

Smart Lamp

Aim: - The aim of this project is to make our own smart lamp.

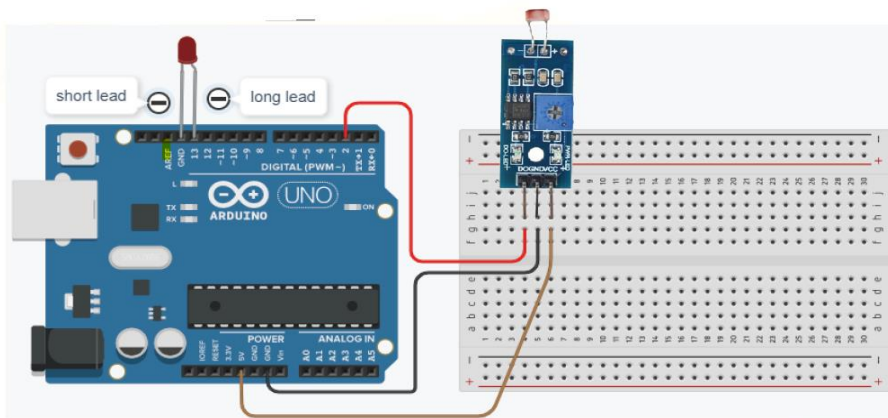


Component Requirements

Sl. No	Items	Quantity
1	Arduino Uno	1
2	Cable	1
3	LDR Sensor	1
4	Jumper Wire M	3
5	Breadboard	1
6	Battery 9 Volt	1
7	Battery Cap	1



Circuit Diagram



Circuit connections procedure

- Take 1 Arduino board, 1 breadboard and place it side by side.
- Mount light sensor/LDR on breadboard.
- Connect 3 male to male wires on the breadboard in front of each pin of the sensor.
- Now connect the other ends of those 3 wires to the arduino board as per given details.

LDR Sensor Arduino

VCC ----- 5v

GND-----GND

DO----- Pin

- Connect the long lead/leg of the LED to pin 13 of the arduino board.
- Connect the short lead/leg of the LED to the GND pin of the arduino board.

Procedure to upload the code

- Once you complete the circuit connections connect the arduino board to your laptop/computer system using arduino cable.
- Open arduino IDE.
- Go to **File->Open>Download> Select smart_lamp**
- Click on the upload option.

Program

```
#define LDR 2
#define led 13
void setup()
{
// put your setup code here, to run once: Serial.begin(9600);

pinMode(LDR,INPUT);
pinMode(led,OUTPUT);
}
void loop(){
// put your main code here, to run repeatedly: int LDR_read = digitalRead(LDR);

if(LDR_read==LOW)
{
Serial.println("Light_detected");
digitalWrite(led,LOW);
}
```

```
else if( LDR_read==HIGH){  
Serial.println("No light");  
digitalWrite(led,HIGH);  
}  
}
```

Output

1. When there is no light/dark around the sensor, "No light" text will print on the serial monitor and the LED will glow.
2. When there is light around the sensor, "Light detected" text will print on the serial monitor and LED will turn off.
3. To see the text on the serial monitor, just click on this icon in your Arduino IDE



9V Battery connection:

1. You are powering the arduino through your laptop. You can also power the arduino through a 9v battery.
2. Disconnect the arduino cable and connect the 9v battery to the arduino board using the power jack connector. Now you can see the circuit is working.

Do not connect the battery all the time to the arduino board. It will drain the battery.