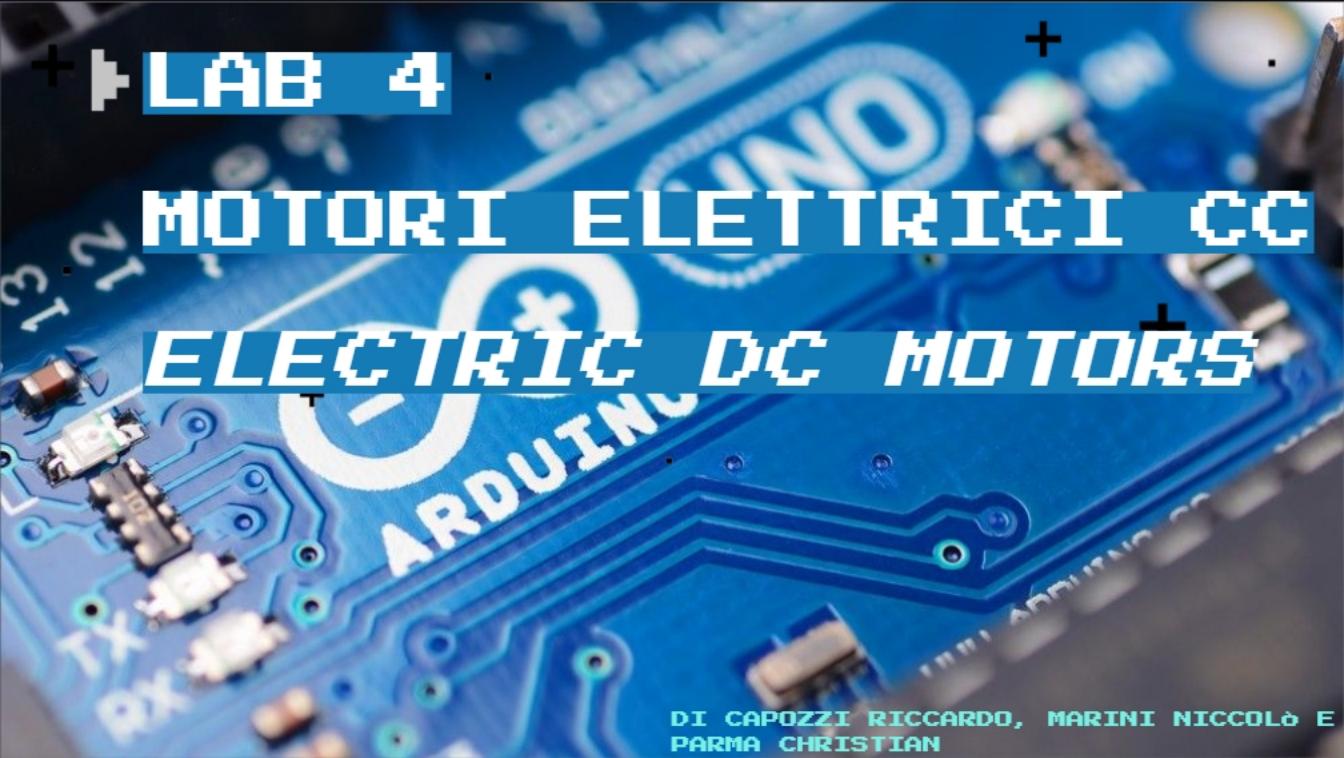
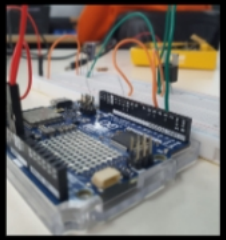
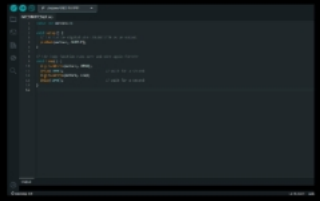

LAB 4
MOTORI ELETTRICI CC
ELECTRIC DC MOTORS
DI CAPOZZI RICCARDO, MARINI NICCOLò E PARMA CHRISTIAN

Riassunto

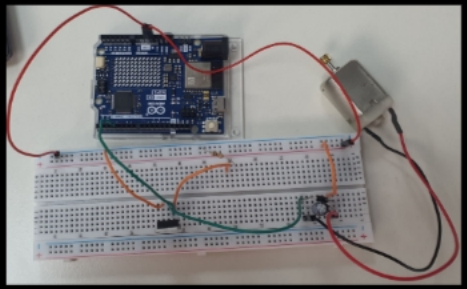
IN QUESTA PRESENTAZIONE SPIEGHEREMO COME REALIZZARE VARI CIRCUITI UTILIZZANDO IL MOTORE ELETTRICO PRESENTE NEL KIT DI ARDUINO UNO R3.





