Electronics ventilator

COVID-19

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INNOVATIVE TOOLING

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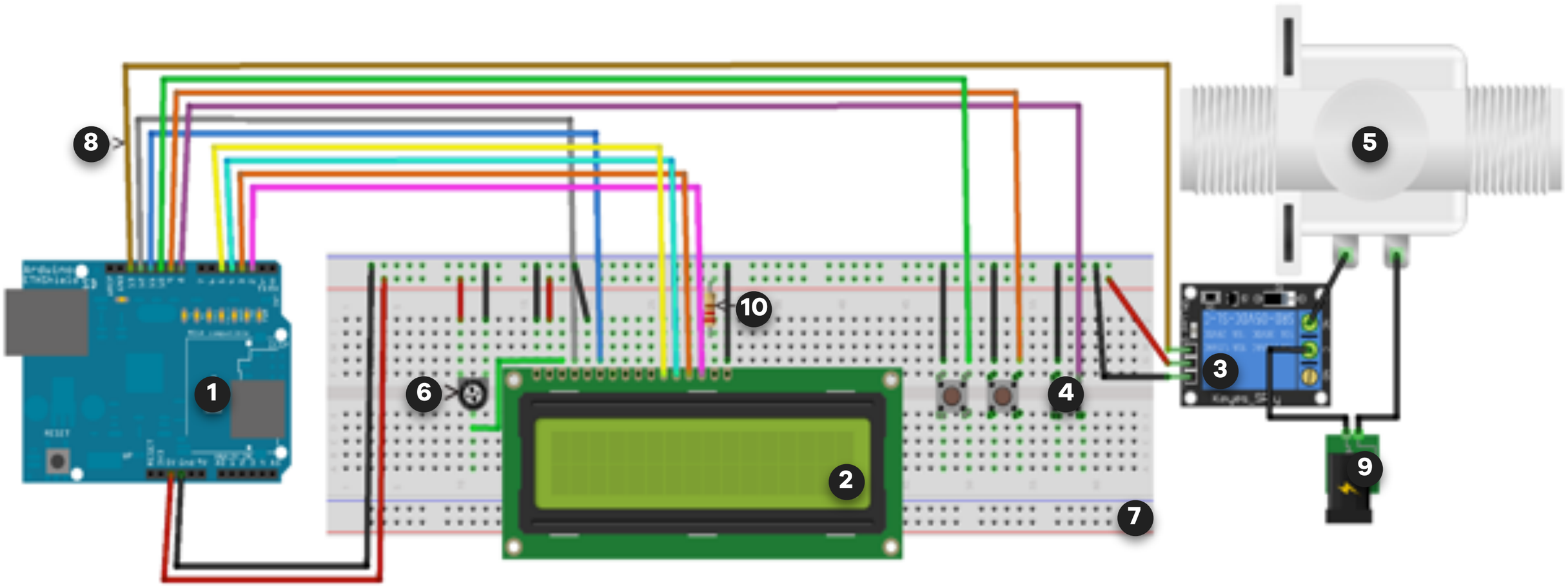
THE SCHEMATIC CIRCUIT

OF ARDUINO

Is shown in the following image:

