

Circuit Simulation Project

<https://esim.fossee.in/circuit-simulation-project>

Name of the participant : K.Neharika

Title : Automatic Street Light Using Ldr And Bc547

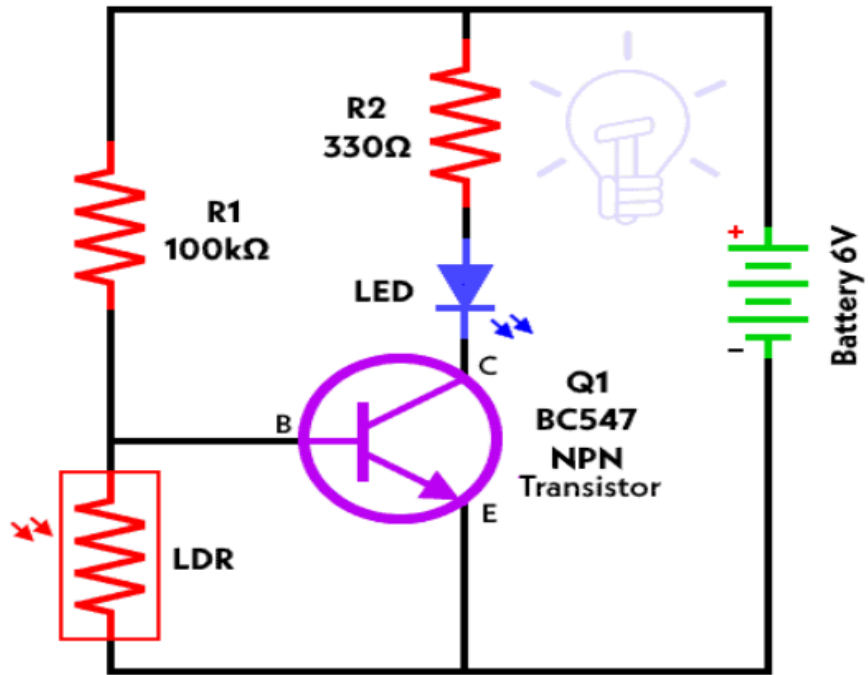
Theory/Description :

This circuit is designed to automatically control street lights based on ambient light conditions. It utilizes a Light Dependent Resistor (LDR) and a BC547 NPN transistor to regulate the operation of the street light.

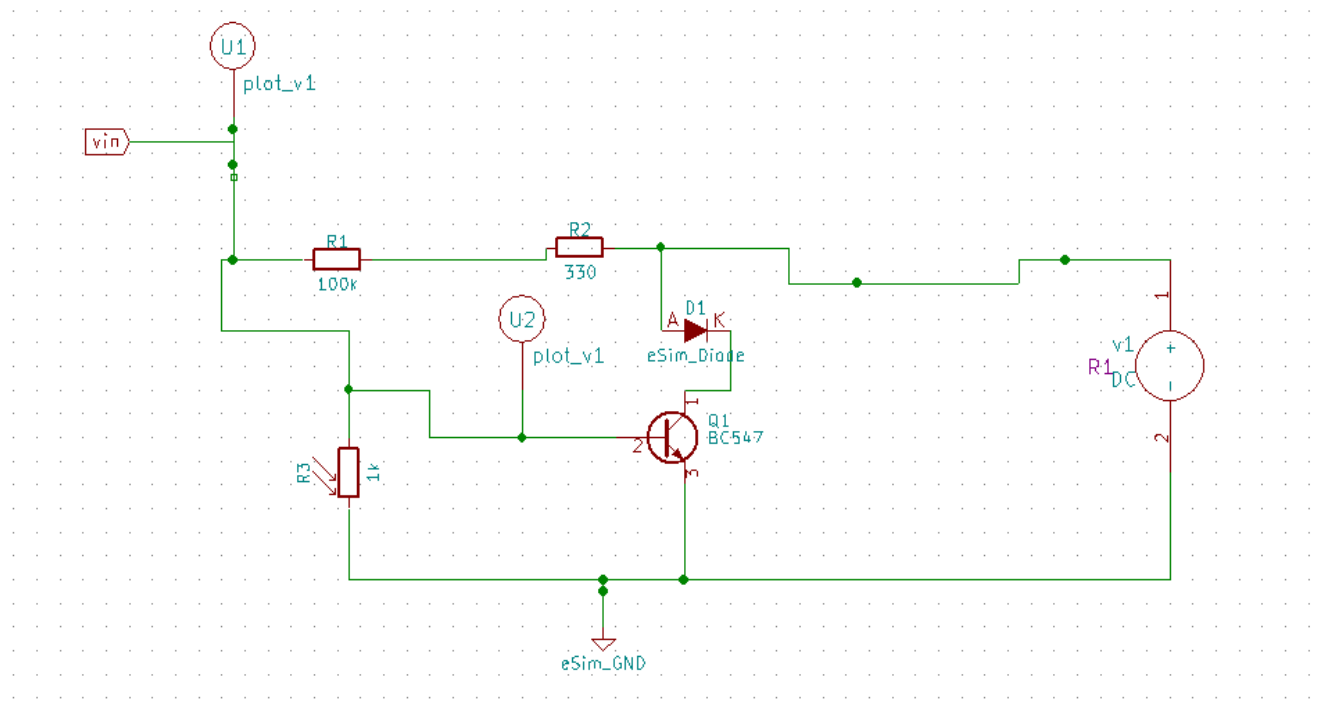
- It is a dark detector circuit based on LDR and a transistor (BC-547 NPN) which automatically switches ON and OFF the street light system.
- It automatically switches ON street lights when the sunlight goes below the visible region of our eyes. (e.g. in the evening after sunset).
- It automatically switches OFF the lights when sunlight falls on it (i.e. on LDR) e.g. in the morning, the sensor called LDR (Light Dependent Resistor) senses the light just like our eyes and deactivates the circuit.

