

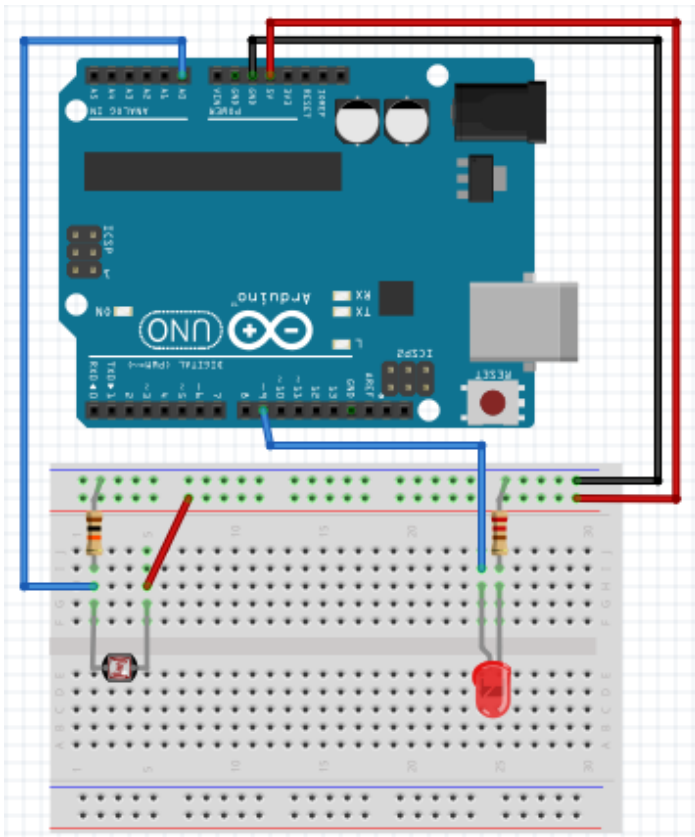
STEMKRAF - ARDUINO

<https://github.com/teaksoon/stemkraf>

Project: mini_p Automatic night light

⋮

⋮ by TeakSoon Ding for STEMKRAF (OCT-2021)



Hardware:

Arduino Uno x1

Solderless Breadboard x1

Jumper Wires

LDR(Light Dependent Resistor) x1

Resistor 10Kohm x1

LED 5mm x1

Resistor 220ohm x1

Automatic Night Light

This project will be built in a few stages. We will start building up various parts, accumulating them until the entire project is completed. This is a small project, it has only 2 parts.

01. mini_p_ldr_raw - raw analog ldr readings

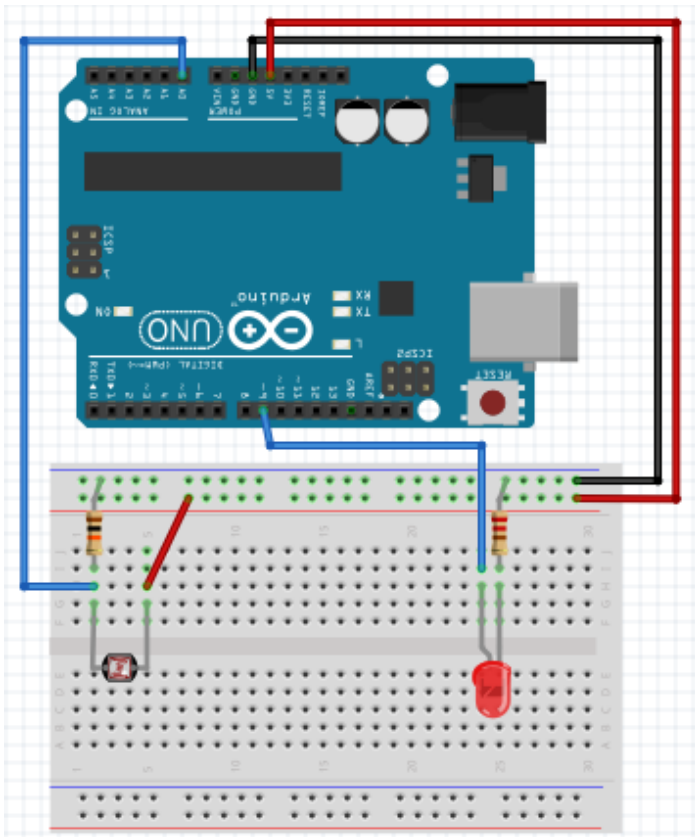
02. mini_p_automatic_night_light

- Fully functional Automatic Night Light where this device will automatically switch ON Lights when it is dark and switch OFF Lights when it is bright. It can be fitted with RELAY to automatically switch ON and OFF house light.