Summary

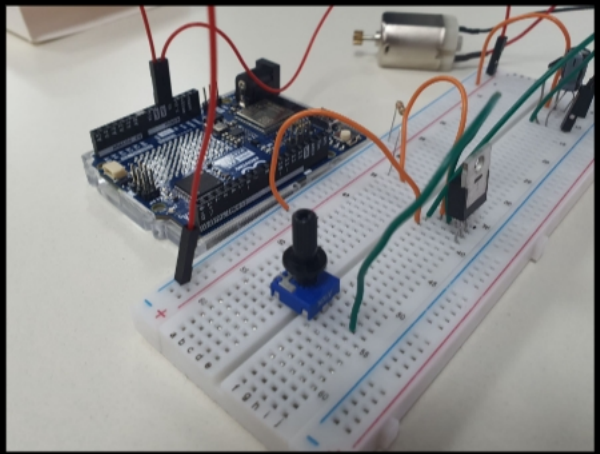
IN THIS PRESENTATION WE ARE GOING TO EXPLAIN HOW TO REALIZE VARIOUS ELECTRIC CIRCUITS USING THE ELECTRIC DC MOTOR INCLUDED IN THE ARDUINO R3 KIT.

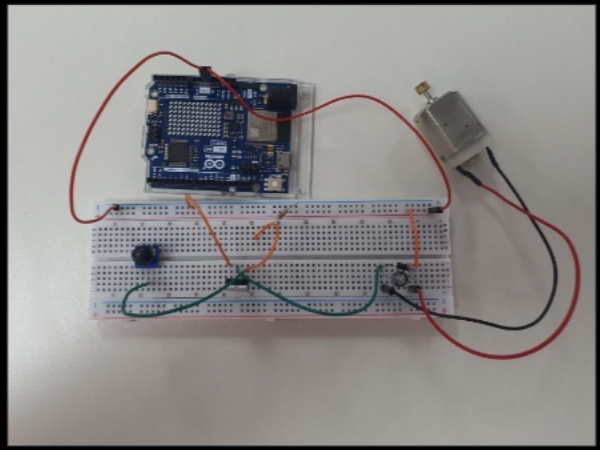


CONTENUTI/ *CONTENTS*

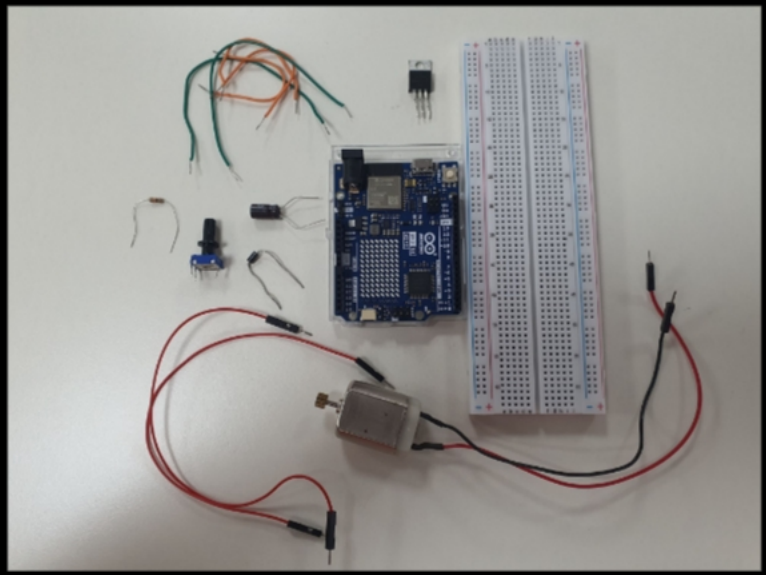
CIRCUITO 1 / *CIRCUIT 1*

In questo circuito vi spiegheremo come utilizzare il potenziometro per far partire gradualmente il motore.





In this circuit we are going to explain to you how to use the potentiometer to make a DC motor spin gradually.



