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Automatic Street Lamp

Automatic street lamp using LDR

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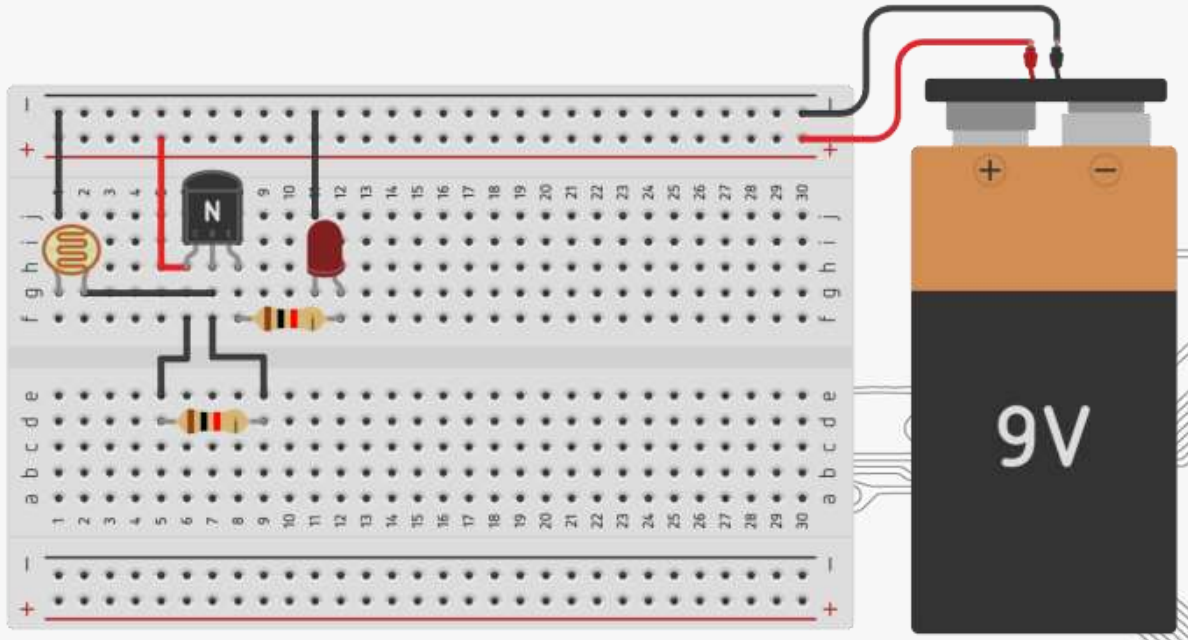
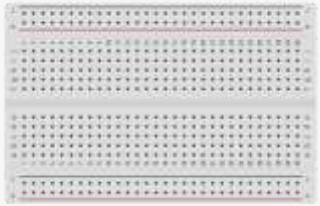
Introduction

Automatic street lamp



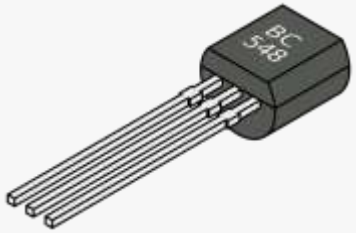
Required Components

- Breadboard
- LED
- BC548 transistor
- Resistor
- Snap Connector
- Light Dependent Resistor
- Jumper Wires
- Battery 9v



Breadboard

LED



BC548/547 Transistor

Resistor

Snap Connector

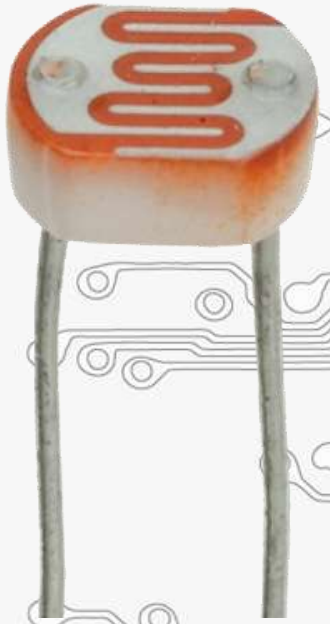
LDR

Jumper Wires

Battery 9v

Light Dependent Resistor (LDR)

- A photoresistor (also known as a Photocell, or light-dependent resistor, LDR, or photo-conductive cell) is a component that decreases resistance with respect to receiving luminosity (light) on the component's sensitive surface.
- It can be found in many consumer items such as:
  - Camera light meters
  - Clock radios
  - Alarm devices (as the detector for a light beam)
  - Nightlights
  - Solar street lamps



