***PRACTICAL: 2***

**AIM:** Program using Light Sensitive Sensors.

**Objective**:

The objective of this experiment is to study the behavior of an Ambient Light Sensor (Phototransistor) by measuring its resistance using a Resistance Multimeter and analyzing how its resistance varies with different light intensities.

**Key Learning Outcomes:**

* Understand the working principle of a Phototransistor and its role as an Ambient Light Sensor.
* Observe how resistance changes with varying light intensity.
* Learn how to measure resistance using a Resistance Multimeter.
* Analyze the relationship between light intensity and electrical properties in a circuit.

**Components Required:**

* Ambient Light Sensor (Phototransistor)
* 1kΩ Resistor
* 3 × AAA 1.5V Batteries (providing 4.5V in series)
* Battery Holder
* Resistance Multimeter
* Connecting Wires

**Connections:**

1. **Prepare the Power Source:**

* Insert **three AAA batteries** into the battery holder to create a 4.5V supply.
* Identify the **positive (+)** and **negative (-)** terminals of the battery pack.

1. **Connect the Phototransistor:**

* The phototransistor has **two terminals:** **Collector (C)** and **Emitter (E).**
* Connect the **collector (C)** of the phototransistor to the **positive terminal (+)** of the battery pack.

1. **Attach the Resistor:**

* Connect a **1kΩ resistor** between the **emitter (E)** of the phototransistor and the **negative terminal (-)** of the battery pack.

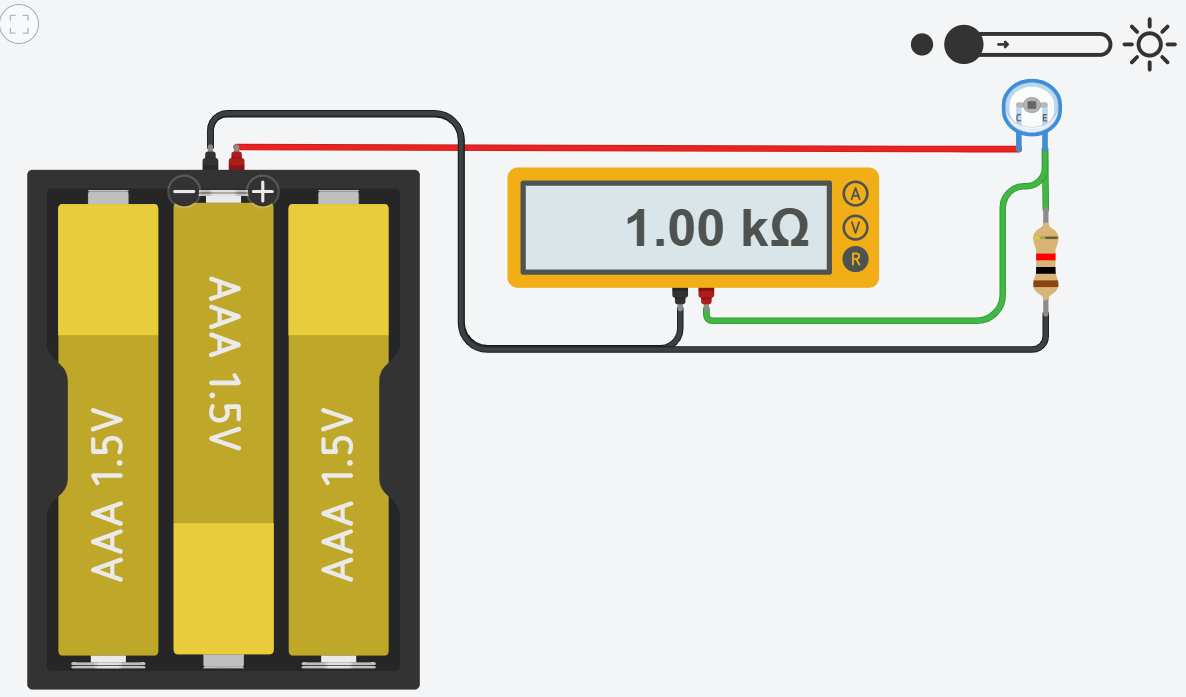
1. **Connect the Resistance Multimeter:**

* Set the **multimeter** to the **resistance (Ω) mode** to measure the resistance of the phototransistor.
* Connect the **positive (red) probe** of the multimeter to the **collector** of the phototransistor.
* Connect the **negative (black) probe** to the **emitter** of the phototransistor.

1. **Observe the Readings:**

* The resistance of the phototransistor changes based on the amount of ambient light it receives.
* In **bright light**, the resistance decreases, allowing more current to flow.
* In **low light or darkness**, the resistance increases, reducing the current flow.

***DAIGRAM***

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