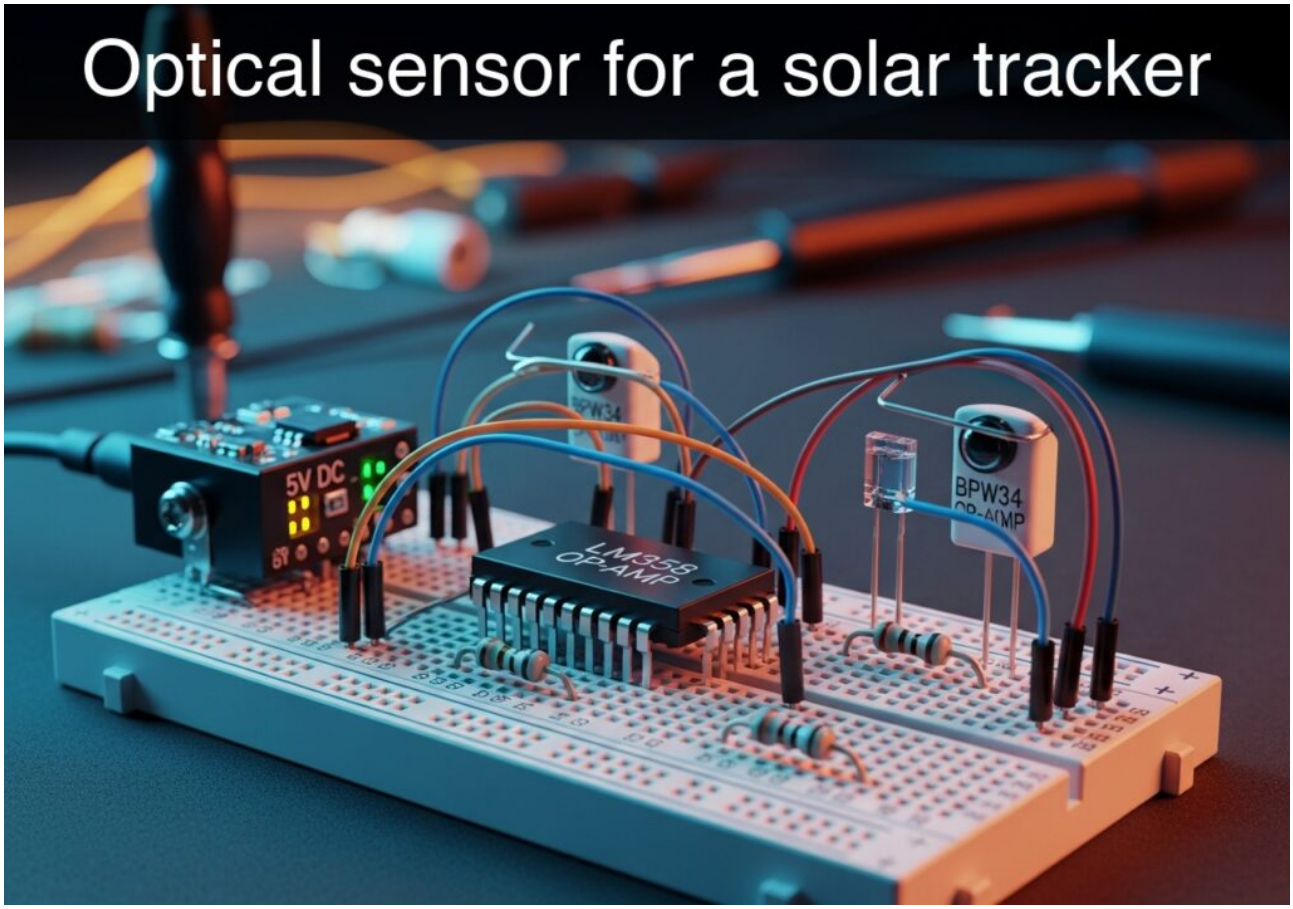
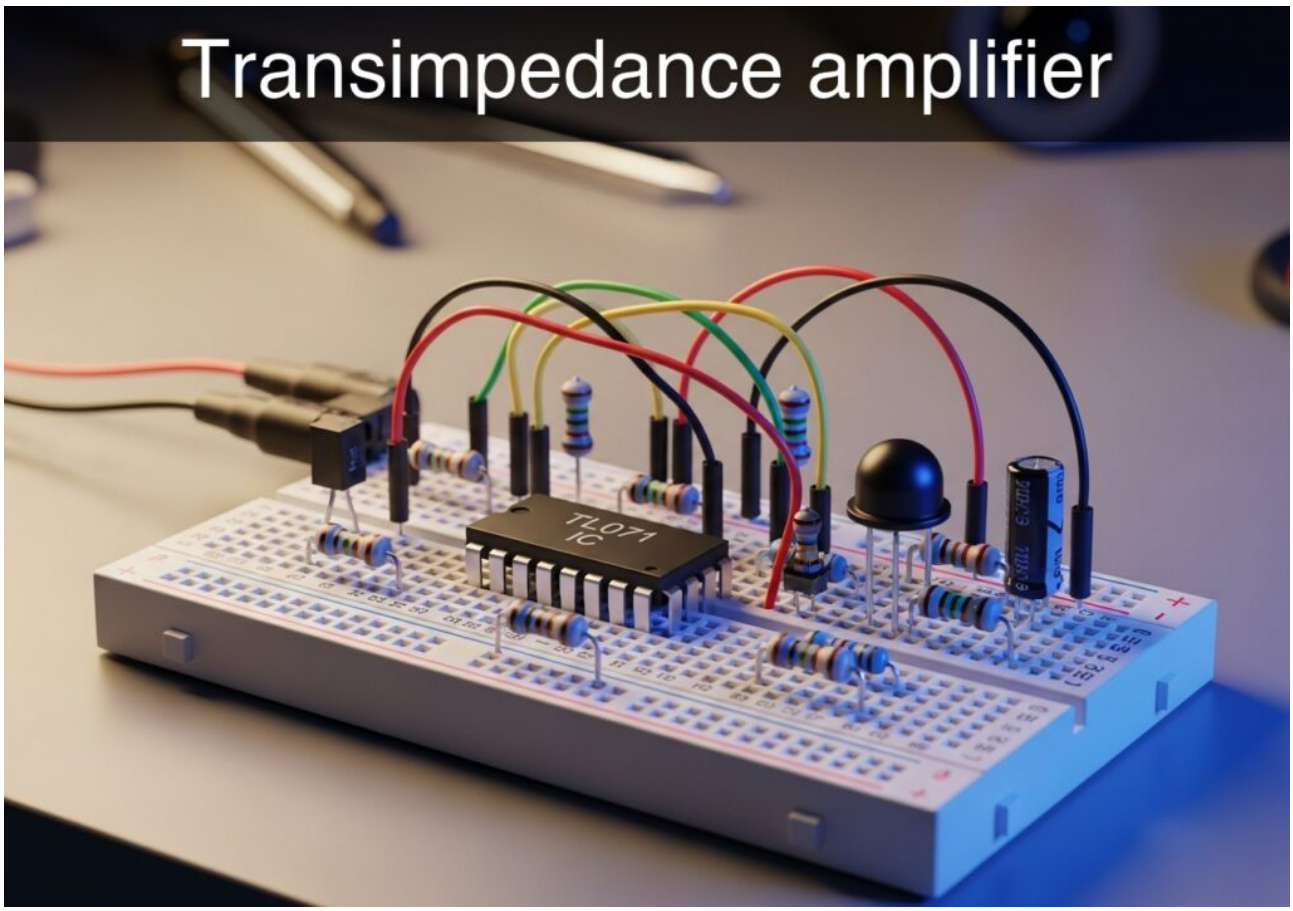
Practical case: Optical sensor for a solar tracker