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Procedure

Connection Steps

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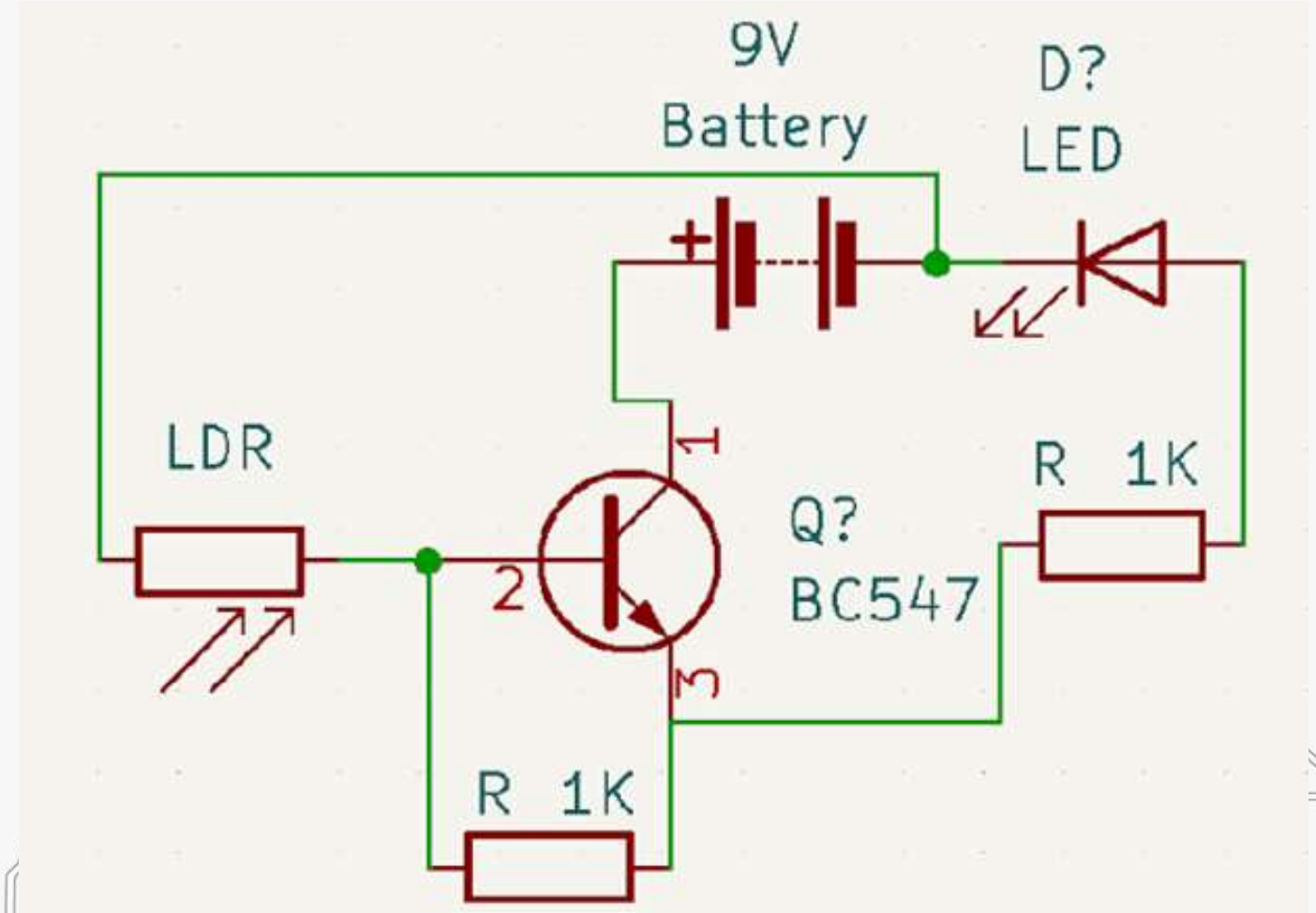
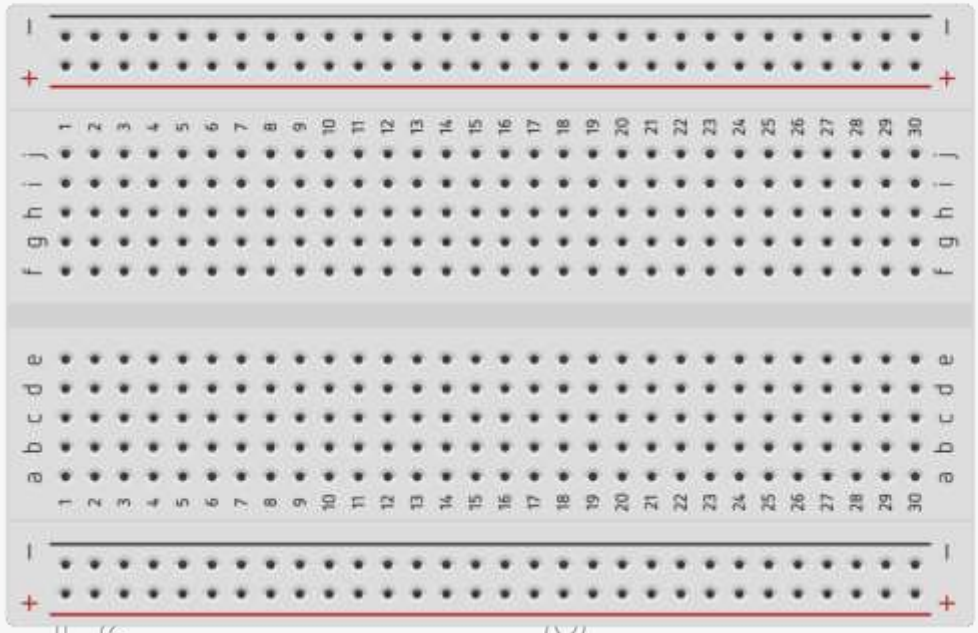
Circuit diagram



