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User Manual

Kit Arduino + Sensores Arduino

Model: TURING A 01Kit

Arduino IDE (Integrated Development Environment)

Introduction

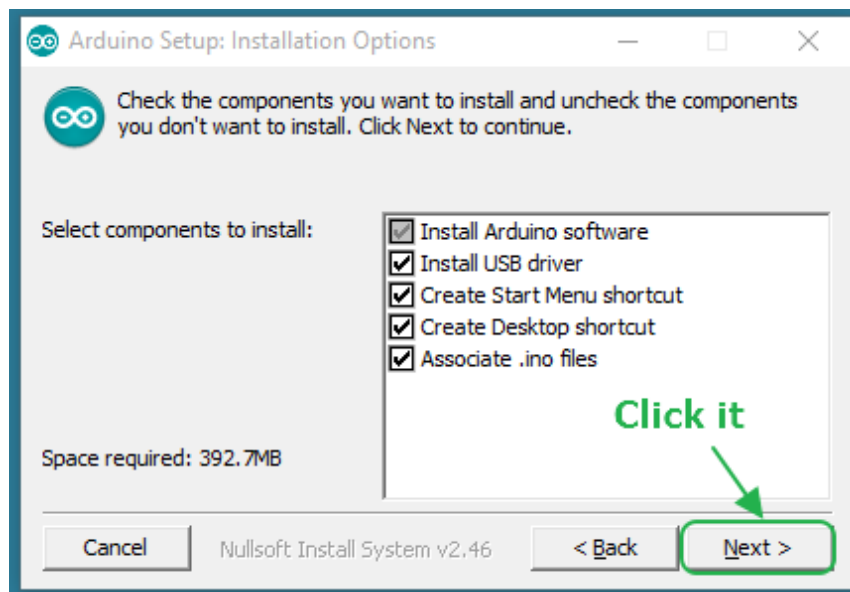
The Arduino Software (IDE) is easy to use for beginners, yet flexible enough for advanced users to take advantage of as well. For teachers, it's conveniently based on the Processing programming environment, so students learning to program in that environment will be familiar with how the Arduino IDE works.

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Operation demo

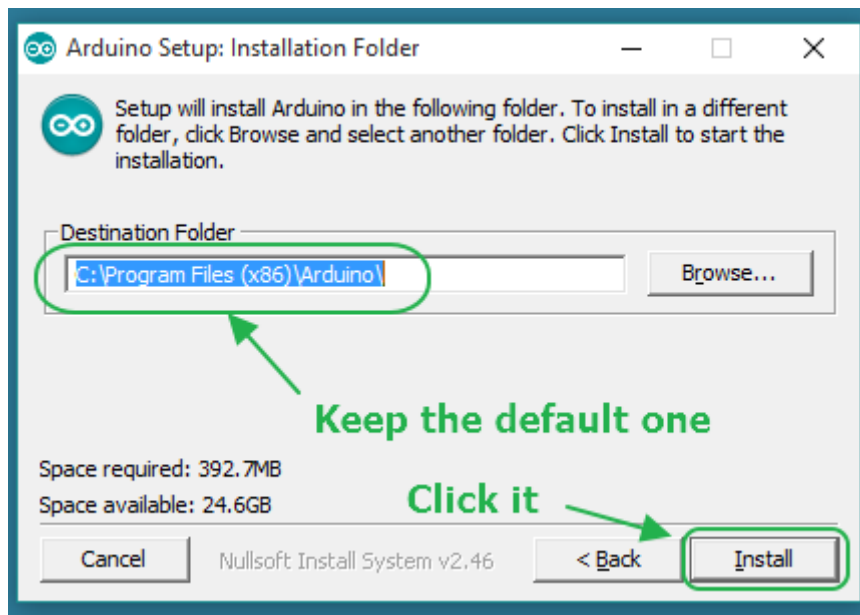
Step 1: Install the Arduino Software (IDE)

Download the latest version from this page: <http://arduino.cc/en/Main/Software>.
Next, proceed with the installation and please allow the driver installation process.

