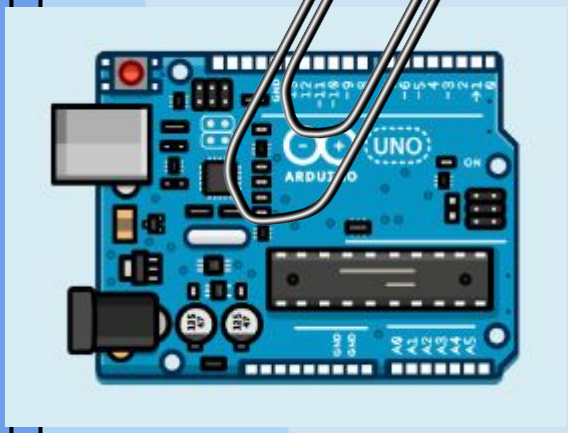


Atelier Începători Arduino

prezentare realizată de
Bianca Badescu

Ce cuprinde acest atelier?

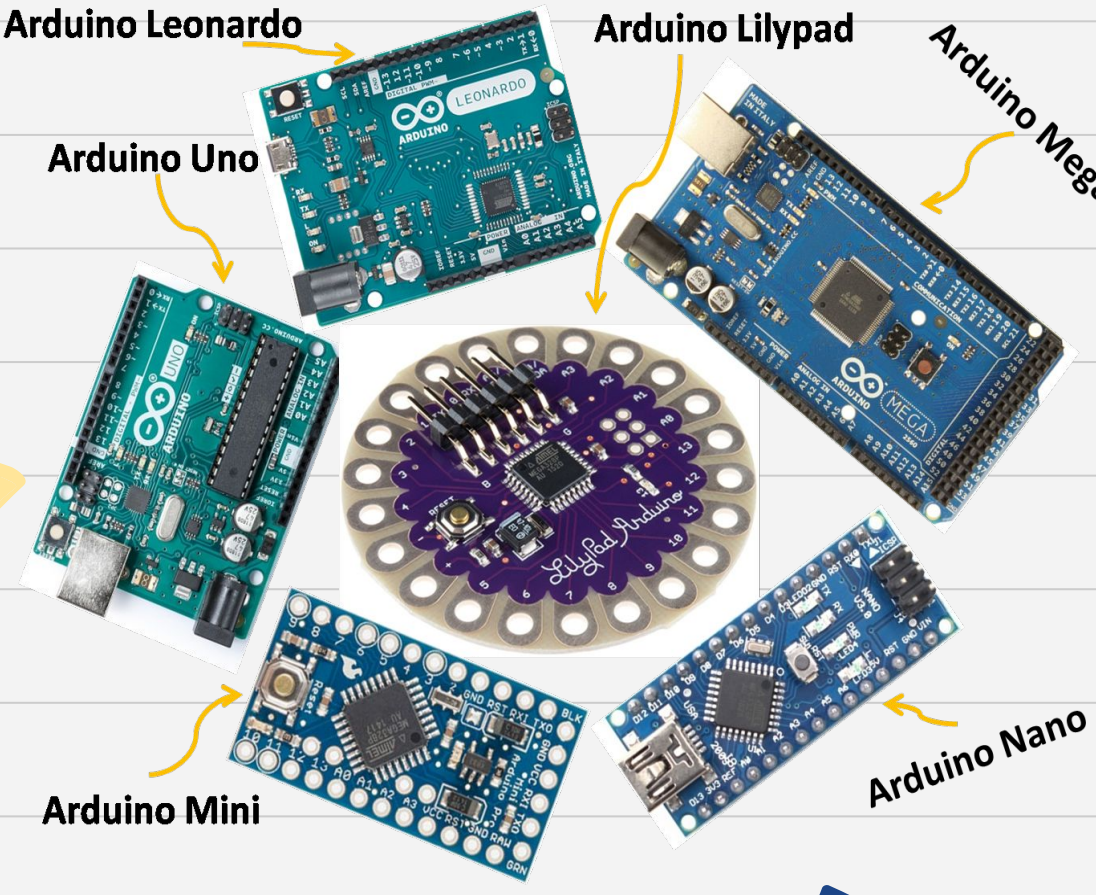
- Informații despre Arduino Boards.
- Informații despre Arduino IDE.
- Exemple din Arduino IDE
- Aprinderea unui bec
- Provocare: cum facem un semafor?
- Senzori

