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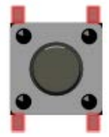
HOW TO USE A

# PUSH BUTTON TO TURN ON AN LED

WITH ARDUINO



PUSH BUTTON

LED

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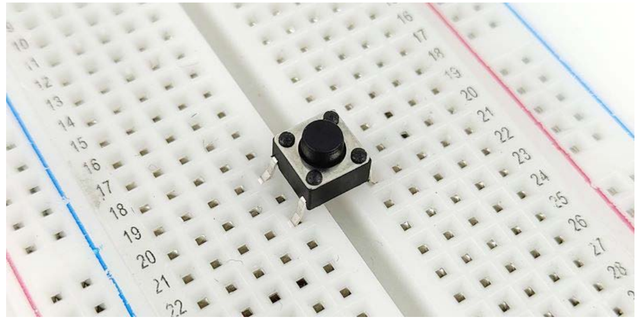
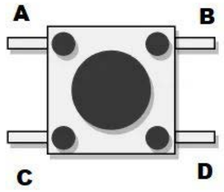
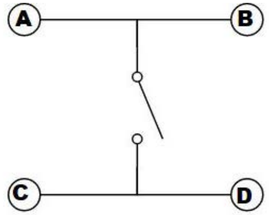
# PUSH BUTTON

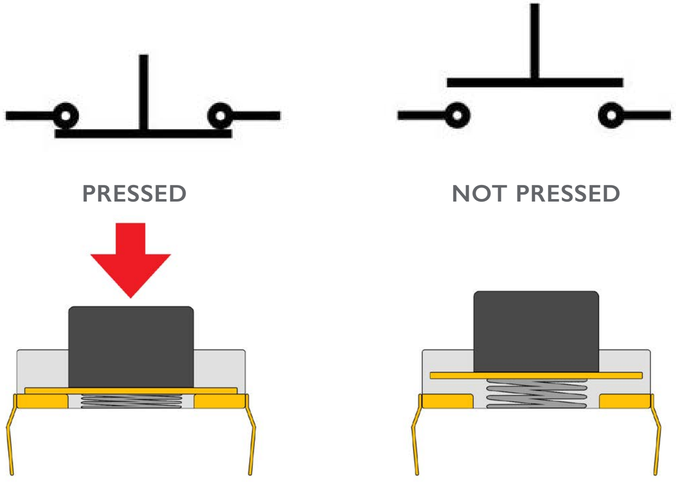





Chanel 1: pins A-B are internally connected




Chanel 2: pins C-D are internally connected




## HOW DOES IT WORK?

Buttons open and close the flow of electricity in a circuit. When the button is pressed, we connect the button's internal pins (A-B to C-D) creating a bridge that allows the flow of electricity. While the button is not pressed, the connection is broken, therefore, electricity cannot pass through the circuit..

**WARNING!** The choice of pins does matter. Make sure you are connecting the correct pins.

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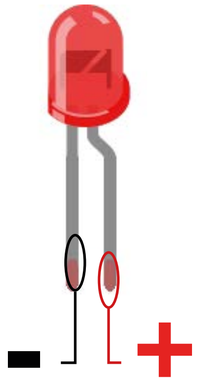
# LED (Light-Emitting Diode)



**SHORTER LEAD**
Ground (-)

**LONGER LEAD**
Power (+)

RESISTOR 220ohms

## HOW DOES IT WORK?

LEDs are electronic components (diodes) that emit light when electricity flows through them.

**WARNING! Polarity Matters**
LEDs are polarized components, meaning electricity flows only in one direction—from positive to negative.

The longer lead must be connected to the positive side of the circuit (e.g., a data pin from the Arduino). You a resistor!

The shorter lead must be connected to ground (GND).

**WARNING! Use a Resistor**
Arduino pins output 5V—too much for an LED. Use a 220Ω resistor to prevent it from burning out.

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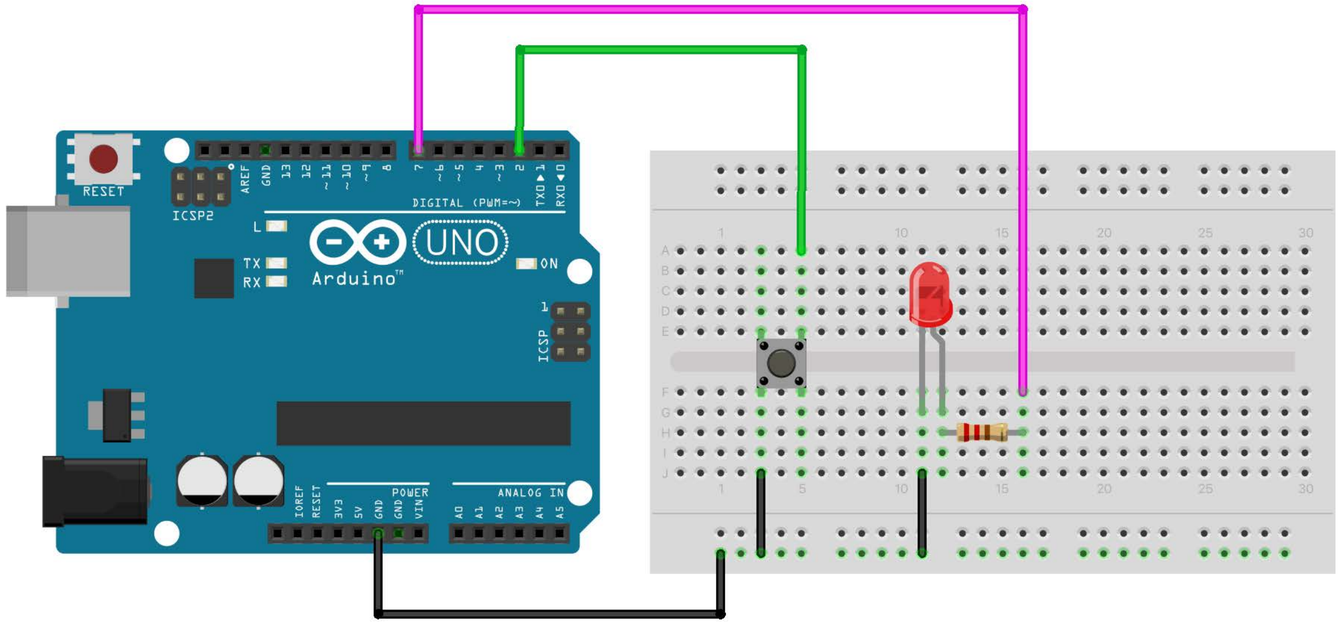
# Control an LED using a push-button