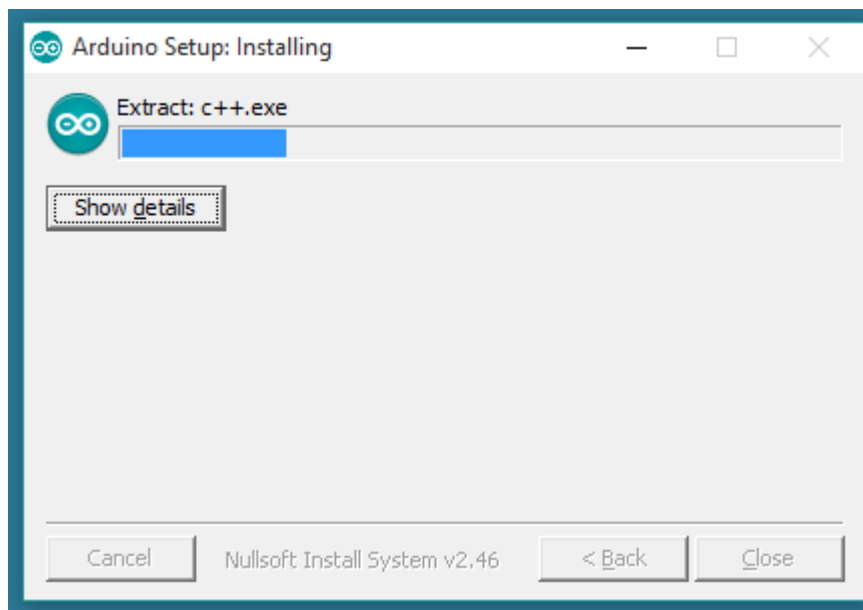


Choose the components to install and click “next” button.

Choose the installation directory.

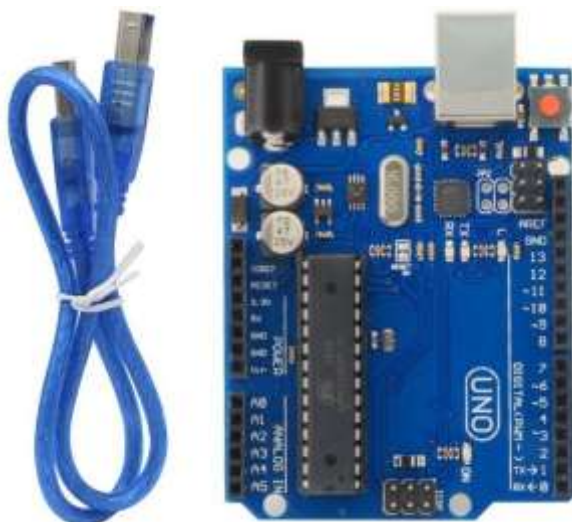


The process will extract and install all the required files to execute properly the Arduino Software (IDE)



Step 2: Get a main board and USB cable

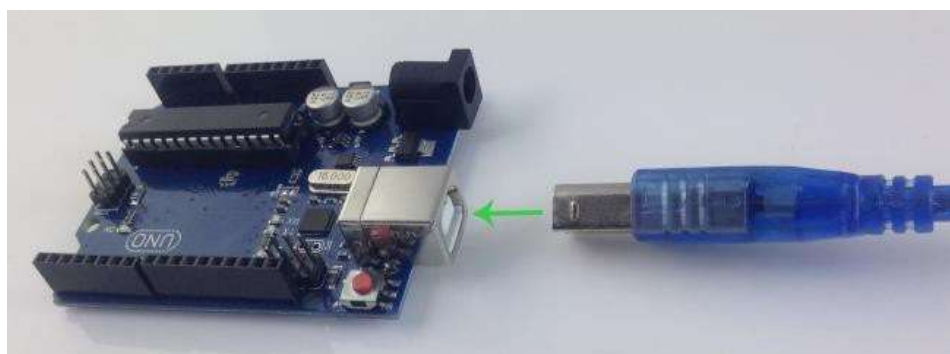
In this tutorial, you're using a TURING A 01 ki main board. You also need a standard USB cable (A plug to B plug): the kind you would connect to a USB printer, for example.



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Step 3: Connect the board

The USB connection with the PC is necessary to program the board and not just to power it up. The Uno and Mega automatically draw power from either the USB or an external power supply. Connect the board to your computer using the USB cable. **The green power LED (labelled PWR) should go on.**