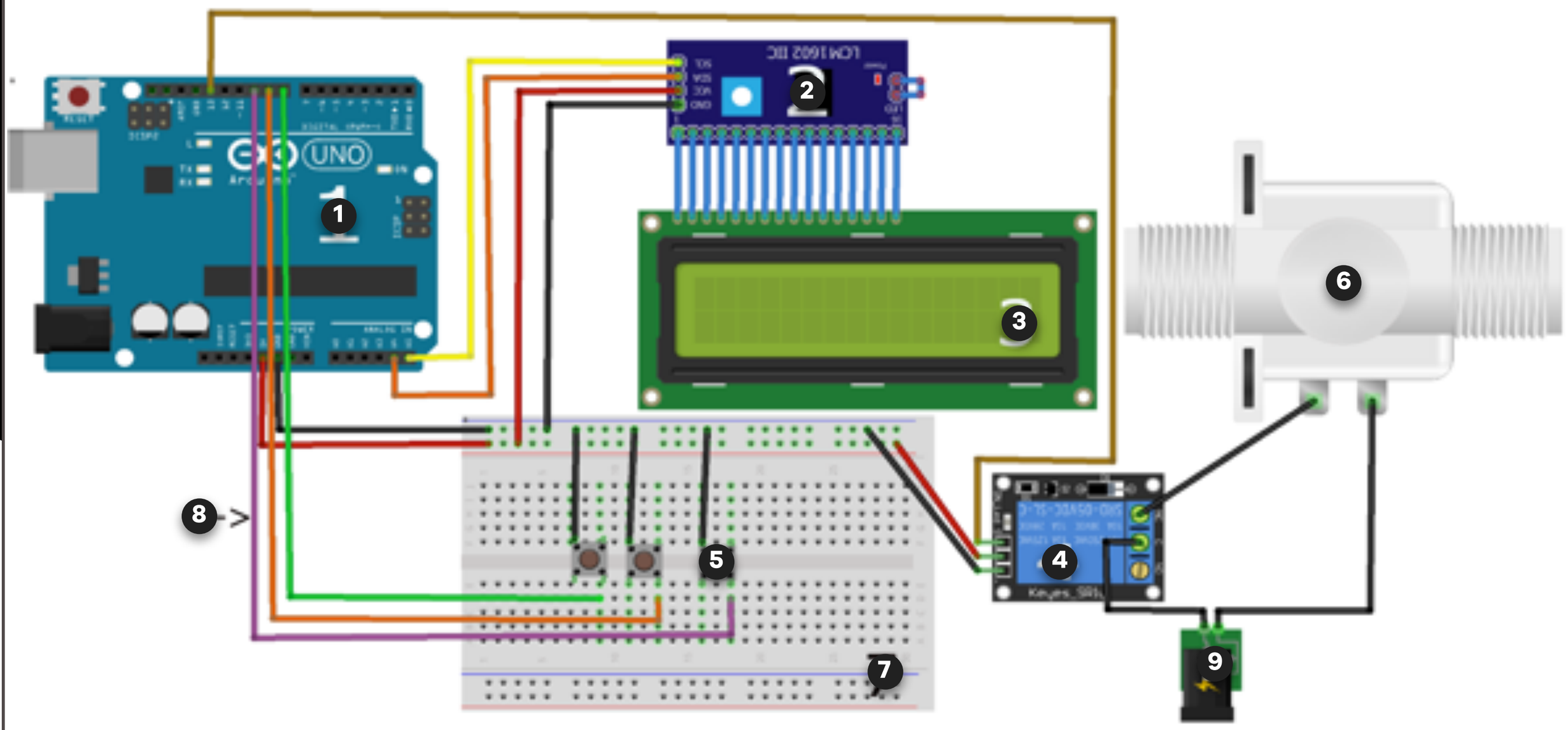


Component List:

1. Arduino one
2. Display LCD for Arduino 16x2
3. Module relay for Arduino 220v
4. 3 buttons for Arduino
5. Solenoid valve 24v or 12v
6. Potentiometer 10k
7. Protoboard
8. Cable DuPont
   (female-male, male-male)
9. Power source 24v 0 12
   (Depending on the valve used)
10. Resistance 220 ohms

SECOND SIMPLIFIED

SCHEME



1. Arduino one
2. Module i2c for LCD
3. Display LCD for arduino 16x2
4. Module relay for arduino 220v
5. 3 buttons for arduino
6. Solenoid valve 24v or 12v
7. Protoboard
8. Cable dupont
   (female-male, male-male)
9. Power source 24v 0 12
   (Depending on the valve used)

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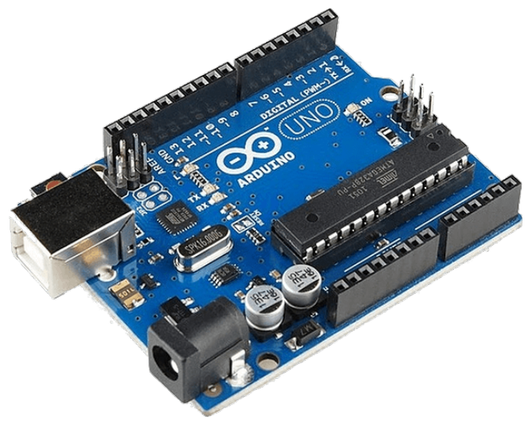
SHORT DESCRIPTION

OF MATERIALS USED

Arduino one

Open source microcontroller board based on the ATmega328P microchip.