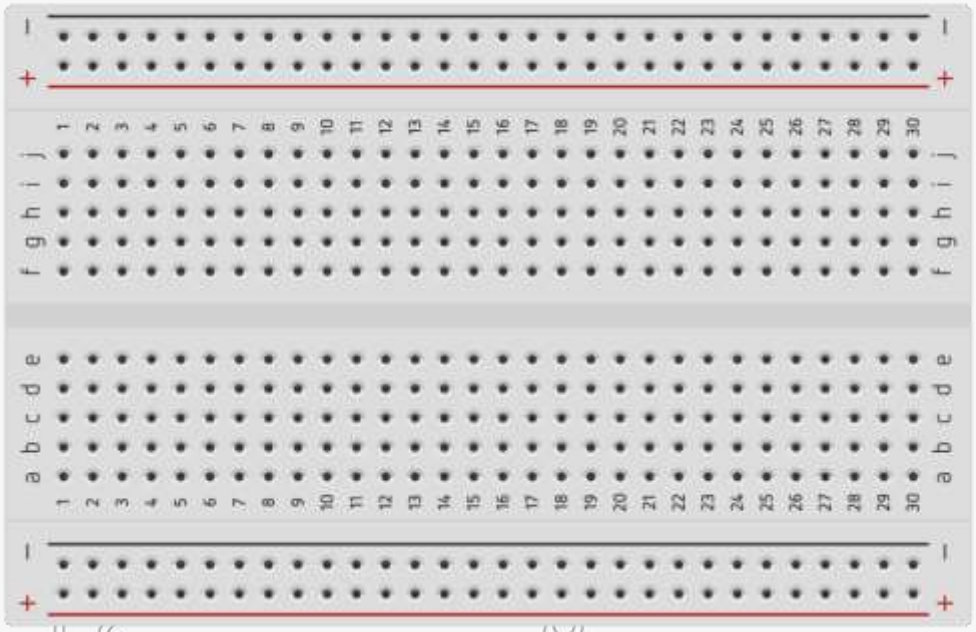
Connection Step 1

- Place breadboard



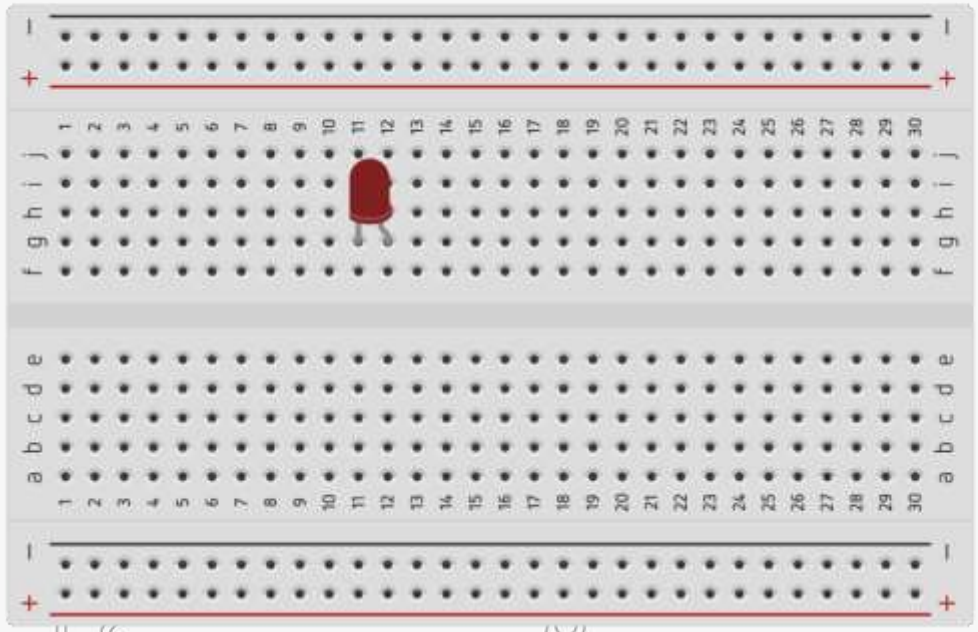
Series Connection Step 2

- Place 9v Battery



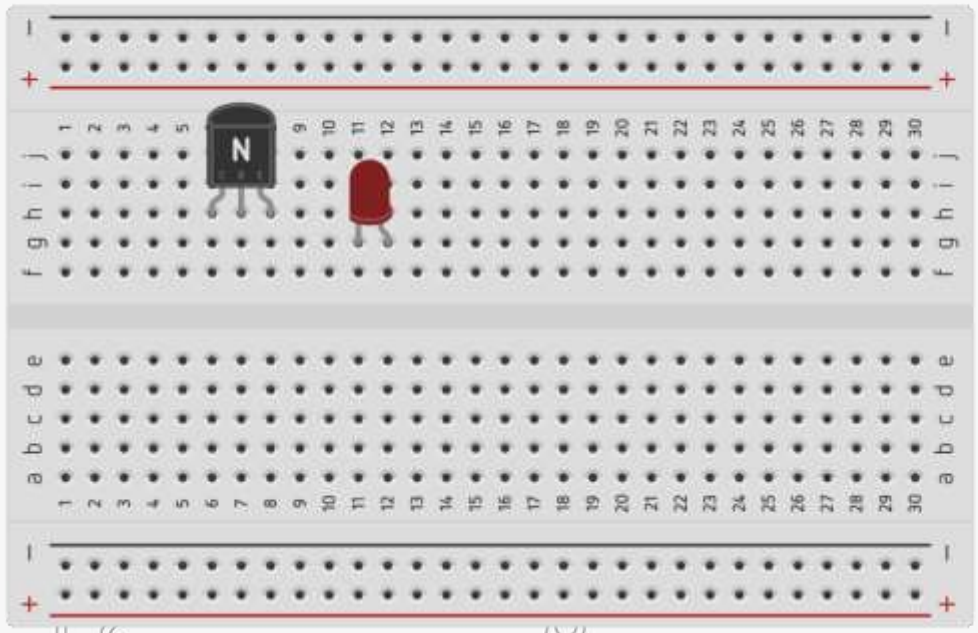
Series Connection Step 3

- Insert LED



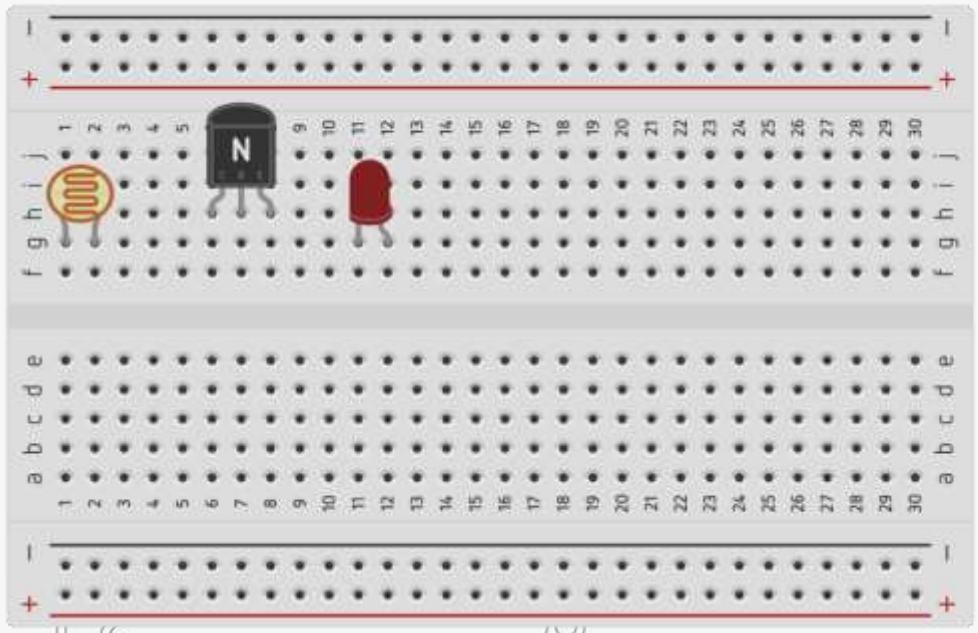
Series Connection Step 4

