Temperature Monitoring System in Vehicles

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1 About the Temperature Monitoring System

1.1 Description

Monitoring is one of the principal matters of our project. In this technology, it's miles used to decide the presence of the passenger and if the passenger exists then our machine begins off evolved the functionality. So in recent times the whole thing is turning into computerized and all people is searching out new merchandise to make lifestyles easier. In our project, the principle intention is to layout and broaden a machine this is able to tracking the passenger's life and Heat Monitoring and Displaying.

1.2 Features

Its able to figuring out climate the consumer is exist or now no longer withinside the automobile.

If Passanger turned into existed withinside the automobile it's going to offers the indication.

After the indication it's going to decide the heat.

Driver and the passanger could have the get entry to to chaning the temperature withinside the automobile.

The passanger can alternate the temperature via way of means of looking the show because the show is given withinside the system

1.3 S.W.O.T Analysis

Strengths

Easy to adjust the temperature value.

The machine is robust.

Low cost.

Modular Based Programs.

User Friendly.

Weakness

It's handiest beneficial for the international locations which might be having low temperature.

Opportunities

It can be practised by replacing heater by air conditioners so that it will be usefull in all the countries

Threats

Not suitable for average or high temperature environment.

5W,s And 1H

WHAT : Temperature Monitoring System

WHERE : Used in Automotive Industries

WHEN : At low Temperature

2 Requirements

2.1 High Level Requirements

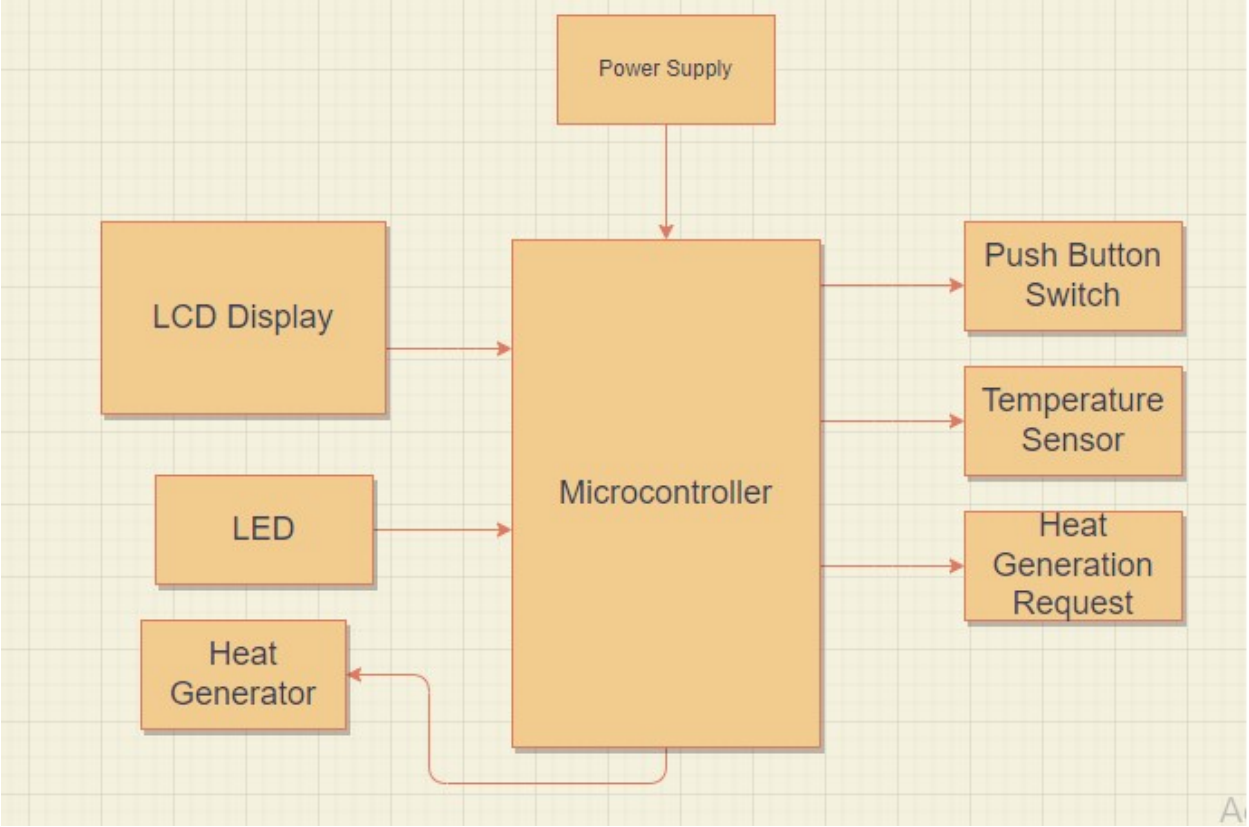
High Level Requirements	Description
HLR1	Temperature Sensor
HLR2	Switches
HLR3	Heat Generation
HLR4	Microcontroller
HLR5	Software used
HLR6	Display

