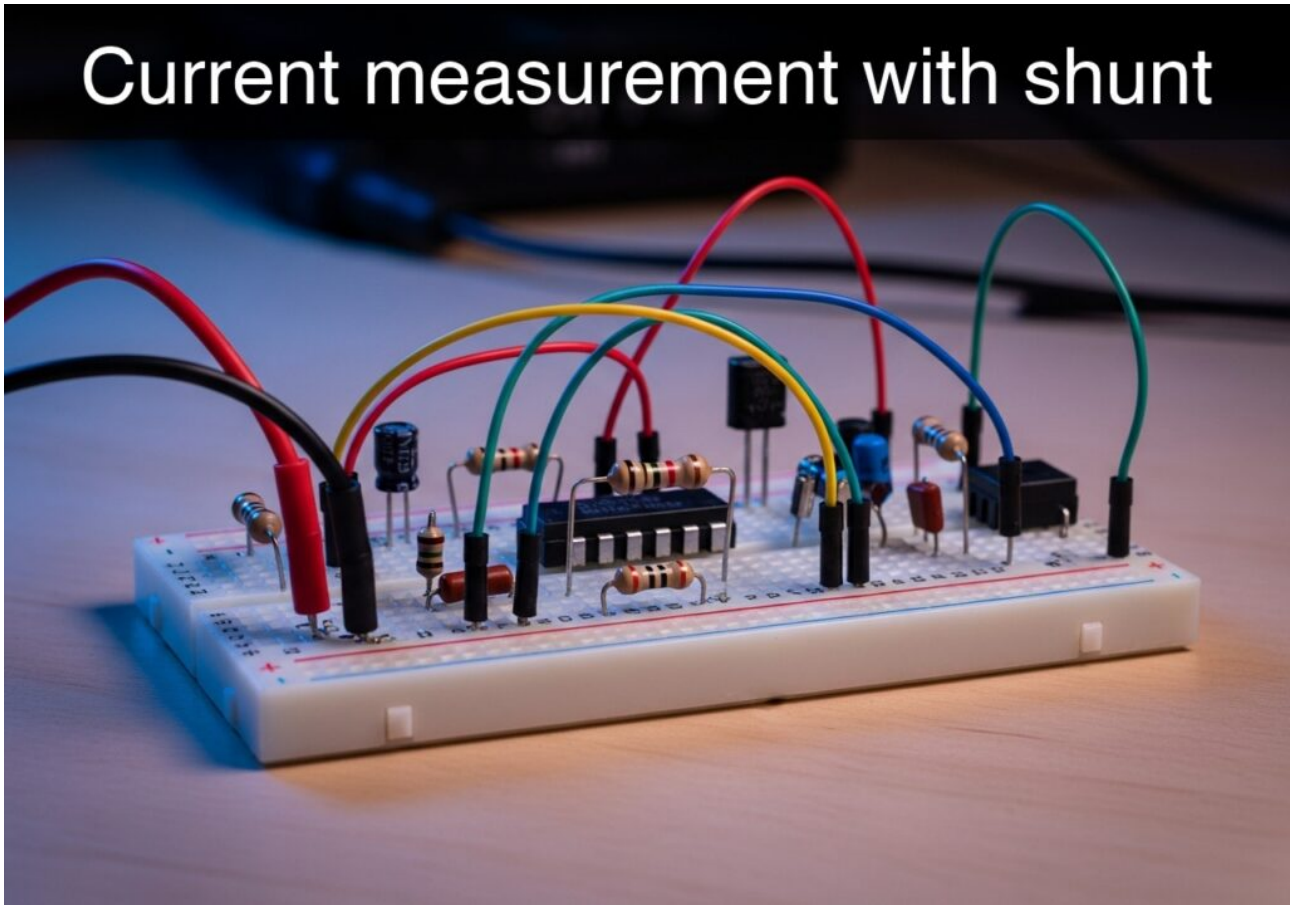
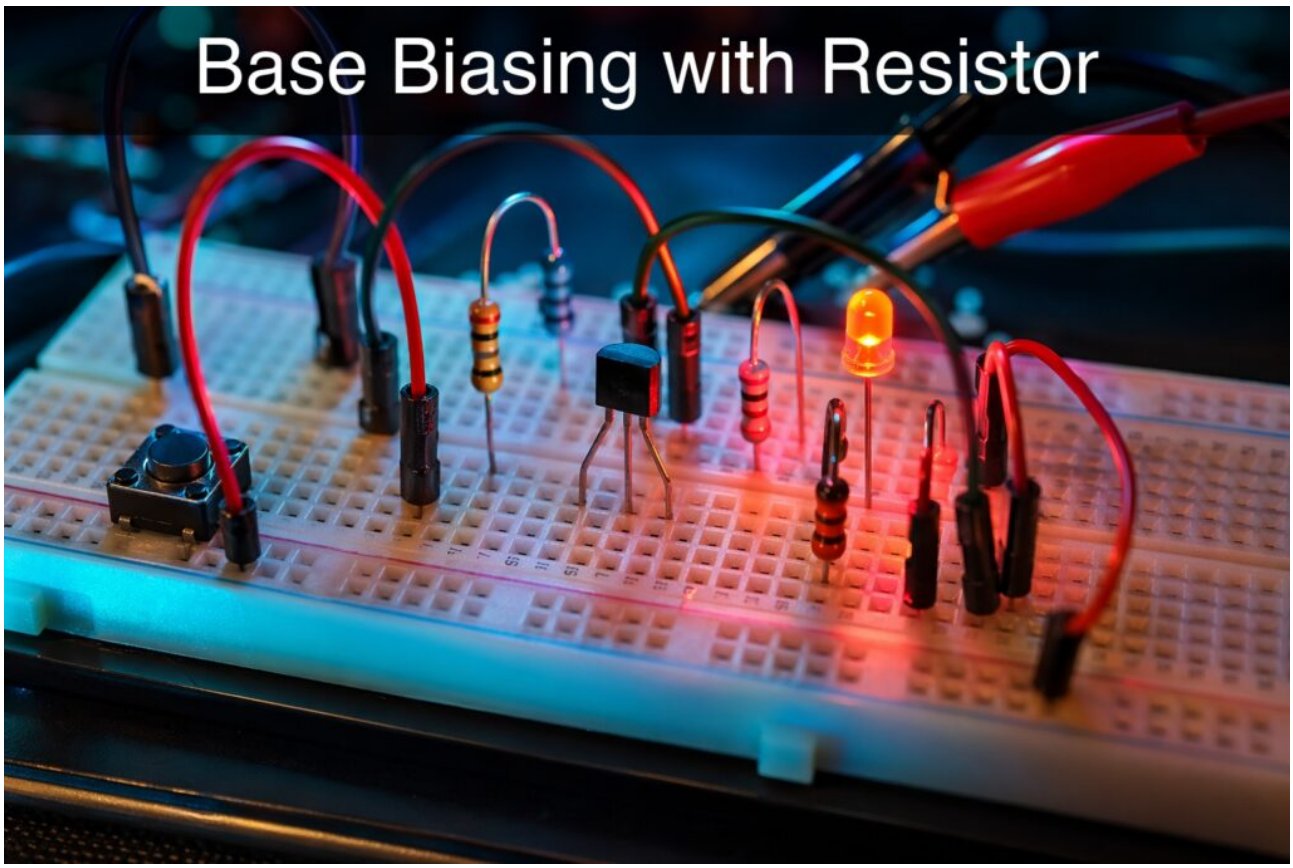
Practical case: Current measurement with shunt