- Insert BC548 transistor in the breadboard.



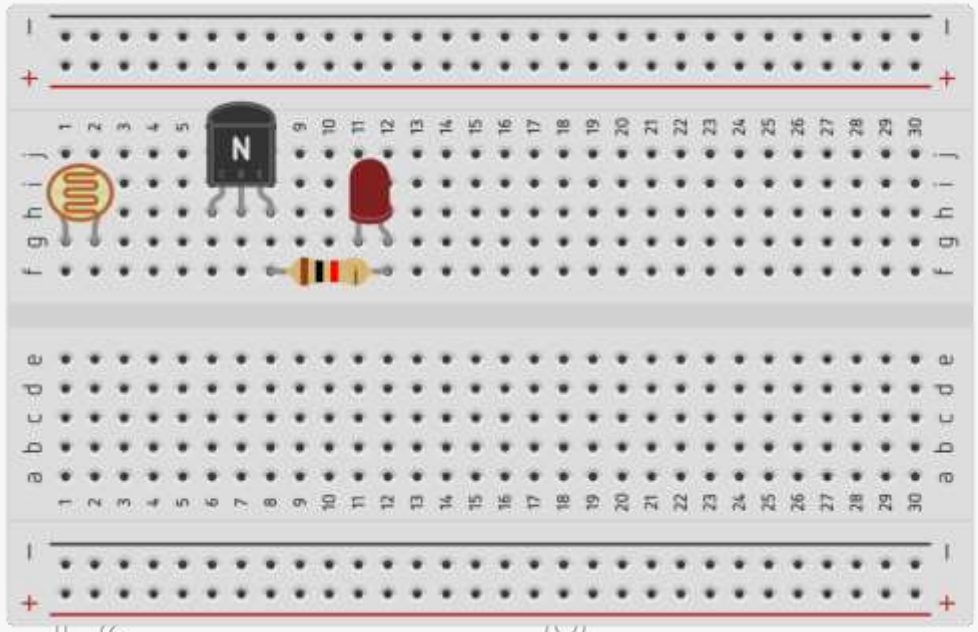
Series Connection Step 5

- Insert light dependent resistor in breadboard.



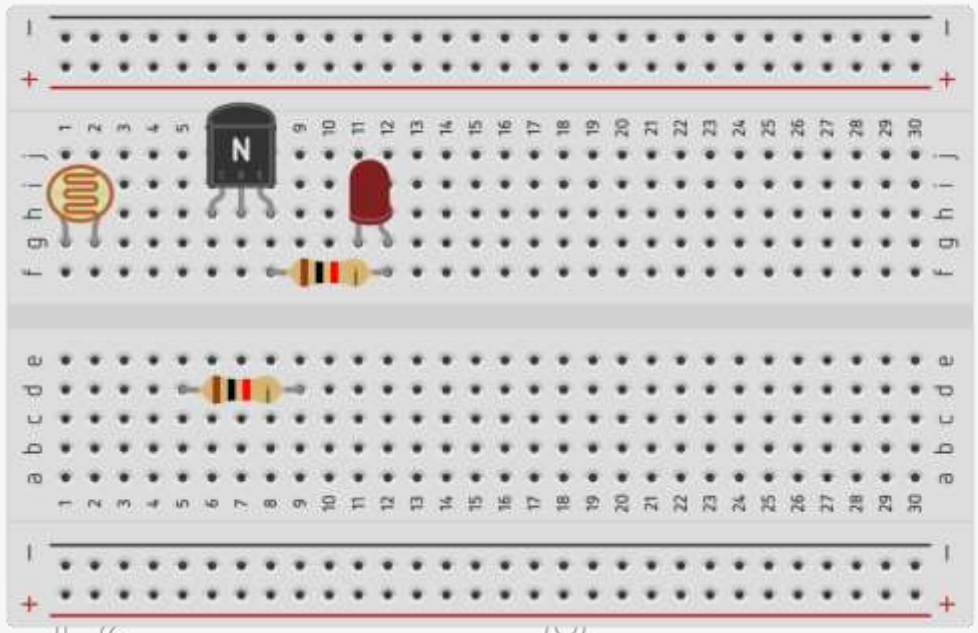
Series Connection Step 6

- Insert resistor in such a way that it connects to the anode(+) terminal of LED in breadboard as shown below.