Components Required:

- LDR – Light Dependent Resistor
- 2 Nos. of transistors. (NPN transistor – BC547 or BC147 or BC548)
- Resistor- 1k Ω , 100k Ω , 330 Ohm & 470 ohms.
- Light emitting diode (LED) – Any color
- Connecting wires – (Use single-core plastic-coated wire of 0.6mm diameter (the standard size) or any wire used in computer networking).
- Power supply-6V or 9V



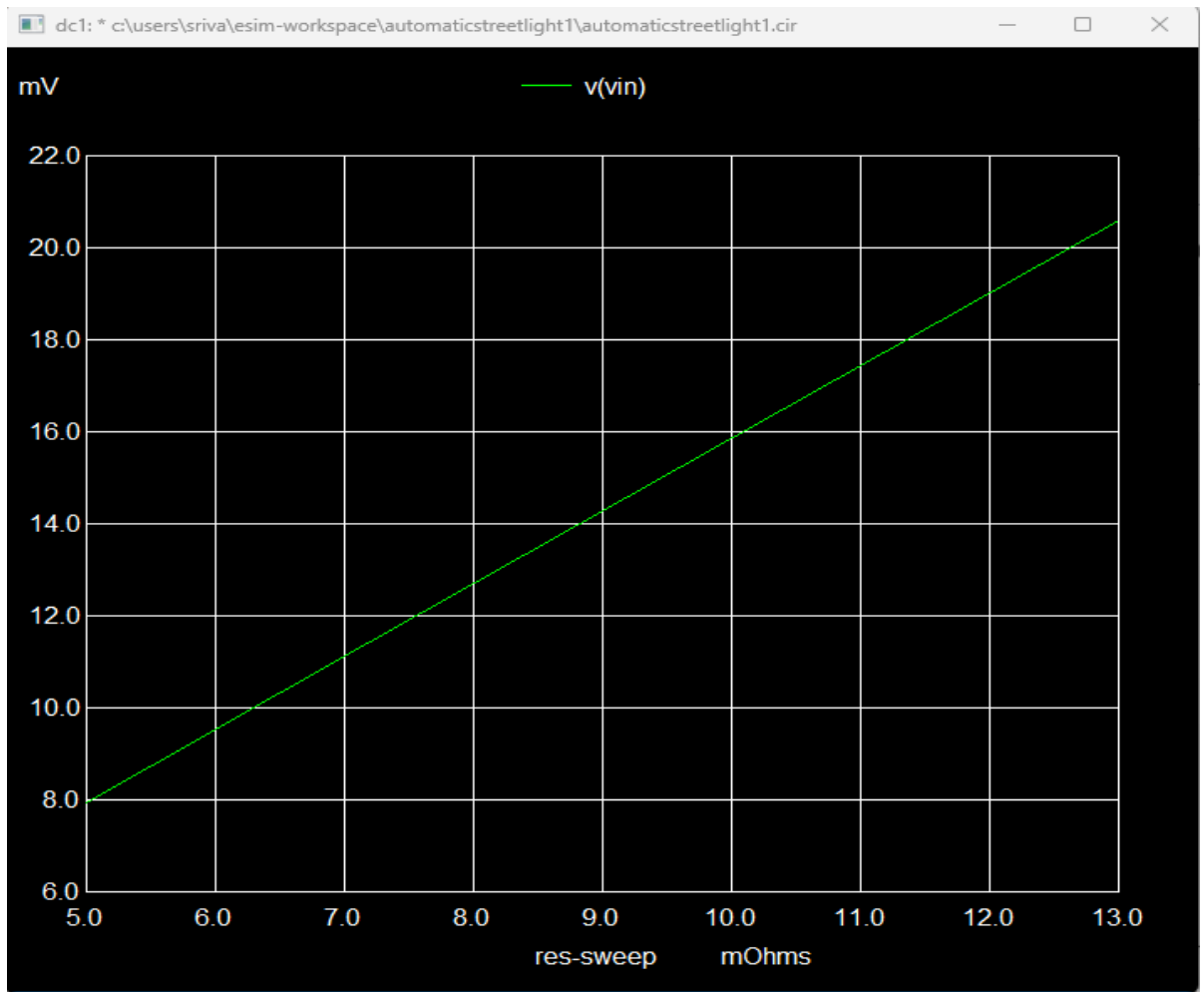
Circuit Diagram(s) :

