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# TEMPERATURE MONITORING AND CONDITIONAL MAINTENANCE SYSTEM FOR SURGERIES

## ABSTRACT

This project is a standalone digital temperature meter that monitors and controls the temperature according to its requirement. Use of embedded technology makes this closed loop feedback control system efficient and reliable. Micro controller (AT89C51) allows dynamic and faster control. Liquid crystal display (LCD) and the buzzer make the system user-friendly. The sensed and set temperature values are simultaneously displayed on the LCD panel. The circuit is programmed for 'ON'/ 'OFF' control. It is very compact using few components and can be implemented for several applications including air-conditioners, water-heaters, snow melters, ovens, heat-exchangers, mixers, furnaces, incubators, thermal baths and veterinary operating tables. AT89C51 micro controller is the heart of the circuit as it controls all the functions.

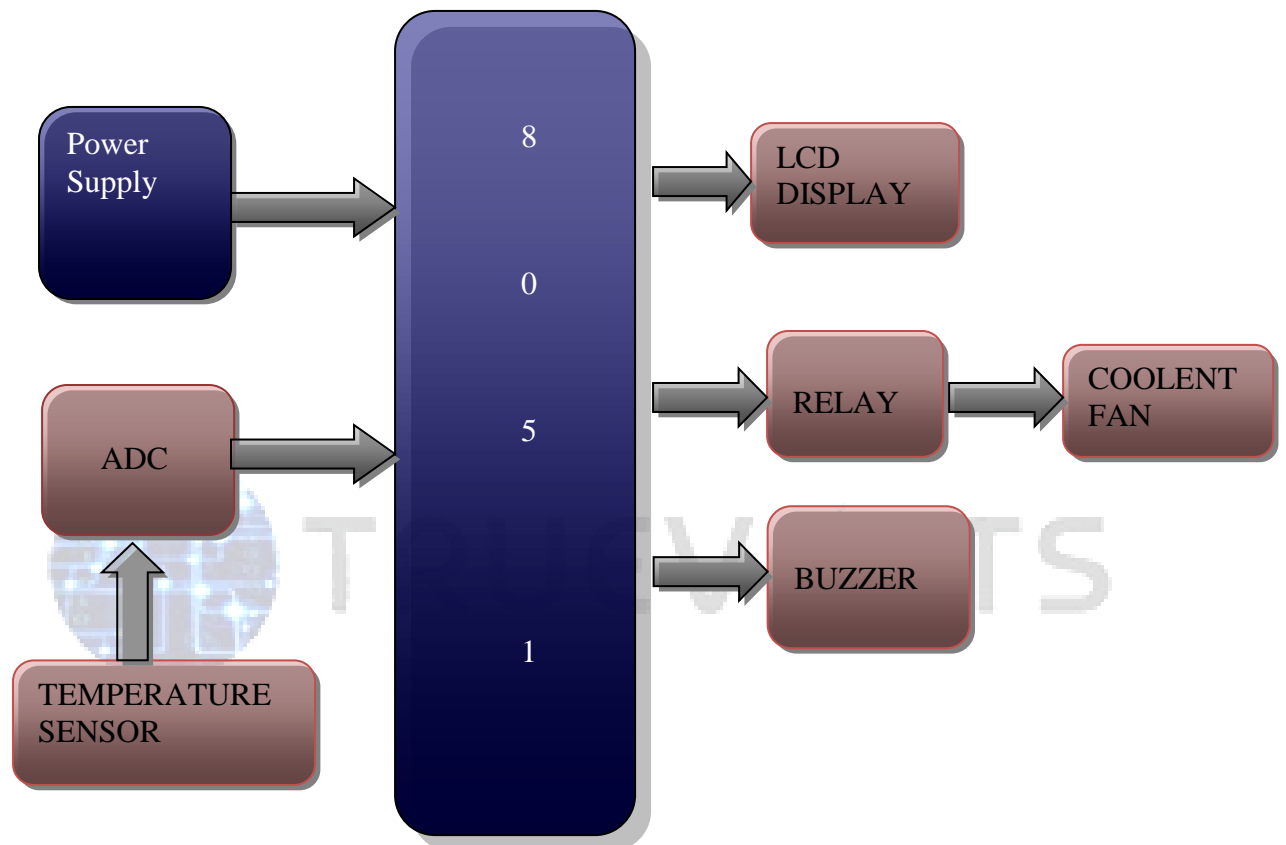
The temperature sensor LM35 senses the temperature and converts it into an electrical signal, which is applied to the micro controller through ADC. The analog signal is converted into digital format by the analog-to-digital converter (ADC). The sensed and set values of the temperature are displayed on the 16x2-line LCD. The micro controller turn ON a coolant fan to control the heating element with the help of an electromagnetic relay, if the sensed temperature crosses the set temperature and the buzzer also provided for an audio indication.

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the AC output of secondary of 230/12V step down transformer. This project is useful in maintaining the temperature mainly in Surgeries.

### APPLICATIONS:

- Hospitals
- Diagnostic centers
- Pharmaceutical companies

### BLOCK DIAGRAM:



### POWER SUPPLY BLOCK DIAGRAM:



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