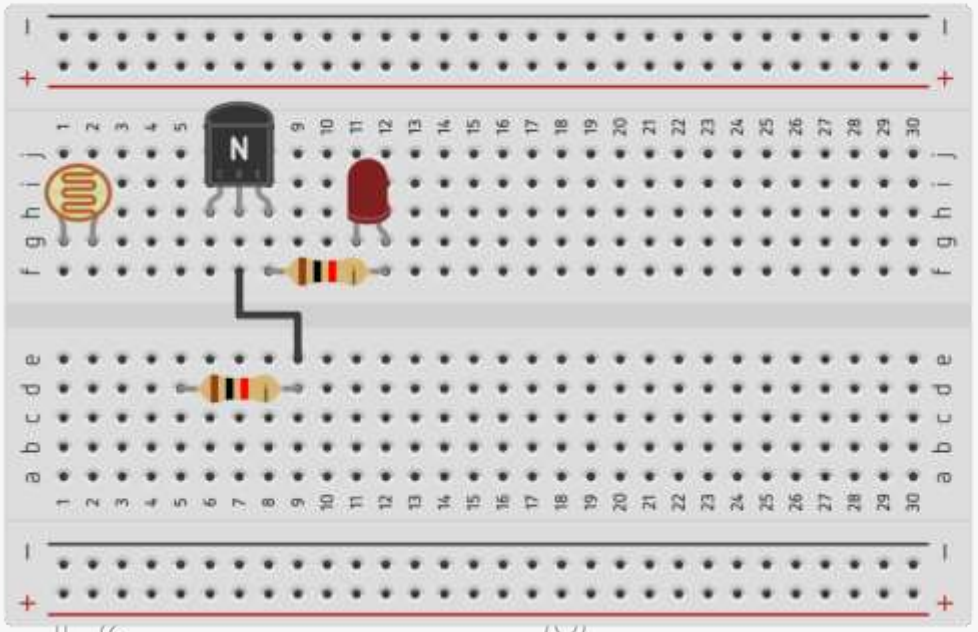
Series Connection Step 7

- Insert another resistor in the breadboard as shown below.



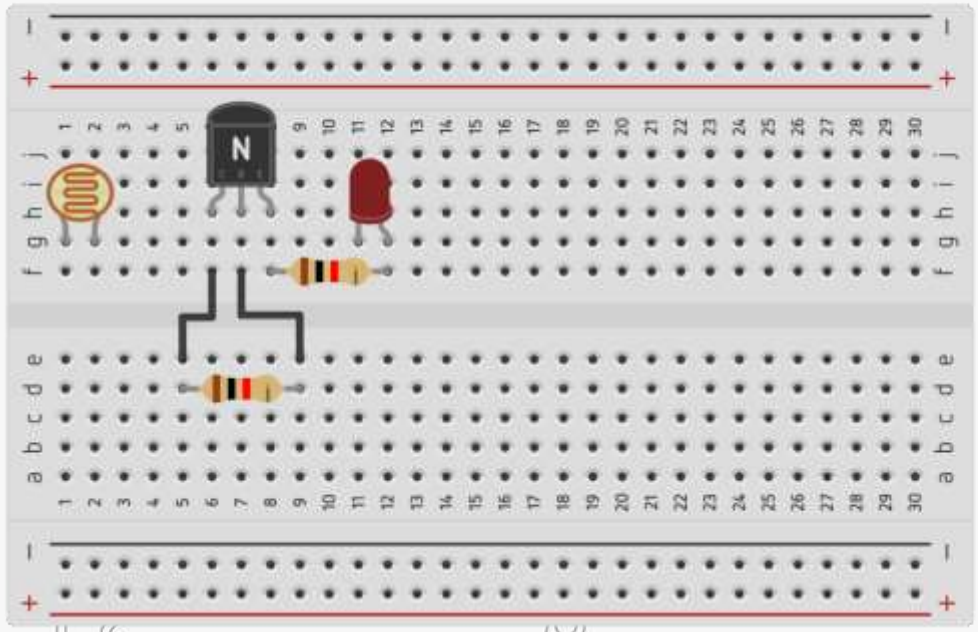
Series Connection Step 8

- Connect base terminal of transistor to the terminal of resistor as shown below.



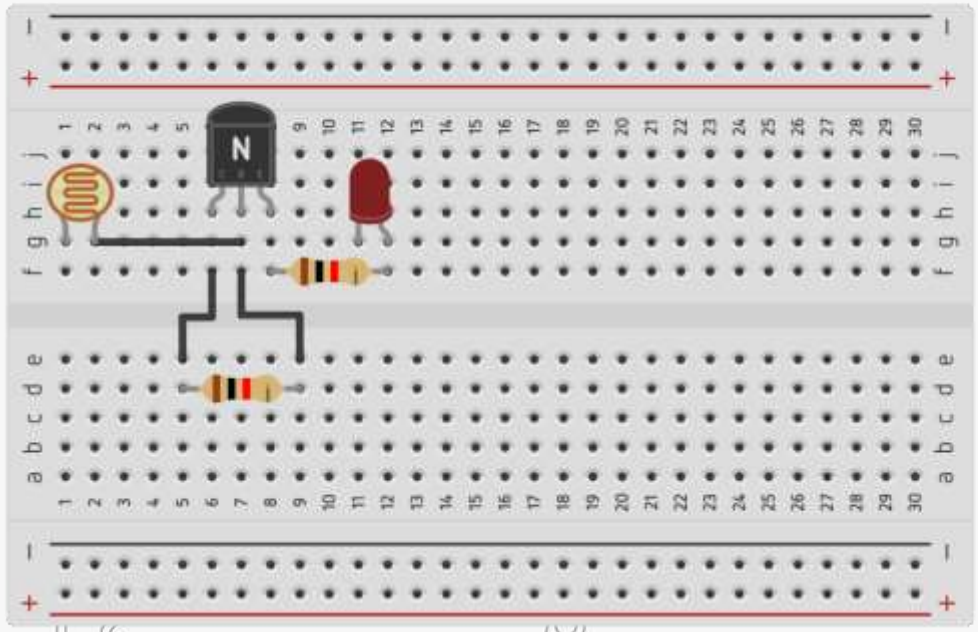
Series Connection Step 9

- Connect collector terminal of transistor to the another terminal of resistor as shown below.