01

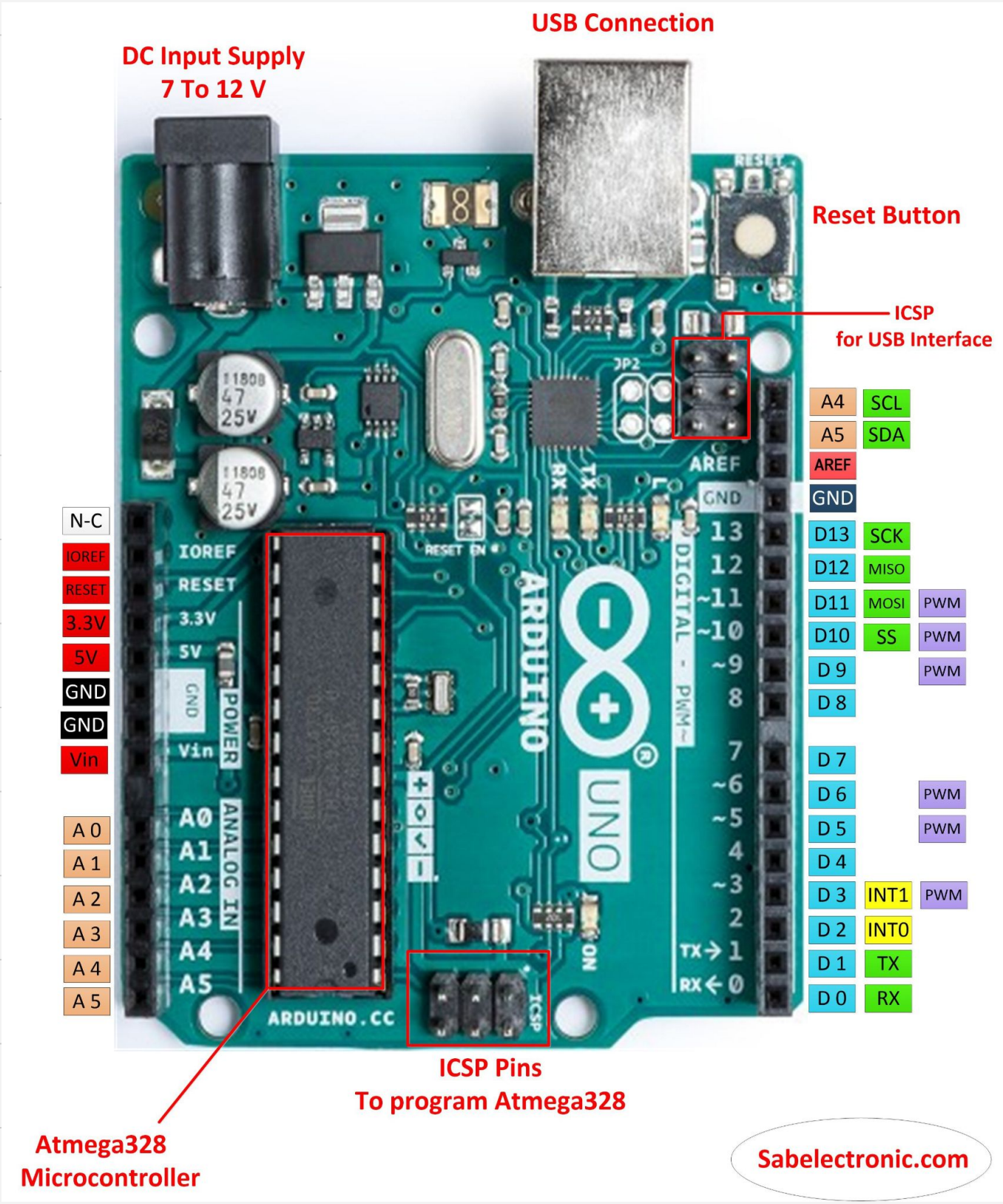
Arduino Boards

Informații de bază despre plăcile Arduino (în special Uno)

