Vehicle Seat Heat Generator & Monitoring System

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Abstract

- As now-a-days we are looking for the automation and advancement in all the sectors, In cars also we are getting new features as of growing technology in that vehicle seat heat Monitoring system is one as per our comforts.

- In the Vehicle Seat Heat Monitoring System, it is capable of maintaining of heat in the vehicles seats. In European countries, the temperature is very low, and any electronic designer should make sure that his equipment should work efficiently in weather conditions in coolest places.

- In our project, the Temperature sensor will sense is the driver has been seated or not and if the driver seated then he needs to set the temperature accordingly. Based on that our controller will set the heater to required temperature. The Heater will generate the heat and a LCD display will show requested the temperature as we required.

- In our project we have used ATmega328 microcontroller along with temperature sensor, Push button, Heat generator, LED and LCD display, etc.

Requirements

1. ATMEGA 328

- It is commonly used in many projects and autonomous systems where a simple, low-powered, low-cost micro-controller is needed

2. Temperature Sensors.

- It is a device used to measure temperature.

3. Heat generator

4. Thermostat.

- used for electric current to a heating or cooling.

5. LCD

- Liquid Crystal Display used to display Temperature- Generated heat.

6. LED

- Light Emitting Diode used as indicator.

SWOT ANALYSIS

Strengths

1. It has Designed User Friendly

2. It is easy to change the temperature inside the vehicles.

3. Low cost and Robust system.

Weakness

1. Its only used for the countries those which are having low temperature/ coolest places.

2. Low sensitivity.

Opportunities

1. It can be implemented by having both Heater and AC.

2. It require short time and less expense to implement, and it will consume less energy.

Threats

1. It is not suitable for average or high temperature places ,it used only in cool temperature places.

2. High electric resistance can make it to get over heated.

4W's and 1'H

WHAT

Vehicle Seat Heat Monitoring System, these heated seats can make us more comfortable in the winter or low temperature areas/places.

WHEN

It can be used at low Temperature areas/places(coolest places),It is used in Vehicle, Mainly used in Cars

WERE

Used in the Vehicle seats and Automobile industries.

WHY

Vehicle Seat Heat Monitoring System these Heating system in our vehicle is designed to keep us warm, mainly in very cool Temperatures and we can feel more comfortable.

HOW

It can be modified by changing the temperature we can feel comfort at any temperature or coolest climatic conditions.

HIGH LEVEL AND LOW-LEVEL REQUIREMENTS

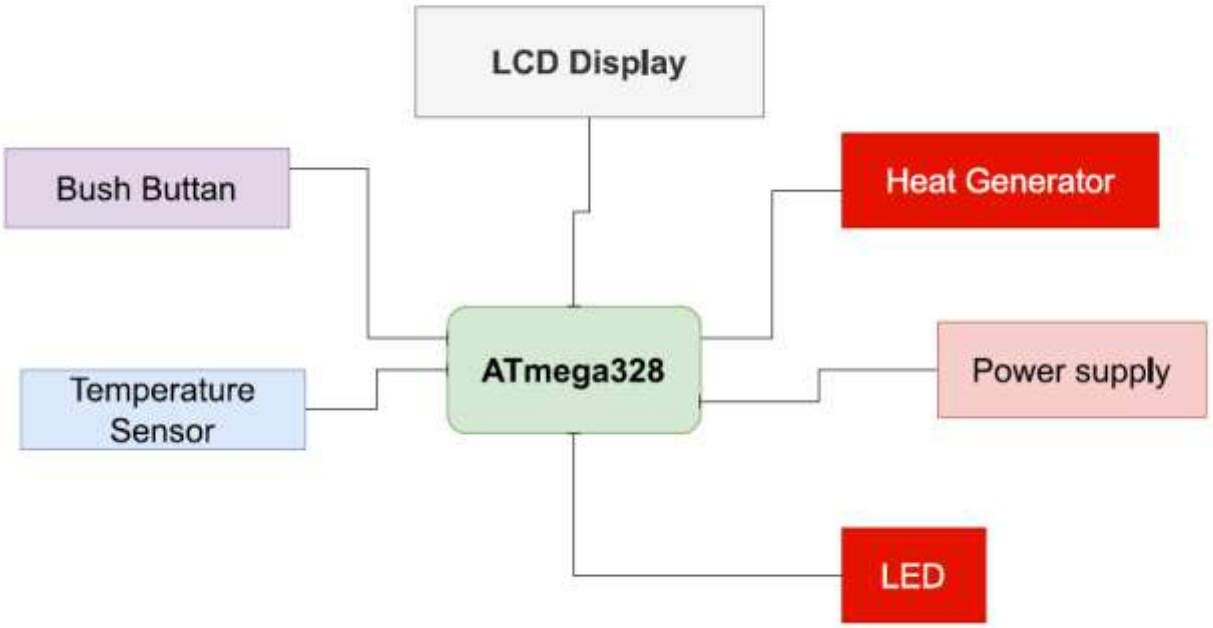
High Level Requirements (HLR)