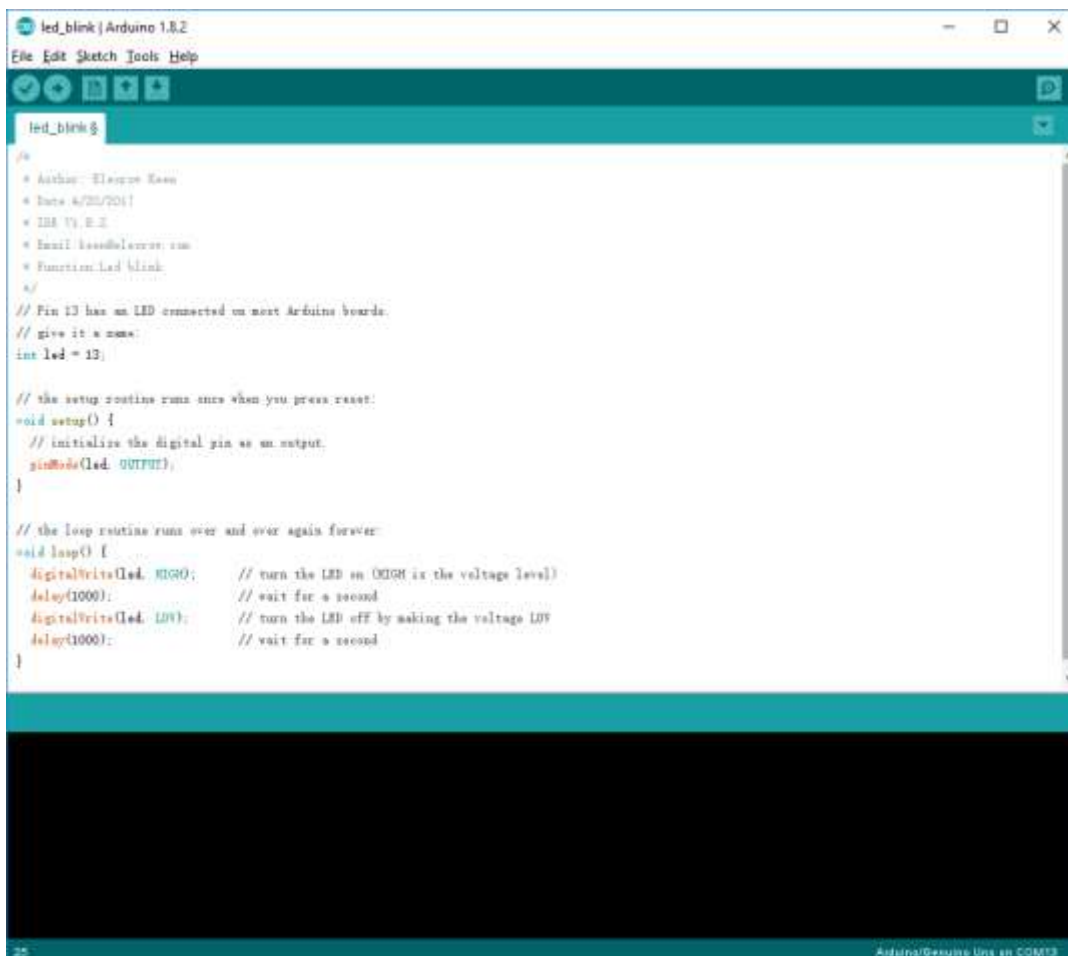


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Step 4: Open Lesson 1: LED blink

Open the LED blink example sketch: CD > For Arduino>Demo Code>Lesson1-LED_blink>led blink.

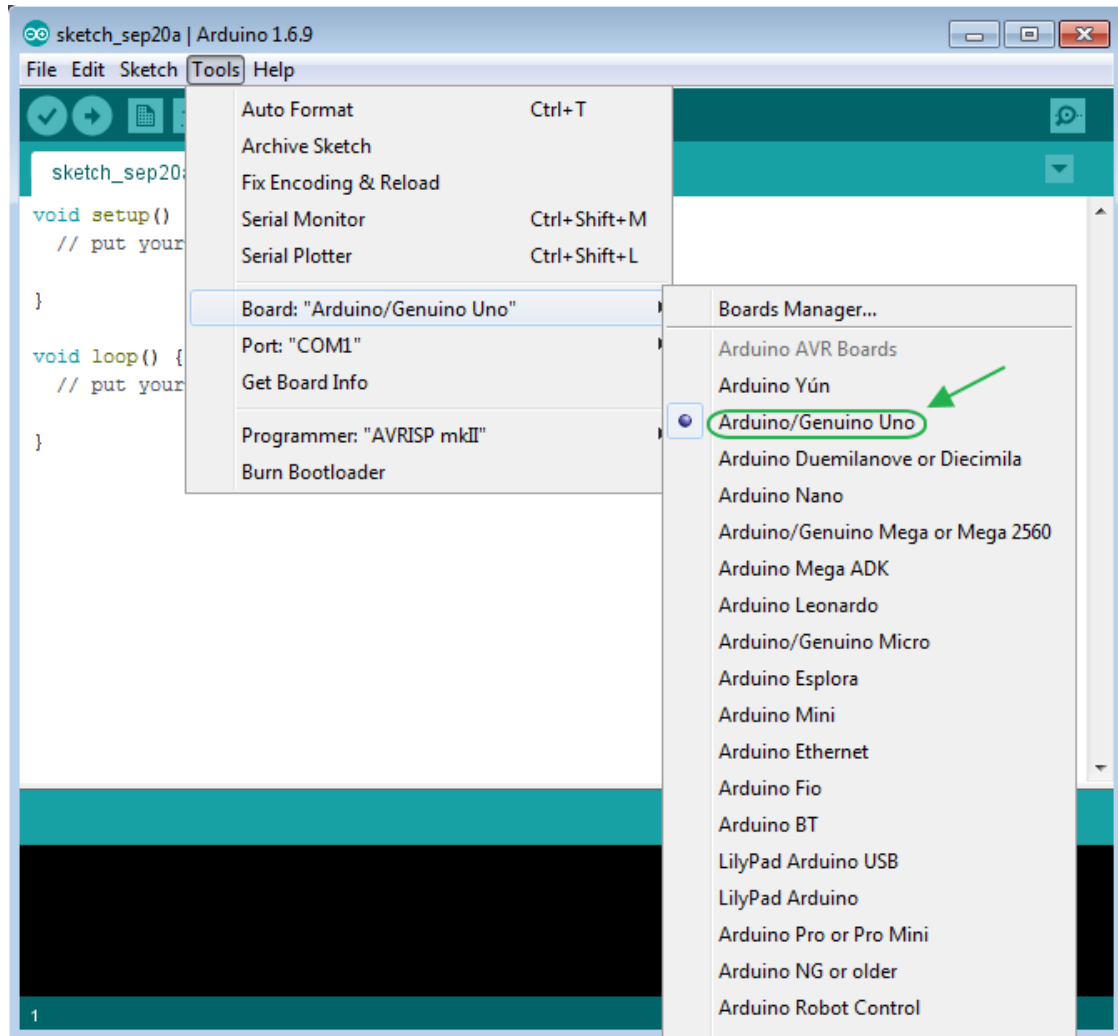
For Arduino > Demo Code > Lesson1-LED_blink > led_blink			
Name	Date modified	Type	Size
 led_blink.ino	9/27/2016 7:35 PM	Arduino file	1 KB



```
//  
/* Author: Elecrow Team  
 * Date: 8/20/2017  
 * IDE: V1.8.2  
 * Email: leed@elecrow.com  
 * Function: Led blink  
 */  
// Pin 13 has an LED connected on most Arduino boards.  
// give it a name:  
int led = 13;  
  
// the setup routine runs once when you press reset:  
void setup() {  
  // initialize the digital pin as an output.  
  pinMode(led, OUTPUT);  
}  
  
// the loop routine runs over and over again forever:  
void loop() {  
  digitalWrite(led, HIGH;    // turn the LED on (HIGH is the voltage level)  
  delay(1000);              // wait for a second  
  digitalWrite(led, LOW);   // turn the LED off by making the voltage LOW  
  delay(1000);              // wait for a second  
}
```