Level: Medium – Design a circuit with two photodiodes in a differential configuration to detect the direction of the highest intensity light source.

##…

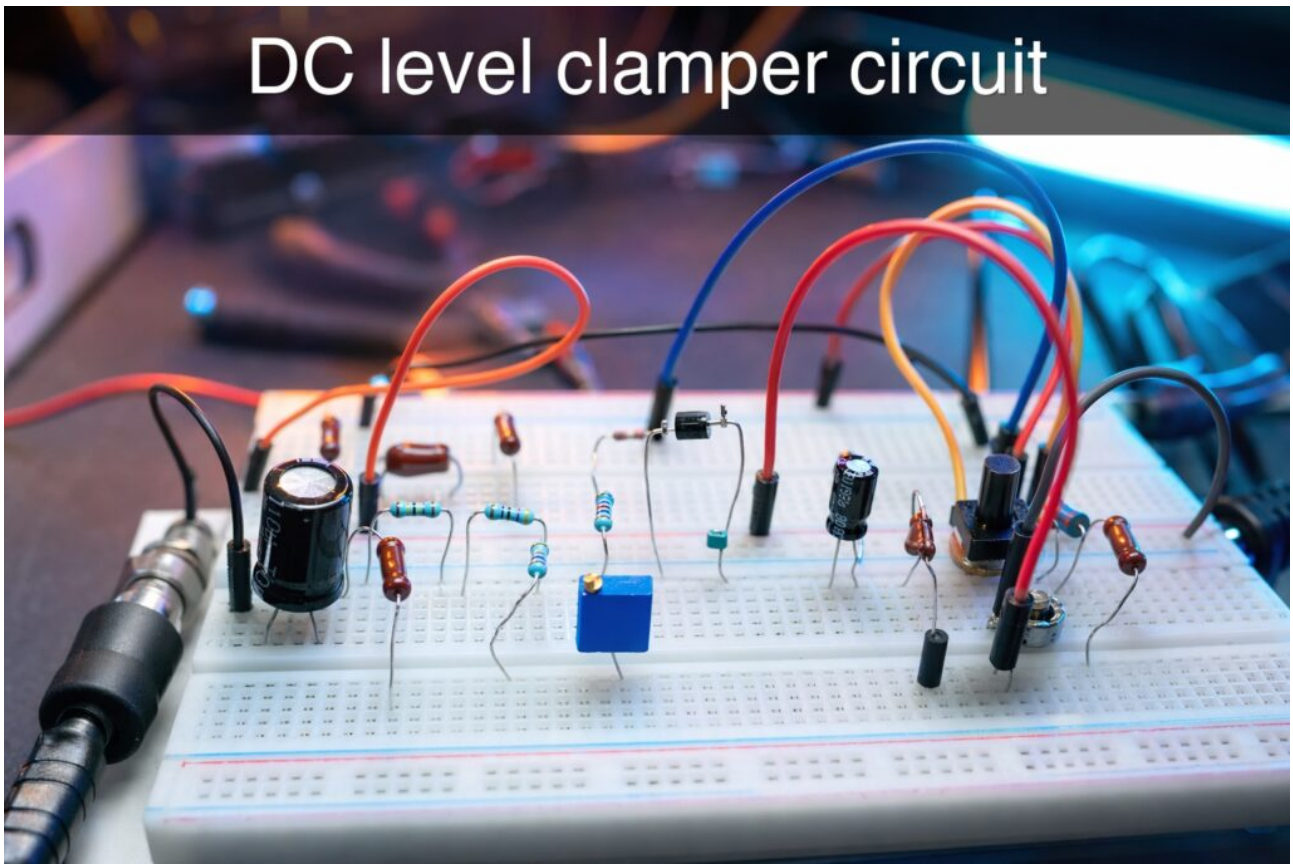
Practical case: Transimpedance amplifier



Level: Medium – Design an OPAMP transimpedance amplifier to convert the small photodiode current into a measurable voltage.