1. Microcontroller
2. Temperature Sensor used to measure Temperature (LM355)|
3. Heat Generator to get Seat heated|
4. Display Generated heat should be displayed on LCD|
5. Need Software|

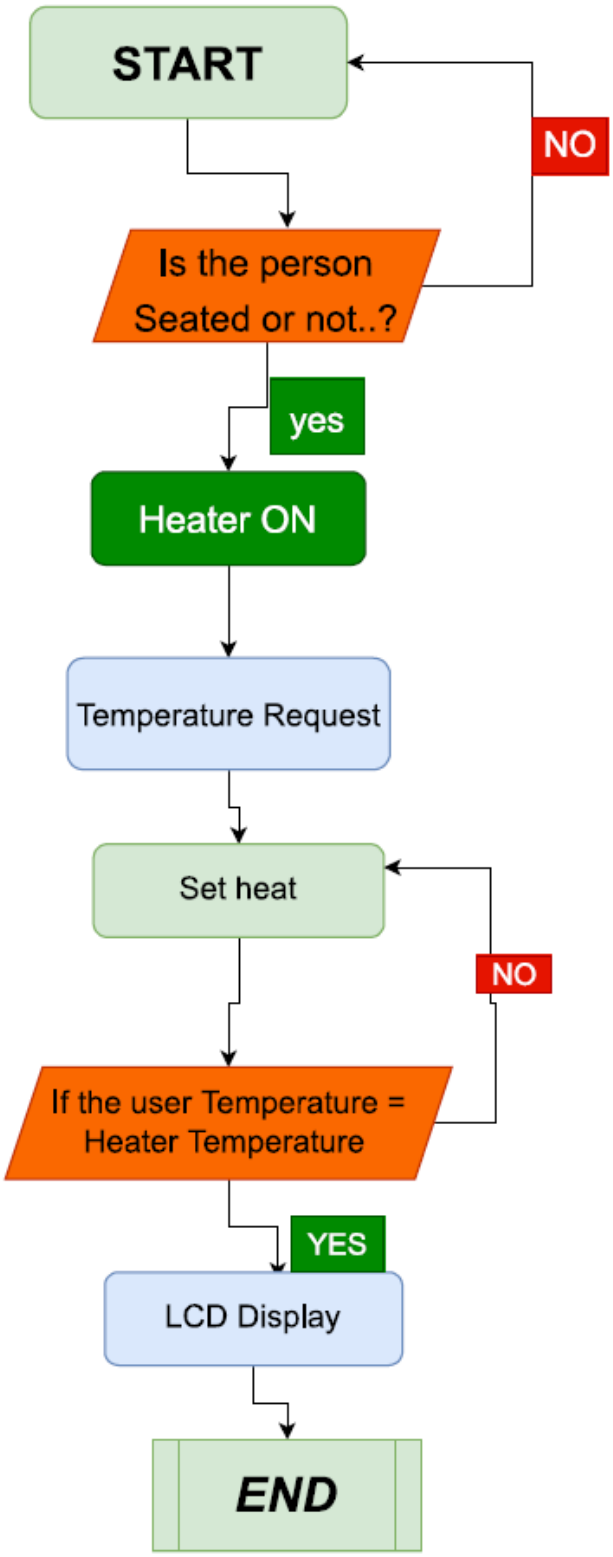
Low Level Requirements (LLR)

1. The digitized temperature input is visualized using Pulse Width Modulation
2. Need LCD(Liquid Crystal display) and LED (Light Emitting diode)
3. Need AVR GCC compiler and SimulIDE
4. As per Drivers request, Heater will generate the heat accordingly
5. Thermoelectric module used t for both heating and cooling.

