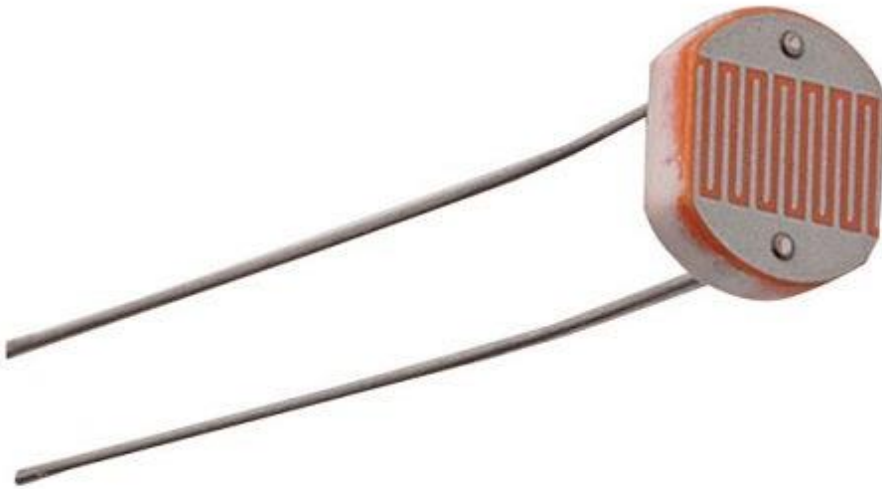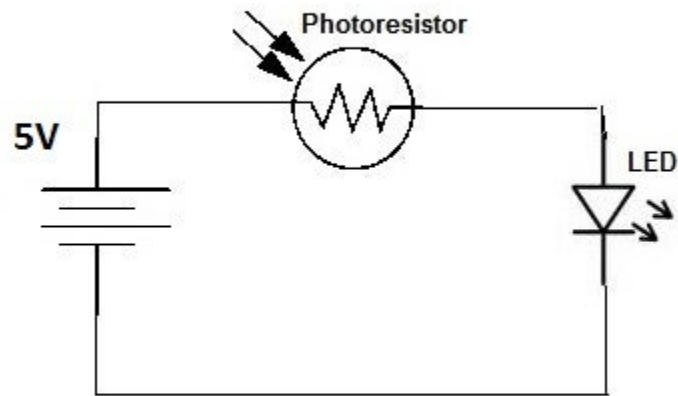# PHOTORESISTOR

A photoresistor or photocell is a light-controlled variable resistor. The resistance of a photoresistor decreases with increasing incident light intensity. A photoresistor can be applied in light-sensitive detector circuits, and light- and dark-activated switching circuits. It's also called light-dependent resistor (LDR).

In this tutorial you will learn how to use a photoresistor with and without arduino uno.

So, let's get started!

HOW TO USE PHOTORESISTOR

Let's see how a photoresistor react in light. Build the circuit above and notice how led brightness change.

The resistance value becomes smaller when there is much light in the room. So in the dark the led remains off because the resistance has become very big.

The Arduino will help us to reverse this situation, let's see how in next step.