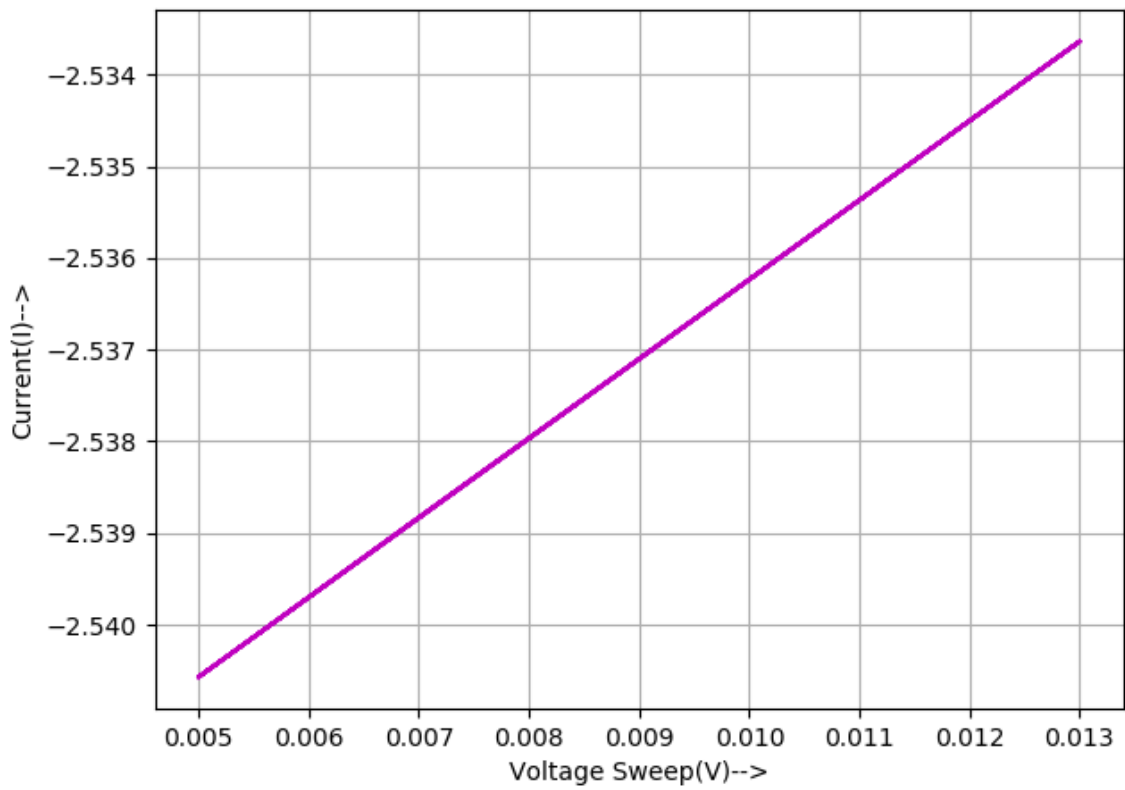


Results (Input, Output waveforms and/or Multimeter readings) :

DC Analysis

Enter Source 1	R3	
Start	5	mV or mA
Increment	2	mV or mA
Stop	13	mV or mA
Enter Source 2	R1	
Start	6	mV or mA
Increment	5	mV or mA
Stop	21	mV or mA





Source/Reference:

<https://www.electricaltechnology.org/2013/04/automatic-street-light-control.html>