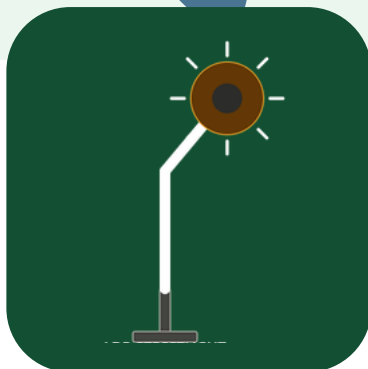
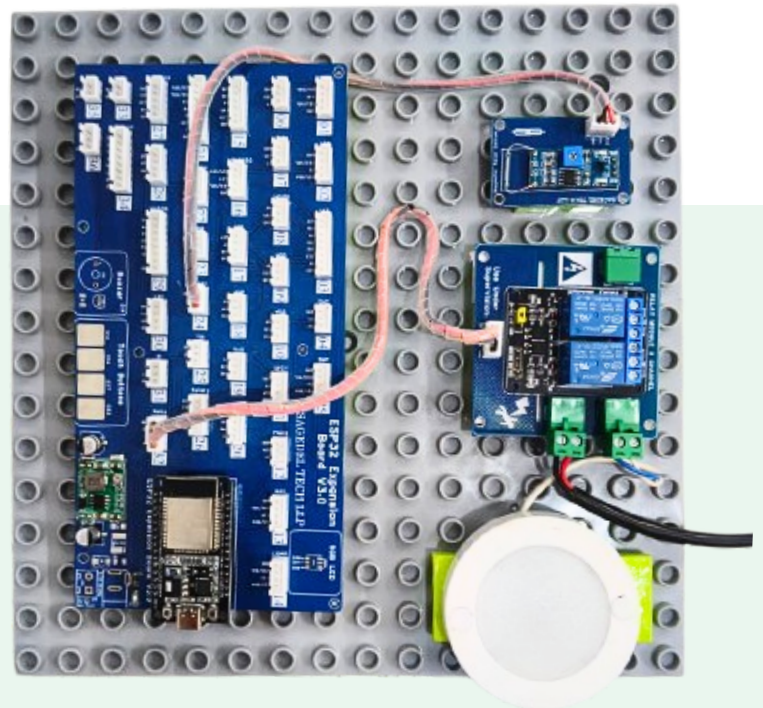


AUTOMATIC LDR BASED STREET LIGHT

Automatic LDR Based Street Light — Automatic Light Control Using Ambient Light Sensing

2026



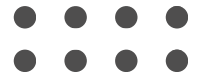
Phone
9958007460



Website
www.sagedel.com

AUTOMATIC LDR BASED STREET LIGHT

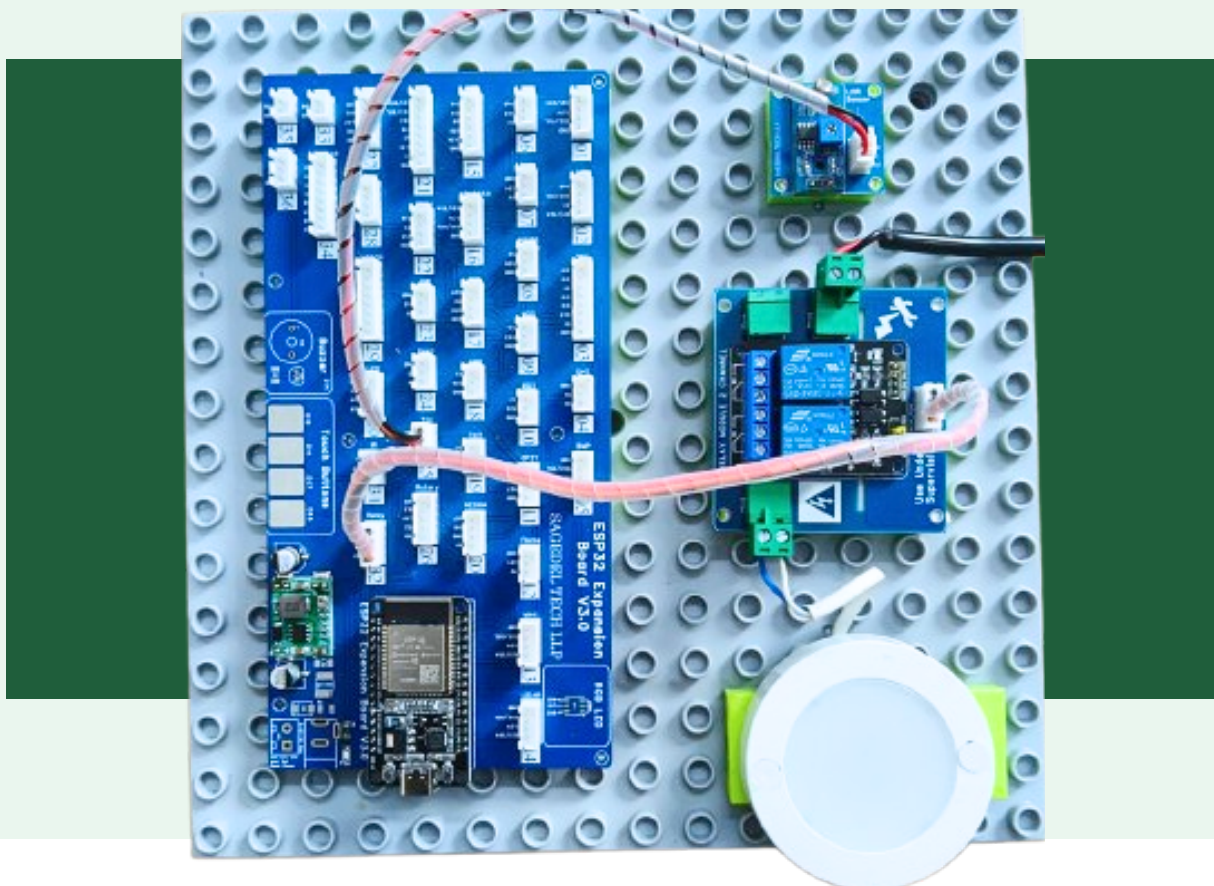
Objective:



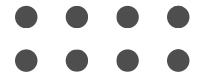
To design and implement an automatic street light system that switches lighting on at dusk and off at dawn using an LDR sensor, reducing manual intervention and saving electrical energy.

What it Does:

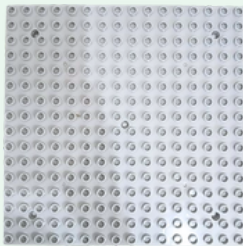
The LDR senses ambient light — as darkness falls and light levels drop, its resistance rises, automatically switching the street light ON; at daybreak, rising light lowers the resistance and switches it OFF, with no manual control needed.



Modules & Components used:



ESP Expansion Board



Lego board



2 Channel Relay Module



LDR Sensor



Connector



USB cable



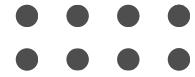
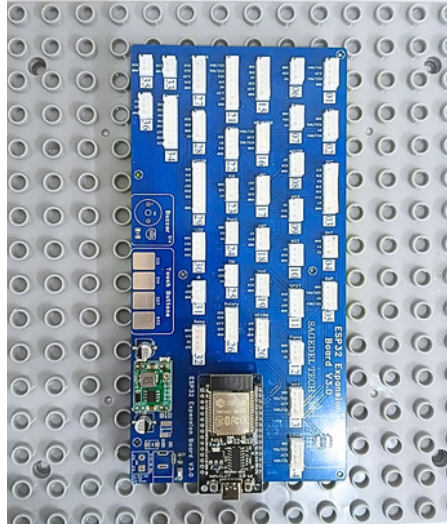
5W AC LED Light



Connector

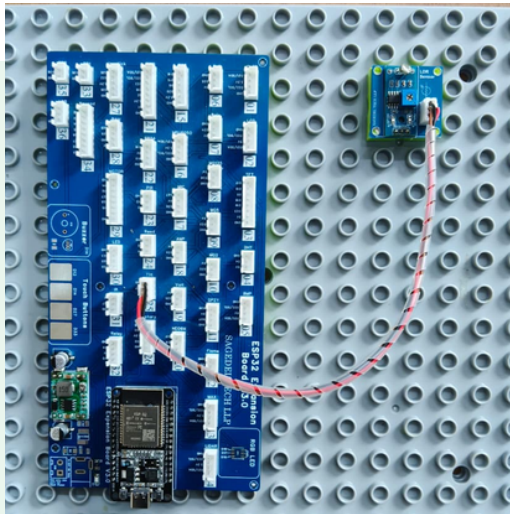
Step-by-Step Assembly & Connections

Step 1: Place the ESP32 Expansion Board securely on the lego plate and align it with the mounting holes.



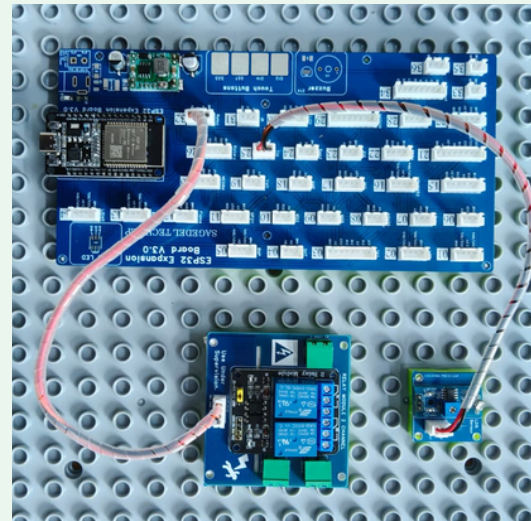
Step 1

Step 2: Connect the LDR Sensor to **Port No. 25** on the ESP32 Expansion Board.