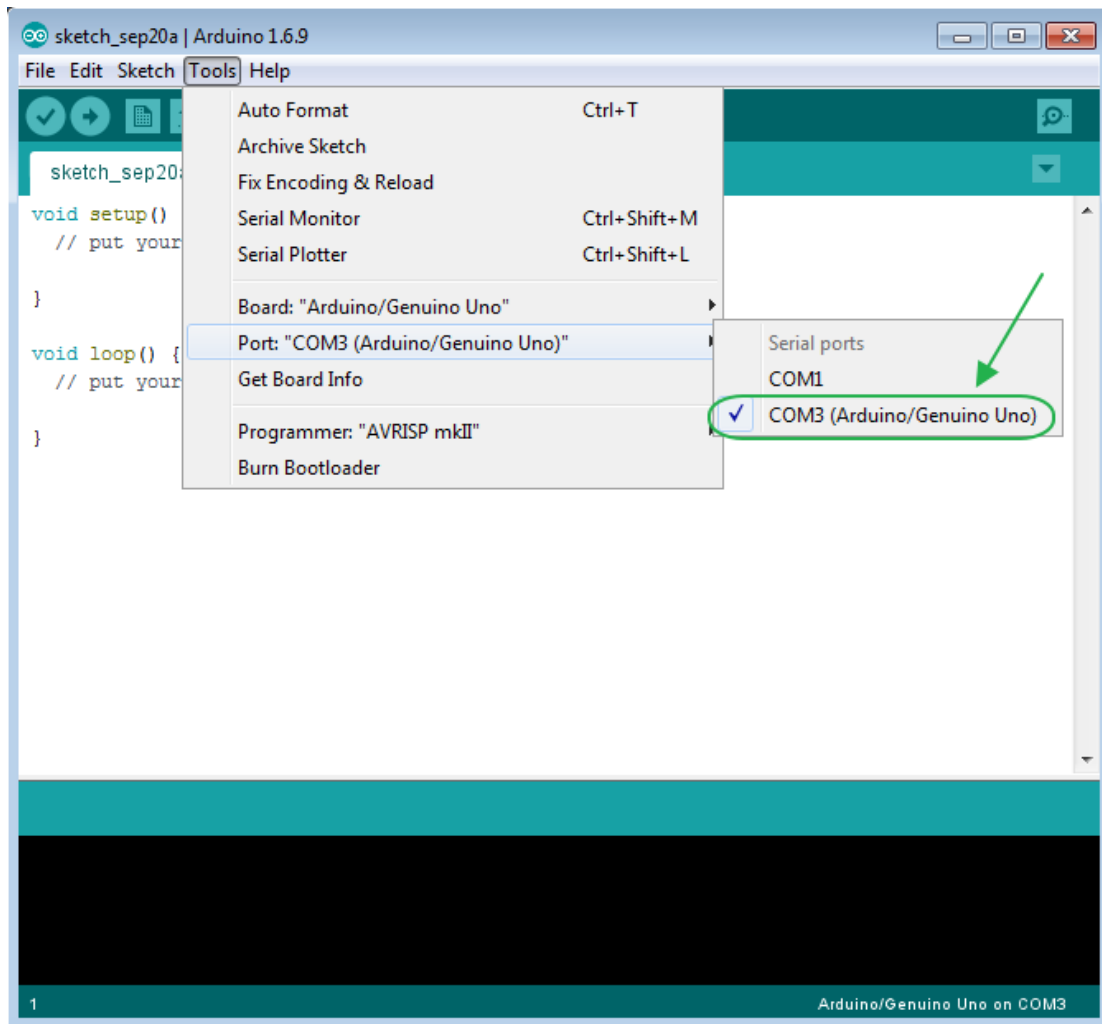
Step 5: Select your board

You'll need to select the entry in the Tools > Board menu that corresponds to your Arduino board.



Selecting an Arduino/Genuino Uno.

Step 6: Select your serial port



Select the serial device of the board from the Tools | Serial Port menu. This is likely to be COM3 or higher (COM1 and COM2 are usually reserved for hardware serial ports). To find out, you can disconnect your board and re-open the menu; the entry that disappears should be the Arduino board. Reconnect the board and select that serial port.

