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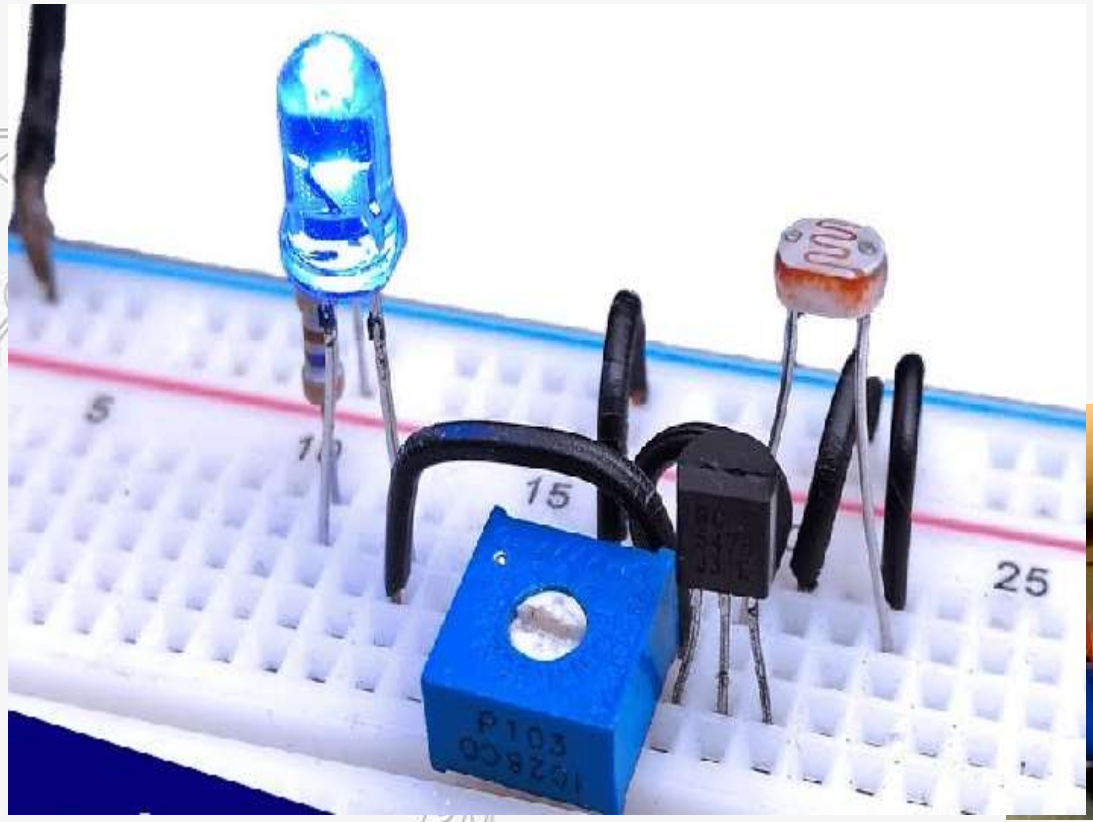
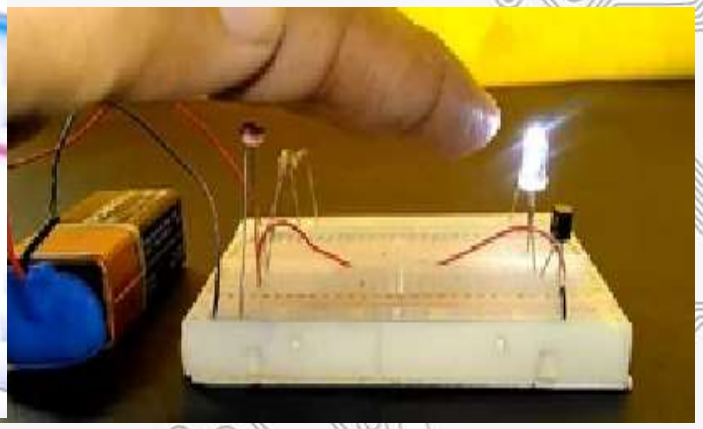
Automatic Street Light Controller





Light Dependent Resistor [LDR] Sensor

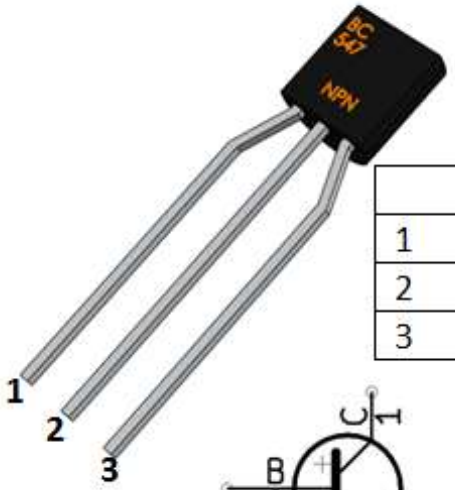
An **LDR** is a component that has a (variable) resistance that changes with the light intensity that falls upon it. This allows them to be used in light **sensing** circuits. A Light Dependent **Resistor** (**LDR**) or a photo **resistor** is a device whose resistivity is a **function** of the incident electromagnetic radiation. Hence, they are light sensitive devices. They are also called as photo conductors, photo conductive cells or simply photocells.