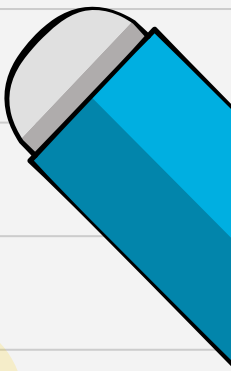
Arduino Boards



ARDUINO UNO


USB Connection
DC Input Supply
7 To 12 V
Reset Button
ICSP
for USB Interface
N-C
IOREF
RESET
3.3V
5V
GND
GND
Vin
A 0
A 1
A 2
A 3
A 4
A 5
A4 SCL
A5 SDA
AREF
GND
D13 SCK
D12 MISO
D11 MOSI PWM
D10 SS PWM
D 9 PWM
D 8
D 7
D 6 PWM
D 5 PWM
D 4
D 3 INT1 PWM
D 2 INT0
D 1 TX
D 0 RX
ARDUINO.CC
ICSP Pins
To program Atmega328
Atmega328
Microcontroller
Sabelectronic.com

Ce conține o placă Arduino Uno?



DC Input Supply

USB Connection

Reset Button

Microcontroller

Digital Pins

HIGH(1)
LOW(0)

Analog Pins

0->1023

02

Arduino IDE

Informații de bază
despre Arduino IDE
(instalare și explorare)

Cum să instalăm Arduino IDE?

Search: Arduino Ide

Click pe primul link

Downloads

Arduino IDE 2.1.0

The new major release of the Arduino IDE is faster and even more powerful! In addition to a more modern editor and a more responsive interface it features autocompletion, code navigation, and even a live debugger.

For more details, please refer to the **Arduino IDE 2.0 documentation**.

Nightly builds with the latest bugfixes are available through the section below.

SOURCE CODE

The Arduino IDE 2.0 is open source and its source code is hosted on **GitHub**.

DOWNLOAD OPTIONS

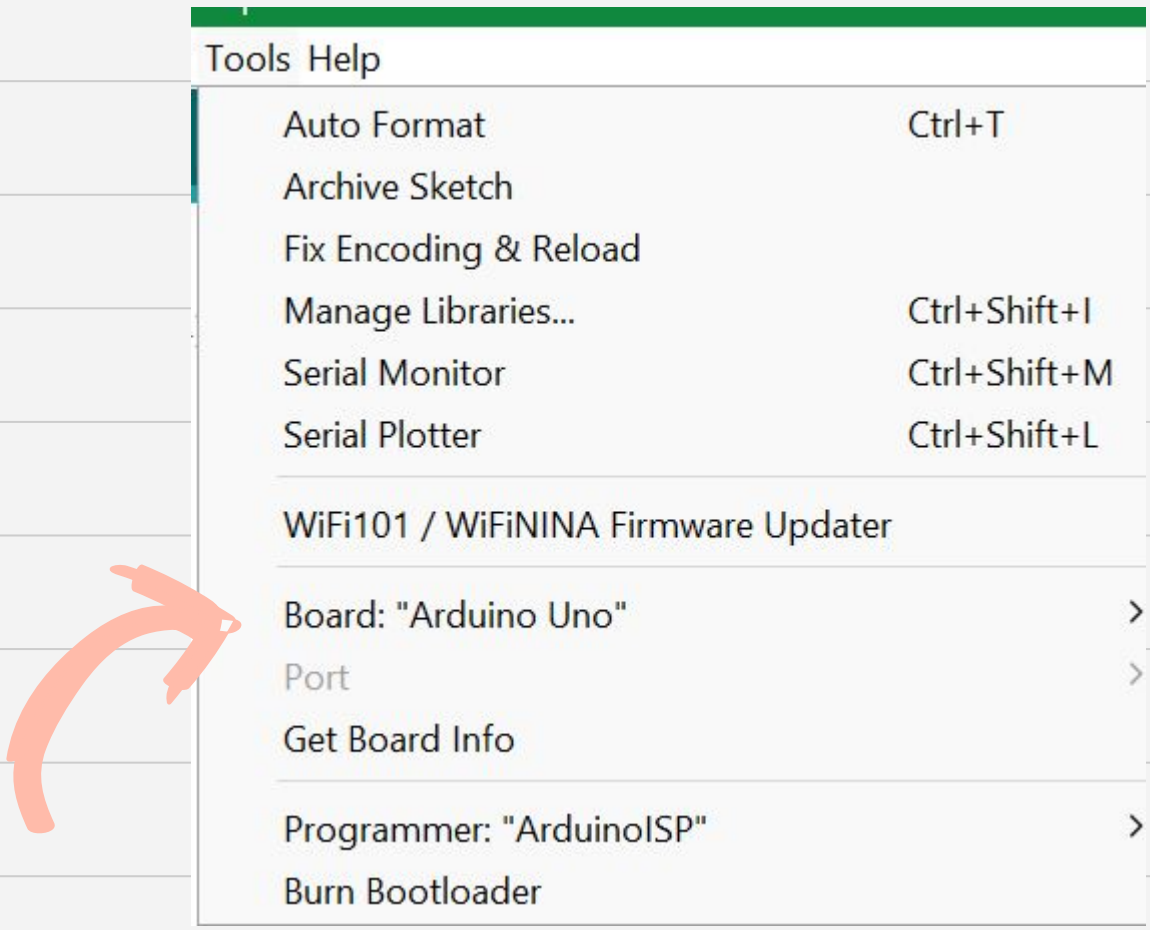
Windows Win 10 and newer, 64 bits
Windows MSI installer
Windows ZIP file

