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# GSM Based Fire Alert and SMS System

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**ABSTRACT:** An design and implementation of GSM based fire SMS and alert system which can perform an alarm by the voice signal. This project identify the raising temperature and humidity with the help of input sensor. When the Arduino gets input signal then the Arduino processes the signal if the condition satisfied in sense that the sensor sense the fire or raising temperature at the input then Arduino passes a alert message through GSM.

**KEYWORDS:** Implementation; Sensor.

## I. INTRODUCTION

Many of us know what an a huge fire is a disaster for live, isn't it? In this project, we are going to build a FireAlarm System using Arduino, Temperature Sensor and GSM Module. The objectives of this fire detector using Arduino is to sense the surroundings for occurrence of fire with help of temperature sensor, and send SMS alerts to mobile numbers stored inside the Arduino program if fire is detected (using GSM Module).

We have developed a very good system is it and send/receive SMS using GSM module. Interfacing any device with a micro controller is the first step to building a useful system or project with that particular device. we are going to build a very interesting project GSM Based Fire SMS and Alert System when fire occurs in a particular location. We have seen many typical Fire Alarm projects which will alert with a siren or that activates an automatic shutdown mechanism. This fire alarm project makes use of modern communication technologies to deal with emergencies. This system SMS based Fire Alarm system are very useful in remote locations where human interaction is limited. Such systems are useful in mines, industrial areas, factories etc.

## II. PROPOSED ALGORITHM AND WORKING

A. Flow chart:

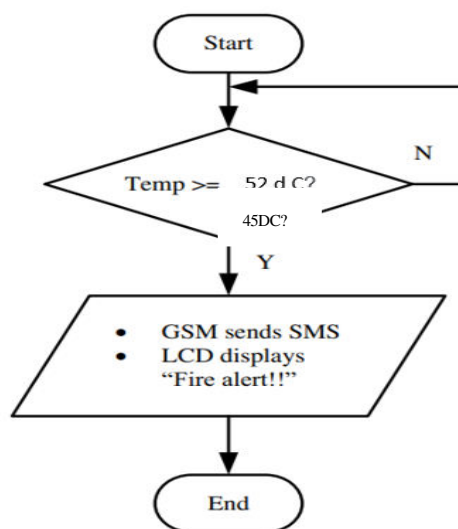


Fig.1.Flow chart of system

**B. Working the Proposed Algorithm:**

For this project, the development of fire alert is built based on Arduino board as the main controller board that interacts with GSM module which works in the communication part. The interaction is for the user to know the current situation in the house. This system works totally on wireless network communication as GSM module is performed by sending an SMS to the user. The microcontroller inside the Arduino board is used as the mastermind of the circuit where it controls the circuit flows and execute all the decision as well. The GSM Module is responsible for the communication part of the circuit. It takes information from the Arduino on where to send information and what information needs to be sent. It uses a GSM for communication purposes. It is basically just a modem which uses serial communication to interface with and needs Hayes compatible AT commands for communicating with the Arduino. The alert message and the phone number of the recipient are given by the user through the project codes. As soon as fire is detected (temperature will hit certain temperature limit) an SMS will be sent to the recipient's phone number from the SIM card inserted into the module for giving information to the user upon fire detection in the house.

**C. Block Diagram of the proposed system:**

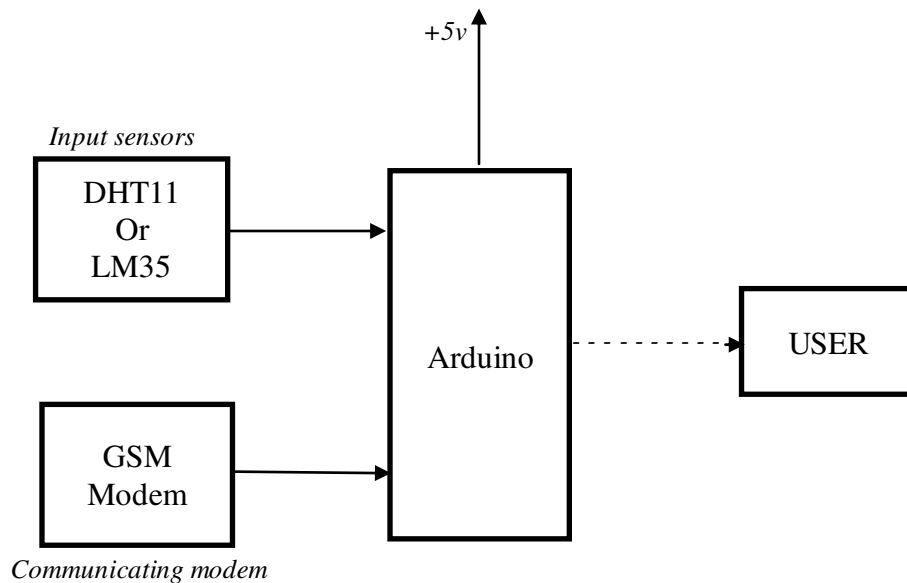


Fig.2. Block Diagram of the System

**III. FIRE ACCIDENTS IN HISTORY**

There has been a spate of incidents of fire accidents occurring in the past few years. Causing damage and huge loss of human lives. There are few most recent incident India below:

- May 9<sup>th</sup>, 2019: Fire kills 5 in a blaze at Pune cloth warehouse
- May 13<sup>th</sup>, 2019: Fire at Apple Children Multi Speciality Hospital in Ahmedabad
- May 20<sup>th</sup>, 2019: Massive Fire at a Chemical Factory near Silvassa
- May 25<sup>th</sup>, 2019: Surat Building Fire
- May 28<sup>th</sup>, 2019: Fire erupts at Bulb Manufacturing unit in Delhi
- June 8<sup>th</sup>, 2019: Women and her 2 kids died in a fire at Faridabad
- June 9<sup>th</sup>, 2019: 3 Coaches of Silchar-Trivandrum Express catches Fire
- June 10<sup>th</sup>, 2019: fire breaks out at shastri bhavan
- June 10<sup>th</sup>, 2019: Fire breaks out at Shastri Bhavan
- April 18<sup>th</sup>, 2021: Fire broke out in a chemical company in Maharashtra's Ratnagiri



#### IV. CONCLUSION AND FUTURE WORK

Thebecause of fire causes many people its so horrible and worrying From this we can conclude that the system can be one of the best method to avoid fire accident .It is more robust and require less maintenance, thus making the things they control work better, in spite of the environment. Users can simply apply the system in their interested area to protect the area from the existence of fire. Whenever the temperature reaches the limit (45o C), the device will instantly alert the users by sending a message via GSM. This will make the users become aware of the dangerous situation and can easily prevent it from happening by quick prevention (use fire extinguisher, call firemen etc.).

For the future work it is able to add it on the main power supply of the installed area whenever the fire causes system automatically breaks the supply and spread water and and with help of the GSM it is possible to send message to firemen

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