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…

Practical case: Base Biasing with Resistor

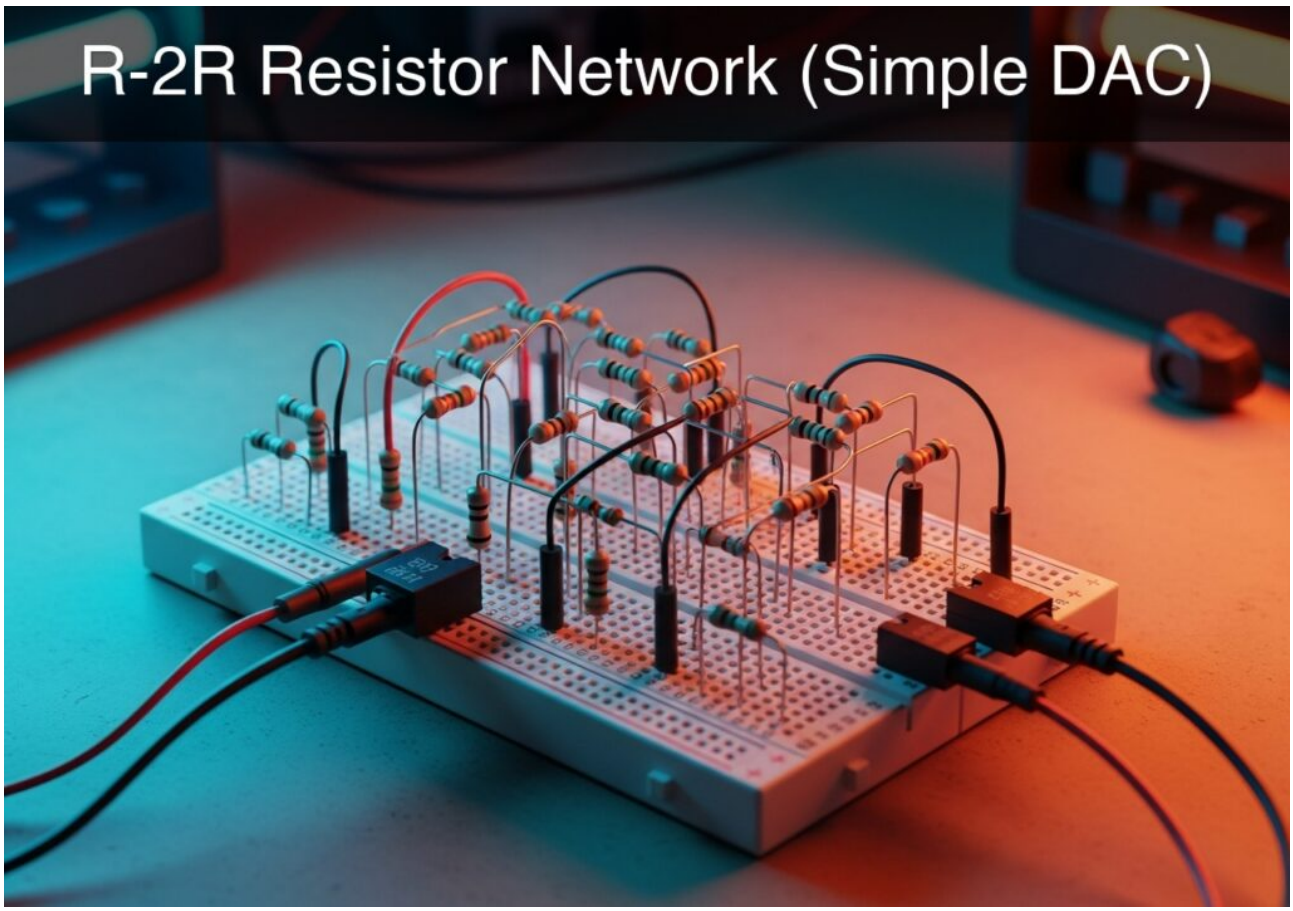


Level: Medium — Calculate and verify a base resistor to switch an NPN transistor safely from a logic output.