Linux AppImage 64 bits (X86-64)
Linux ZIP file 64 bits (X86-64)

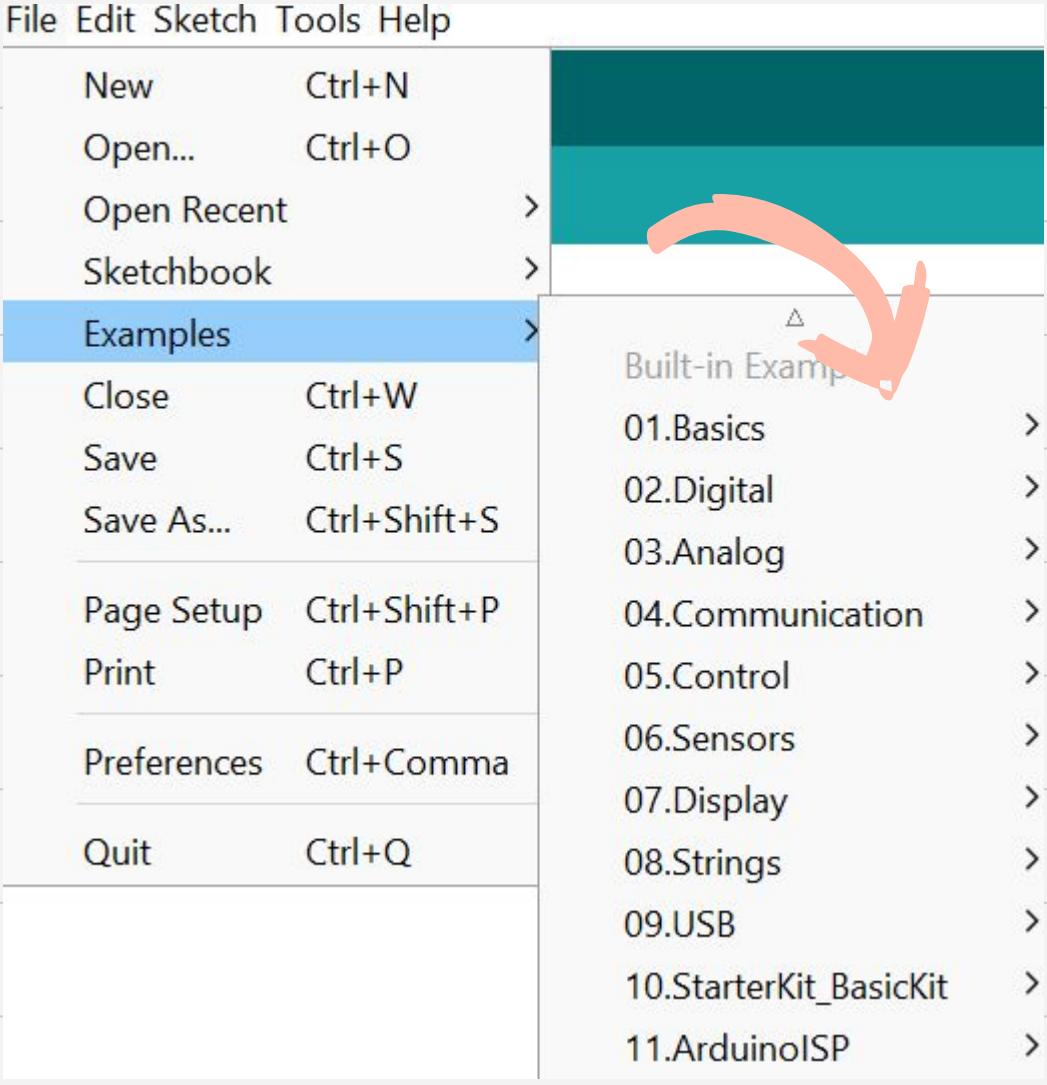
macOS Intel, 10.14: "Mojave" or newer, 64 bits
macOS Apple Silicon, 11: "Big Sur" or newer, 64 bits

