Mobile Overheat Protection M.O.P

UQU-CE-20-103

Authors: *Hani Khalid Bahha, Abdullah Ali Alghamdi, Bassam Nabeel Mubarak and Mohammed Abdulrahim bin Afif*
supervisor: *Dr. Amar Jaffar.*

College of Computer and Information Systems

ABSTRACT

This project is to display the temperature and when it goes beyond certain limit then control it to bring it back into desired level and reduce waste of energy and save our mobile phones of damage.
It may also be used for monitoring changes in environment. In near future, it can also be used in different industries and electronic devices.

INTRODUCTION

- The overheating battery is one of the most popular problem which we face daily, and might cause mobile, user and place damage. So to avoid this problem we should put a maximum heat that can't be exceed, and this heat should be safe and might not cause damage anything around it. In this project we will provide a low cost, minimum size, effective solution for this problem.

PURPOSE OF THIS DOCUMENT

- Describe the entire system and cover what this project can provide to solve the overheating battery problem, functional and nonfunctional requirements, used hardware and software, and describe the different activities the project can perform and how it work.

TOOLS

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux.

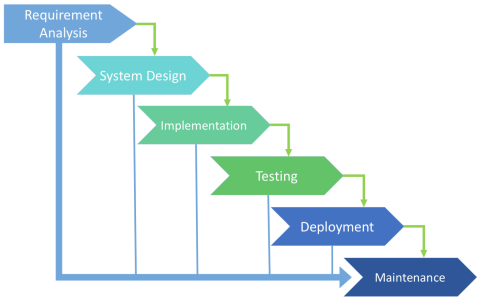
ARDUINO

METHODOLOGY

- We use advanced microcontroller called Arduino (ATmega8). It has in built with many components like analog to digital converter, clock of 16 MHz, shift registers. And we uses temperature sensor IC DS18B20, to use to detect temperature into appropriate voltage. This voltage is given to Arduino. According to program it process the analog signal into digital and forms a particular voltage level for a particular temperature. LCD is used to display the output. At the same time it also sends the data to Relay, if the temperature becomes maximum from set point relay becomes activate and it switches on the cooling device like fan. In this manner it monitors and controls the temperature.

METHOD

- We used the waterfall model.



RESULTS

The project gives two outputs. One is displaying temperature on LCD screen. And second on is given to relay, relay switches ON and OFF the device connected across it. Here, we used LED to show the output of relay.

- When temperature is below set point the relay is off. Consequently, LED connected across it is on.
- When temperature goes above set point the relay is ON. Consequently, it cuts the power and the LED connected across it is off.

FUTURE ENHANCEMENTS/PLANS

- Arduino based temperature controller is a simple whereas a useful circuit with which the temperature can be controlled with the aid of a used temperature sensor. As explained the circuit can be made useful in practical area where the circuit can be connected to a device whose temperature has to be controlled at a particular limit. We can use a buzzer to save electricity by avoiding overheating of the device.
- In future the circuit can be enhanced by connecting a GSM Module to the circuit so that in industrial area when a machine crosses the set temperature, we can inform the control room by sending a message, or else a call to control room manager so that damages to the machine can be avoided by disconnecting the equipment with GSM technology.

CONCLUSIONS

- In our project, we designed and implemented an efficient temperature monitoring and controlling system with an Arduino board. Output was verified by setting the temperature at different levels and it was found that the led turn on and off when the device crosses the set value. It is very useful for the people who are disable. There is still much room for future development that would enhance the system and increase its business value.
- This project can be used in Industry as well as in Home to monitor the environments that is not comfortable, or possible, for humans to monitor, especially for extended periods of time. It prevents waste of energy when it's not hot enough for a fan to be needed. And it may be used to assist people who are disabled to switch on or off cooling device automatically.