Objective and use case

You will build a…

Practical case: R-2R Resistor Network (Simple DAC)

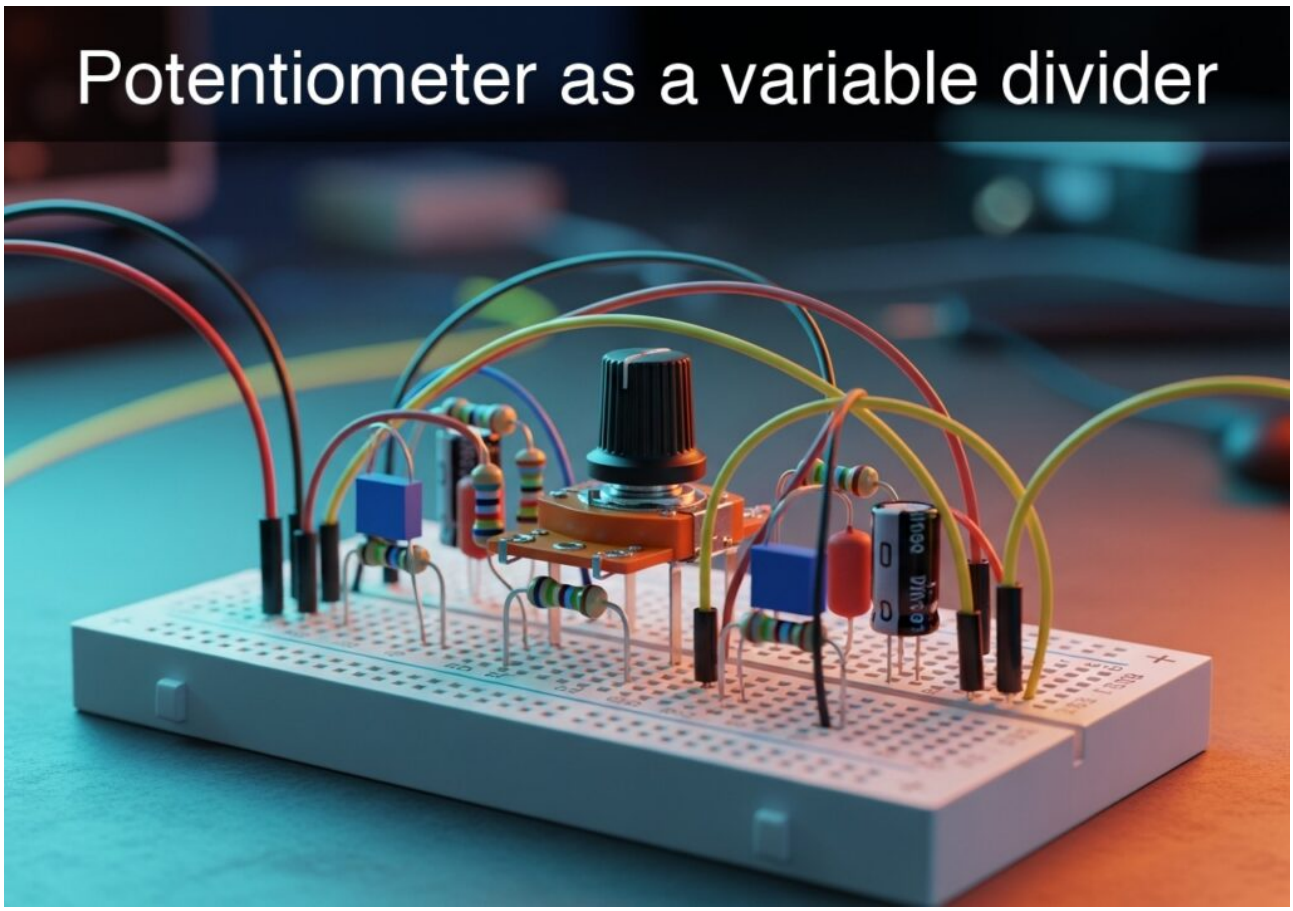


Master Analog Electronics by building a 4-bit DAC using a Resistor ladder. Create precise voltage steps from binary signals for audio synthesis and control.

