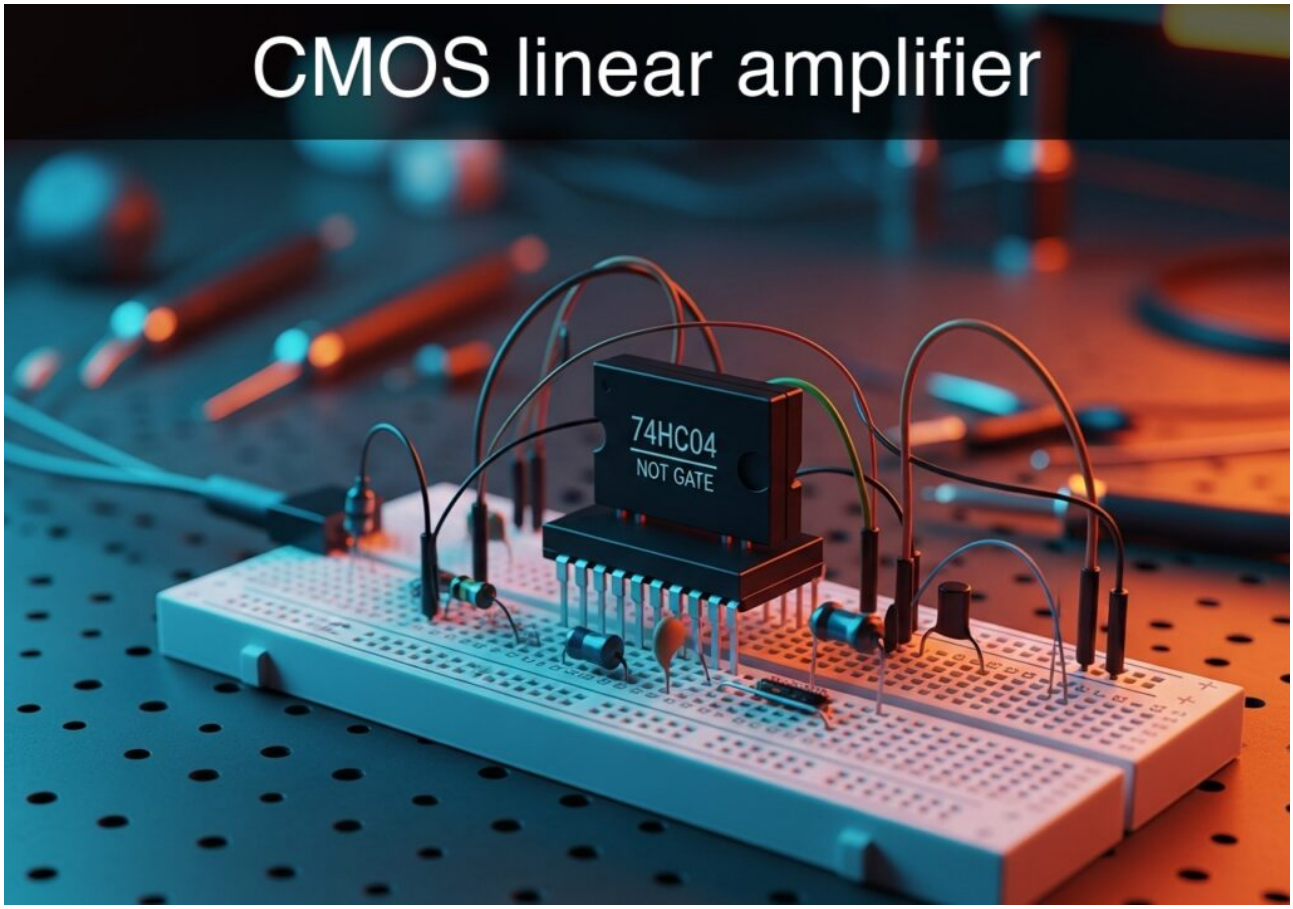
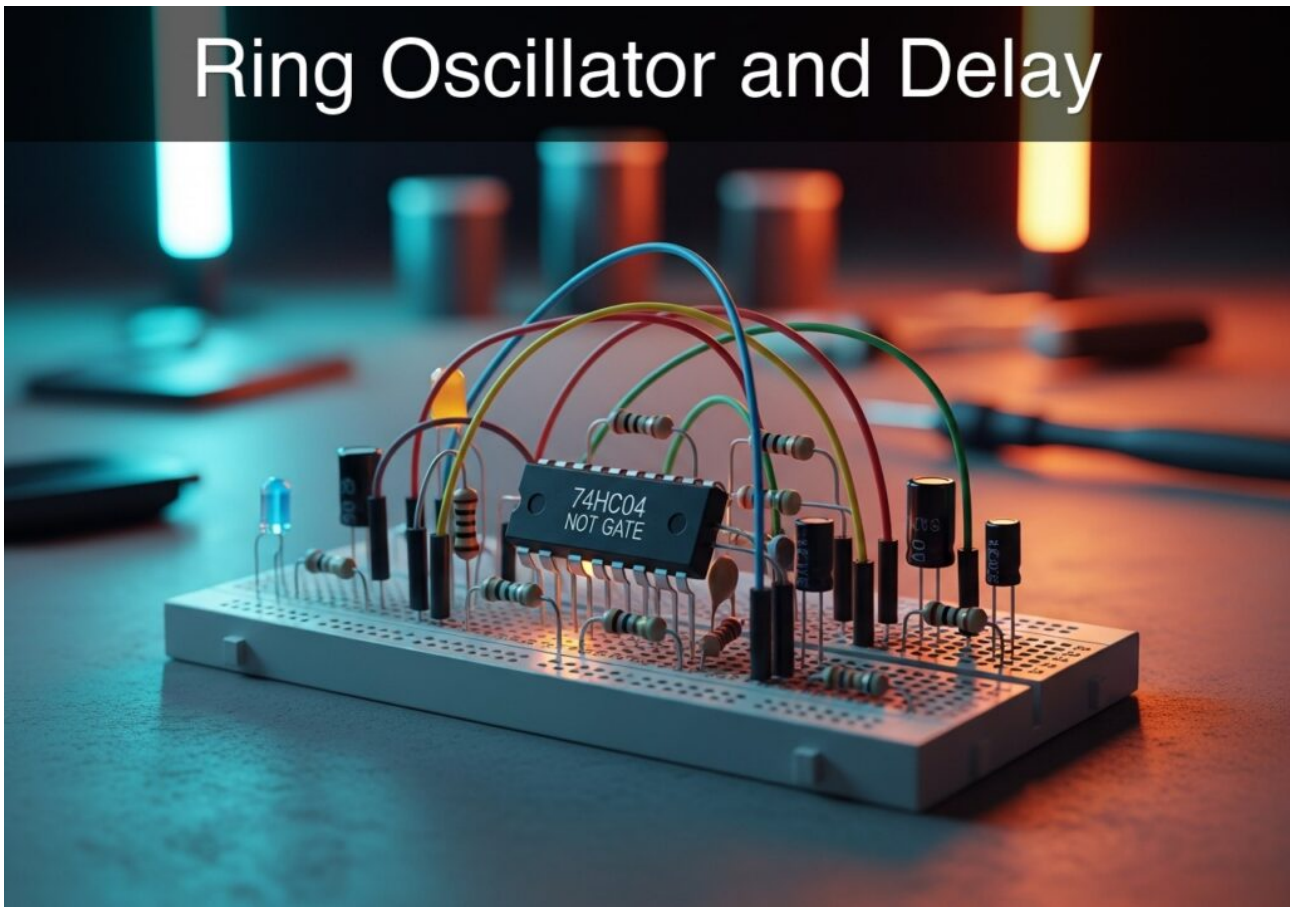
Practical case: CMOS linear amplifier



