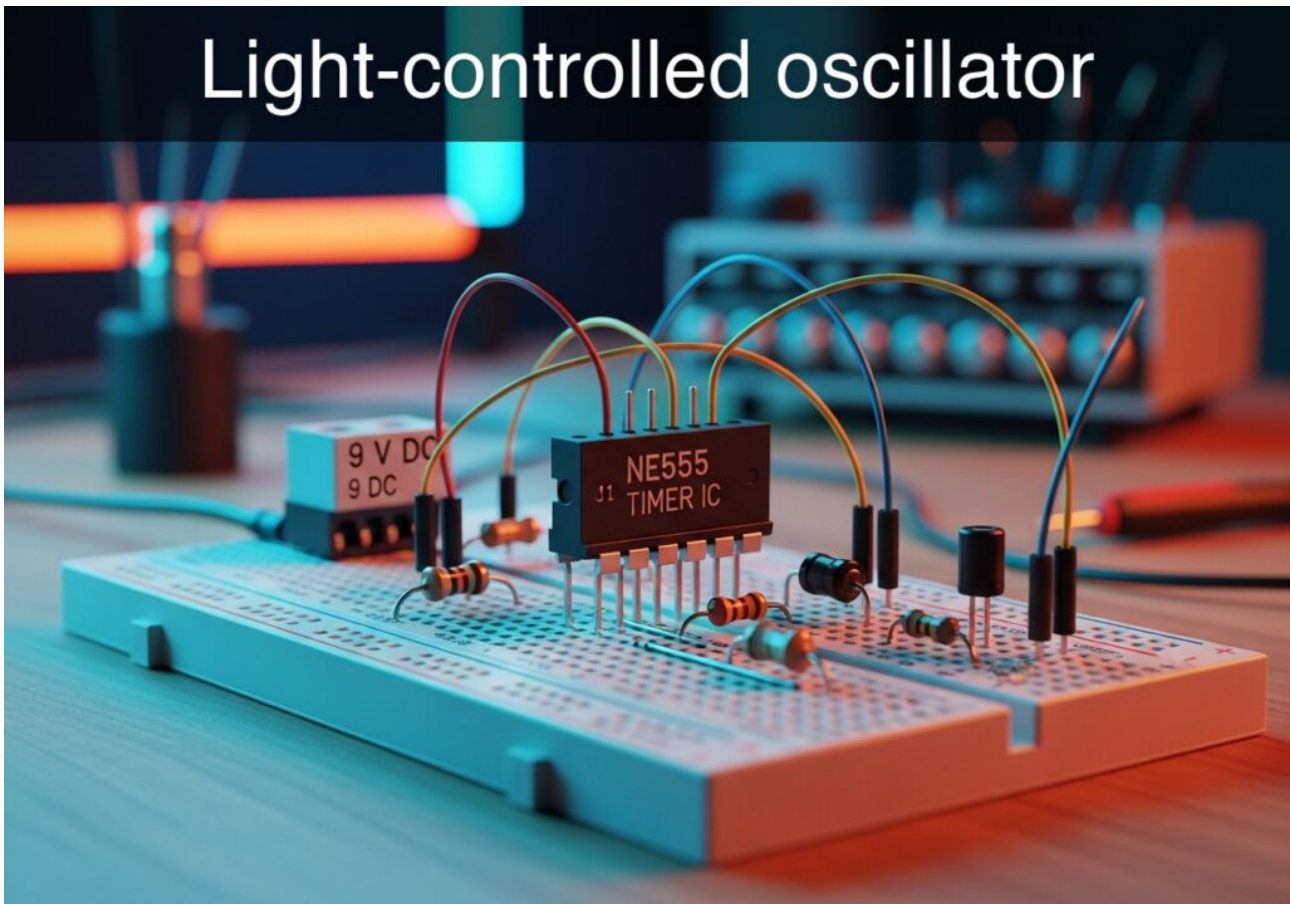


## Practical case: Light-controlled oscillator



Level: Medium. Design an astable NE555 oscillator where an LDR modulates the output frequency based on ambient light.

