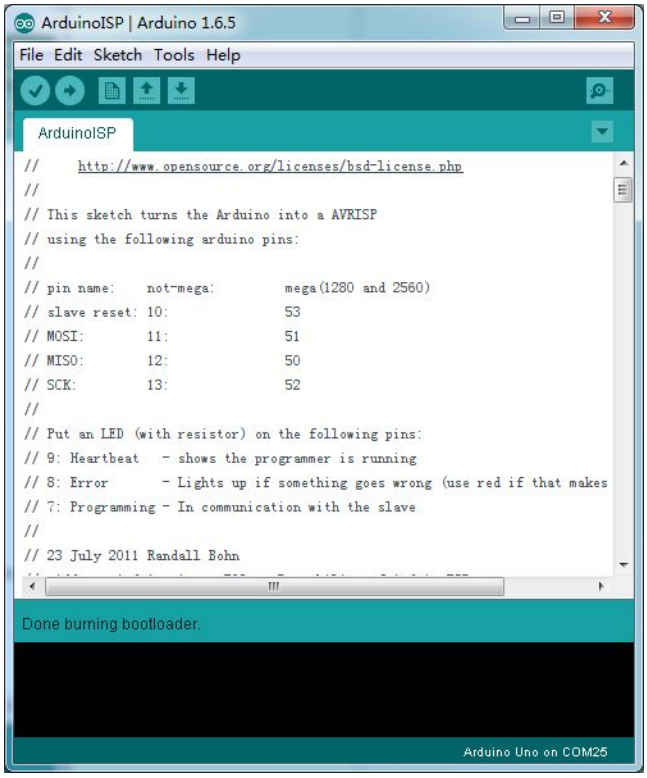
(6) When you has done uploading, you can select which board type you want the Arduino DIY board to be. We select Arduino Uno here.



(7) Click Tools/Burn Bootloader to burn the booloader via the ICSP interface.




ArduinoISP | Arduino 1.6.5
File Edit Sketch Tools Help
ArduinoISP
// http://www.opensource.org/licenses/bsd-license.php
//
// This sketch turns the Arduino into a AVRISP
// using the following arduino pins:
//
// pin name: not-mega: mega(1280 and 2560)
// slave reset: 10: 53
// MOSI: 11: 51
// MISO: 12: 50
// SCK: 13: 52
//
// Put an LED (with resistor) on the following pins:
// 9: Heartbeat - shows the programmer is running
// 8: Error - Lights up if something goes wrong (use red if that makes
// 7: Programming - In communication with the slave
//
// 23 July 2011 Randall Bohn
Burning bootloader to I/O Board (this may take a minute)...
Arduino Uno on COM25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// 23 July 2011 Randall Bohn
Done burning bootloader.
Arduino Uno on COM25

