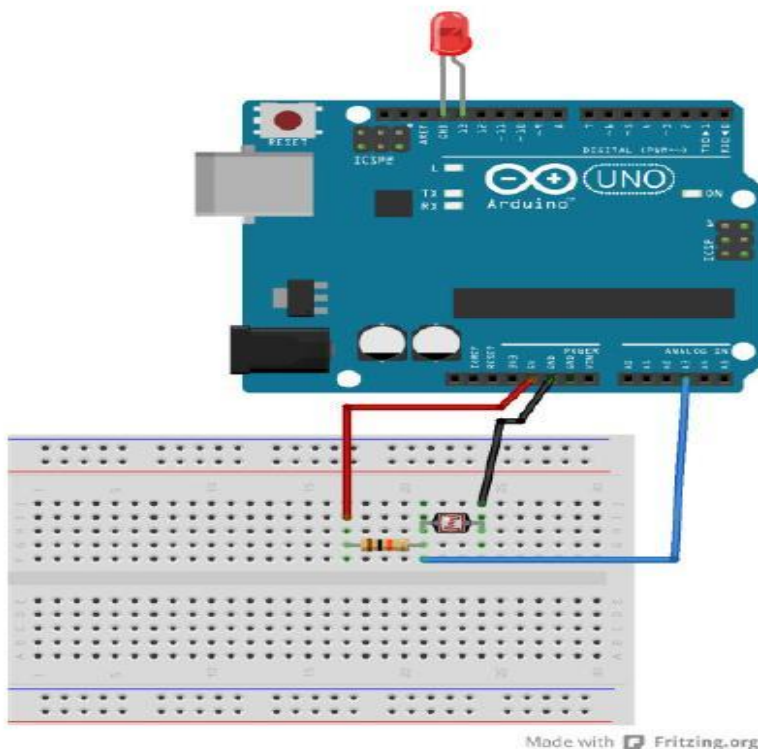




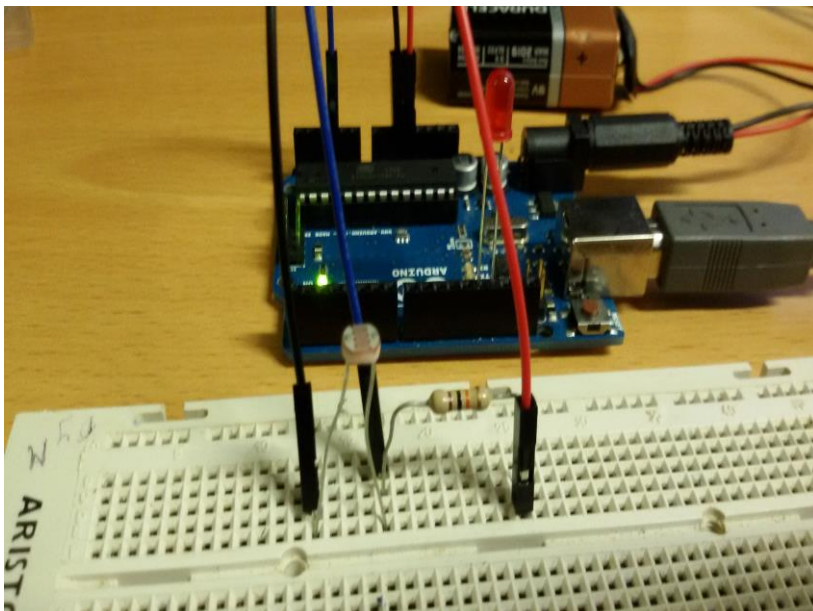
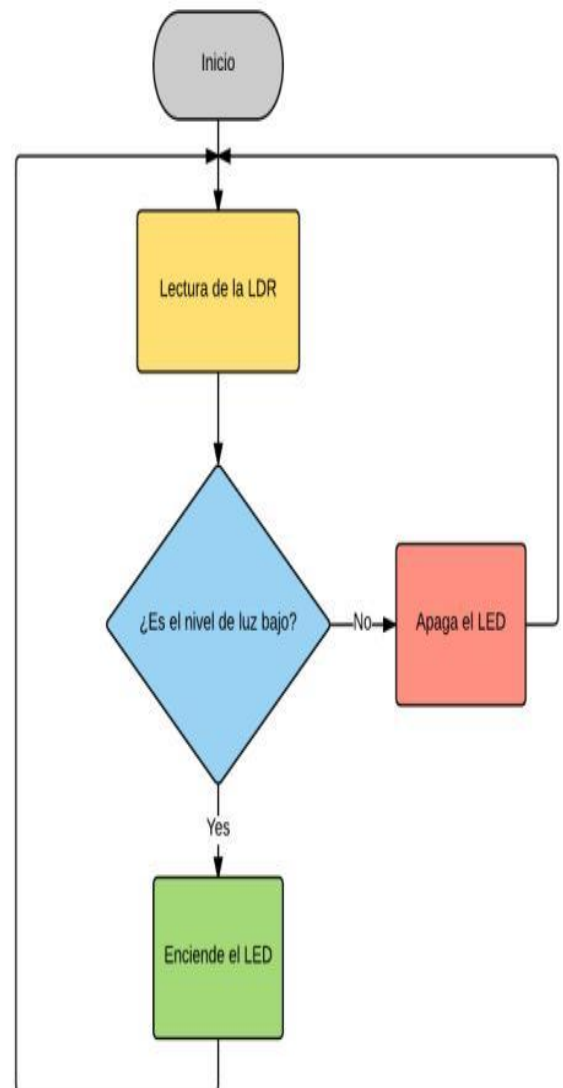
Practice 6 – Activation of an LED regulated by an LDR

To carry out this practice we will use a protoboard board, an LED, an LDR, a resistance of $1000\ \Omega$ and an Arduino board. It is about connecting the positive pole of the LED to the digital pin 13 and the negative to the GND pin. At the same time, the terminals of the LDR must be connected to the analog A2 and GND pins, with the $1000\ \Omega$ resistor between the analog and the 5V power supply, as shown in the diagram below.

Once connected, let's think about the steps to be taken to program the Arduino board so that the LED lights up when the light level goes down and turns off when the light level rises.




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_ldr_block Arduino
Archivo  Editar  Programa  Herramientas  Ayuda

Encendido_led_con_ldr_block

int _ABVAR_1_ldr;

void setup()
{
  _ABVAR_1_ldr = 0;
  pinMode( 13 , OUTPUT);
}

void loop()
{
  _ABVAR_1_ldr = analogRead(A2) ;
  if ( ( ( _ABVAR_1_ldr ) < ( 300 ) ) )
  {
    digitalWrite( 13 , LOW );
  }
  else
  {
    digitalWrite( 13 , HIGH );
  }
}
```

Initially the variable `_ABVAR_1_ldr`

In `void setup ()` we are going to define:

- The variable of the LDR with value 0.
- The pin 13 as output for the LED.

In `void loop ()` the following actions will happen:

`_ABVAR_1_ldr = analogRead (A2);` This instruction indicates that the analog values received via pin A2 from the LDR must be stored in the memory space reserved for the variable.

`if (((_ABVAR_1_ldr) < (300)))` This instruction tells us that if the given conditions of brightness below 300 are given the following action is taken:

`digitalWrite(13, LOW);` Indicates that the LED

`else` If the brightness is greater than 300, this other action is performed:

`digitalWrite(13, HIGH);` Indicates that pin 12 is activated and therefore the LED is lit.