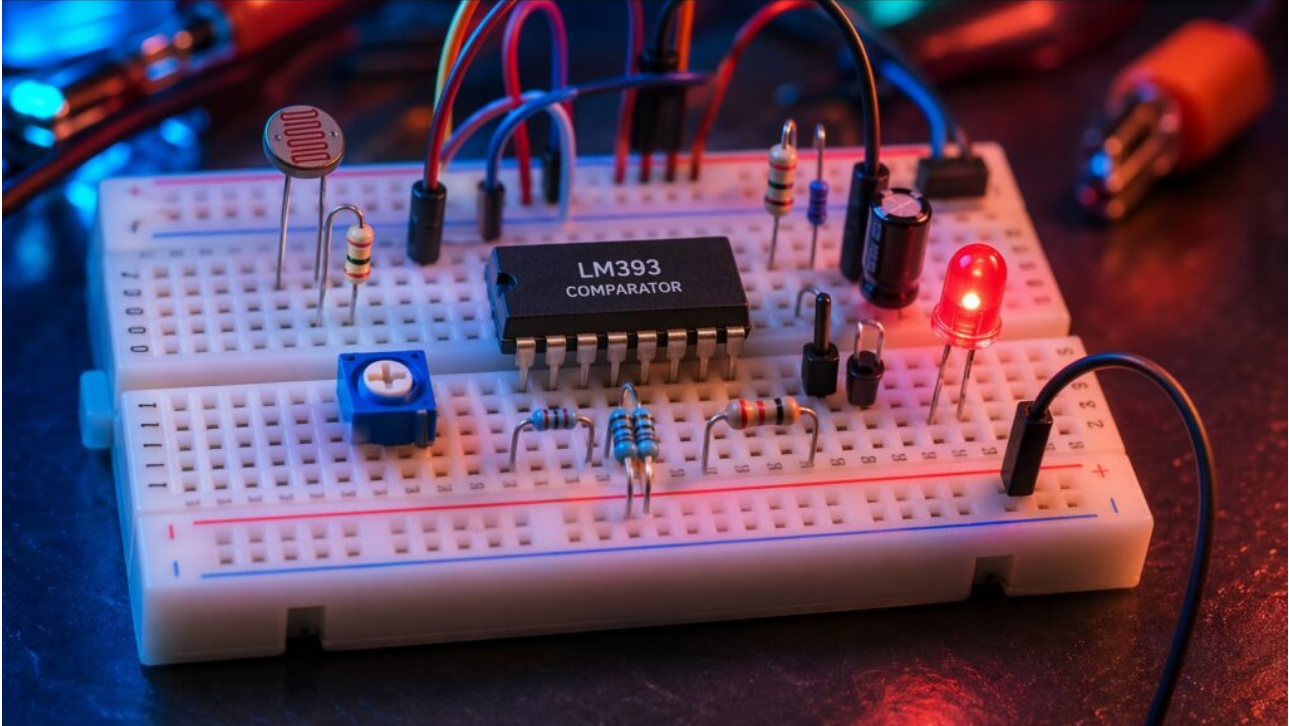
## Objective and use case

In this...

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## Practical case: Shadow detector for visual alert

# Shadow detector for visual alert



Level: Medium — Build a stable shadow detector with visual indication and low false triggering.

