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**Project Title:** *LDR-Based Automatic Light Control System using Arduino (Tinkercad Simulation)*

**Description:** This simulation demonstrates a simple IoT concept where a **Light Dependent Resistor (LDR)** detects light intensity and controls an **LED** automatically. When the light level falls below a certain threshold (dark environment), the LED turns ON; when the light level increases (bright environment), the LED turns OFF.

**Components Used:**

* Arduino Uno
* LDR (Photoresistor)
* 10kΩ resistor
* 220Ω resistor
* LED
* Connecting wires

**Circuit Explanation:**

* The LDR and 10kΩ resistor form a **voltage divider** connected to analog pin **A0**.
* The LED is connected to **digital pin 13** through a 220Ω resistor.
* The Arduino reads the LDR value and decides whether to turn the LED ON or OFF based on light intensity.

**Code Explanation:**

* analogRead(A0) reads the LDR voltage (0–1023).
* If the value is below 500 → digitalWrite(13, HIGH) (LED ON).
* If above 500 → digitalWrite(13, LOW) (LED OFF).
* Serial.begin(9600) and Serial.println(sensorValue) display live readings in the Serial Monitor.