CIRCUITO 1 / *CIRCUIT 1*

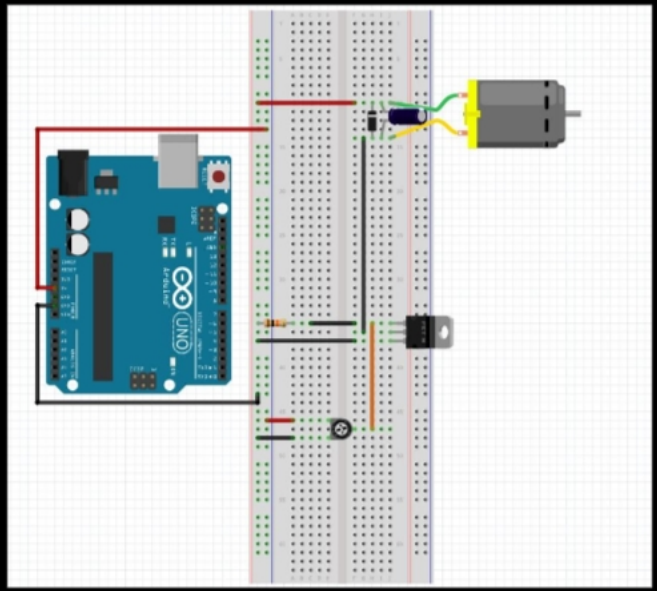
COMPONENTI / *MATERIALS NEEDED*

Per realizzare questo circuito, serviranno:
- Scheda Arduino Uno R3 / R4;
- Breadboard;
- 2x Cavi Jumper;
- 7x Ponticelli;
- Potenziometro da 10k;
- Motore;
- Mosfet (IRF520N);
- Diodo (IN4007 / MIC);
- Resistenza da 10kΩ;
- Condensatore (100µF / 16V).

In order to realize this circuit, you will need:
- *Arduino Uno Board R3 / R4;*
- *Breadboard;*
- *2x Jumper Cables;*
- *7x Cables;*
- *10k Potenentiometer;*
- *Motor;*
- *Mosfet (IRF520N);*
- *Diode (IN4007 / MIC);*
- *10kΩ Resistor;*
- *Capacitor (100µF / 16V).*