2.2 Low Level Requirements

Low Level Requirements	Description
HLR1_LLR1	Thermoelectric module
HLR2_LLR1	Push Button
HLR3_LLR1	ADC with PWM-fast
HLR3_LLR2	LM35 and ADC
HLR4_LLR1	ATmega328

3 Block Diagram and Blocks explination

3.1 BLOCK DIAGRAM



3.2 SENSORS

- **Temperature Sensor (Thermistor)**

Thermistors are a very accurate and cost- effective sensor for measuring temperature.it is the NTC thermistor that is commonly used to measure temperature

Resistence produces change in voltage, this voltage is taken as input to micro controller.

3.3 ACTUATORS

- **LCD Display:**

Displays each and every value we enter in our keypad along with Temperature.

- **LED:**

A light-emitting diode is a semiconductor light source that emits light when current flows through i

3.4 MICRO CONTROLLER

An integrated circuit that contains a microprocessor along with memory and associated circuits and that controls the whole system.Here I am using ATmega-328 controller as part of project requirement.

3.5 Power Supply

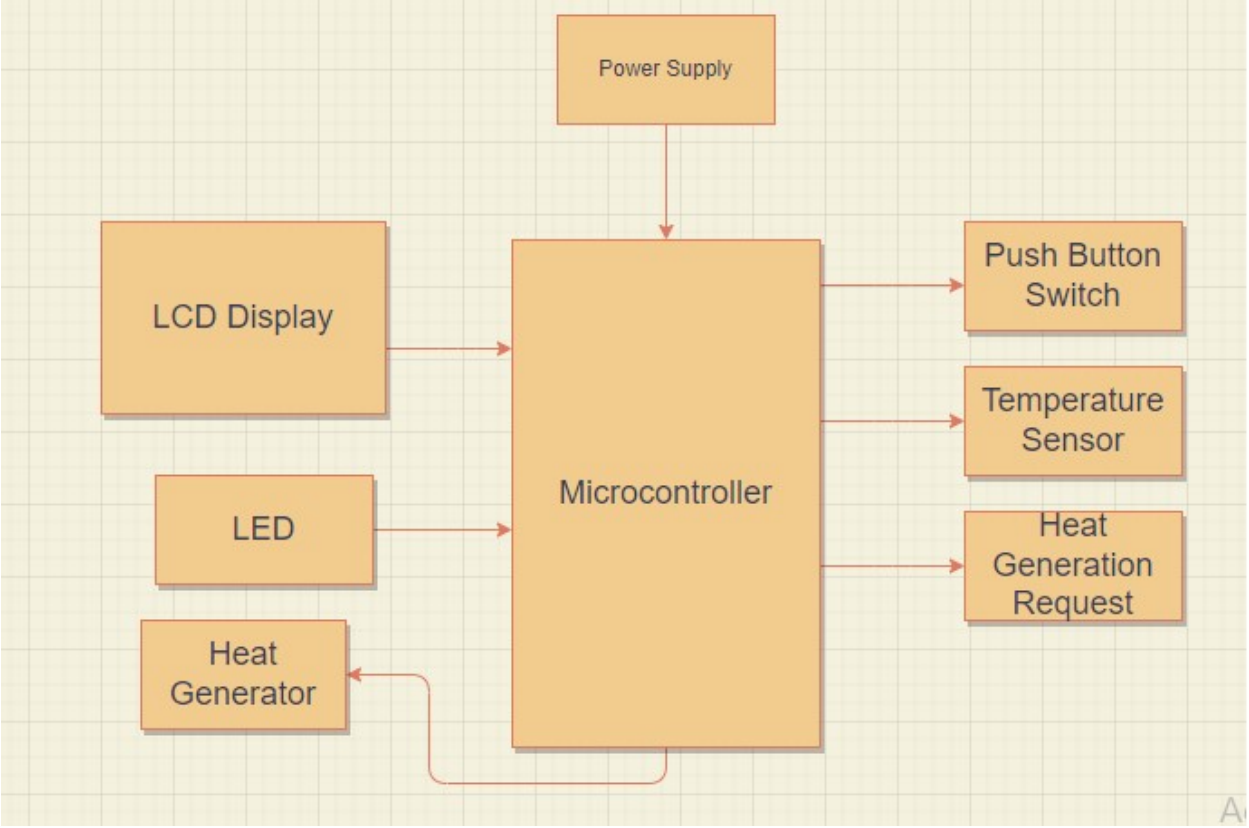
The DC Power supply powers Microcontroller and other components in the system. Here I am using 5V Dc supply to power the circuit.