Objective and use case
You…

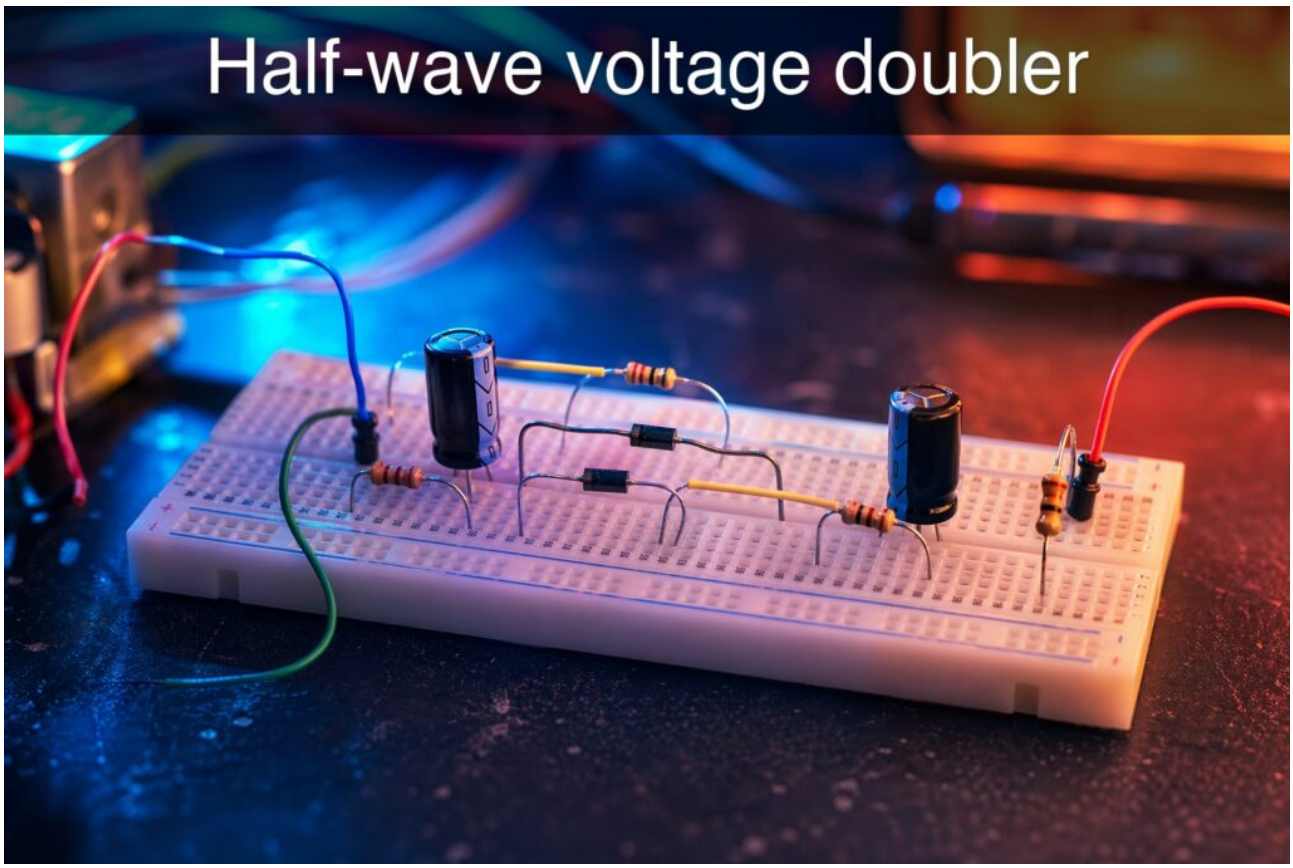
Practical case: DC level clamper circuit



Level: Medium | Understand the shifting of the DC level of an AC signal using a diode and a capacitor.