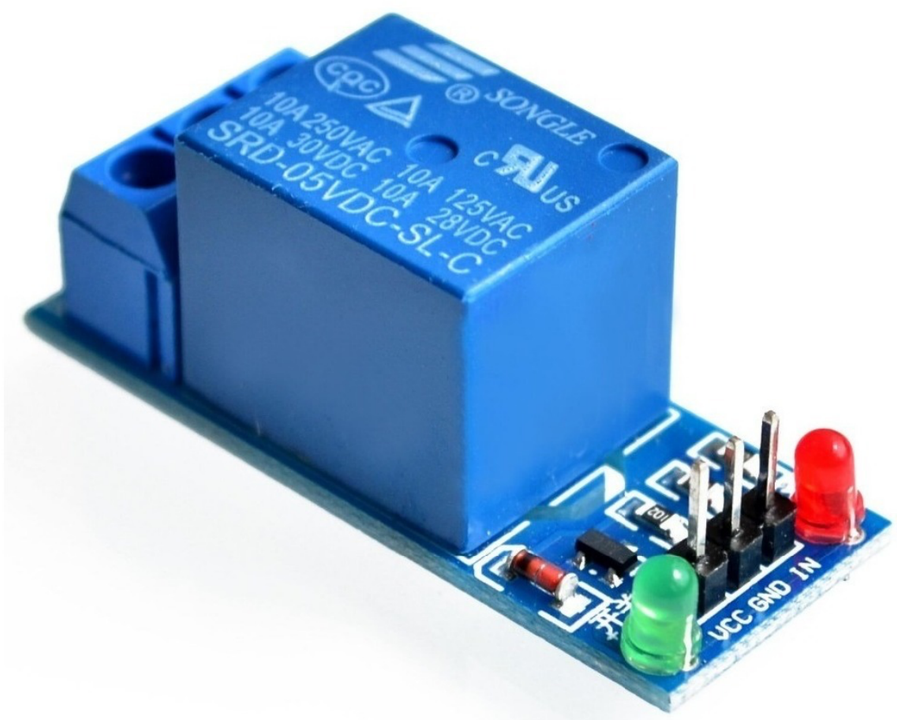


Display LCD 16X2

Liquid Crystal Display (LCD) is a flat display used in digital watches, cameras and many portable computers. LCD displays utilize two sheets of polarizing material with a liquid crystal solution between them. An electric current passed through the liquid causes the crystals to align so that light cannot pass through them. 16x2 which means it can display 16 characters per line and there are 2 such lines.

Relay Module

We can control high voltage electronic devices using relays. A Relay is actually a switch which is electrically operated by an electromagnet. The electromagnet is activated with a low voltage, for example 5 volts from a microcontroller and it pulls a contact to make or break a high voltage circuit.



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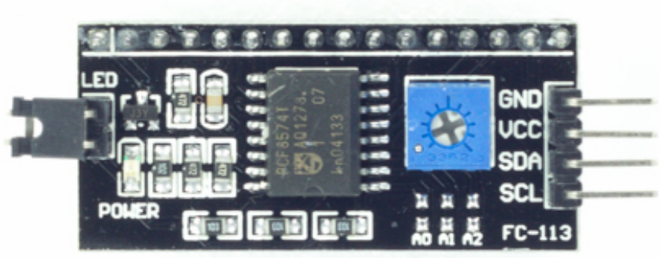
SHORT DESCRIPTION

OF MATERIALS USED

I2C LCD Adapter Module

IC/I2C Interface Adapter Module is used for 16×2 LCD Display.It uses the PCF8574T IC chip which converts I2C serial data to parallel data for the LCD display.Also this interface module simplifies connecting an Arduino to a 16×2 Liquid Crystal display using only 4 wires.



Solenoide valve

A solenoid valve is an electromechanical valve, designed to control the passage of a fluid through a duct or pipe. The valve is moved by a solenoid coil. It usually has only two positions: open and closed, or all and nothing. Solenoid valves are used in many applications to control the flow of all types of fluids.