THE CIRCUIT
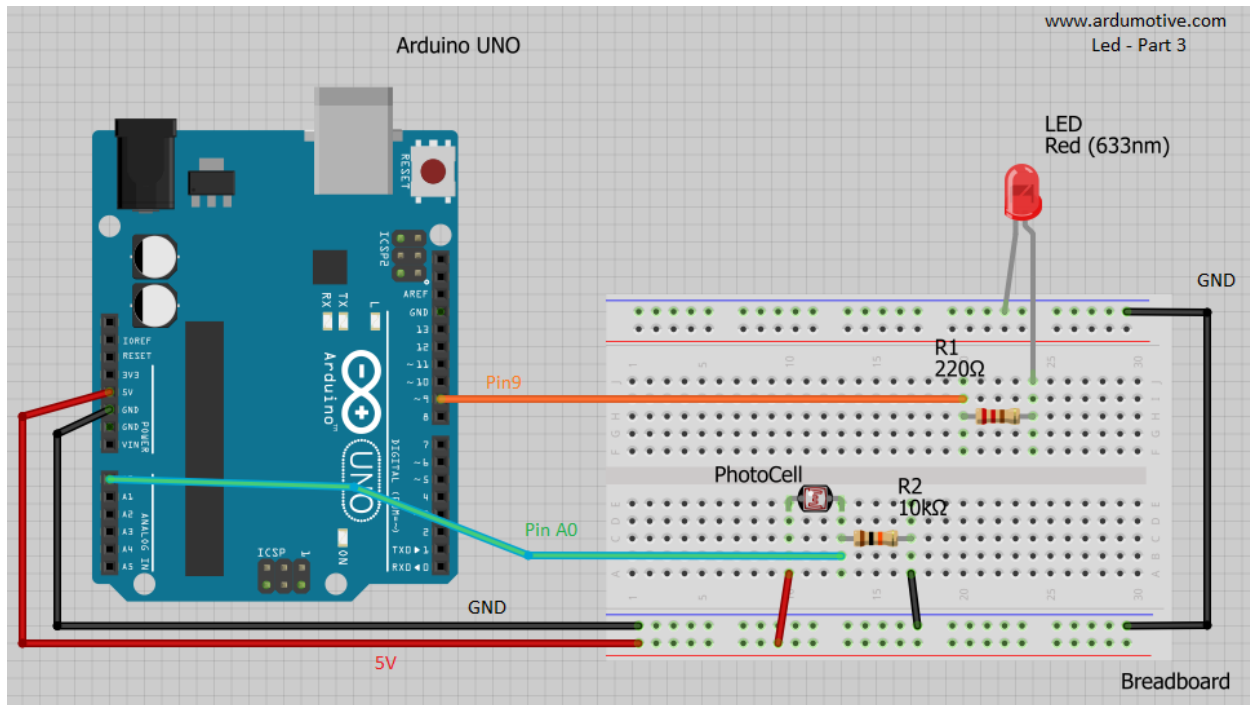
You will need:

