
# Eco Friendly, Energy Saving Street Light

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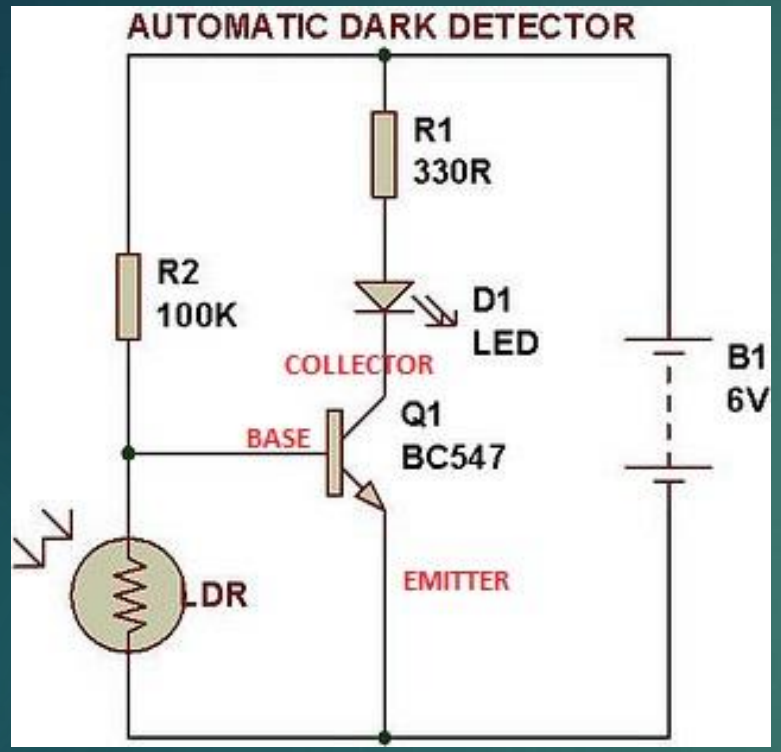
# Exhibit 1: Automatic Light Detector

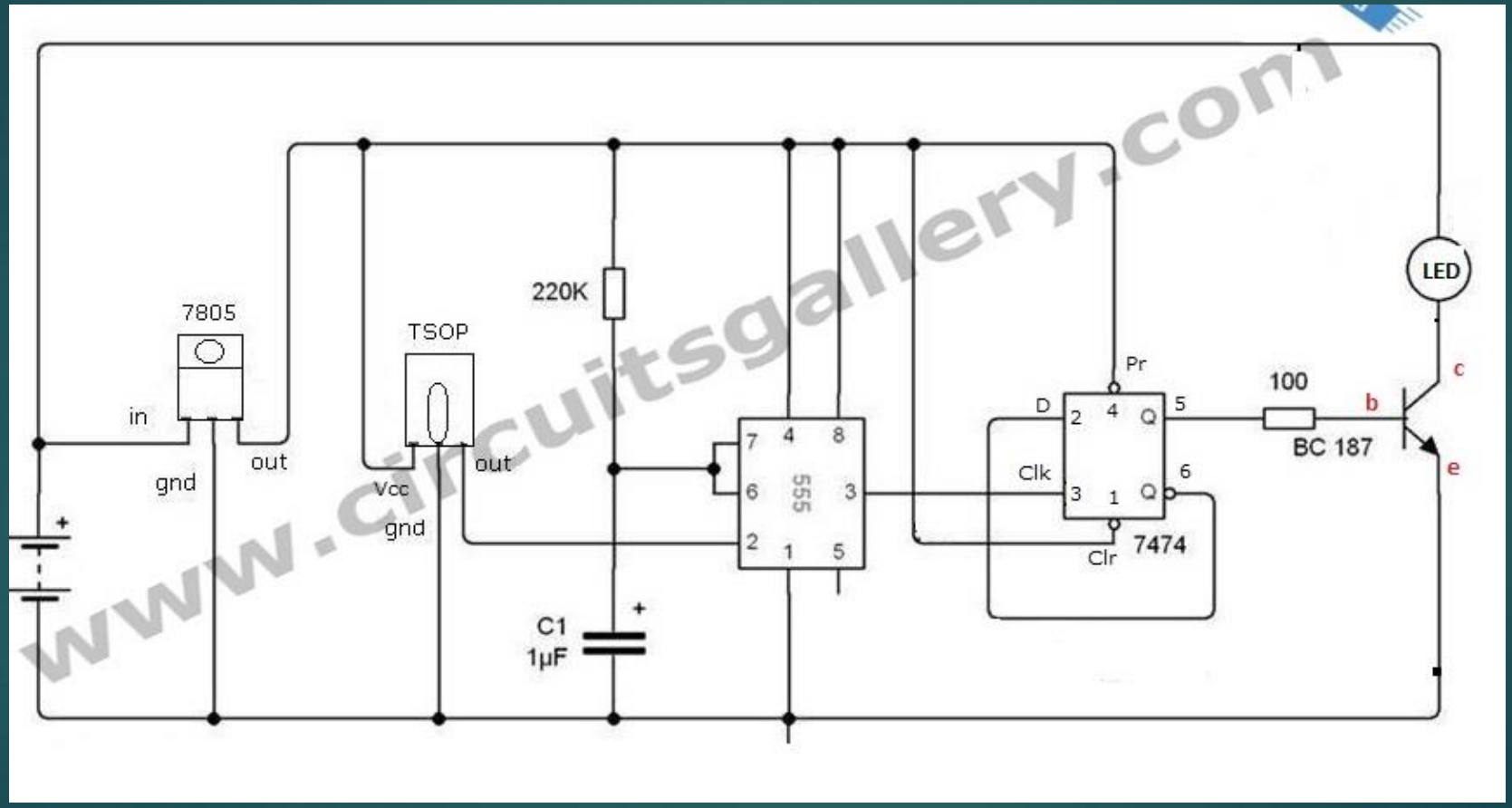



Voltage between BASE & EMITTER = (B1 * LDR)/ (LDR + R2)

- Light Dependent Resistor (LDR):
  - Resistance is HIGH when it is DARK
  - Resistance is LOW when it is BRIGHT
- Light Emitting Diode (LED) is the STREET LIGHT
- Transistor is the SWITCH
  - Voltage between BASE & EMITTER collector > 0.7V, SWITCH IS ON, Current flows through LED, Street Light is ON
  - Voltage between BASE & EMITTER collector < 0.7V, SWITCH IS OFF, No current flows through LED, Street Light is OFF

ADVANTAGES:
Street Light is ON only when it is dark. Reduces wastage of Electricity
Automatic ON/OFF: No Electrician required to switch the light ON and OFF

# Exhibit 2: Infra Red Controlled Light Source ("Virtual Sun")



# Exhibit 2: Infra Red Controlled Light Source ("Virtual Sun")


- 7805 – Voltage Regulator. Generates 5V from 9V battery
- TSOP – Infra Red (IR) Light Sensor. Converts IR light to electrical voltage pulses
- 555 – Timer IC operating as Monostable Multivibrator
  - Converts many voltage pulses into single long voltage pulse
- 7474 – D FLIP FLOP to store "HIGH" or "LOW" voltage
- TRANSISTOR – Current Amplifier to drive LED

# References

- www.circuitsgallery.com for the Exhibit 2 Circuit
- www.buildcircuit.com for the Exhibit 1 Circuit
- Wikipedia for circuit explanations