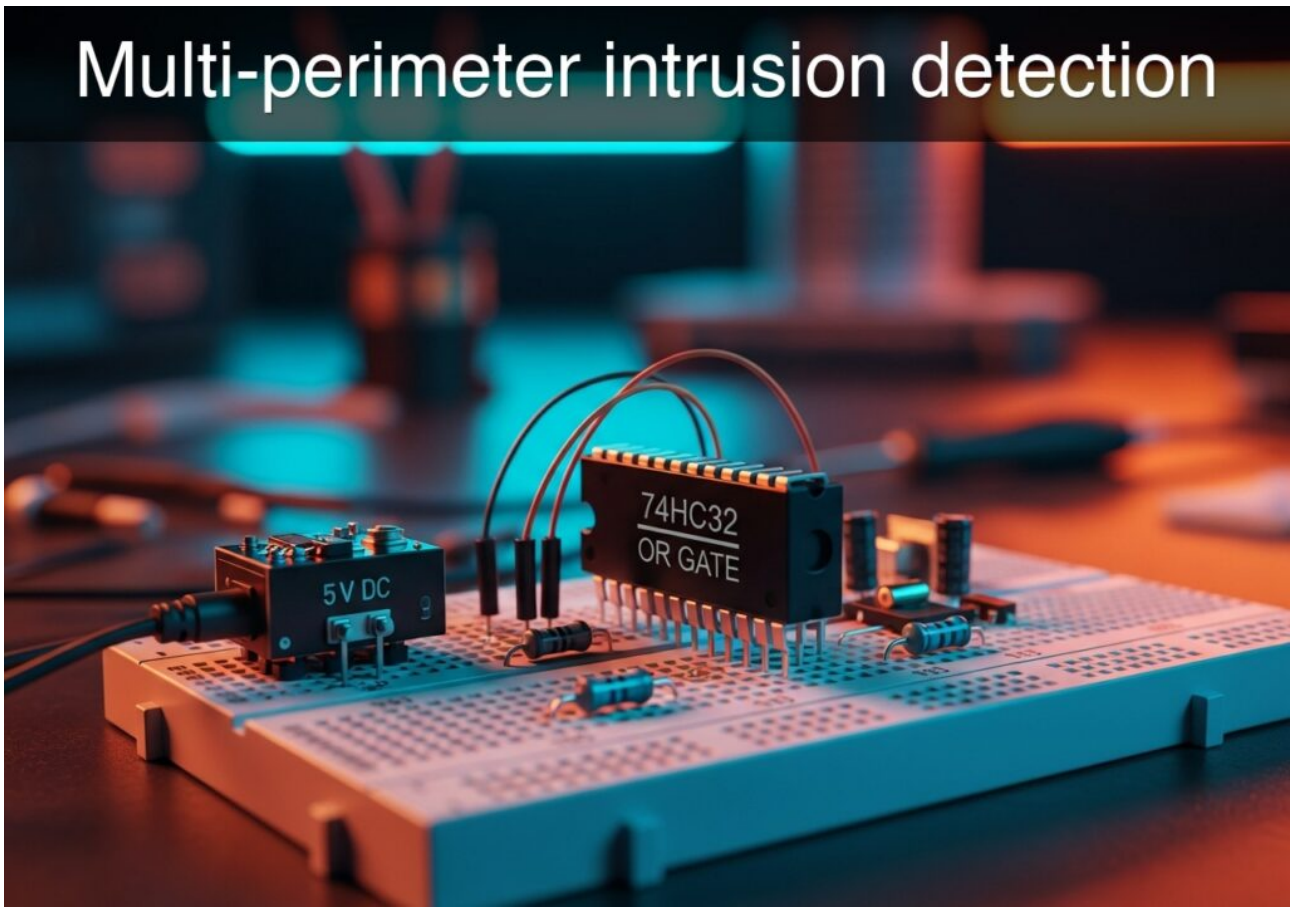
Explore Digital Electronics by configuring a NOT gate as a Class A linear amplifier. Build the circuit to observe measurable AC signal gain and self-biasing.