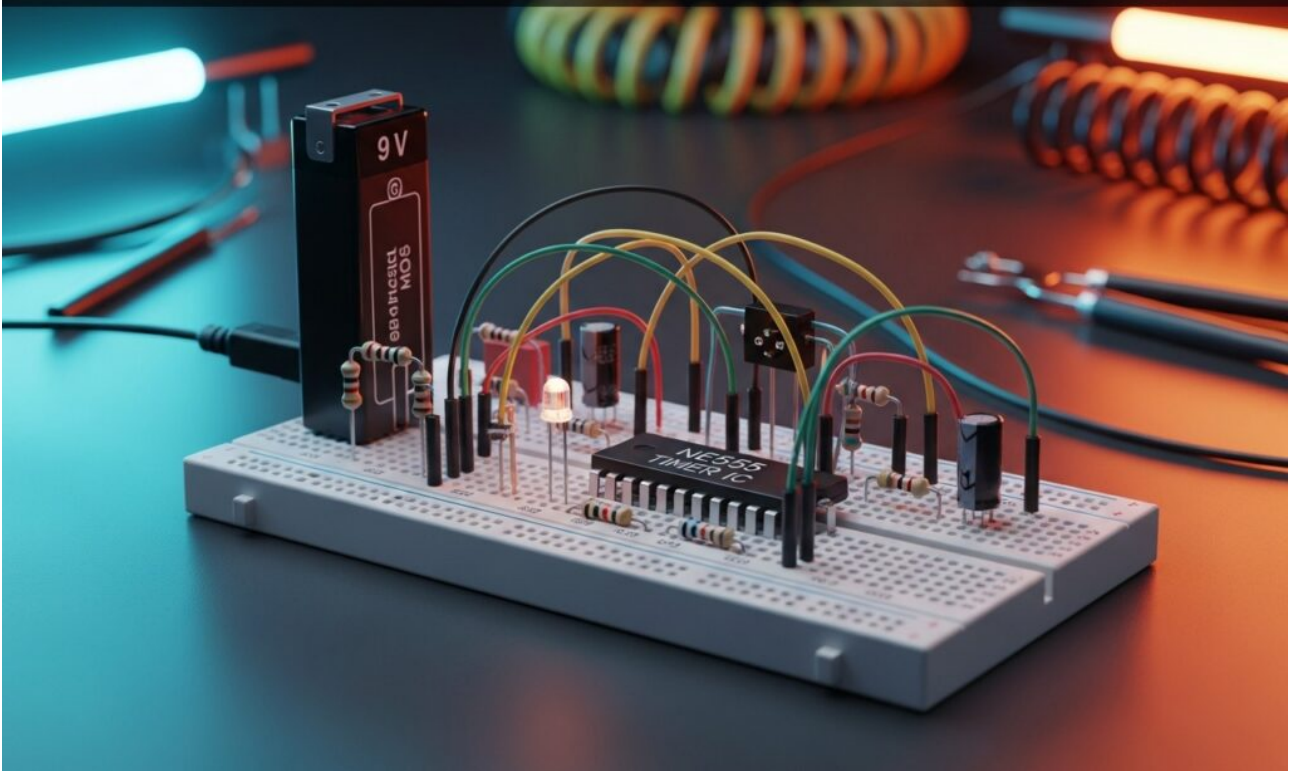
## Objective and use case

You will build a...

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**Practical case: Adaptive Screen Brightness Regulator**