2 Upload Arduino code

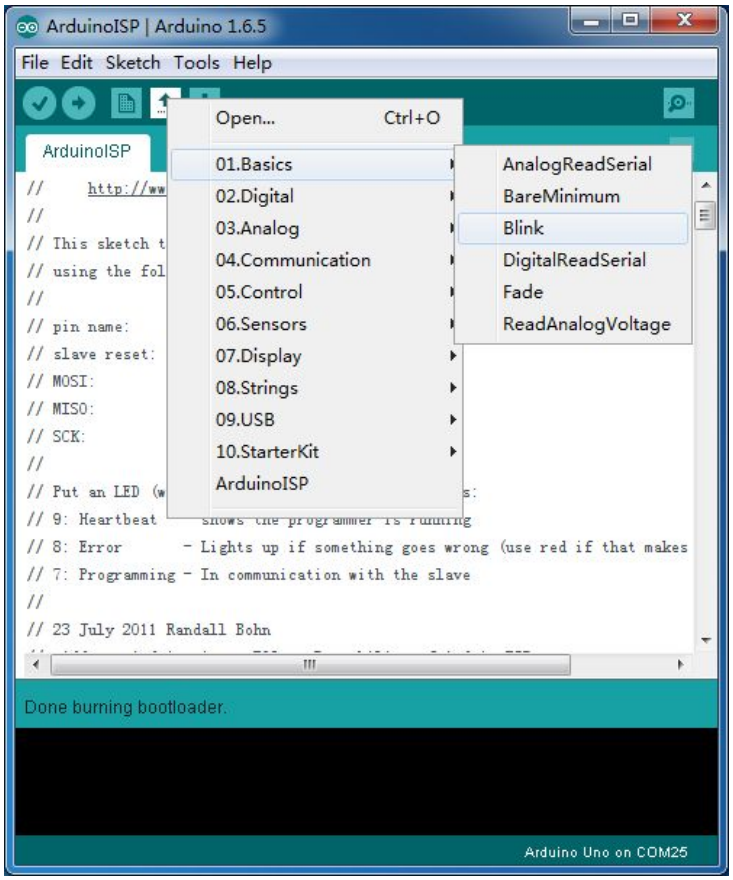
(1) We use CH340G USB to TTL module(DX SKU: 379444) here to upload Arduino code to the DIY board. Make sure that you have done installing the CH340G driver.

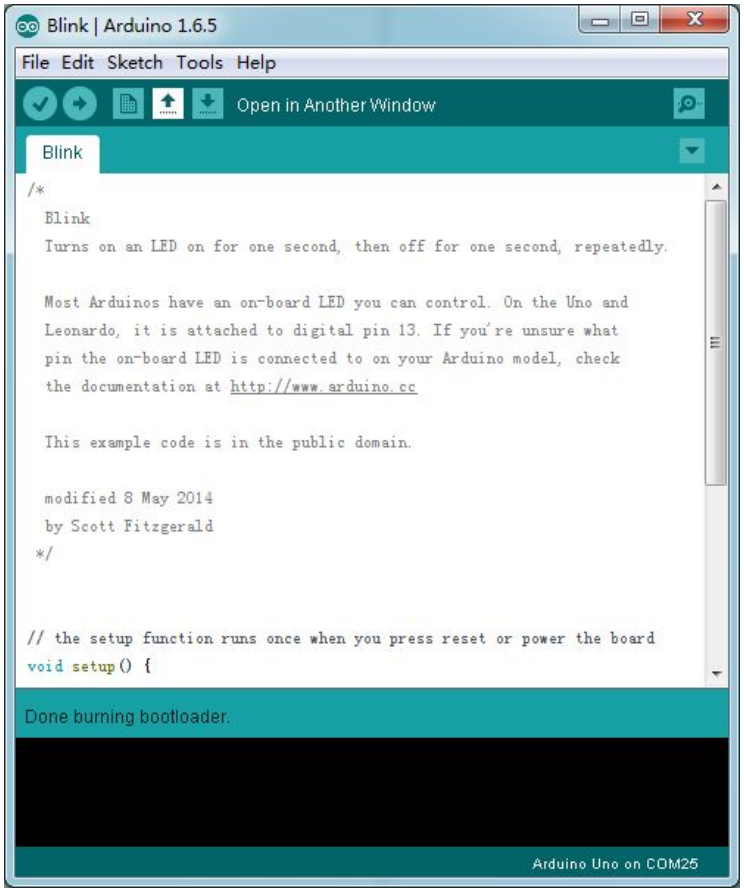
(2) Use the female-to-female dupont line to connect CH340G module and Arduino DIY board as shown in the following table.

Arduino DIY board	CH340G module
GND	GND
5V	VCC
RX	TXO
TX	RXI
DTR	GRN

(3) Connect the CH340G module to your PC.

(4) Open 01.Basics/Blink sketch. And select Board: “Arduino Uno”. Then select the serial port that your CH340G occupies.





(5) Select the programmer: “AVRISP mkII”.

(6) Click upload button to upload the example code. When it has done uploading, you can see that the yellow LED will blink every second.