Practical case: Ring Oscillator and Delay



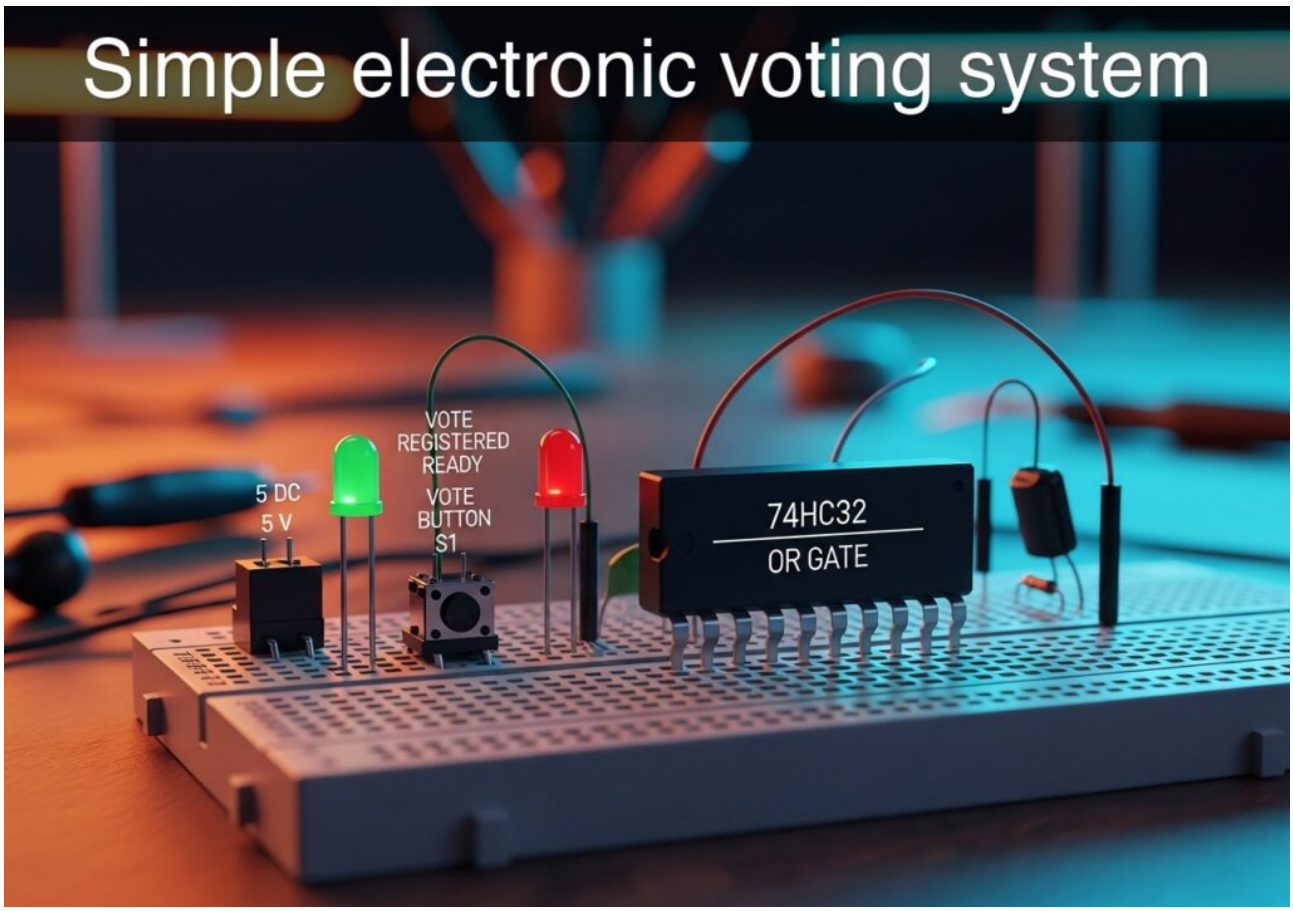
Master Digital Electronics by building a ring oscillator using NOT gates. Measure the MHz output frequency to calculate precise propagation delay.