# Adaptive Screen Brightness Regulator

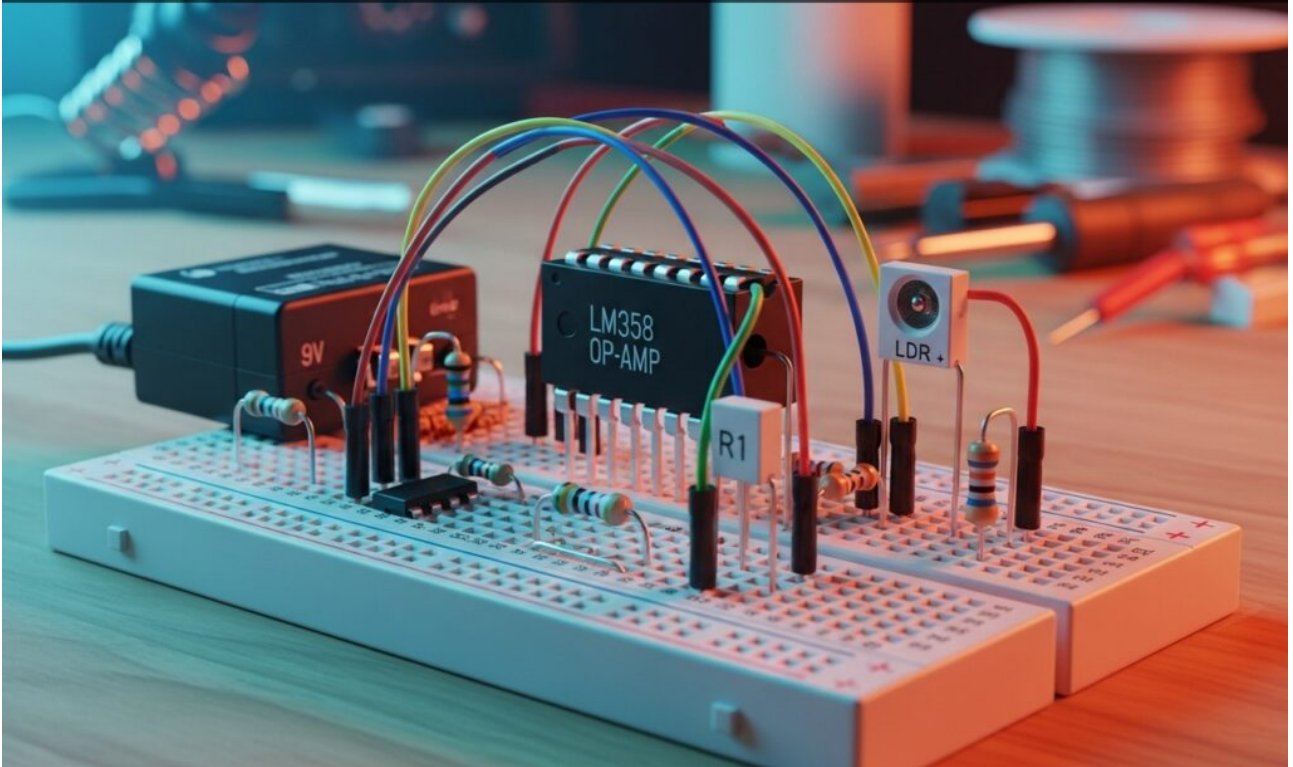


Master Analog Electronics by building a smart dimmer. Use a Photoresistor and 555 timer to auto-adjust LED brightness via PWM based on ambient light levels.

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**Practical case: Single-axis solar tracker**

# Single-axis solar tracker

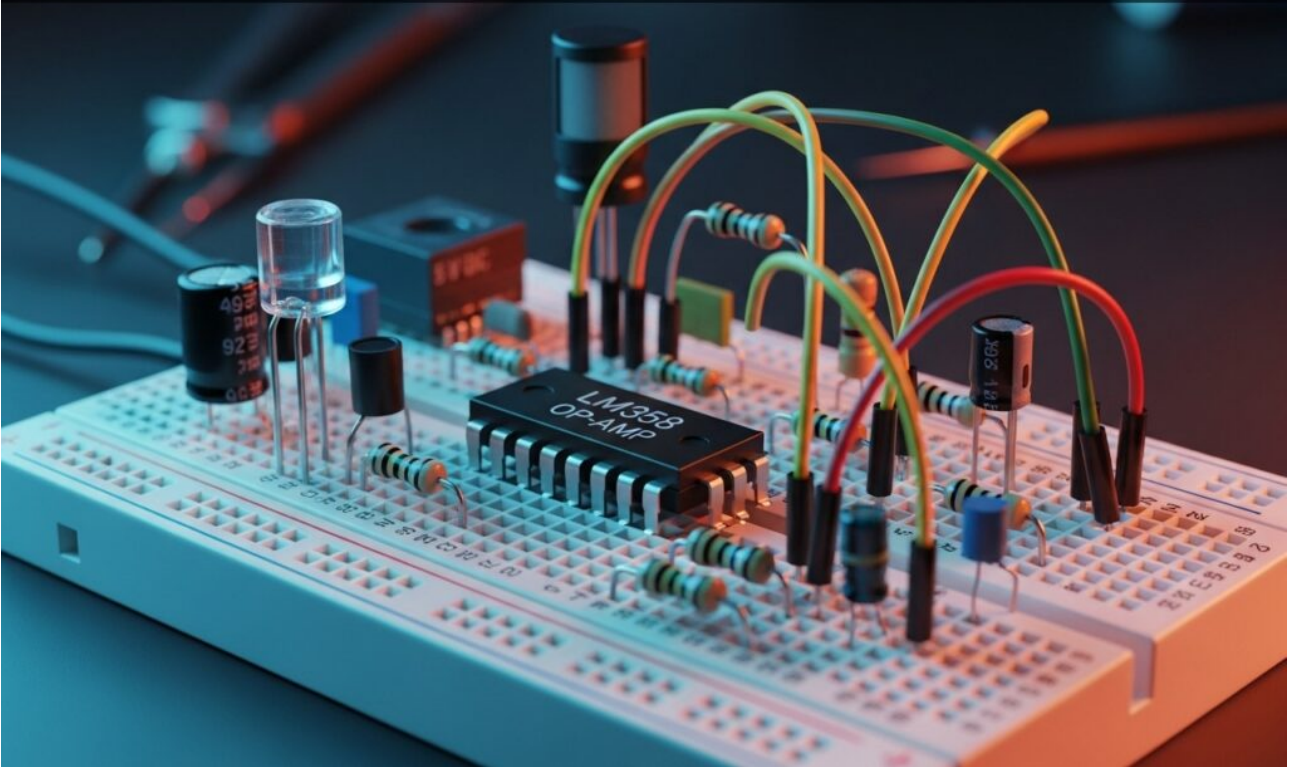


Master Analog Electronics by building a sun seeker circuit. Use a Photoresistor pair to drive a motor that actively tracks the brightest light source.