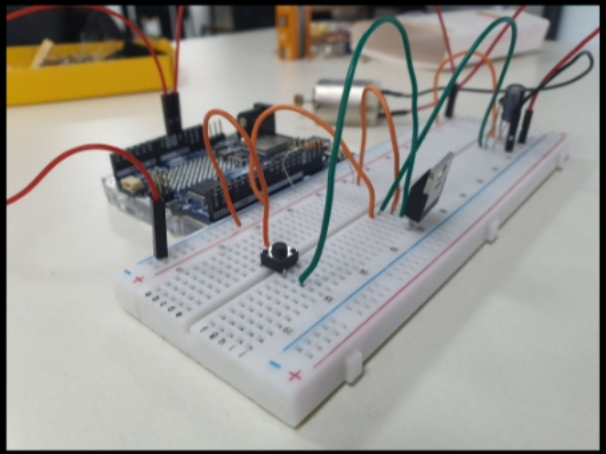
CIRCUITO 1 / *CIRCUIT 1*

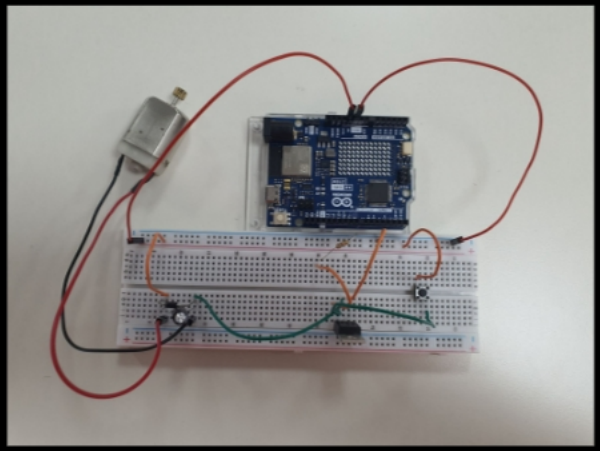
SCHEMA FRITZING / *FRITZING SCHEME*



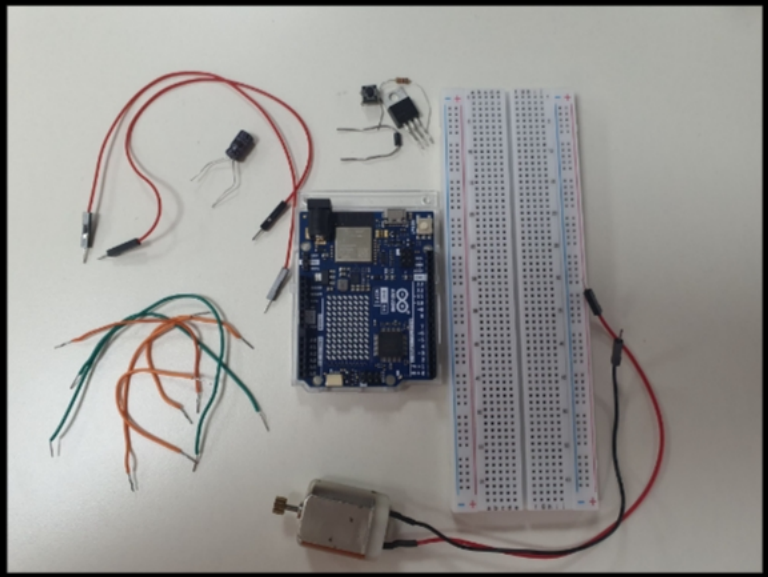
CIRCUITO 2 / *CIRCUIT 2*

In questo circuito vi spiegheremo come utilizzare un pushbutton per accendere e spegnere il motore.





In this circuit we are going to explain to you how to use a pushbutton in order to make a motor spin and then stop.



CIRCUITO 2 / *CIRCUIT 2*

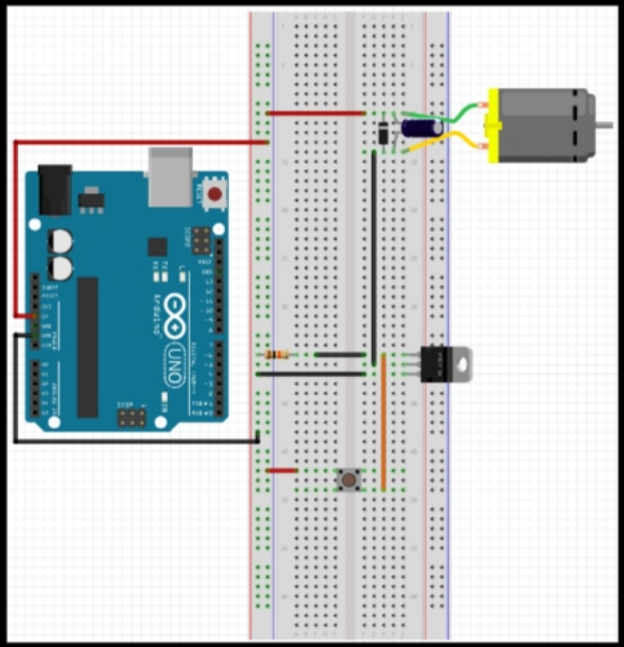
COMPONENTI / *MATERIALS NEEDED*

Per realizzare questo circuito, serviranno:
- Scheda Arduino Uno R3 / R4;
- Breadboard;
- 2x Cavi Jumper;
- 6x Ponticelli;
- Pushbutton;
- Motore;
- Mosfet (IRF520N);
- Diodo (IN4007 / MIC);
- Resistenza da 10kΩ;
- Condensatore (100µF / 16V).

In order to realize this circuit, you will need:
- *Arduino Uno Board R3 / R4;*
- *Breadboard;*
- *2x Jumper Cables;*
- *6x Cables;*
- *Pushbutton;*
- *Motor;*
- *Mosfet (IRF520N);*
- *Diode (IN4007 / MIC);*
- *10kΩ Resistor;*
- *Capacitor (100µF / 16V).*