Step 7: Upload the program

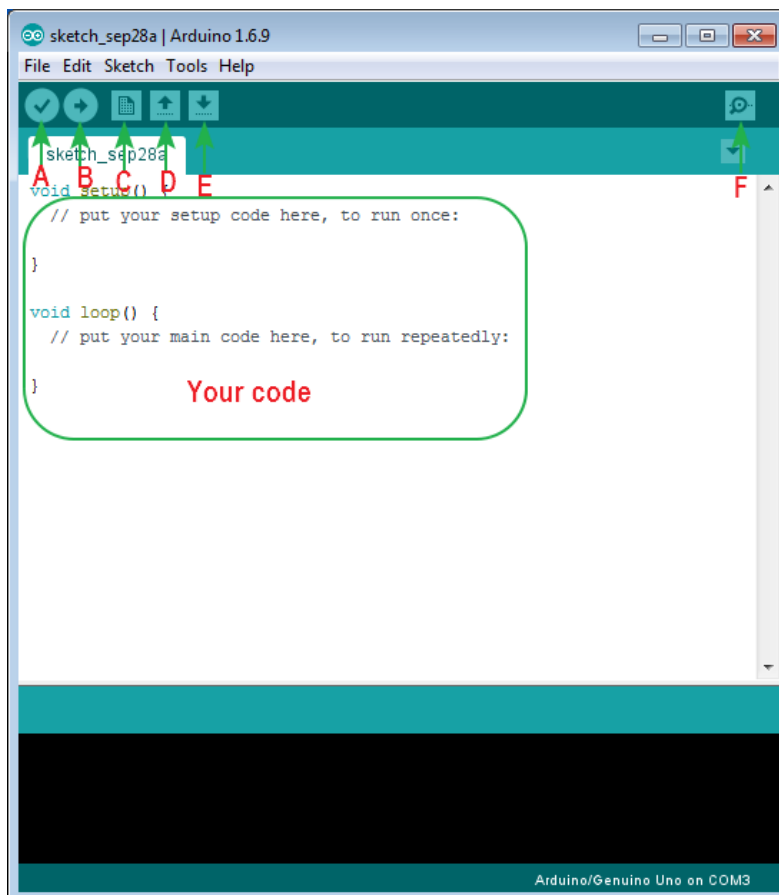
Now, simply click the "Upload" button in the environment. Wait a few seconds - you should see the RX and TX leds on the board flashing. If the upload is successful, the message "Done uploading." will appear in the status bar.



Step 8: Result

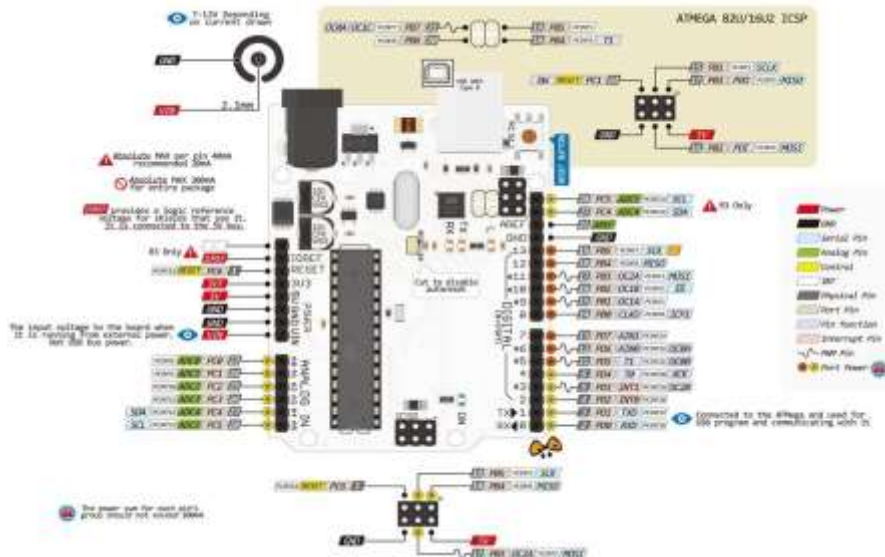
A few seconds after the upload finishes, you should see the pin 13 (L) LED on the board start to blink (in orange). If it does, congratulations! You've gotten Arduino up-and- running.