Release Notes

Setting up the Arduino IDE



Exemple din Arduino IDE

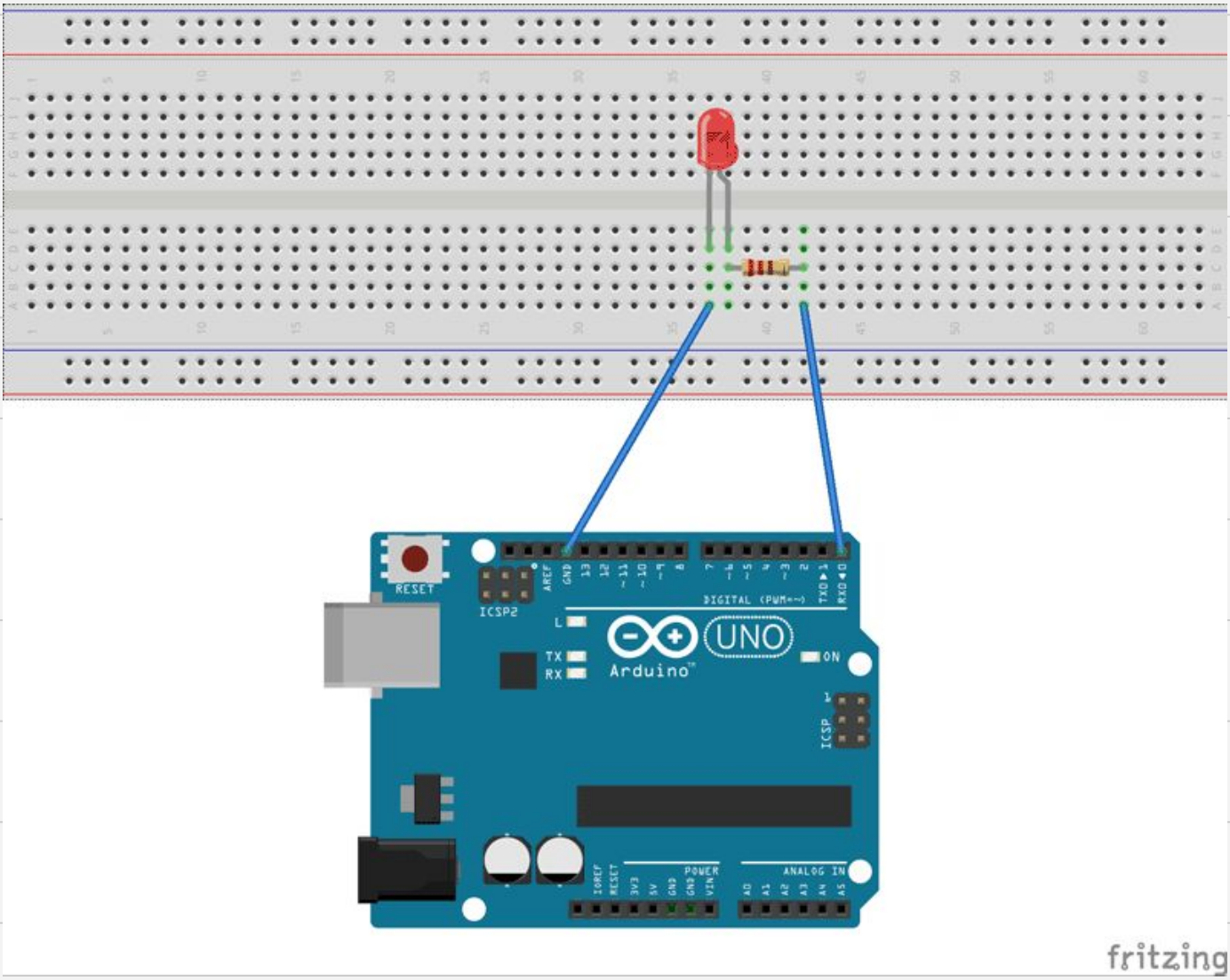


03

Cum aprindem un bec?

Construirea circuitului,
înțelegerea acestuia
și programarea sa

Diagramă circuit



Programare

```
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(1000);                       // wait for a second
  digitalWrite(LED_BUILTIN, LOW);    // turn the LED off by making the voltage LOW