Block Diagram

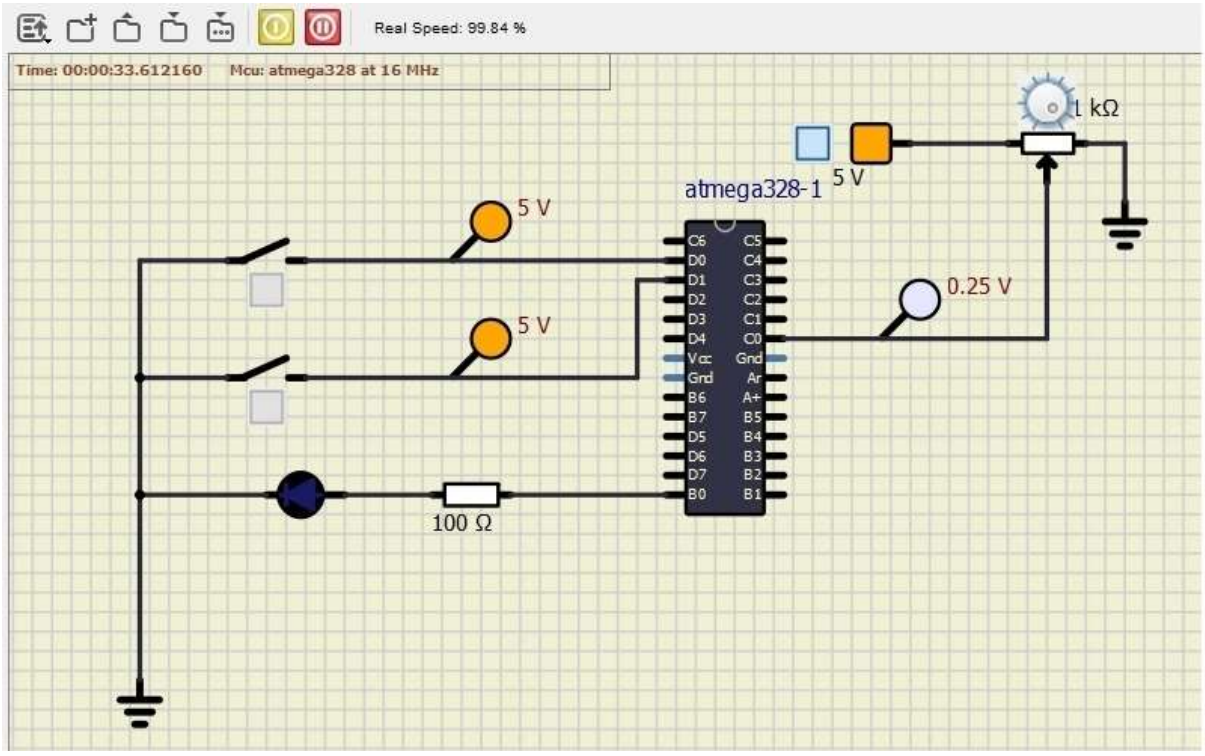


Behavioral_diagram/ Flow chart

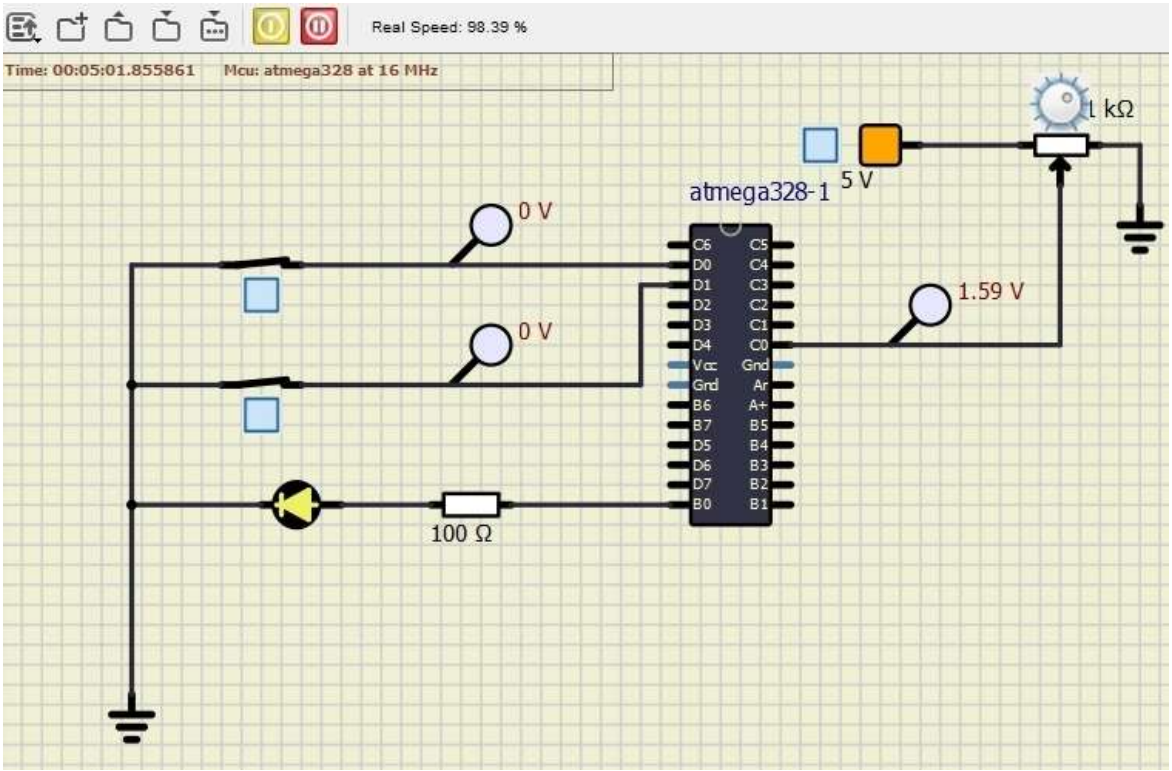


OUTPUT

LED_OFF



LED_ON



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