Arduino interface introduction



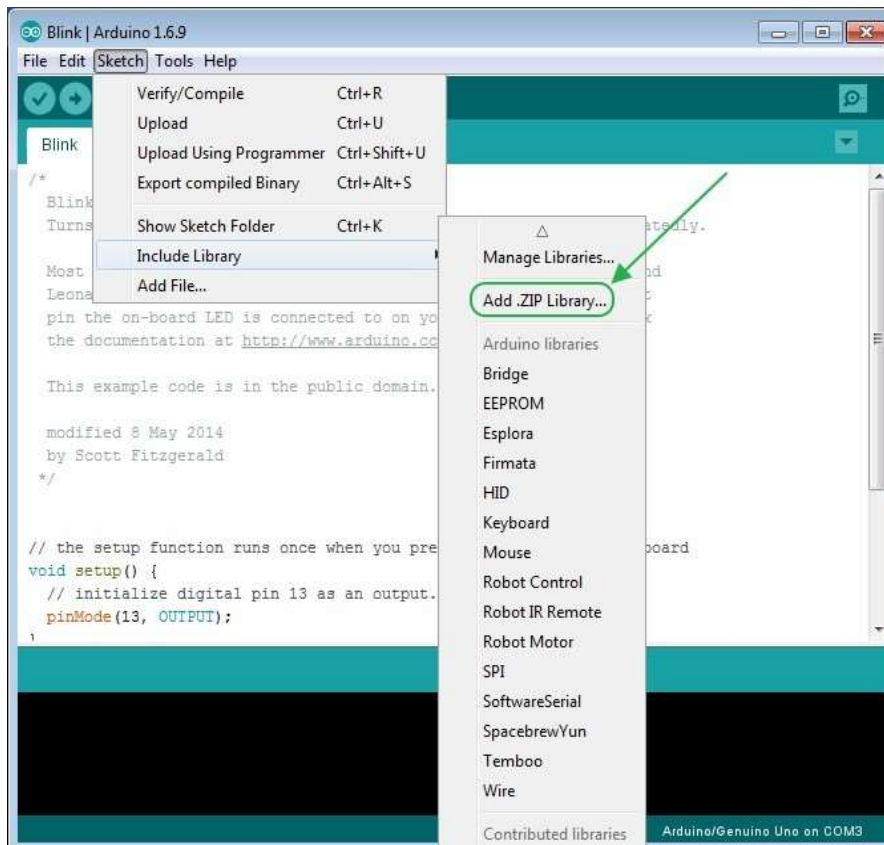
- A ->Compile
- B ->Upload
- C ->New
- D ->Open
- E ->Save
- F ->Serial monitor