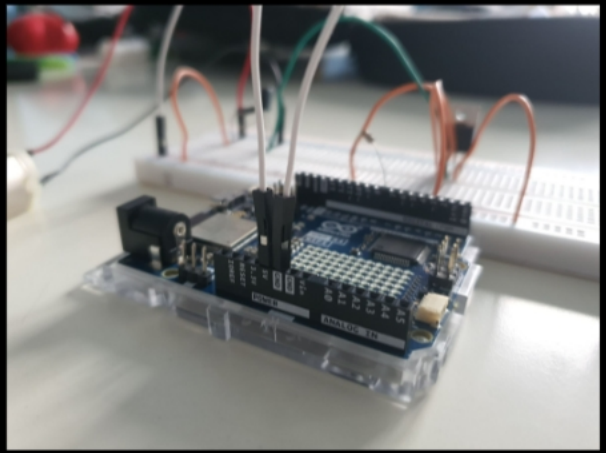
CIRCUITO 2 / *CIRCUIT 2*

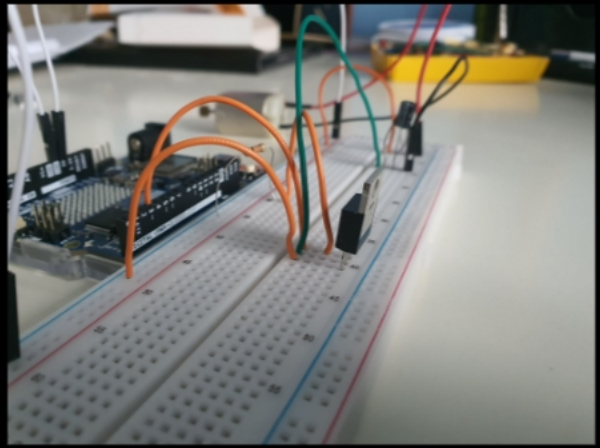
SCHEMA FRITZING / *FRITZING SCHEME*



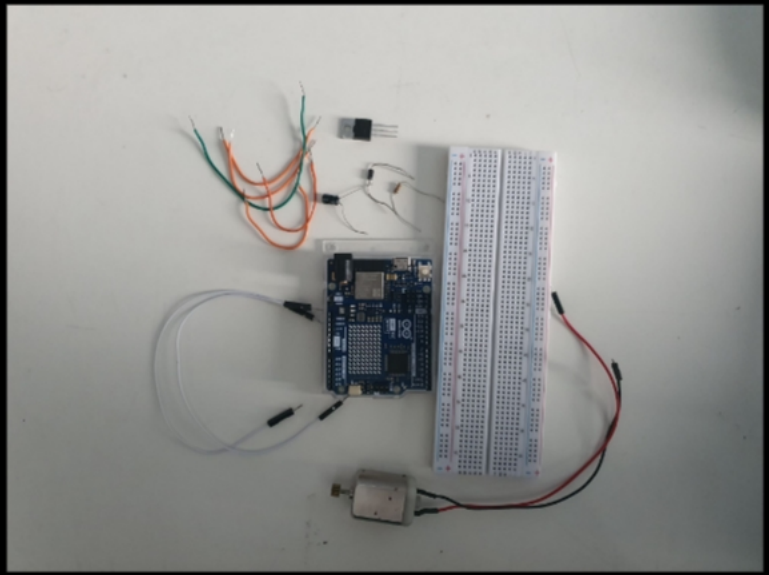
CIRCUITO 3 / *CIRCUIT 3*

In questo circuito vi spiegheremo come utilizzare Arduino IDE per accendere il motore in svariati modi.





In this circuit we are going to explain to you how to use Arduino IDE in order to make a DC motor spin in various ways.



CIRCUITO 3 / *CIRCUIT 3*

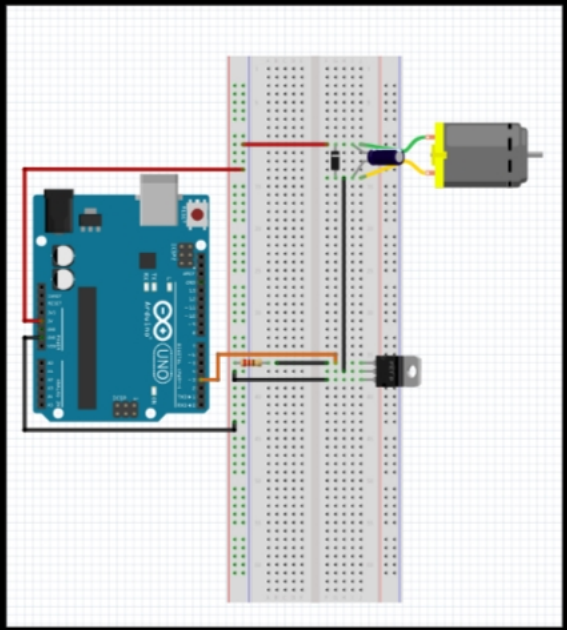
COMPONENTI / *MATERIALS NEEDED*

Per realizzare questo circuito, serviranno:
- Scheda Arduino Uno R3 / R4;
- Breadboard;
- 2x Cavi Jumper;
- 5x Ponticelli;
- Motore;
- Mosfet (IRF520N);
- Diodo (IN4007 / MIC);
- Resistenza da 10kΩ;
- Condensatore (100µF / 16V).