UPLOAD CODE TO

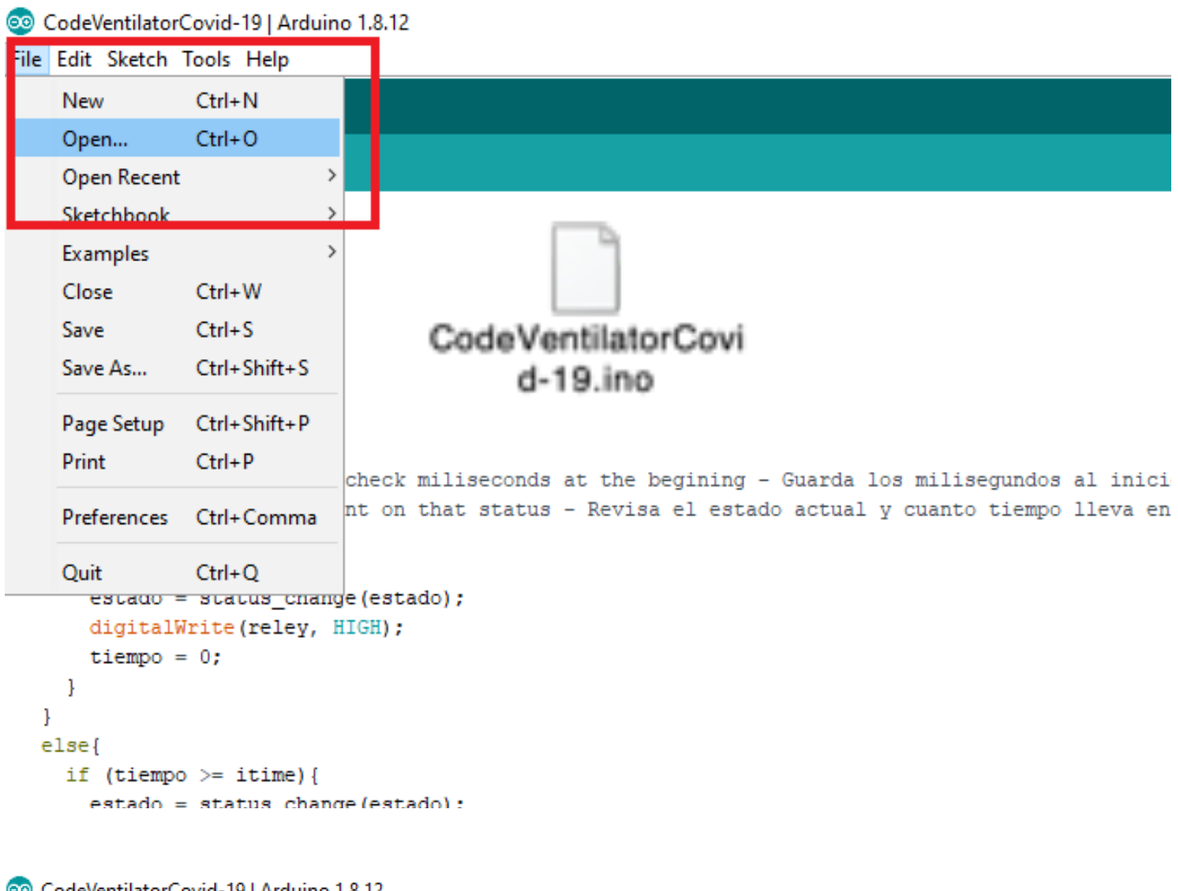
MICROCONTROLLER

It is as easy as installing the Arduino IDE on your computer, you can download it from this link:

https://www.arduino.cc/en/main/software

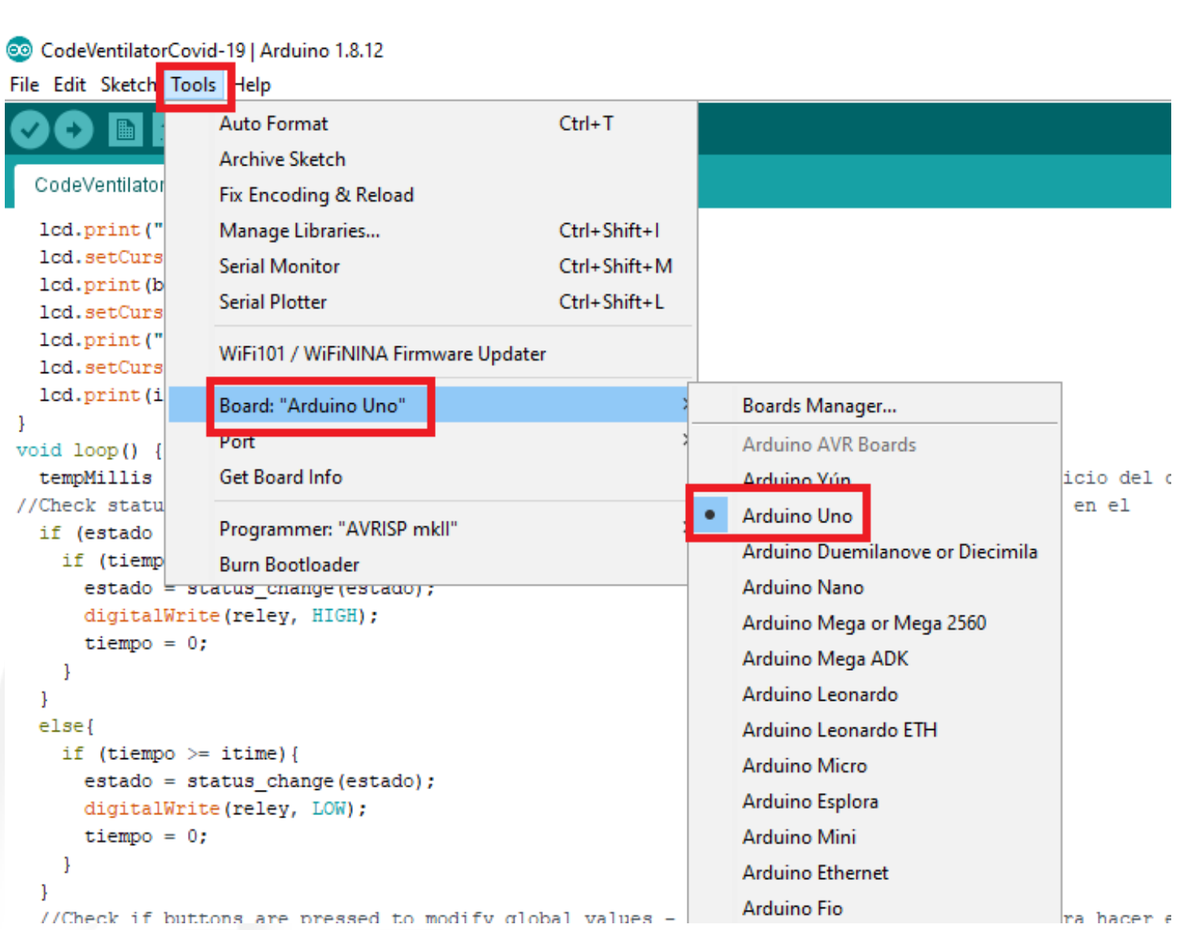
1.

Open the file below.



2.

Select Board Type Arduino UNO .



3.

Select Correct Serial Por.