Hardware introduction

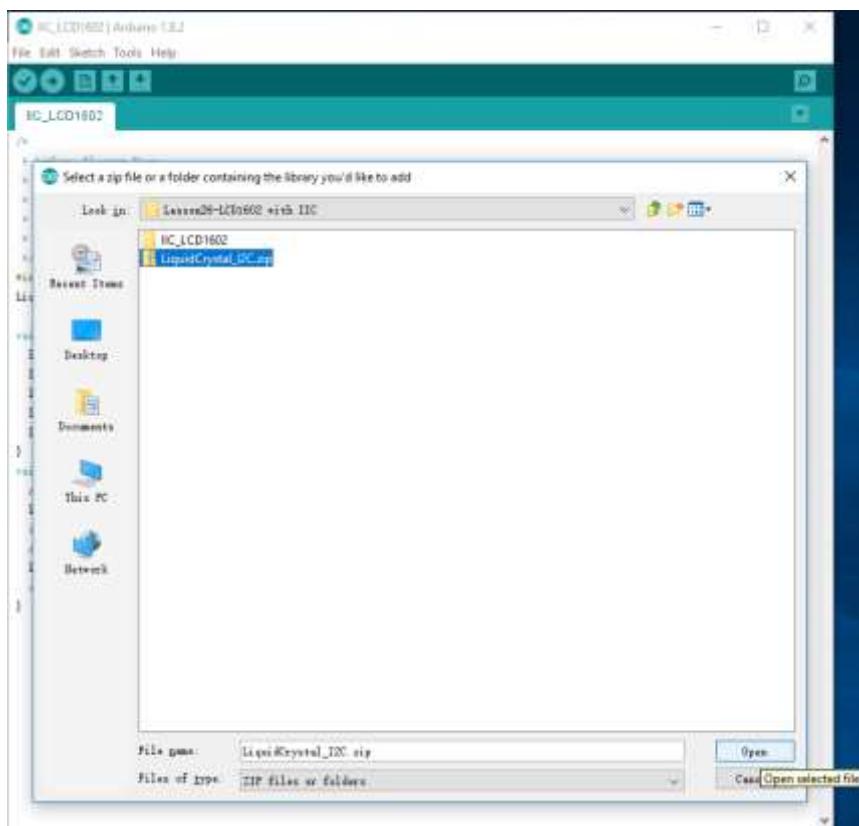


How to add library files

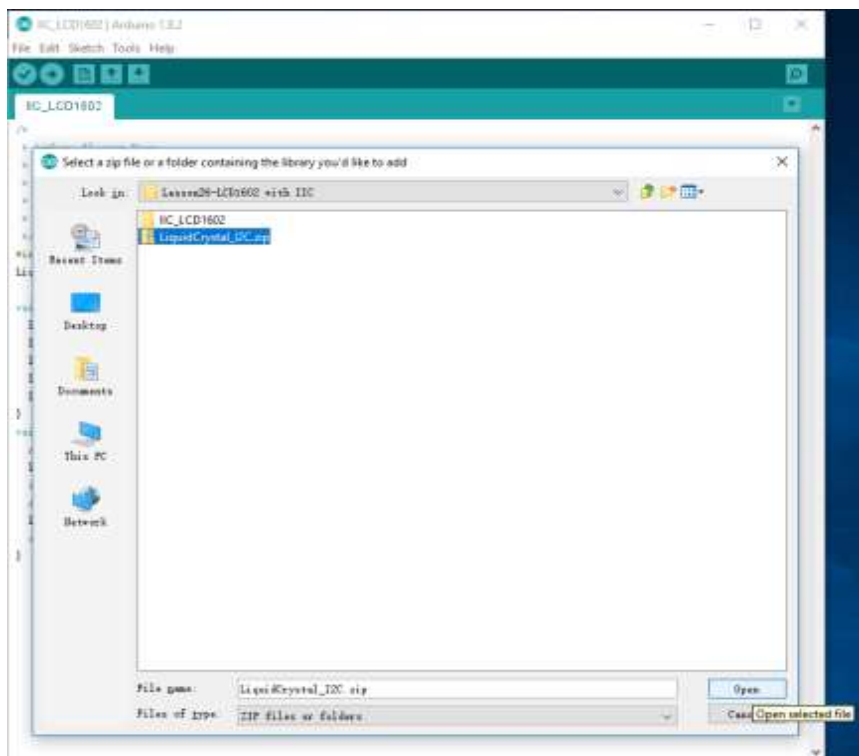
Step 1: Add library file: Sketch>Include Library>Add.ZIP Library



Step 2: Select your library file compression package on the demo code file, as follows:



Step 3: Finish



2. Kit Component List

2.1 ITEM 1: TURING A 01Kit Component List (34)

- 1x Arduino compatible board
- 1x USB Cable (1–3 meters)
- 1x 400-point Breadboard
- 1x Wooden Assembly Base (compatible with board)
- 1x 9V Battery Adapter
- 40x Breadboard Jumper Wires
- 2x Stranded Jumper Wires
- 6x Photoconductors (LDRs)
- 3x 10K Ohm Potentiometers
- 10x Pushbuttons
- 1x Temperature Sensor
- 1x Tilt Sensor
- 1x 1602 LCD
- 1x White LED
- 1x RGB LED
- 8x Red LEDs
- 8x Green LEDs
- 8x Yellow LEDs
- 3x Blue LEDs
- 1x 6V/9V DC Motor
- 1x Servo Motor
- 1x Buzzer
- 1x H-Shaped Jumper Conductor
- 1x Optocoupler
- 2x IRF520 MOSFET Transistors
- 5x 100µF Capacitors
- 5x 1N4007 Diodes
- 1x 40-pin Male Header Strip

- 20x 220 Ohm Resistors
- 5x 560 Ohm Resistors
- 5x 1K Ohm Resistors
- 5x 4.7K Ohm Resistors
- 20x 10K Ohm Resistors
- 5x 1M Ohm Resistors
- 5x 10M Ohm Resistors

2.2 ITEM 2: TURING A 01Kit Component List (48)

- 4x 3V–6V Motor with Gearbox
- 3x Servo Motor
- 1x Small Passive Buzzer Module
- 1x 2-Color LED Module
- 1x Hit Sensor Module
- 1x Vibration Switch Module
- 1x Photoresistor Module
- 1x Keyswitch Module
- 1x Tilt Switch Module
- 1x 3-Full-Color LED SMD Module
- 1x Infrared Emitter Sensor Module
- 1x 3-Color LED Module
- 1x Open Optical Mercury Module
- 1x 3mm LED 2-Color Module
- 1x Active Buzzer Module
- 1x Temperature Sensor Module
- 1x Auto Flash Color LED Module
- 1x Mini Magnetic Reed Module
- 1x Hall Effect Sensor Module
- 1x Infrared Sensor Receiver Module
- 1x Class Bihor Magnetic Sensor
- 1x Magic Light Cup Module