Practical case: Multi-perimeter intrusion detection



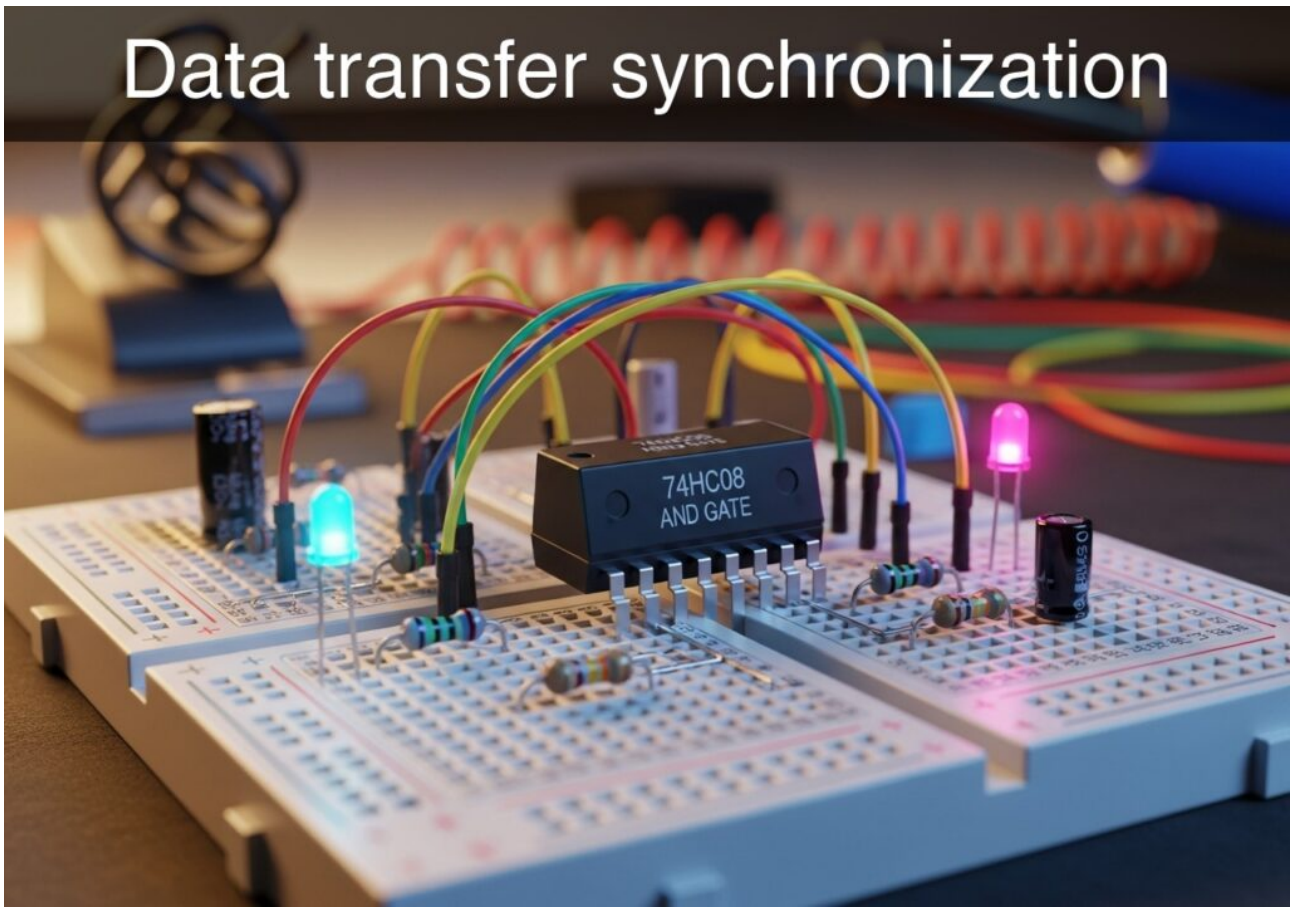
Master Digital Electronics by building a 4-zone security alarm. Use an OR gate to trigger a relay and siren instantly when any single access point is breached.