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UPLOAD CODE TO

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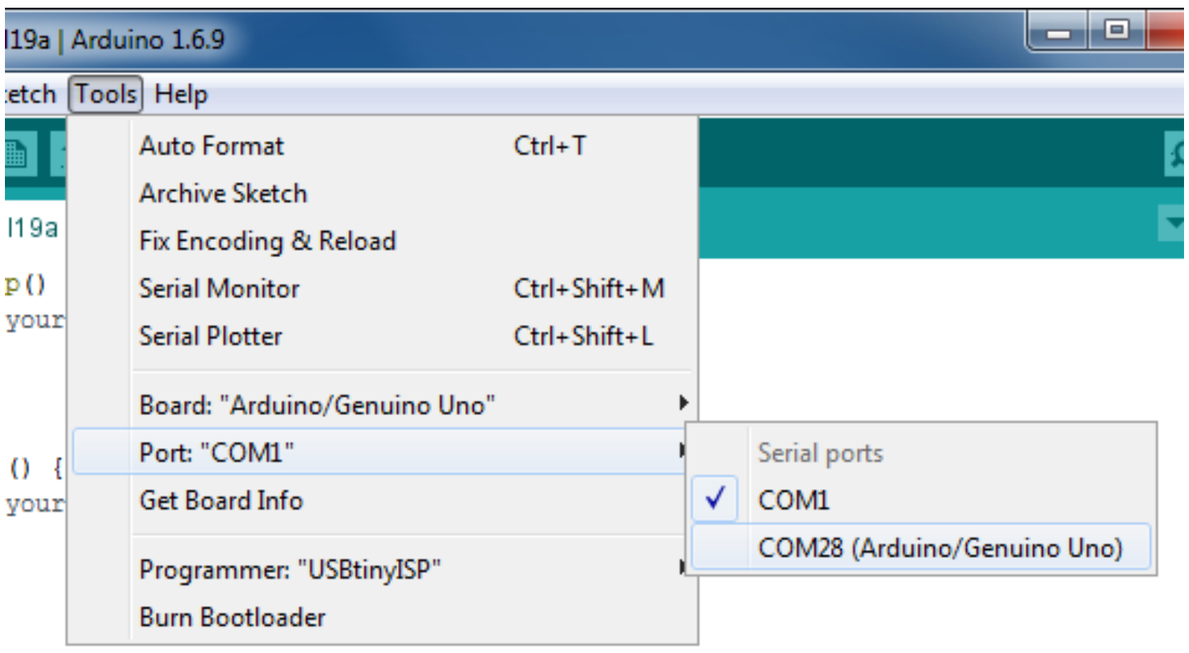
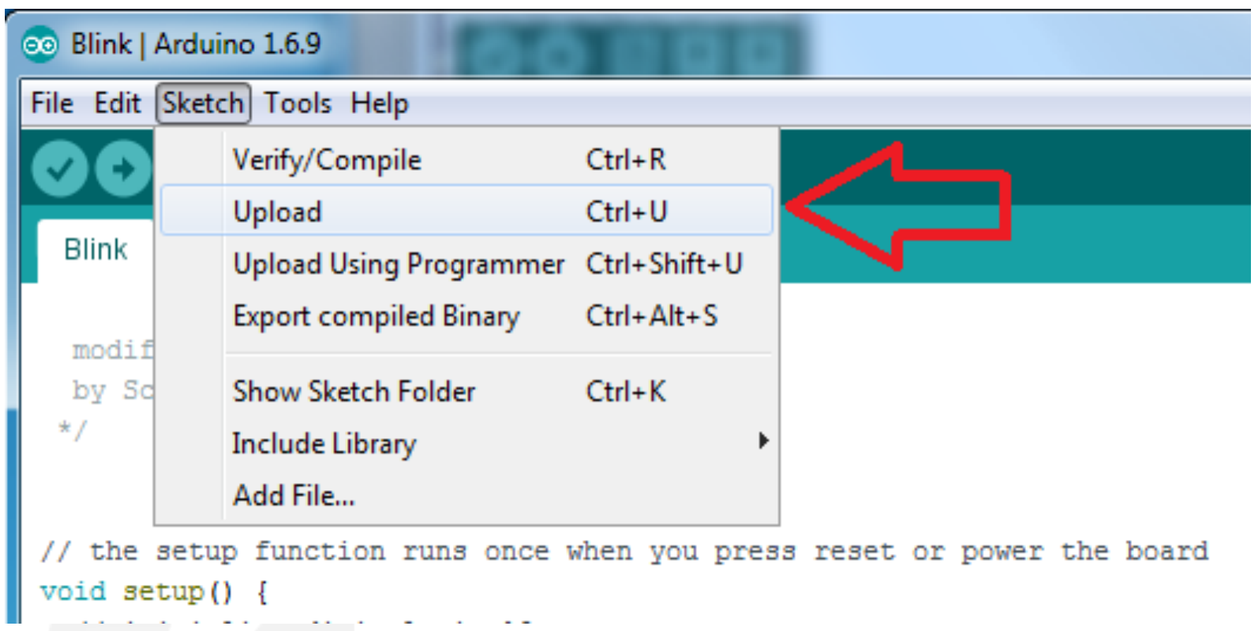


4.

