Embedded System Coach

C MEETS REAL WORLD - SIMULATE A TEMPERATURE SENSOR

Control is just this question : “How do I change something so that it behaves the way I want?”
When you give input, output doesn’t change instantly.
Physical systems store energy and resist change.

Current temperature : 34 degree Celsius
Heater adds : 2 degree every 3 second
But you lose : 1 degree per 5 due to ambient cooling

Temp = Temp + (Heater Power - Heat Loss) * dt

To solve this controller uses PID in “for” loop.

🎯 Requirements

- Investigate how controller uses PID concept here to simulate the temperature sensor behaviour
- Write code to simulate model change with “+= something * dt” (refer the equation above)
- Check error and adjust input, you can control anything.
- What you’re doing in coding is running temperature sensor forward, one line at a time.