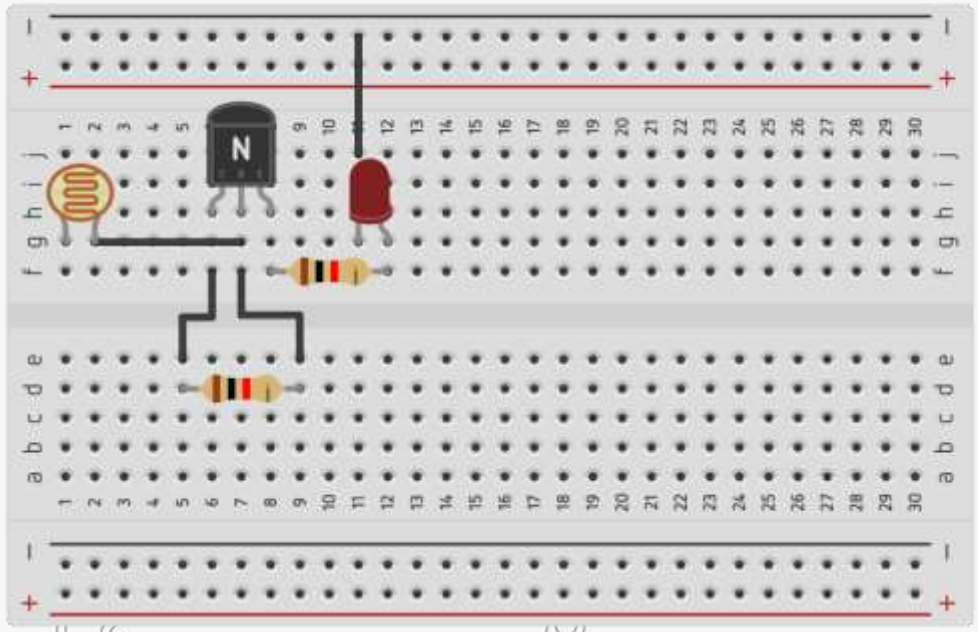
Series Connection Step 10

- Connect base terminal of transistor to the another terminal of LDR as shown below.



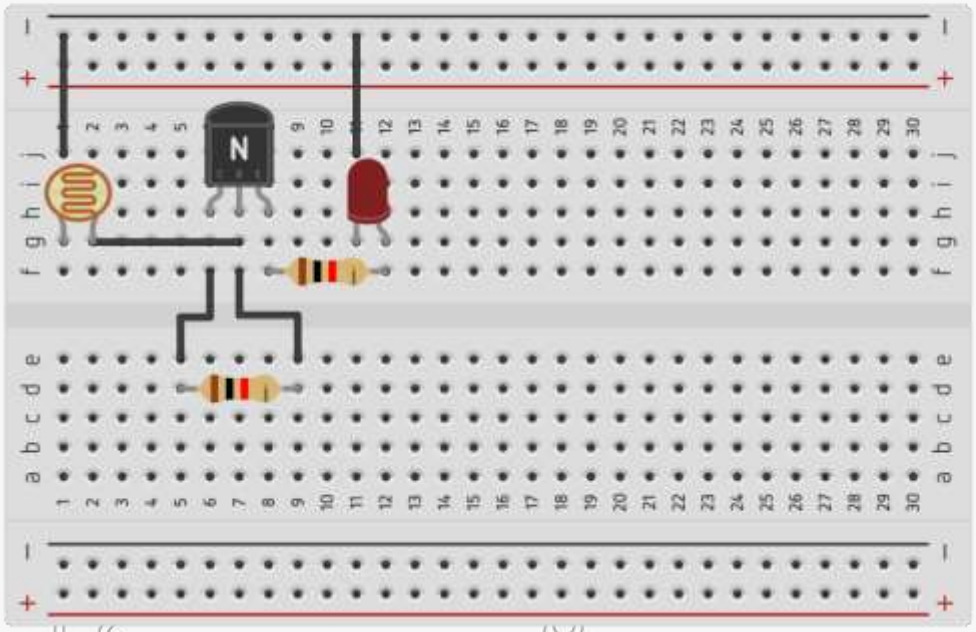
Series Connection Step 11

- Connect cathode(-) terminal of LED to the negative(-) power rail of breadboard as shown below.