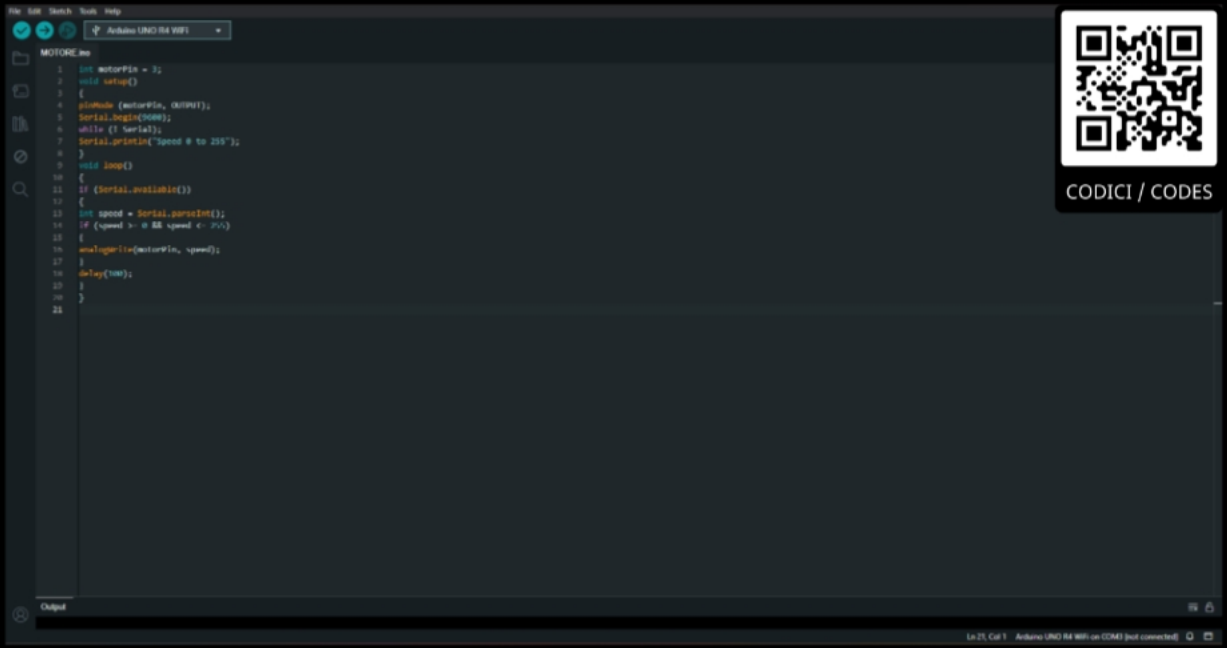
In order to realize this circuit, you will need:
- *Arduino Uno Board R3 / R4;*
- *Breadboard;*
- *2x Jumper Cables;*
- *5x Cables;*
- *Motor;*
- *Mosfet (IRF520N);*
- *Diode (IN4007 / MIC);*
- *10kΩ Resistor;*
- *Capacitor (100µF / 16V).*