Working of LDR sensor

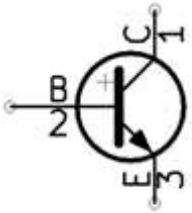
- We will use a LDR and a resistor together in series. An LDR is simply a device that changes resistance based on ambient light. The brighter the light, the lower the resistance, the dimmer the light, the higher the resistance.
- When there is no light , LDR will offer high resistance and less current flows through the resistor and voltage across resistor will be less near to GND.
- When light falls on LDR, its resistance decreases and current flow through it increases. Then voltage across the resistor increases and LED gets a HIGH signal.

BC547

BC547 is a NPN transistor hence the collector and emitter will be left open (Reverse biased) when the base pin is held at ground and will be closed (Forward biased) when a signal is provided to base pin.



BC-547	
1	Collector
2	Base
3	Emitter



About project

- It is a simple and powerful project, which uses transistor (BC 547 NPN) as a switch to switch ON and OFF the street light system automatically.
- It automatically switches ON lights when the sunlight goes below the visible region of our eyes. (e.g. in evening after Sunset).
- It automatically switches OFF lights when Sunlight fall on it (i.e. on LDR) e.g. in morning, by using a sensor called LDR (Light Dependent Resistor) which senses the light just like our eyes.
- By using this Automatic system for street light controlling, we can reduce energy consumption because the manually operated street lights are not switched off properly even the sunlight comes and also not switched on earlier before sunset.

Components Required

- Light Dependent Resistor
- NPN Transistor- BC547
- Resistor [10k ,220ohms]
- LED
- Breadboard
- +9V Battery
- Battery Cap
- Connecting Wires

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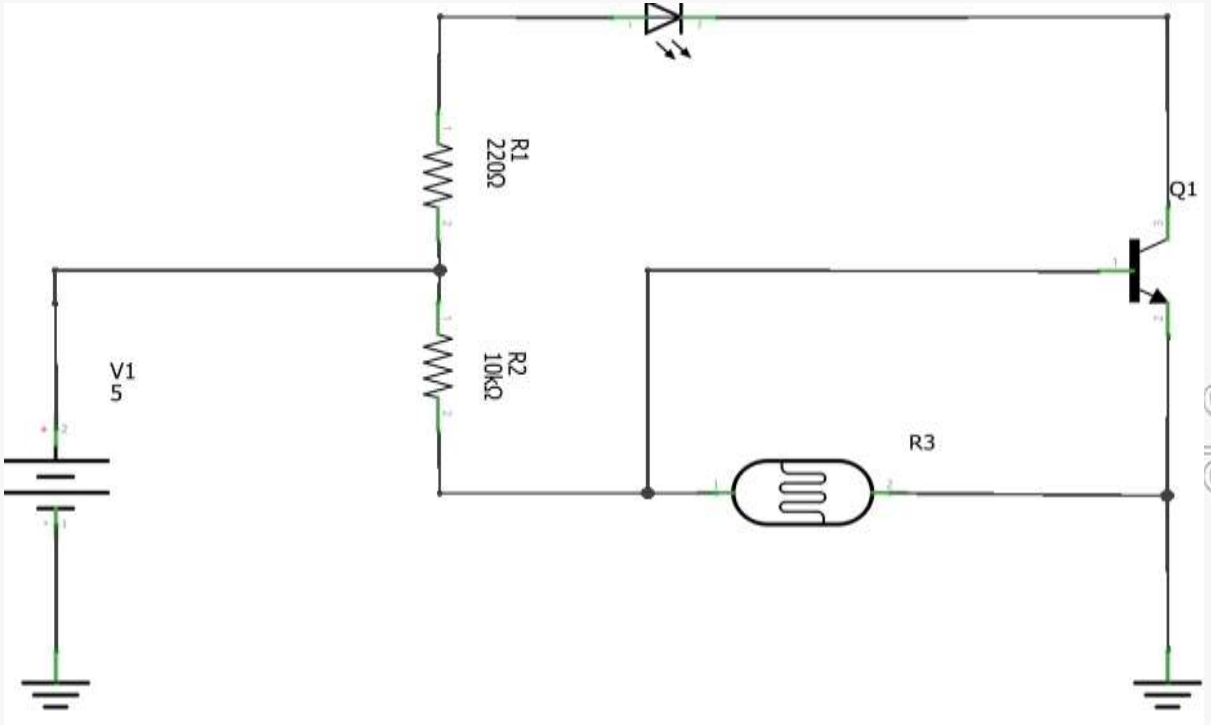
Connection Diagram



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Project Link : https://youtu.be/ovMK8RkB678