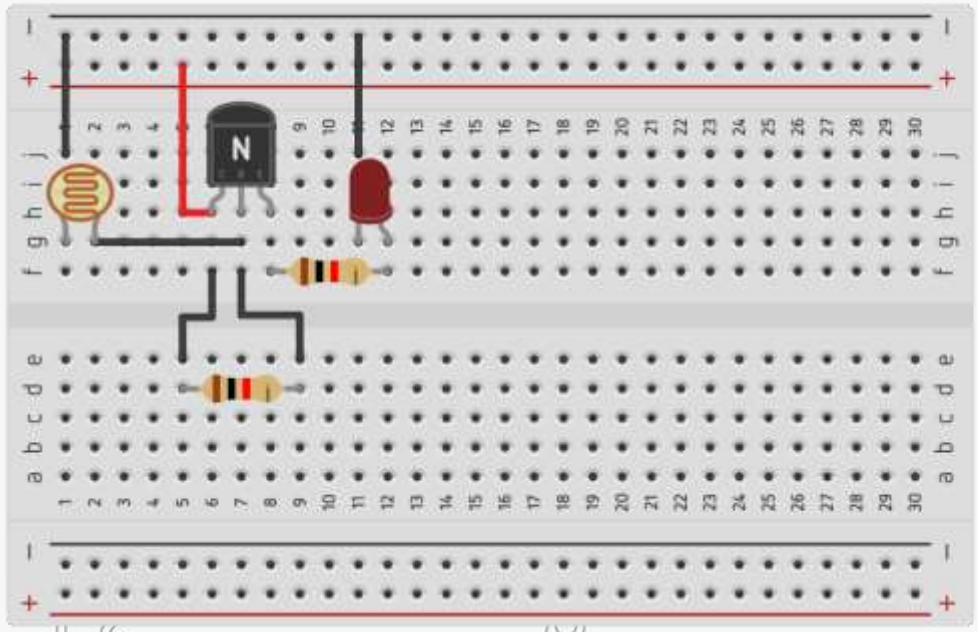
Series Connection Step 12

- Connect free end of the LDR to the negative(-) power rail of the breadboard as shown below.



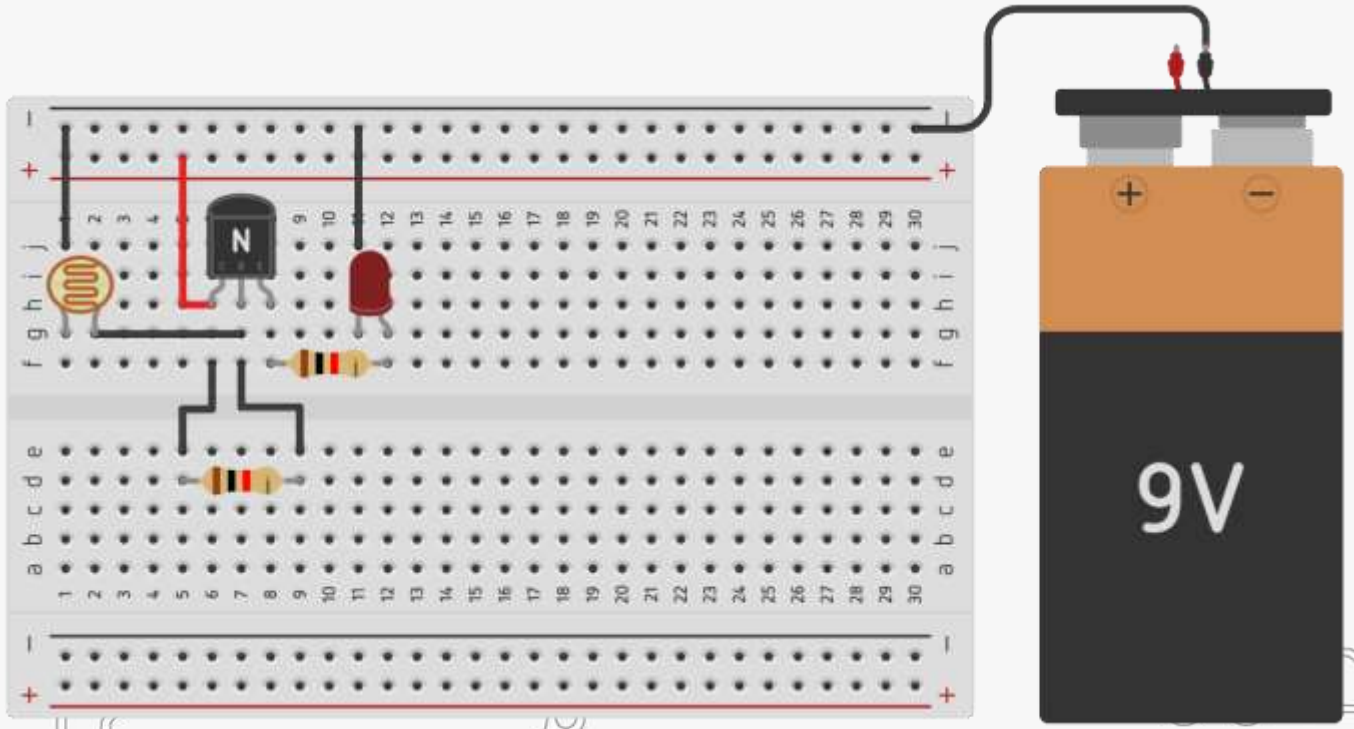
Series Connection Step 13

- Connect collector terminal of transistor to the positive(+) power rail of the breadboard as shown below.