Objective and use case
You will build a positive…

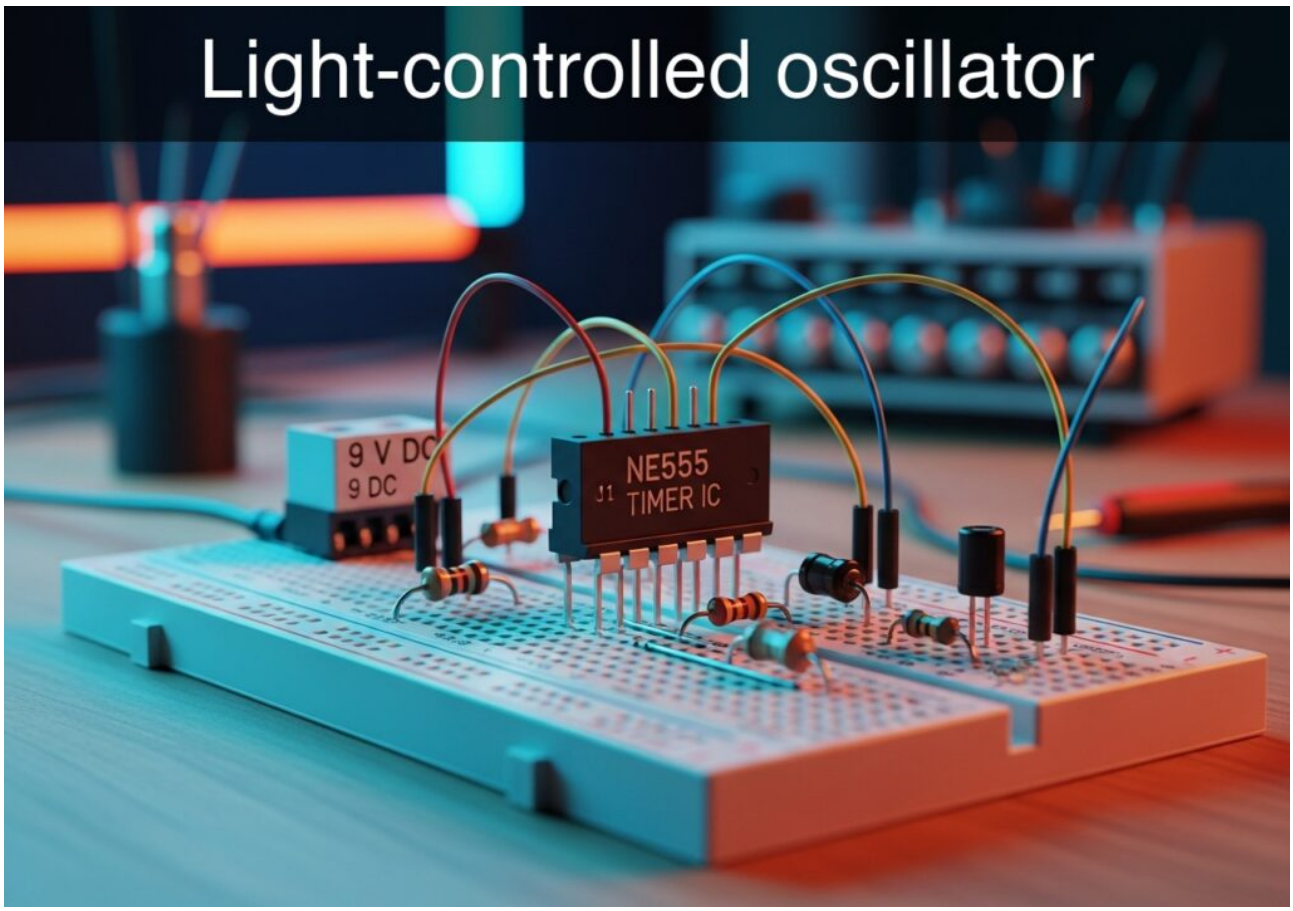
Practical case: Half-wave voltage doubler



Level: Medium | Objective: Analyze and assemble a voltage doubler circuit to increase the peak voltage of an AC signal.