## DIAGRAM




## CODE

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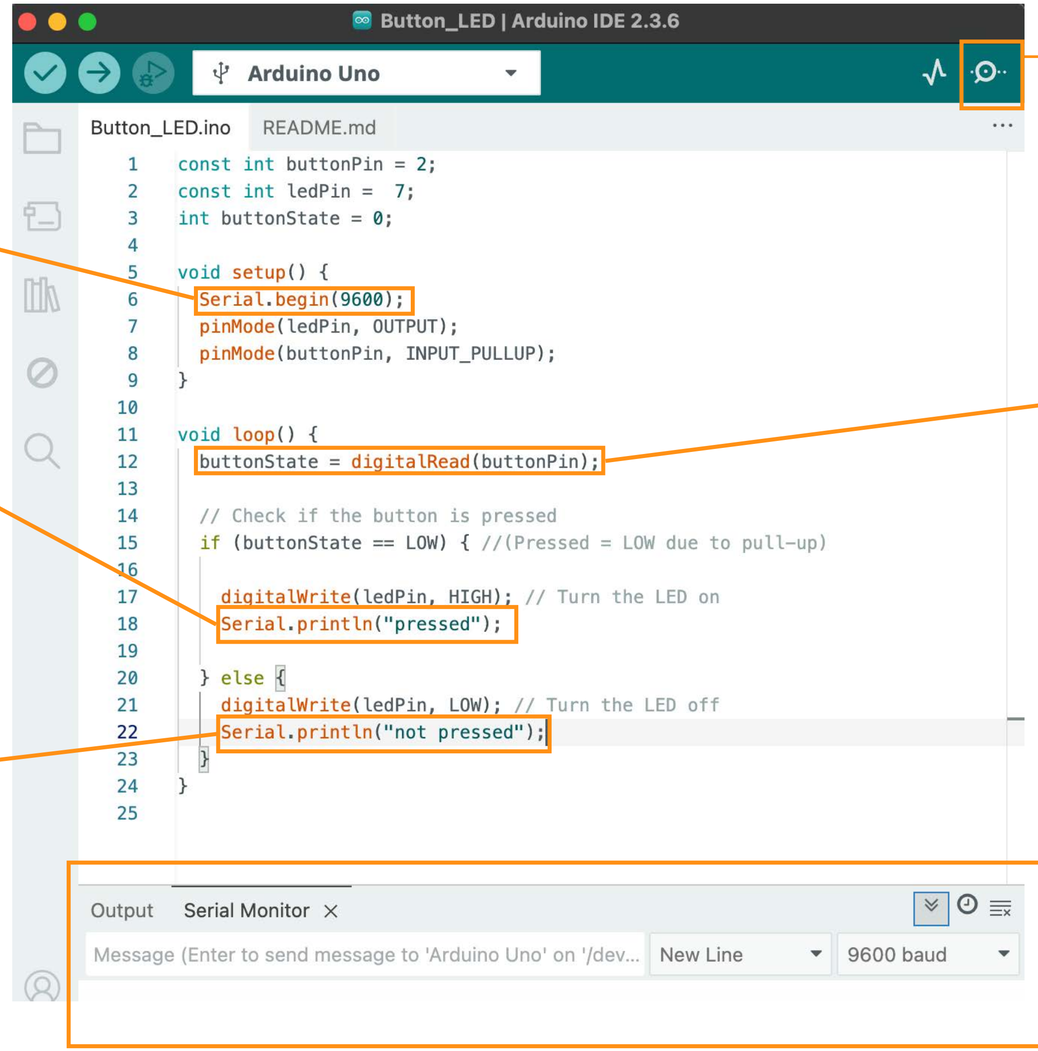
# SERIAL MONITOR: Let's analyse the data




Initiate Serial Communication

Print 'PRESSED' if the button is being pressed.

Print 'NOT PRESSED' if the button is not being pressed.

CLICK HERE to open the Serial Monitor

Read data coming from the Button

SERIAL MONITOR

WHAT DATA IS PRINTED WHEN YOU PRESS OR RELEASE THE BUTTON?

?

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# CHALLENGE:

1. Build a circuit with two buttons and two LEDs:
   - Button A controls LED A
   - Button B controls LED B
   - Each LED should light only while its button is pressed.
   - Change the messages written in the Serial Monitor

2. Upload a video (max 10 seconds) showing your achievements.

VIDEO UPLOAD

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# FURTHER LEARNING

- Push-Button more tutorials
- Understanfing Pull-up and Pull-Down
- How to connect a push button or switch