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Departamento de
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Practice 3 – Activation of a LED with a push button

To carry out this practice we will use a protoboard board, an LED, a pushbutton and an Arduino board. This involves connecting the positive pole of the LED to the digital 12 pins and the negative to the GND pin through a 220 ohm resistor. At the same time, the terminals of the pushbutton must be connected to the digital pin 4, 5V and GND, with a resistance of 220 ohms between the digital pin and GND, as shown in the diagram below.

Once connected, we will think about the steps to be taken to program the Arduino board in such a way that the LED lights up if the button is activated and if it is not activated, it will turn off.
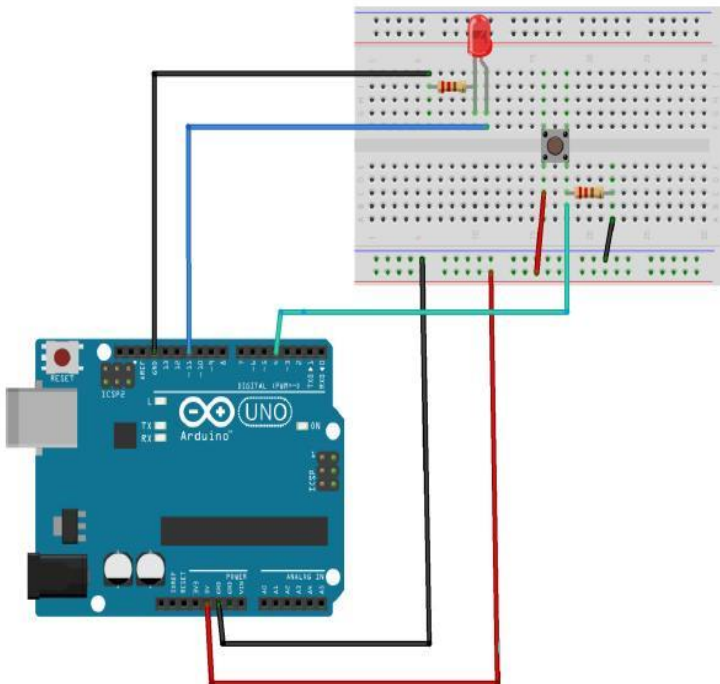
The sequence can be seen in the following flowchart:
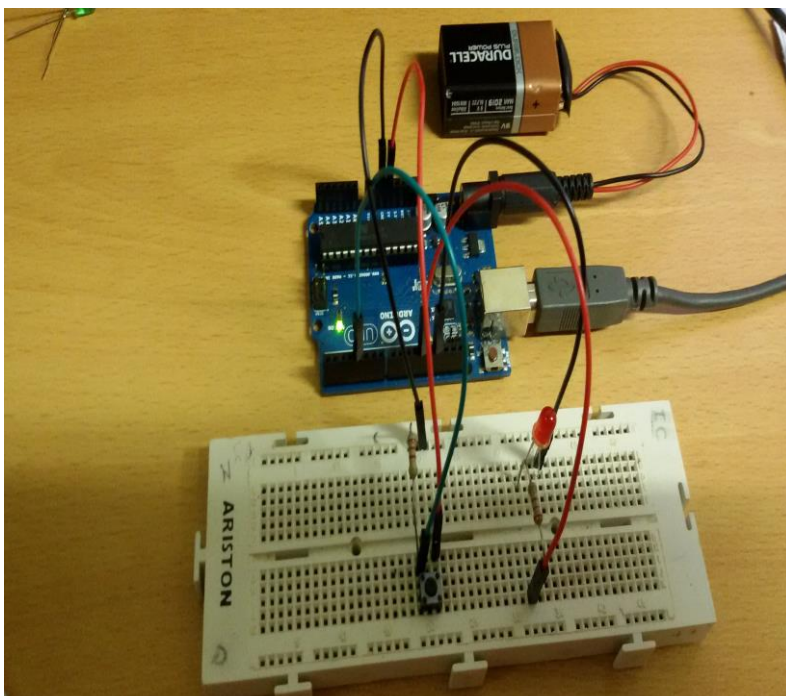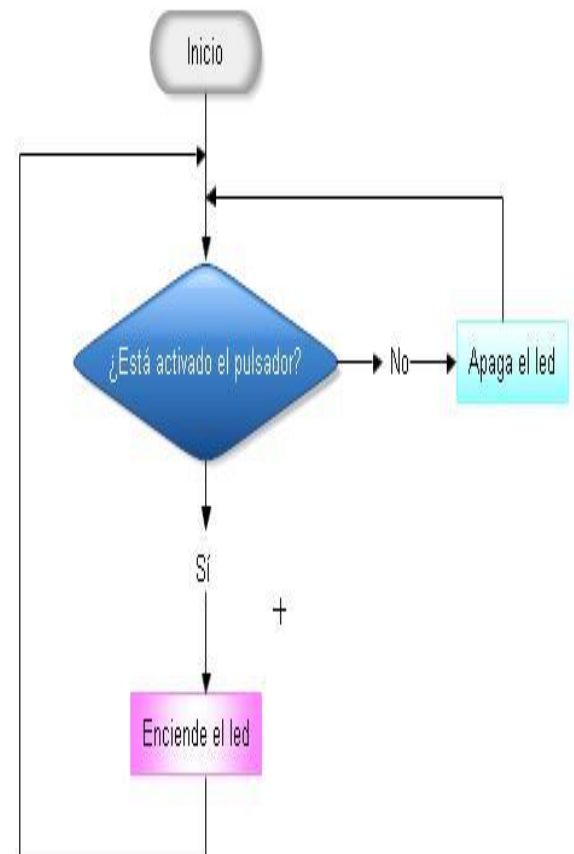
The Arduino IDE instructions that will allow us to perform this sequence are the ones that appear in

the image below:

```
Encendido_led_con_pulsador_block Arduino 1.6.3

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Encendido_led_con_pulsador_block

void setup()
{
pinMode( 12 , OUTPUT);
pinMode( 4 , INPUT);
}

void loop()
{
if (digitalRead( 4))
{
digitalWrite( 12 , HIGH );
}
else
{
digitalWrite( 12 , LOW );
}
}
```

In void setup () let's define two pins:

- Pin 4 as input for the pushbutton.
- The pin 12 as output for the LED.

In void loop () the following actions will happen:

if (digitalRead (4)) This instruction indicates that if pin 4 receives the signal from the pushbutton, an action is performed and else that if no signal is received, another action is taken.

digitalWrite(12, HIGH); This is the first action to take if the button is activated. Indicates that pin 12 is activated and therefore the LED is lit.

digitalWrite(12, LOW); This is the second action, which occurs if the button is not activated. Indicates that the LED does not light up.