- 1x Rotary Encoder Module
- 1x Optical Module
- 1x Pulse Detection Module
- 1x Magnetic Switch Module
- 1x Obstacle Detection Module
- 1x Sensor Hunting Module
- 1x Sound Sensor Module (Microphone)
- 1x Laser Sensor Module
- 1x 5V Relay Module
- 1x Analog Temperature Sensor Module
- 1x Digital Temperature Sensor Module
- 1x Hall Effect Magnetic Linear Sensor
- 1x Fire Detector
- 1x Microphone Sensor Module
- 1x Temperature and Humidity Sensor Module
- 1x XY Axis Joystick Module
- 1x Metal Contact Sensor Module
- 1x Bluetooth Module
- 1x WiFi Module
- 1x HL-69 Soil Moisture Sensor Module
- 1x L298N H-Bridge Motor Driver Module
- 1x ESP8266 Module
- 1x Sensor Shield V5
- 1x 8x8 LED Matrix with MAX7219 Controller
- 40x Male-to-Female Dupont Cables
- 40x Female-to-Female Dupont Cables

3.Sensors catalogue

3.1.ITEM 1: TURING A 01Kit Component List (34)

- 1x Arduino compatible board



- 1x USB Cable (1m)



- 1x 400-point Breadboard



- 1x Wooden Assembly Base (compatible with board)



- 1x 9V Battery Adapter



- 40x Breadboard Jumper Wires



- 2x Stranded Jumper Wires



- 6x Photoconductors (LDRs)



- 3x 10K Ohm Potentiometers



- 10x Pushbuttons



- 1x Temperature Sensor



- 1x Tilt Sensor



- 1x 1602 LCD



- 1x White LED



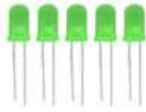
- 1x RGB LED



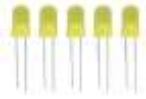
- 8x Red LEDs



- 8x Green LEDs



- 8x Yellow LEDs



- 3x Blue LEDs



- 1x 6V/9V DC Motor



- 1x Servo Motor



- 1x Buzzer



- 1x H-Shaped Jumper Conductor(H-bridge motor driver)



- 1x Optocoupler



- 2x IRF520 MOSFET Transistors



- 5x 100 μ F Capacitors



- 5x 1N4007 Diodes



- 1x 40-pin Male Header Strip



- 20x 220 Ohm Resistors



- 5x 560 Ohm Resistors



- 5x 1K Ohm Resistors



- 5x 4.7K Ohm Resistors



- 20x 10K Ohm Resistors



- 5x 1M Ohm Resistors



- 5x 10M Ohm Resistors



3.2.ITEM 2: TURING A 01Kit Component List (48)

- 4x 3V–6V Motor with Gearbox



- 3x Servo Motor



- 1x Small Passive Buzzer Module



- 1x 2-Color LED Module



- 1x Hit Sensor Module



- 1x Vibration Switch Module



- 1x Photoresistor Module



- 1x Keypush Module



- 1x Tilt Switch Module



- 1x 3-Full-Color LED SMD Module



- 1x Infrared Emitter Sensor Module



- 1x 3-Color LED Module



- 1x Open Optical Mercury Module



- 1x 3mm LED 2-Color Module



- 1x Active Buzzer Module



- 1x Temperature Sensor Module



- 1x Auto Flash Color LED Module



- 1x Mini Magnetic Reed Module



- 1x Hall Effect Sensor Module



- 1x Infrared Sensor Receiver Module



- 1x Class Bihor Magnetic Sensor



- 1x Magic Light Cup Module



- 1x Rotary Encoder Module



- 1x Optical Module (UV Detection Sensor)



- 1x Heart Rate Sensor Module



- 1x Magnetic Switch Module



- 1x Obstacle Detection Module



- 1x Sensor Hunting Module (PIR Module)



- 1x Sound Sensor Module (Microphone)



- 1x Laser Sensor Module



- 1x 5V Relay Module



- 1x Analog Temperature Sensor Module



- 1x Digital Temperature Sensor Module



- 1x Hall Effect Magnetic Linear Sensor



- 1x Fire Detector



- 1x Microphone Sensor Module



- 1x Temperature and Humidity Sensor Module



- 1x XY Axis Joystick Module



- 1x Metal Contact Sensor Module



- 1x Bluetooth Module



- 1x WiFi Module



- 1x HL-69 Soil Moisture Sensor Module



- 1x L298N H-Bridge Motor Driver Module



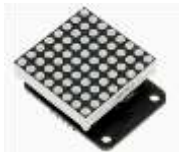
- 1x ESP8266 Module



- 1x Sensor Shield V5



- 1x 8x8 LED Matrix with MAX7219 Controller



- 40x Male-to-Female Dupont Cables



- 40x Female-to-Female Dupont Cables