Practical case: Unbalanced Wheatstone Bridge

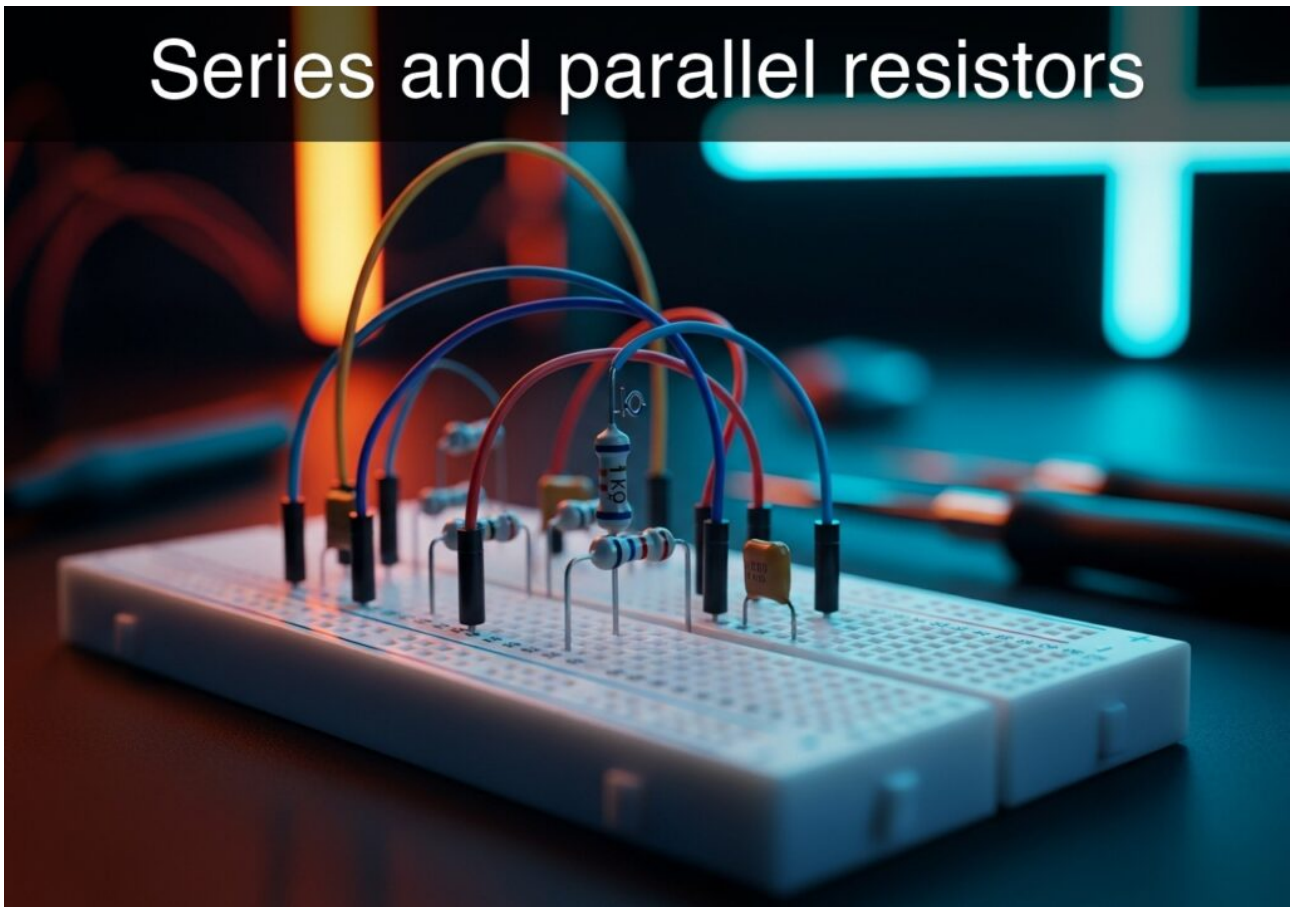
Master Analog Electronics by building a Wheatstone bridge with a Resistor sensor. Measure precise differential voltage changes and calibrate zero-point offsets.

Practical case: Potentiometer as a variable divider



Master Analog Electronics basics by building a variable voltage divider. Use a potentiometer as a variable Resistor to control output signals from 0V to 5V.

Practical case: Series and parallel resistors



Master Analog Electronics basics by building series and parallel Resistor circuits. Measure equivalent resistance to design precise voltage dividers and loads.