STEMKRAF - ARDUINO

<https://github.com/teaksoon/stemkraf>

```
Program: ldr_raw
(1/2): ldr raw readings
:
: by TeakSoon Ding for STEMKRAF (OCT-2021)
```



Hardware:

Arduino Uno x1
Solderless Breadboard x1
Jumper Wires

LDR(Light Dependent Resistor) x1
Resistor 10Kohm x1

LED 5mm x1
Resistor 220ohm x1

LDR(Light Dependent Resistor) is a type of Resistor that can change its resistance value when the brightness that it is exposed to, changes.

When there is less light, LDR resistance will become higher

When there is more light, LDR resistance will become lower

We need to pair the LDR with another Resistor to do a Voltage Divider so that the Analog Pin can give us different readings.

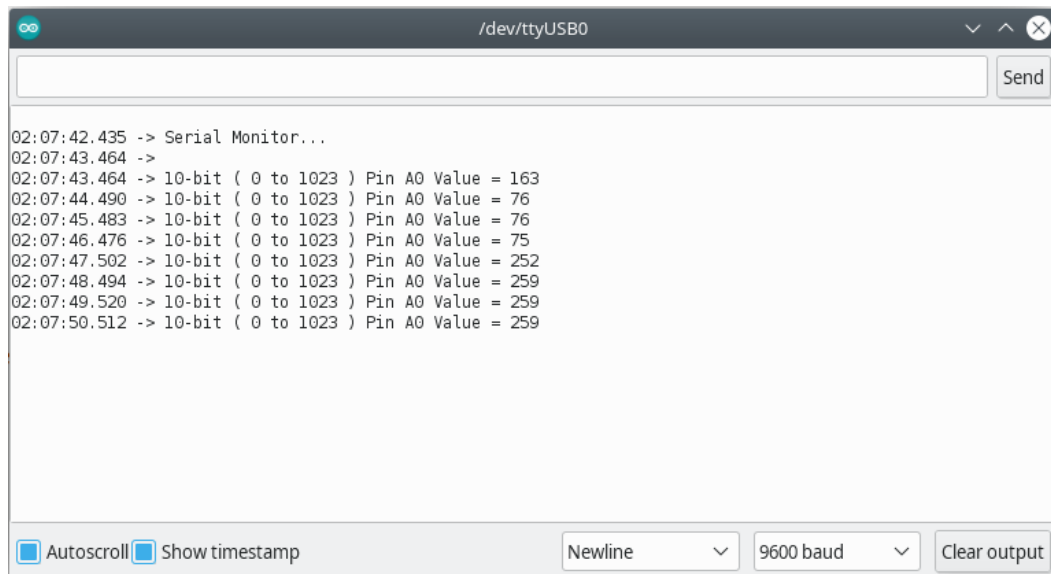
Before we can tell what reading is consider Night and what reading is considered Day. We need to get the raw LDR readings first.

STEMKRAF - ARDUINO

<https://github.com/teaksoon/stemkraf>

```
Program: ldr_raw
(2/2): ldr raw readings
:
: by TeakSoon Ding for STEMKRAF (OCT-2021)
```

- Upload this program with the Arduino IDE Software
- Open the Serial Monitor from the Arduino IDE Software
- Watch the Serial Monitor Screen



Create an artificial “Night” situation for the LDR and record the LDR analog Pin reading. (cover the LDR from Light)

Create an artificial “Day” situation for the LDR and record the LDR analog Pin reading. (expose the LDR to Light)

We will need these readings for our next step.

