🌡️ Project: Temperature Monitoring with ATtiny85 + TMP36 + LED

📘 Overview

In this project, you'll learn how to make a **thermometer circuit** using:

- **ATtiny85** microcontroller
- **TMP36 temperature sensor**
- **LED indicator**

This thermometer reads temperature and visually displays it through an LED that **blinks faster or slower** depending on the current temperature. It's ideal for small embedded systems where using a full Arduino Uno would be overkill.

🧩 Components Used (Short Notes)

Component	Description
ATtiny85	8-pin microcontroller with compact size and cost efficiency.
TMP36	Analog temp sensor with 10mV/°C output.
LED	Indicates temperature level through blink patterns.
Resistor	For LED protection.
Battery	3.3V or 5V to power the system.

🔌 Circuit Explanation

Pin	Connection
VCC (ATtiny85)	To battery +
GND	To battery - and common ground
PB0 (Digital pin 0)	Connected to LED anode
PB2 (Analog A1)	Connected to TMP36 signal pin

Pin	Connection
TMP36 VCC	To battery +
TMP36 GND	To battery -

💡 How It Works

- The **TMP36 sensor** gives an analog voltage based on temperature.
- **ATtiny85** reads this voltage from pin **PB2 (A1)**.
- The voltage is processed to calculate temperature in Celsius and Fahrenheit.
- The **LED blinking pattern** changes depending on the temperature:
    - **< 0°C** → Blinks **very fast**.
    - **30–50°C** → Blinks **normally** (every 500ms).
    - **80–95°C** → Blinks **slowly** (every 1 second).
    - **>100°C** → LED **stays ON** (no blink — fever alert).