**REQUIREMENTS:**

**Theory:**

The heat control system is basically used to control the temperature inside a car. Whenever the user or driver gets seated inside the car, the button sensor gets activated. After that, the user gets access to turn on the heater. The temperature sensor monitors the temperature and sends the analog value to the microcontroller. The microcontroller processes the analog input of the temperature sensor and outputs a temperature value through serial communication. All the activities of the control system are performed on the microcontroller, Atmega328.

**Functions:**

* When the two switches are closed, the first LED glows indicating the actuation of the system and the heater.
* Next the analog input from the temperature sensor is received and digitized using ADC.
* The digitized temperature input is visualized using Pulse Width Modulation.
* The corresponding temperature values based on the digitized temperature input is transmitted by the UART protocol. Here the data is displayed on the serial monitor.
* Its capable of determining weather the user is exist or not in the vehicle.
* If the passenger was existing in the vehicle, it will give the indication.
* After indication, it determines the heat.
* The passenger cqan modify the temperature by watching the display as the display is given in the system.

**SWOT ANALYSIS:**

**Strengths:**

* **Robust system**
* **Low cost**
* **Easy to modify the temperature value**
* **Modular based programs.**

**Weakness:**

* **It is only applicable for the countries which are having low temperature**

**Opportunities:**

* **It can be implemented by replacing by air conditioners o that it will be helpful in all the countries**

**Threats:**

* **Not suitable for High temperature Environment.**

## 4W’S AND 1’H:

## WHAT: Passenger Seat and Heat Monitoring system

## WHERE: Used automative industry

## WHEN: At low temperature

## WHY: For being healthy

## HOW: Operates by modifying the temperature

## Contributors List and Summary:

|  |  |
| --- | --- |
| **Feature Id** | **Feature** |
| F\_01 | Tests if button is on or not |
| F\_02 | Converts the binary to adc |
| F\_03 | Displays the temperature on the serial monitor |

**Challenges Faced and How Was It Overcome**

| **No.** | **Challenge** | **Solution** |
| --- | --- | --- |
| 1. | On the simulide on version where some requirements are not available | Solved in the connect session |
| 2. | Issues in running the code | Solved by exploring in futureskills platform |
| 3. | Issues in workflows on make file | Solved by taking out my files from the implementation part and I kept them in separate files |