  delay(1000);                       // wait for a second
}
```

VOID SETUP()
//Aici se vor face acțiunile de început care se vor executa o singură dată
// De exemplu setarea pinilor

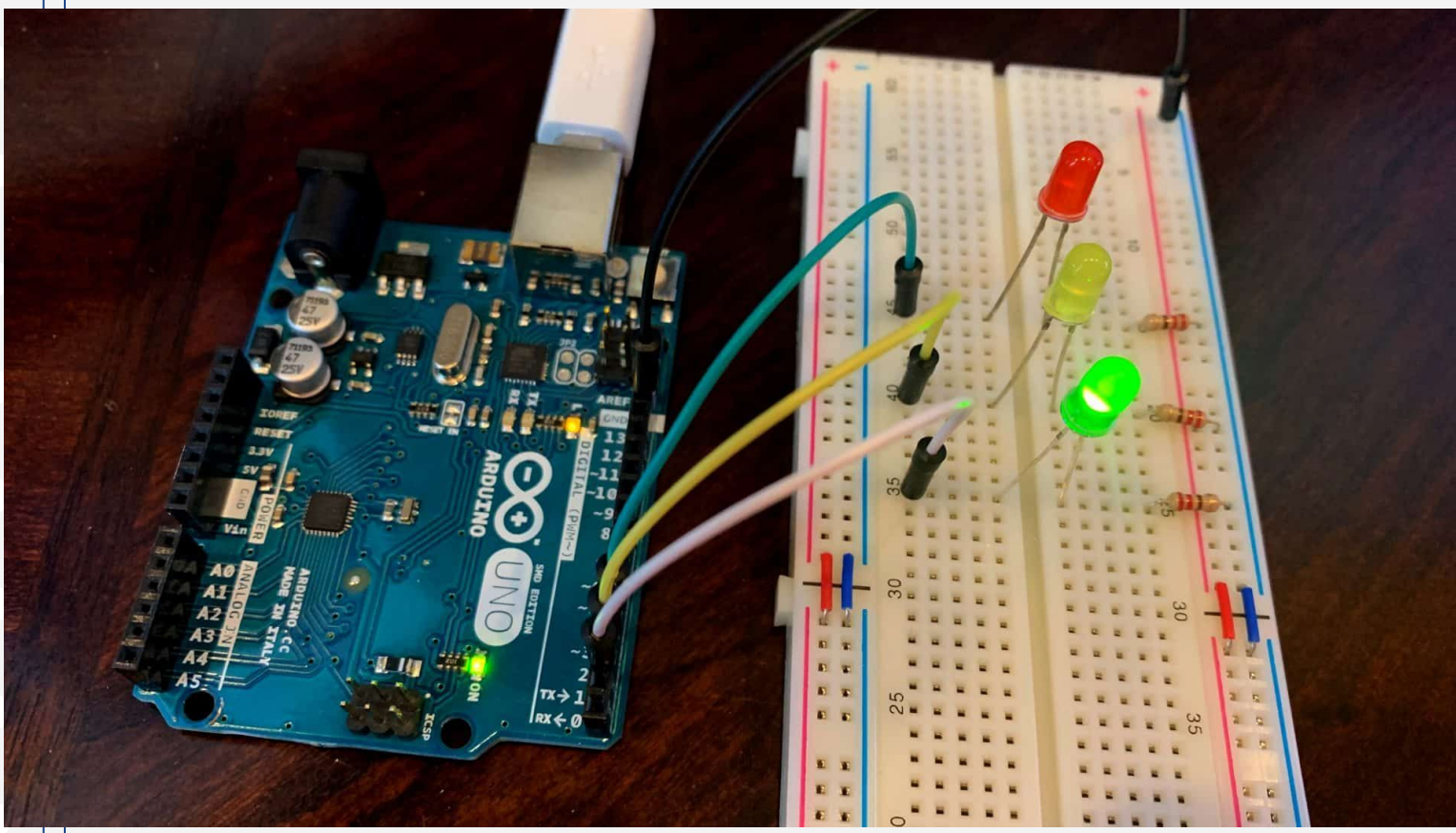
VOID LOOP()
//Aici se vor face acțiuni principale care se vor repeta la infinit dacă nu sunt condiționate de instrucțiunea if
// De exemplu aprinderea și stingerea unui bec