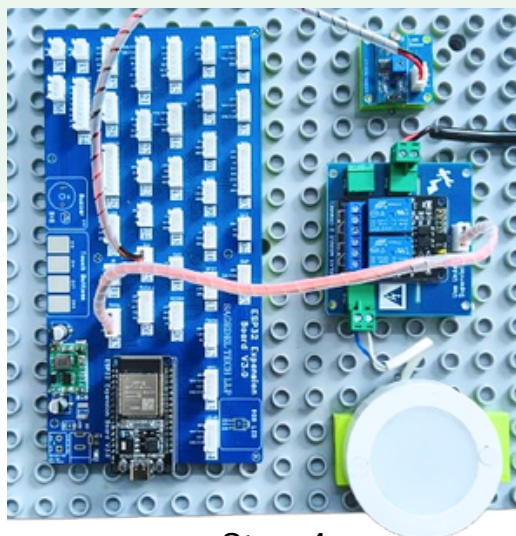
Step 2

Step 3: Connect Relay Module to **Port No. 32** on the ESP32 Expansion Board.



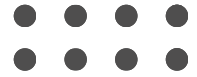
Step 3

Step 4: Connect the light's power wire to the relay module's



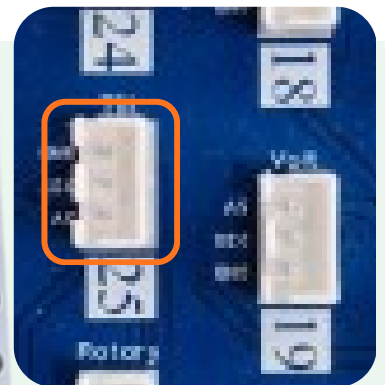
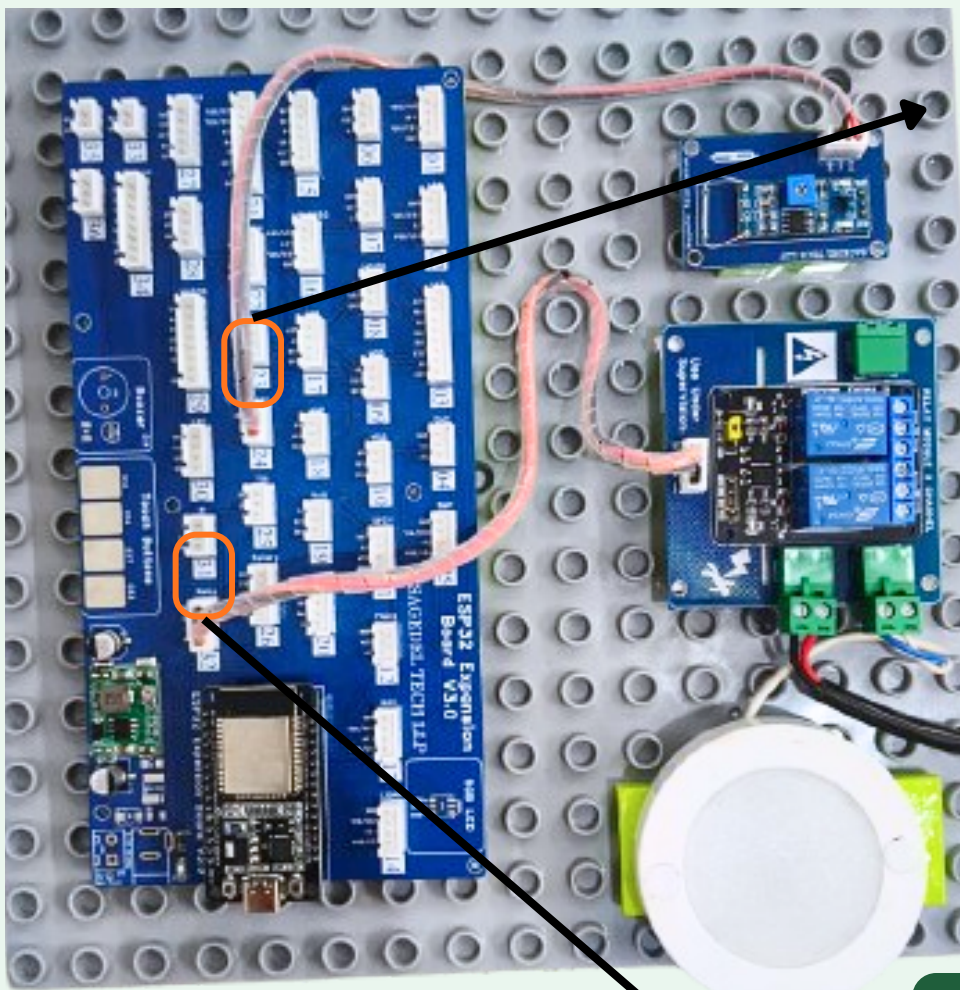
Step 4