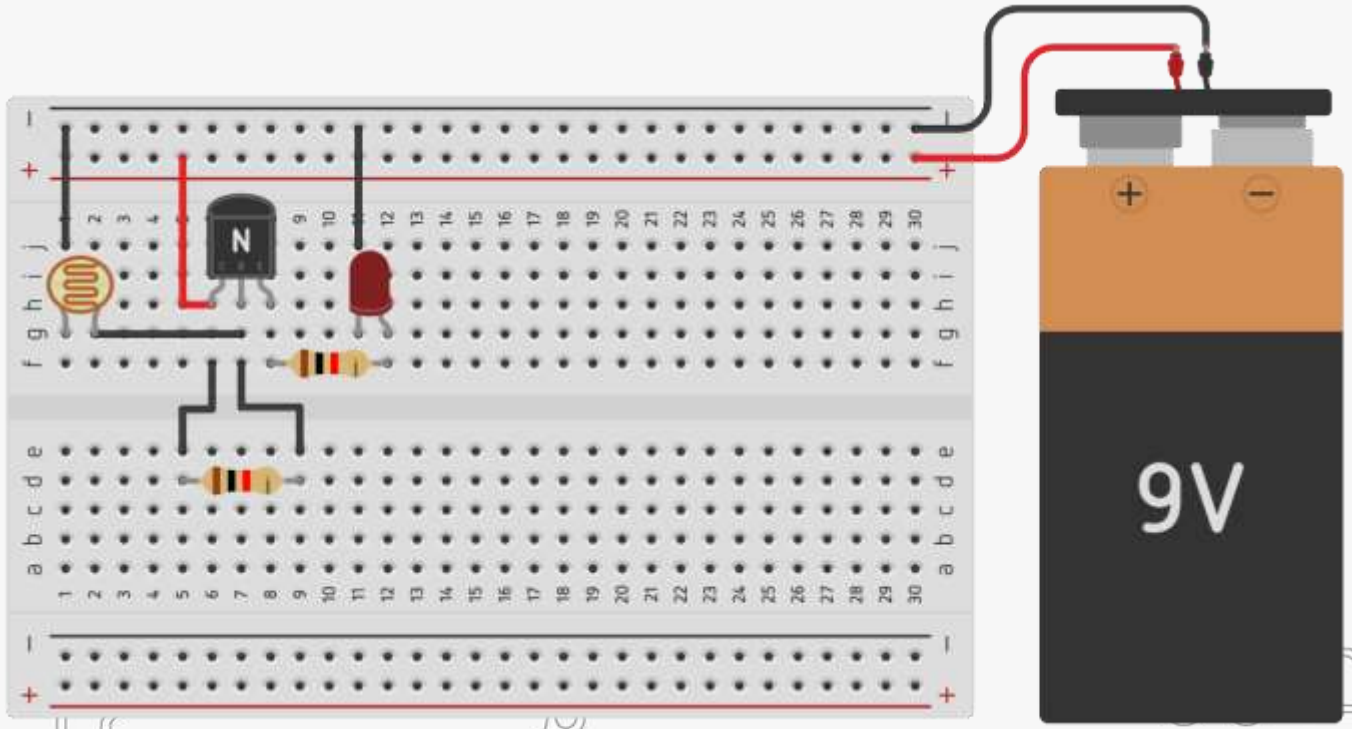
Series Connection Step 14

- Connect cathode(-) terminal of battery to the negative(-) power rail of the breadboard as shown below.



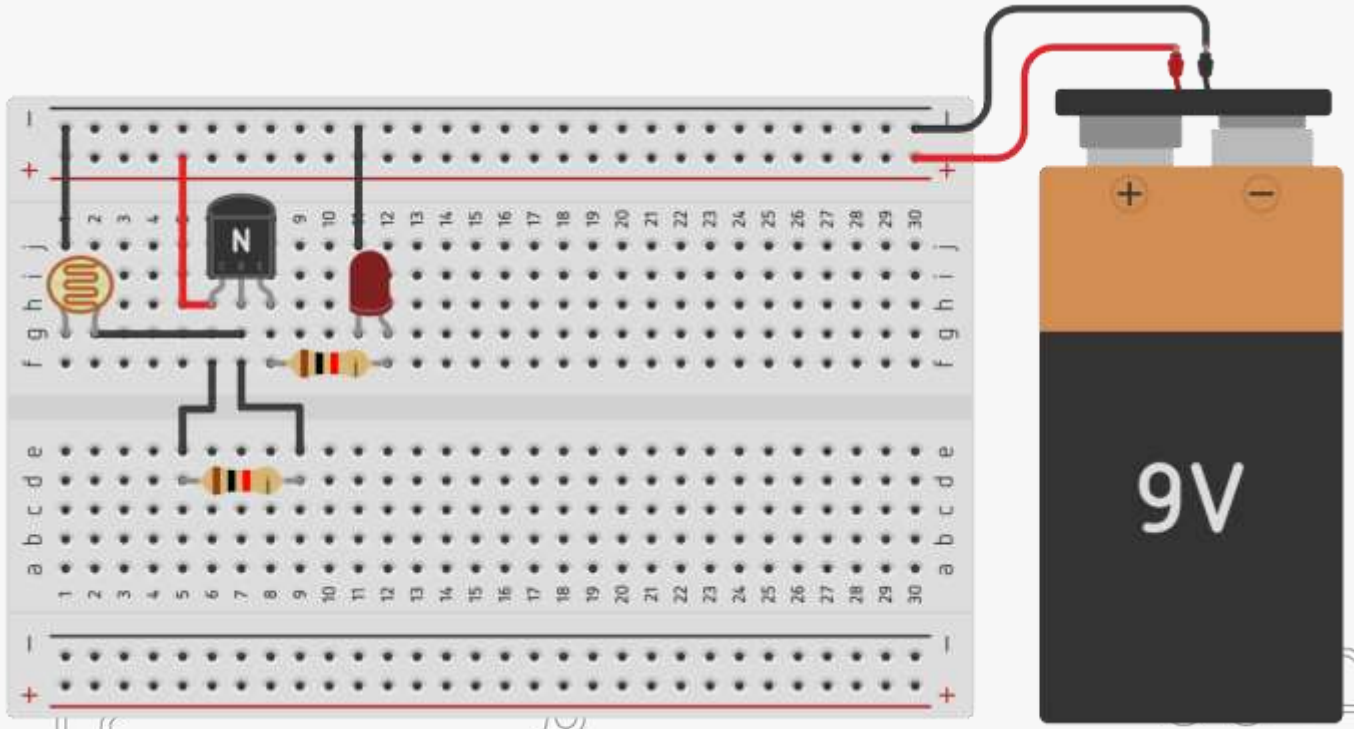
Series Connection Step 14

- Connect anode(+) terminal of battery to the positive(+) power rail of the breadboard as shown below.



Connection Diagram

- Make sure your connections are made as per the diagram.



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Data & Outcomes

Learning from the activity

Data

- What LDR stands for?

- Light Dependent Resistor

Learning from the activity

- Automatic control of lamp.

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Assessment

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Thank you