04

Cum facem un semafor?

Construirea și programarea unui semafor

Semafor


ARDUINO
UNO
SMD EDITION
DIGITAL (PWM~)
POWER
ANALOG IN
ARDUINO.CC
MADE IN ITALY
ICSP
ON
TX→1
RX←0

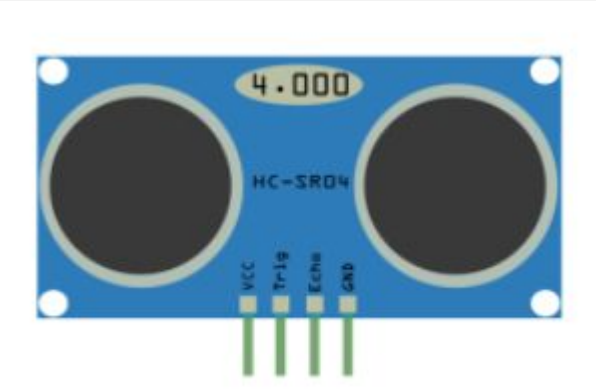
05

Senzori și module

List of Arduino Sensors and Modules - The Geek Pub

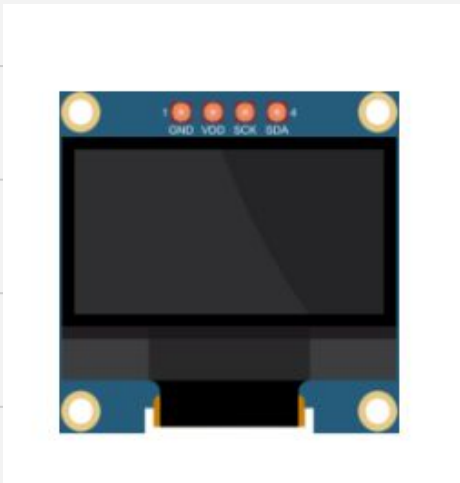
20 Free Guides for Arduino Modules and Sensors | Random Nerd Tutorials

Ultrasonic Sensor

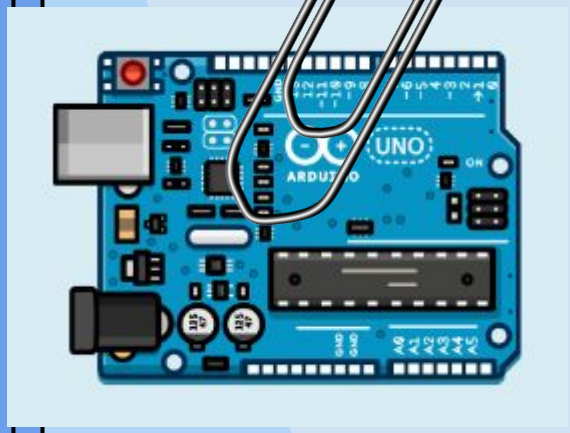


PIR Motion Sensor

OLED Display



8x8 Dot Matrix



Sfârșit Atelier Arduino

prezentare realizată de
Bianca Badescu