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## **Practical case: Object counter on conveyor belt**

# Object counter on conveyor belt

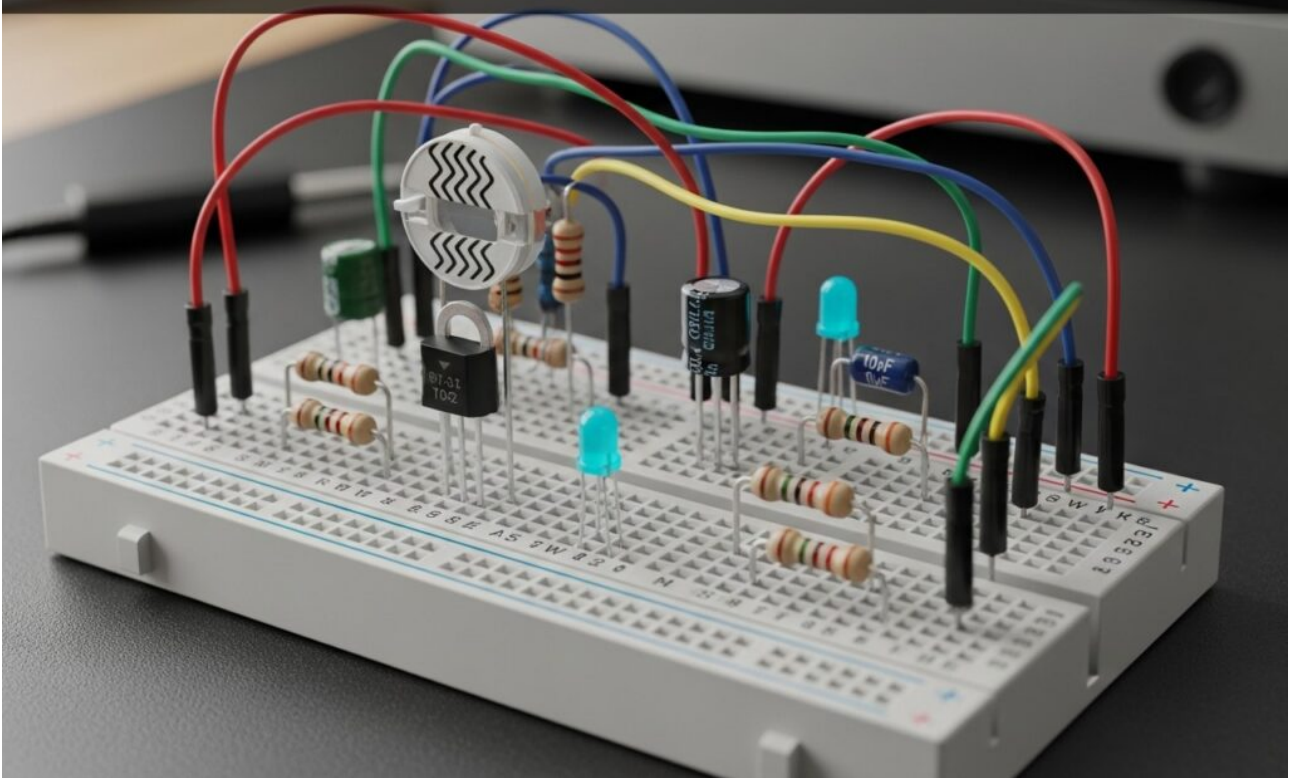


Master Analog Electronics by building an optical barrier with a Photoresistor. Detect moving objects and trigger a precise logic signal when the beam is broken.

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**Practical case: Simple light intensity meter**

# Simple light intensity meter



Master Analog Electronics by building a dark sensor with a Photoresistor. Create a circuit where an LED automatically dims in bright light to save power.