CIRCUITO 3 / *CIRCUIT 3*

SCHEMA FRITZING / *FRITZING SCHEME*

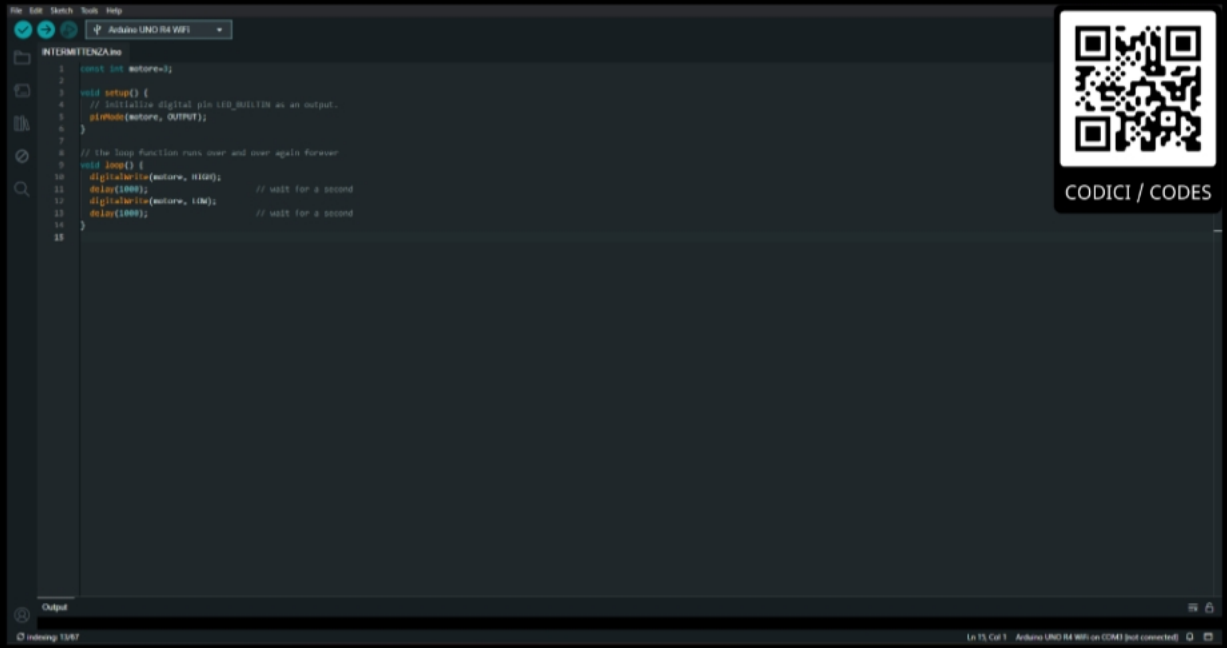


CODICE ACCENSIONE MOTORE CON MONITOR SERIALE
CODE TO SPIN THE DC MOTOR WITH THE SERIAL MONITOR



CODICI / CODES

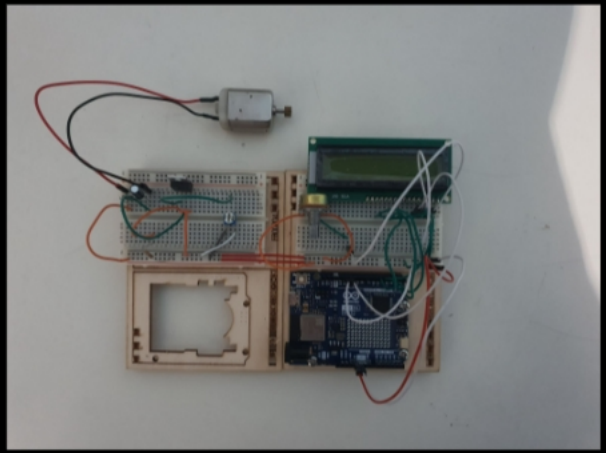
CODICE ACCENSIONE MOTORE AD INTERMITTENZA
CODE TO SPIN THE DC MOTOR ON INTERMITTANCE