Specific Port Connections

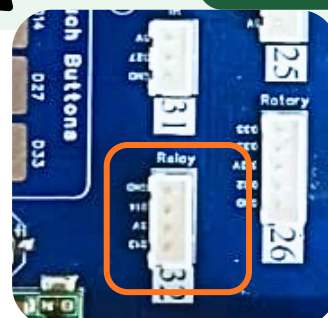


- **LDR Sensor** → port no. 25
- **Relay Module** → port no. 32

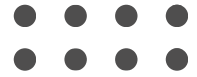
Connect **LDR Sensor** to **port no. 25**



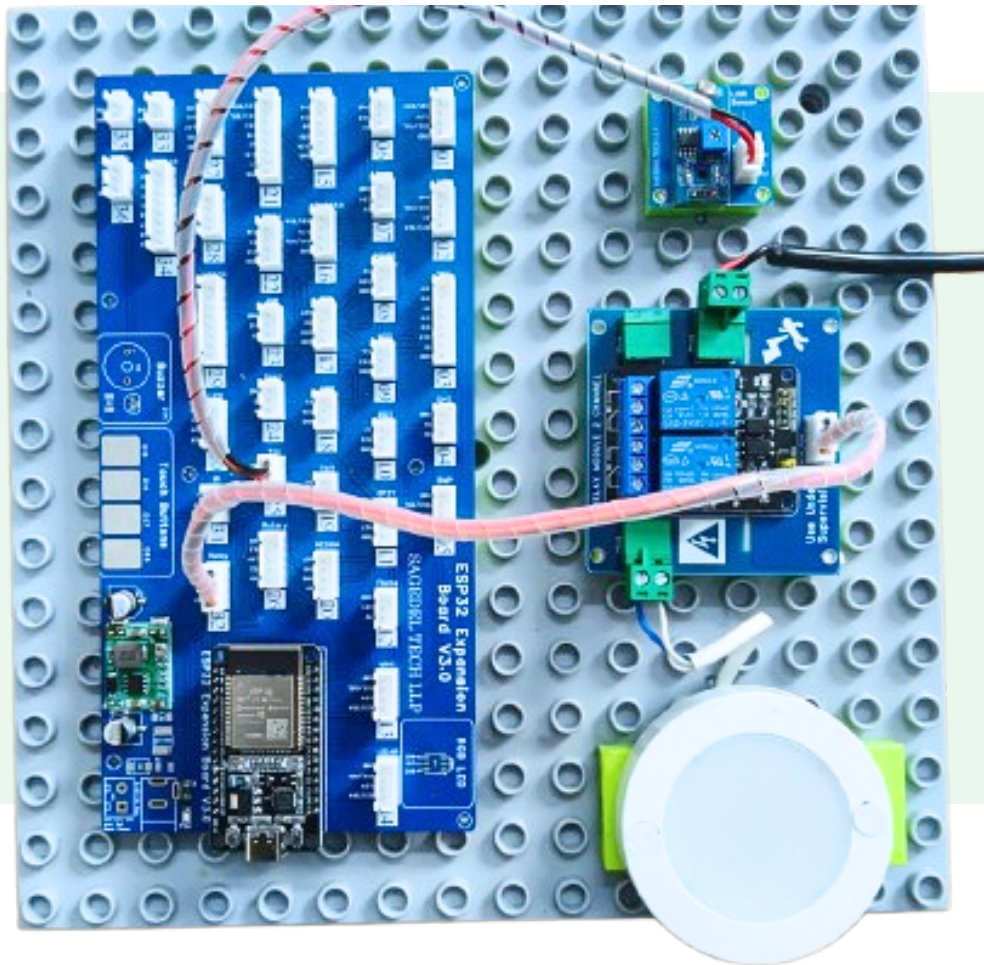
Connect **Relay Module** to **Port no. 32**



Final Cable Management



- Power on the circuit and observe the relay's response in real time — the LDR senses the ambient light level to determine day or night condition, and the relay switches the street light on or off accordingly.



Calibration:

Setting the LDR's light-intensity threshold via the potentiometer, verifying the HIGH/LOW logic level it produces at that threshold, and fine-tuning response timing to avoid false triggers from momentary light changes — then using that state to switch the relay-controlled street light on or off in real time.