Objective and use case
In this…

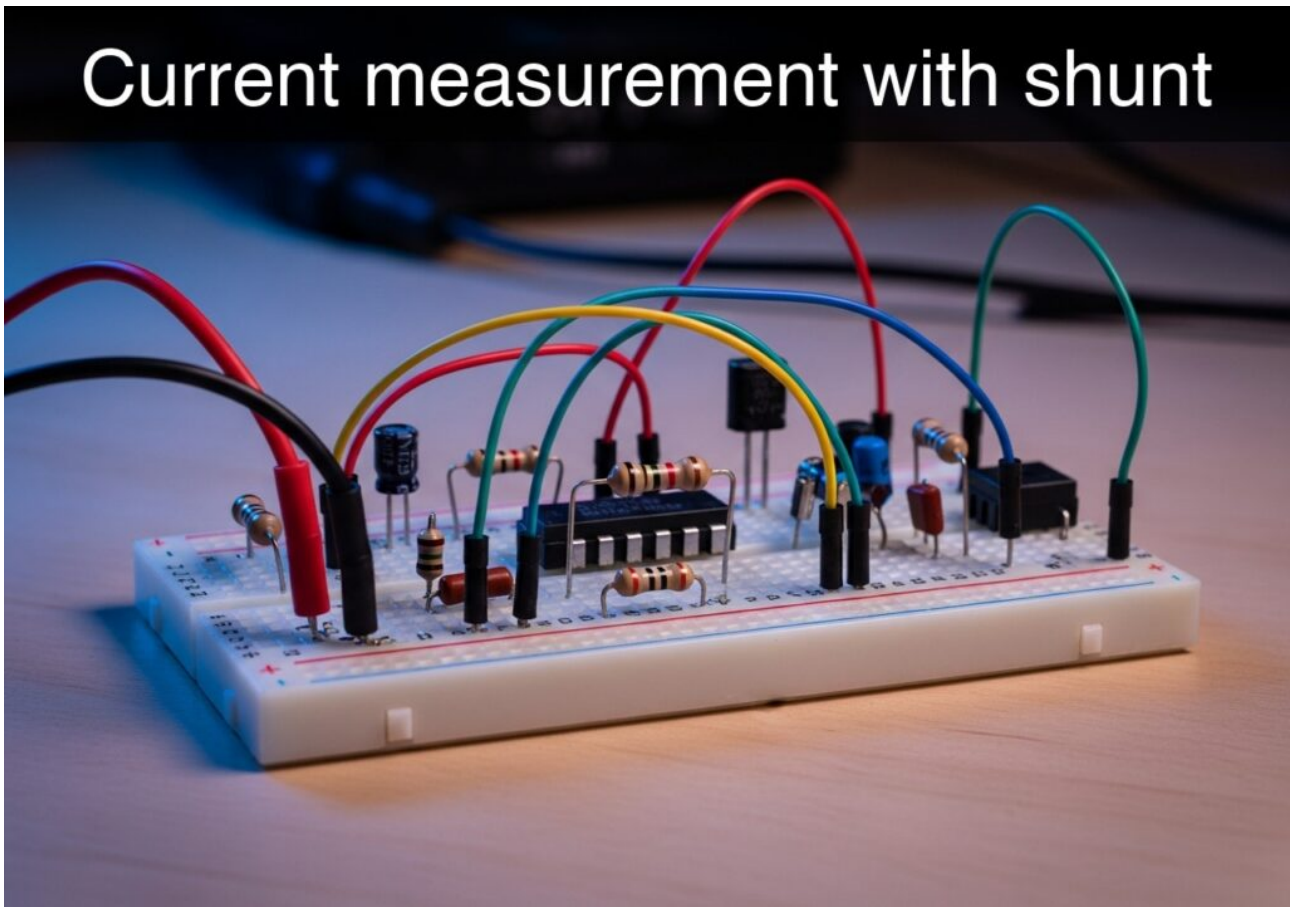
Practical case: Light-controlled oscillator



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

Objective and use case
In this…

Practical case: Current measurement with shunt



Level: Medium – Use a very low-value resistor to indirectly measure a DC load’s current via voltage drop.

Objective and use case
You will build a direct…