STEMKRAF - ARDUINO

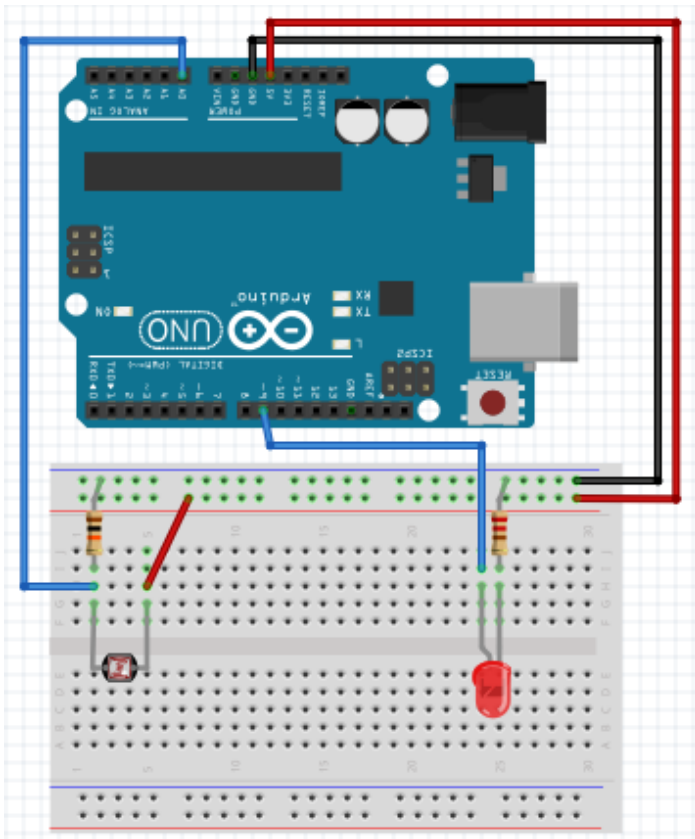
<https://github.com/teaksoon/stemkraf>

Program: mini_p_automatic_night_Light

(1/2): Automatic Night Light

:

: by TeakSoon Ding for STEMKRAF (OCT-2021)



Hardware:

Arduino Uno x1

Solderless Breadboard x1

Jumper Wires

LDR(Light Dependent Resistor) x1

Resistor 10Kohm x1

LED 5mm x1

Resistor 220ohm x1

LDR(Light Dependent Resistor) is a type of Resistor that can change its resistance value when the brightness that it is exposed to, changes.

When there is less light, LDR resistance will become higher

When there is more light, LDR resistance will become lower

Earlier in the LDR raw readings, we have recorded what is considered "Night" and what is considered "Day". Now we use that value to switch ON or OFF the LED.

STEMKRAF - ARDUINO

<https://github.com/teaksoon/stemkraf>

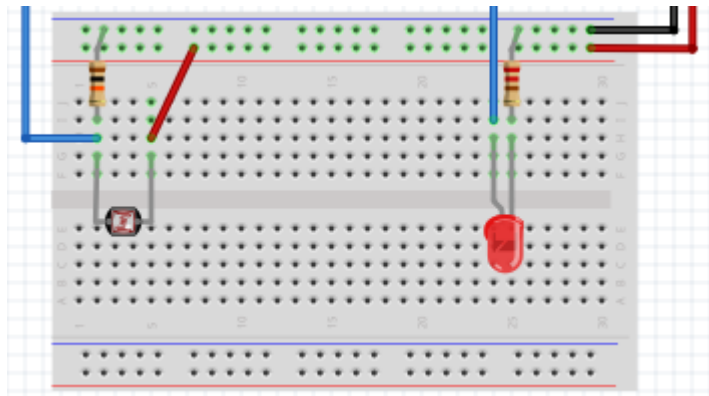
Program: mini_p_automatic_night_Light

(2/2): Automatic Night Light

:

: by TeakSoon Ding for STEMKRAF (OCT-2021)

- Upload this program with the Arduino IDE Software
- Watch the LED
- Cover the LDR from Light and see what happened to the LED



In this case, we are using LED.

If we replace the LED with a RELAY and by connecting our house light to that RELAY, we can use this same program to automatically switch ON/OFF our house light.