- Arduino uno
- Breadboard
- LED
- 220 Ohm & 10 KOhm resistors
- Photoresistror

CODE

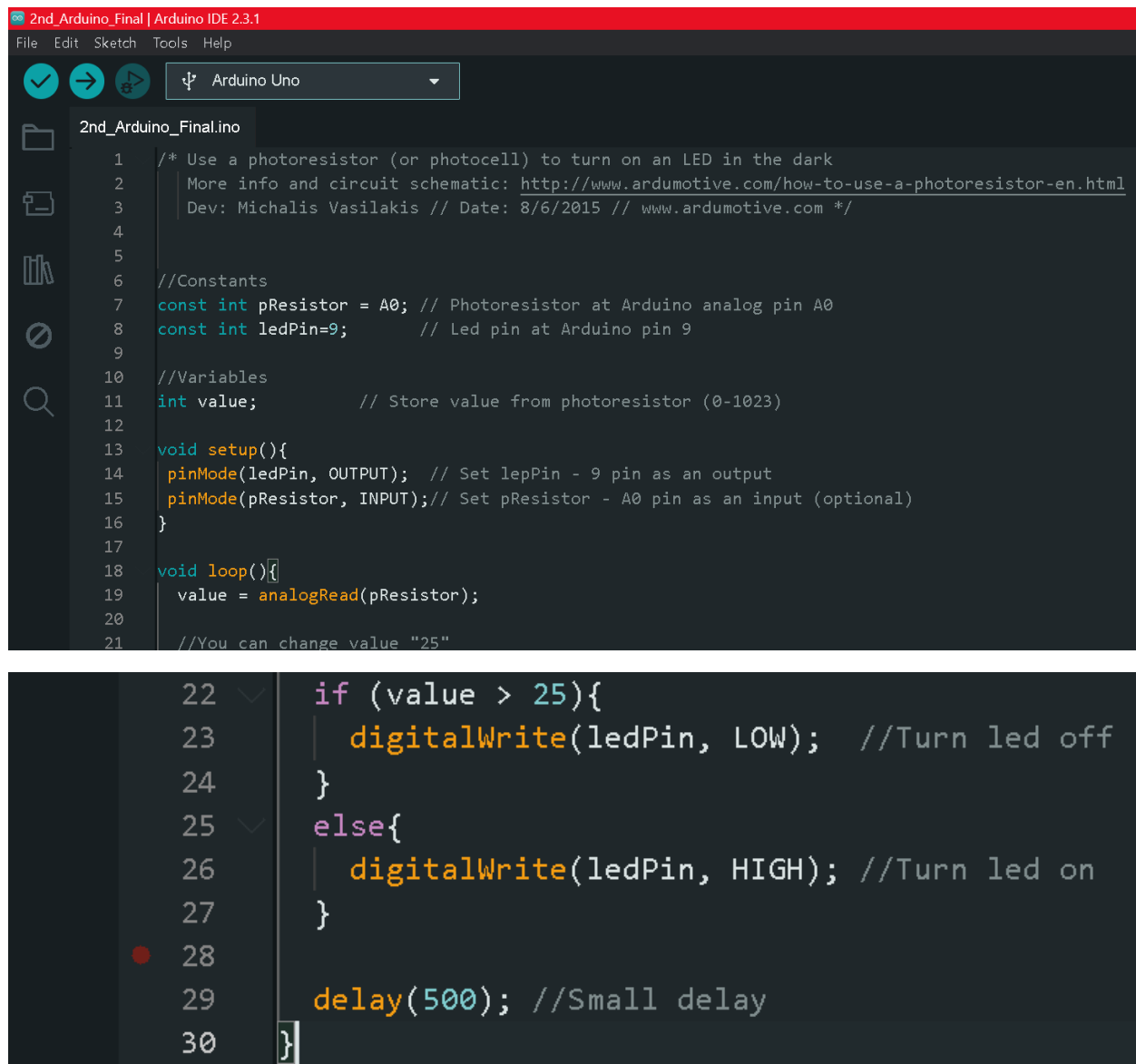Here's the 'led & photoresistor' code, embedded using codebender!

How it works:

Read analog value from photoresistor/photocell

-> value=analogRead(pResistor)

Check if value is bigger than e.g. 25

Send command to turn on/off the led

File   Edit   Sketch   Tools   Help

Arduino Uno

2nd_Arduino_Final.ino

```cpp
1   /* Use a photoresistor (or photocell) to turn on an LED in the dark
2      More info and circuit schematic: http://www.ardumotive.com/how-to-use-a-photoresistor-en.html
3      Dev: Michalis Vasilakis // Date: 8/6/2015 // www.ardumotive.com */
4
5
6   //Constants
7   const int pResistor = A0; // Photoresistor at Arduino analog pin A0
8   const int ledPin=9;       // Led pin at Arduino pin 9
9
10  //Variables
11  int value;                // Store value from photoresistor (0-1023)
12
13  void setup(){
14   pinMode(ledPin, OUTPUT);  // Set lepPin - 9 pin as an output
15   pinMode(pResistor, INPUT);// Set pResistor - A0 pin as an input (optional)
16  }
17
18  void loop(){
19    value = analogRead(pResistor);
20
21    //You can change value "25"
22    if (value > 25){
23       digitalWrite(ledPin, LOW);  //Turn led off
24    }
25    else{
26       digitalWrite(ledPin, HIGH); //Turn led on
27    }
28
29    delay(500); //Small delay
30  }
```

Try downloading the codebender plugin and clicking on the Run on Arduino button to program your Arduino with this sketch. And that's it, you've programmed your Arduino board!

You can keep playing with that by clicking the "Edit" button and start making your own modifications to the code.

For example, try to change "25" value and see how it changes the program.

REFERENCE:

https://www.instructables.com/How-to-use-a-photoresistor-or-photocell-Arduino-Tu/