3.6 Push Button Switch

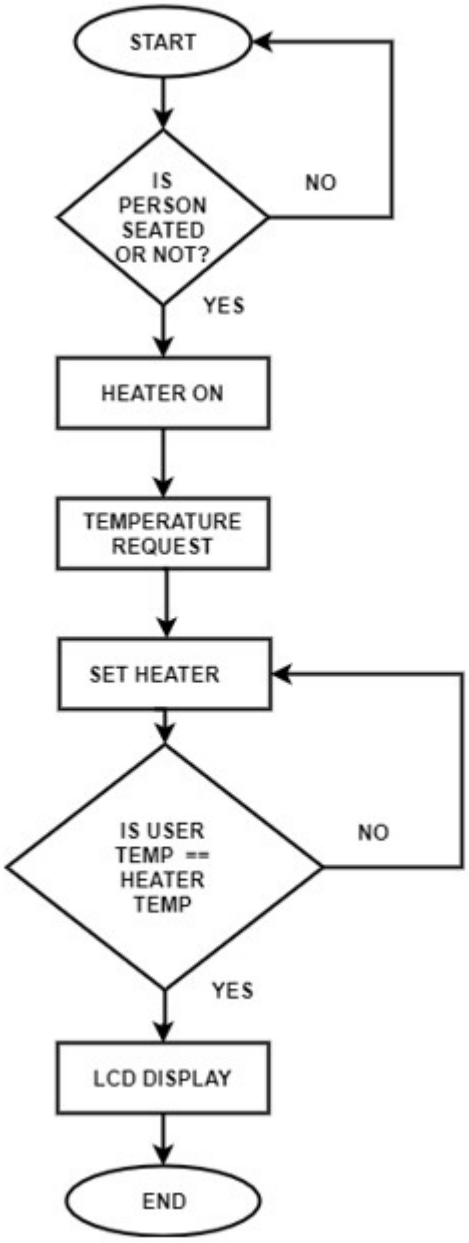
Push button switch is connected to the microcontroller through a switch inorde to limit the flowing current.

4 Architecture

- **4.1 Block Diagram**



4.1.1 Flow Chart



5 Test plan and output

5.1 HIGH LEVEL TEST PLAN

Test ID	Description	Input	Output	Status
1	Is person seated	push button=1	push button=1	PASS
2	Is person not seated	push button=0	push button=0	PASS
3	Temperature Request	Temp=0	heater=Off	PASS
4	Temperature Request	Temp=10	heater=10 degree generation	PASS
5	Temperature Request	Temp=15	heater=15 degree generation	PASS
6	Temperature Request	Temp=23	heater=23 degree generation	PASS
7	Temperature Request	Temp=33	heater=33 degree generation	PASS
8	LED ON	Button=1 && Heater=1	LED=1	PASS
9	LED OFF	Button=0 && Heater=0	LED=0	PASS
10	LCD Display	Temperature 23 degree	Temperature 23 degree	PASS