Select Upload from the Sketch menu.



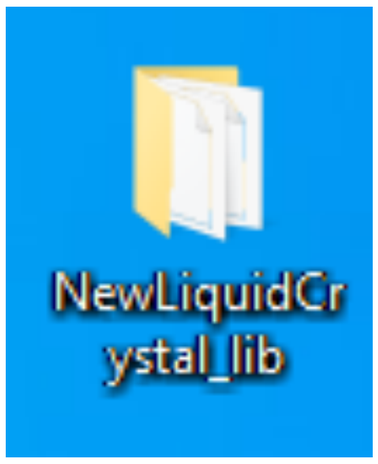
UPLOAD CODE TO

MICROCONTROLLER

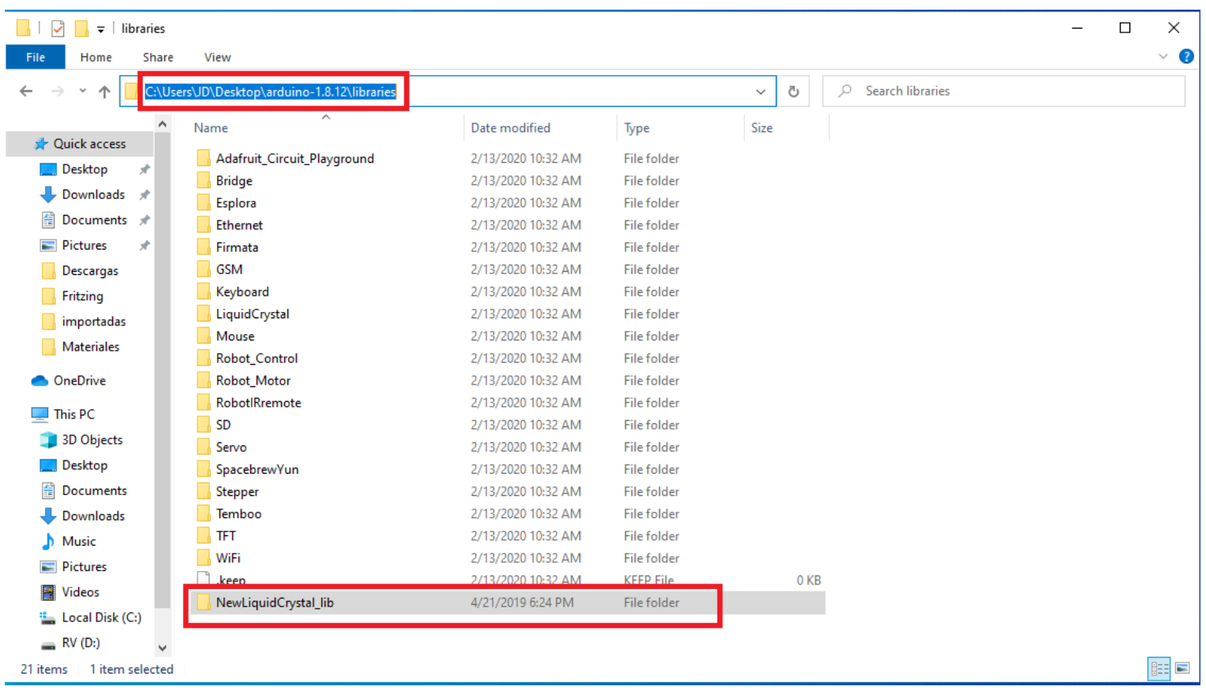
If you are using the second simplified scheme with I2C, you have to install this library and load this code.

1.
Download this file from the following link:

https://bitbucket.org/fmalpartida/new-liquidcrystal/downloads/



2.
Unzip it and you will have a folder just like this one.



3.
Copy and paste the folder into the arduino IDE library directory.

4.
Upload the next code.

https://github.com/4Plus1Creative/ventilator

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