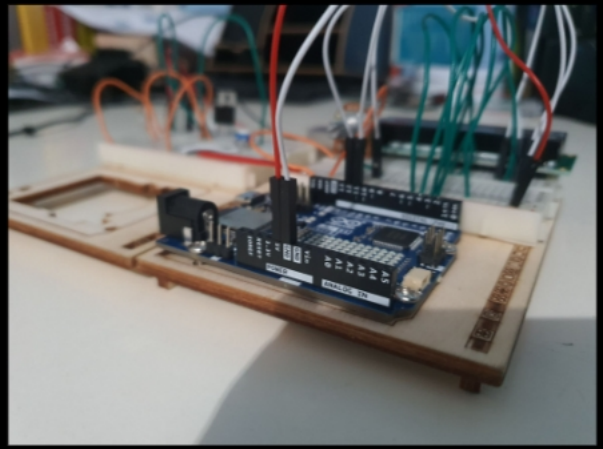


CODICI / CODES

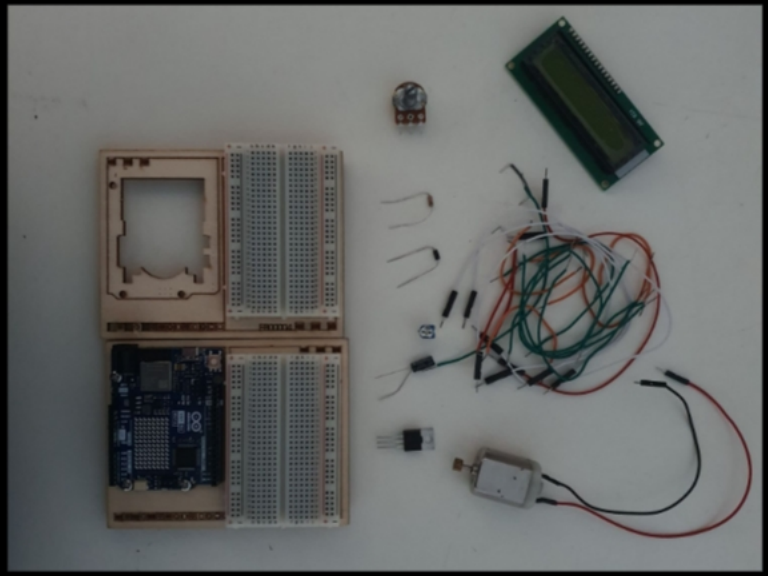
CIRCUITO 4 / *CIRCUIT 4*

In questo circuito vi spiegheremo come utilizzare Arduino IDE per accendere il motore e vedere sullo schermo LCD i suoi valori.





In this circuit we are going to explain to you how to use Arduino IDE in order to make a DC motor spin and see its values on an LCD screen.



CIRCUITO 4 / *CIRCUIT 4*

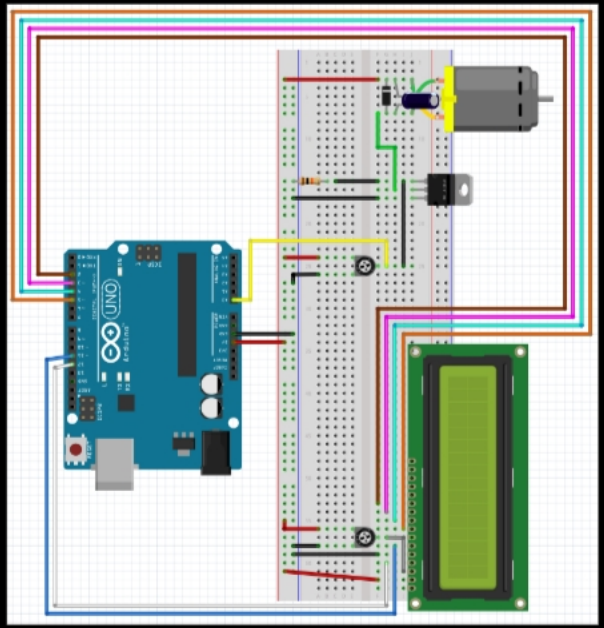
COMPONENTI / *MATERIALS NEEDED*

Per realizzare questo circuito, serviranno:
- Scheda Arduino Uno R3 / R4;
- 2x Breadboard;
- 2x Cavi Jumper;
- 19x Ponticelli;
- Motore;
- Mosfet (IRF520N);
- Diodo (IN4007 / MIC);
- Resistenza da 10kΩ;
- Condensatore (100µF / 16V);
- 2x Potenziometri da 10k;
- Schermo LCD a cristalli liquidi;
- Arduino IDE Software (https://www.arduino.cc/en/software)

In order to realize this circuit, you will need:
- *Arduino Uno Board R3 / R4;*
- *Breadboard;*
- *2x Jumper Cables;*
- *5x Cables;*
- *Motor;*
- *Mosfet (IRF520N);*
- *Diode (IN4007 / MIC);*
- *10kΩ Resistor;*
- *Capacitor (100µF / 16V);*
- *2x 10k Potentiometers;*
- *LCD Liquid Crystals Screen;*
- *Arduino IDE Software (https://www.arduino.cc/en/software)*

CIRCUITO 4 / *CIRCUIT 4*

SCHEMA FRITZING / *FRITZING SCHEME*



CODICE ACCENSIONE MOTORE CON LCD
CODE TO SPIN THE DC MOTOR WITH THE LCD SCREEN

CODICI / CODES

GRAZIE PER L'ATTENZIONE!

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