Practical case: Simple electronic voting system



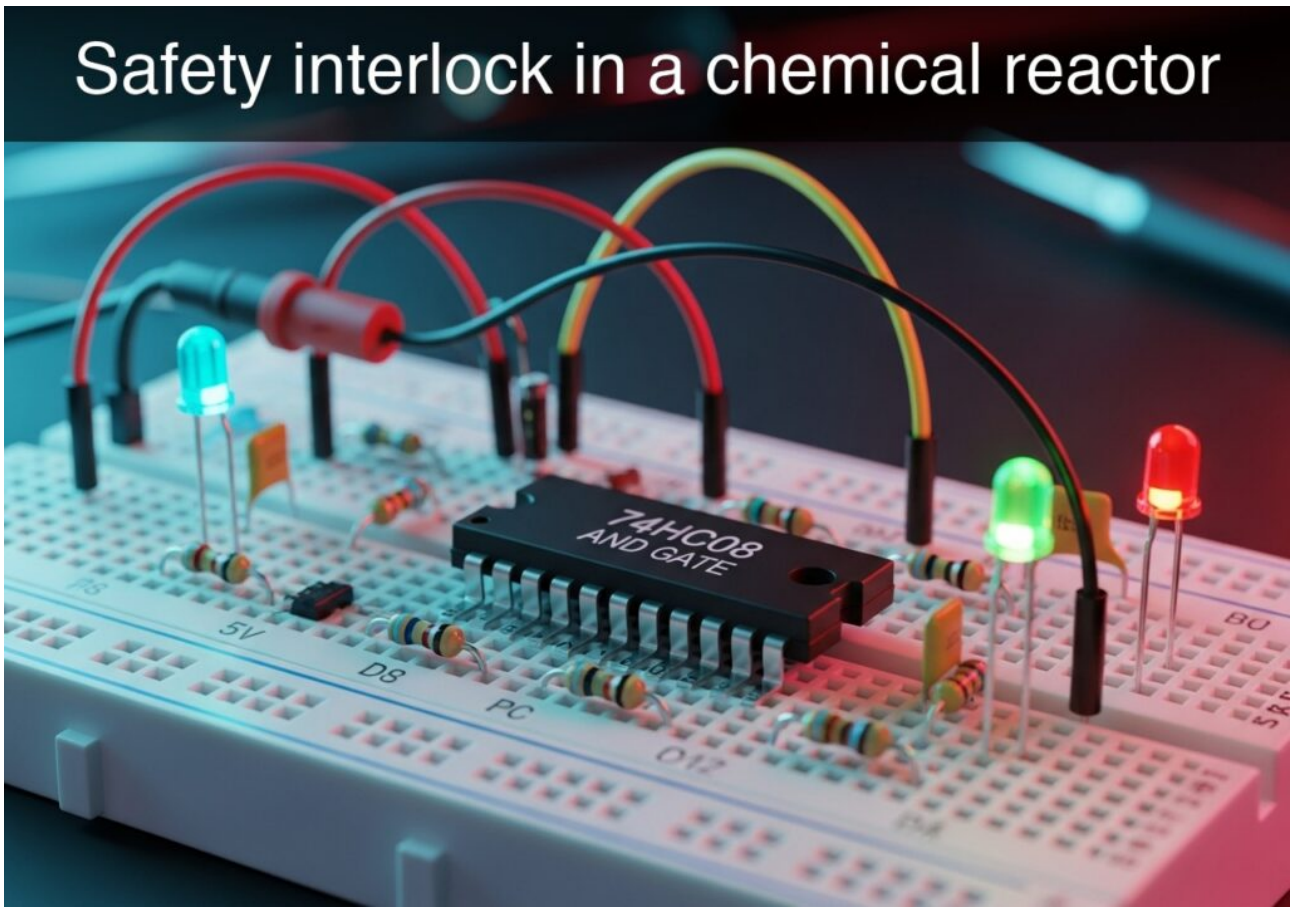
Master Digital Electronics by building a voting system with an OR gate. Design a circuit that triggers a visual signal when any judge activates a switch.

Practical case: Data transfer synchronization



Master Digital Electronics by building a clock gating circuit with an AND gate. Ensure precise synchronization pulses and reduce power only when data is ready.

Practical case: Safety interlock in a chemical reactor



Master Digital Electronics by building a redundant safety interlock. Use an AND gate circuit to validate three critical inputs and activate a high-power relay.