6 Application

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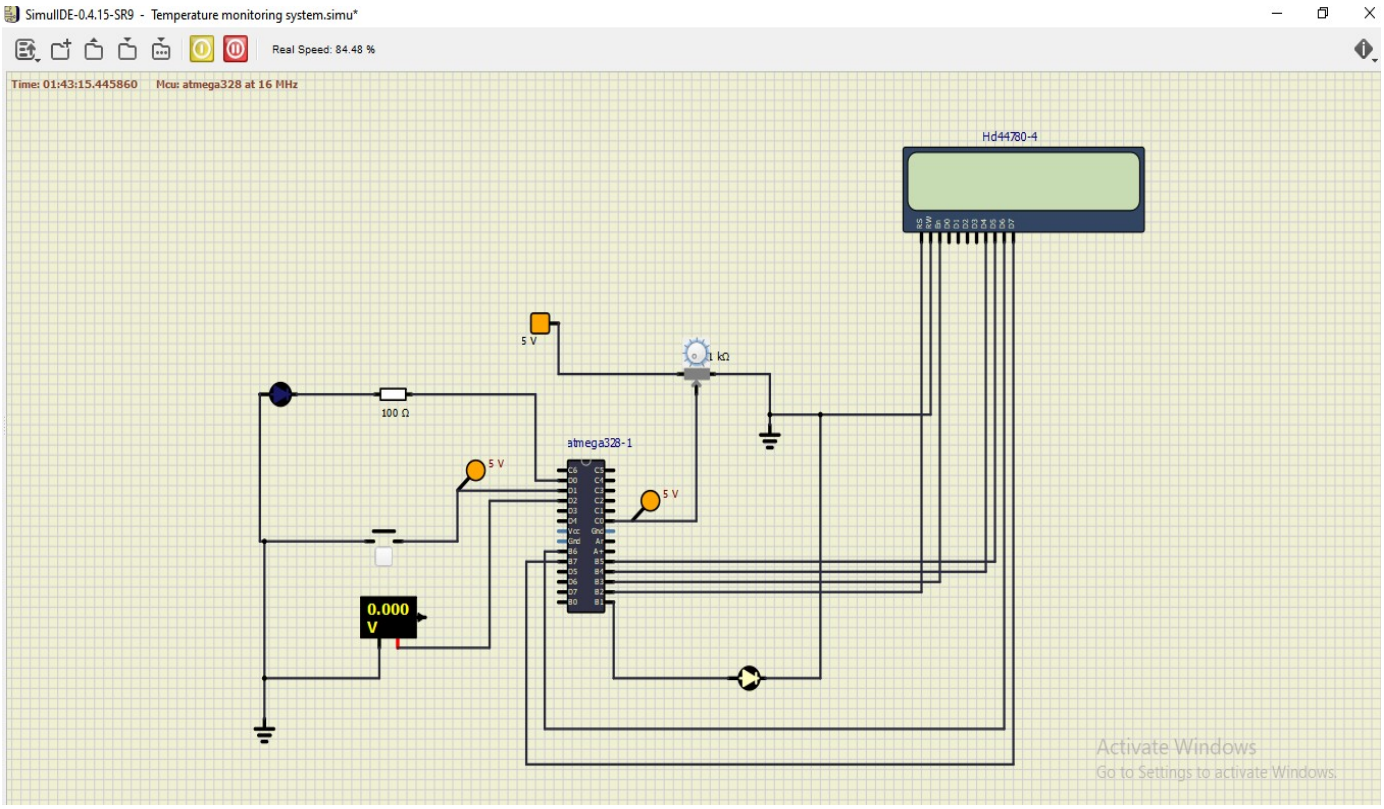
Simulation Diagram:



7 References

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3. https://www.projectsof8051.com/microcontroller-based-overheat-detector-using-temperature-sensor-with-buzzer-indication/amp/