

Arduino – Turn LED ON and OFF With Button

In this Arduino tutorial I will show you how to turn an LED on and off with a push button. In fact, we'll do 2 slightly different applications.

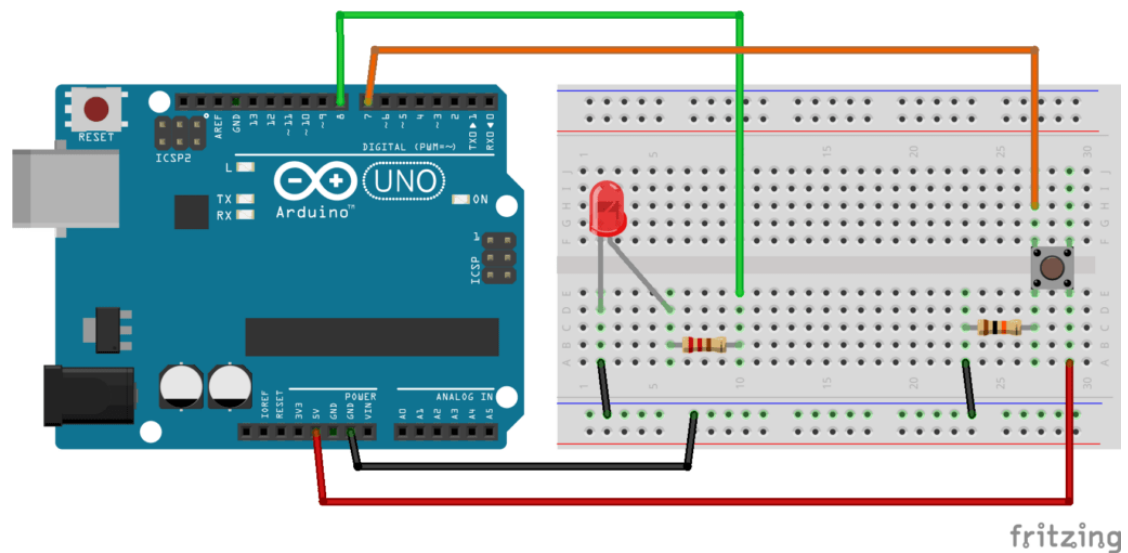
First, we will power on the LED when the button is pressed, and power off the LED when the button is not pressed.

And then we'll modify the program to toggle the LED's state only when we release the button.

Arduino circuit with an LED and a button

To build the circuit you will need those components:

- Arduino board (any board, if you don't have Uno you can easily adapt by finding corresponding pins).
- Breadboard.
- LED – any color.
- Push button.
- 220 Ohm resistor for the LED. If you don't have this specific value, any resistor from 330 to 1k Ohm will do.
- 10k Ohm resistor for the push button. If you don't have, you can go until 20k-50k Ohm.
- A bunch of male to male wires (including if possible black, red, and other colors).



Steps :

- LED attach to board .
- Resistor connect to LED's long leg (+).
- The wire connect to resistor's other leg .
- Wire connect to digital pin 2 from resistor.
- Wire connect to LED's short leg , after that wire connect to ground from LED.
- The button attach to board .
- Resistor connect to button leg .
- wire connect to resistor leg , after that wire connect ground from resistor .
- wire connect to button's other leg , after that connect to 5V from button .
- Wire connect to button's top leg , after that connect to digital pin4 from button .

The Code :

```
//set pin numbers
const int ledPin = 2;           //const won't change
const int buttonPin = 4;

//variables will change
int buttonState = 0;           //variables for reading the pushbutton status

void setup() {

    Serial.begin(9600);
    pinMode(ledPin, OUTPUT);    //initialize the LED pin as an output
    pinMode(buttonPin, INPUT);  //initialize the pushbutton pin as an output
}

void loop() {

    buttonState = digitalRead(buttonPin); //read the state of the pushbutton
    value

    if (buttonState == HIGH) {        //check if the pushbutton is
pressed
        //if it is, the buttonState is HIGH
        digitalWrite(ledPin, HIGH);   //turn LED on
        Serial.println("LED ON ++++++");
    }
    else {

        digitalWrite(ledPin, LOW);     // turn LED off
        Serial.println("LED OFF -----");
    }
}
```