Ideation Phase
Literature Survey

Date	01 September 2022
Team ID	PNT2022TMID24952
Project Name	Industry-specific intelligent fire management system
Maximum Marks	

Paper 1:

IOT BASED FIRE DETECTION AND AUTOMATIC WATER SPRINKLER SYSTEM

Published year: 2022

Author name: D Teja, M.Surajkhan, k Jyothi

Journal name:
International journal of engineering applied science and technology.

Summary:
In this paper, Fire detection systems, particularly vision-based systems, identify flames before any loss or destruction occurs. In this model, a novel vision-based technology is created that uses a camera to detect flames over long distances. An immediate alert is generated on android application. The goal of the proposed system is to notify the remote user when a fire accident occurs. By using camera method, the report is automatically generated and delivered to the person immediately following the fire is detected in any part of the frame using Wi-Fi/GSM.

Methodology:
Following the detection of a fire, our technology will take real-time photos of the surrounding area. The flame sensor determines whether or not there is a fire or flame present. A photo transistor is used in this explicit flame detector. The infrared spectral band is used by flame detection systems. Carbon dioxide, which is produced by the

combustion of organic compound materials, has a resonance frequency in this range. Put anything that can catch fire in front of the flame sensor. The flame sensor is triggered when it detects a fire or flame. As temperature increases the temperature sensor will detect and it will trigger the buzzer and buzzer will blow. The water pump is connected to a IC. If a flame is detected, IC activates the dc motor and water pump. The sprinklers connected to the pump will sprinkle the water throughout the fire affected area.

Paper 2:

Fire Detection, Monitoring and Alerting System based on IOT

Published year: 2019

Author name : Shreya Gosrani, Abhishek Jadhav, Krutika Lekhak D Chheda

Journal name:
International Journal of Research in Engineering, Science and Management

Summary:
Internet of Things refers to connecting things and people through internet, it has imposed itself as the New business practices in different sectors. To make quick and efficient response in real time, IoT enhances the way and provides emergency managers with the necessary information and communication to make use of those assets. In this paper it is proposed that a quick response for fire hazards is evaluated and examined by using IoT based model. Fire is one of the major reasons of accidental deaths in the world. To implement this proposed system a low-cost Wi-Fi module, gas detection sensor, Flame detection sensor, buzzer to alert and temperature sensors are used. The sensors detects and alerts the local emergency with the data collected by the system, and alerts organizations like fire departments, police stations and

hospitals by sending the exact location to both user and operator through module which all are well connected with.

Methodology:
IoT framework concentrates on public safety and livelihood service sector The fire detecting system with IoT standardized design methods The spark Detection sensor PT333B is used to sense the spark, the Flammable gas sensor MQ-6 is used to detect the gases like LPG/LNG and the GPS module is to obtain device location. These sensors along with Wi-Fi micro-controller are connected via Internet.

Paper 3:

IoT Based Automatic Fire Alarm System

Published year: 2020

Author name: A.Jeevanandham, SivamuruganP

Journal name: Bulletin of scientific research

Summary:
Fire identifiers are utilized to recognize the fire or smoke at a beginning time and can help in sparing lives. Right now, IOT based alarm has been planned utilizing temperature and smoke sensor. By utilizing the temperature sensor, smoke sensor and there is a simple to advanced convertor, which changes over the simple signs got at the sensor end to computerized and afterward transmits them to a smaller scale controller and to the Arduino. The small-scale controller is modified to turn on the ringer, when the temperature and the smoke arrive at an edge esteem. Simultaneously, Arduino sends the information to the Wi-Fi module ESP8266. ESP8266 will then the accompanying information to the IOT site, where, approved individuals can take fitting measure so as to check the fire. The gadget id is the one-of-a-kind id given to a gadget, which would enable the work force to get data identified with the area, where the fire is detected

Methodology:
Iot must be self-contained for searchoperation, decision making based on the real-time data orcurrent condition (object detection), intelligent decision(software program) for the immediate surrounding environment or condition is to perform the task or mission.

Paper4:

Fire detection and alarm system

Publication year: 2019

Author name: Trung Luong

Journal name: HAMK Journal of Electrical and Automation Engineering

Summary:
The central target of this project was to study, analyse and design a fire detection and alarm system. This topic was suitable because it covered a basic and important aspect in our modern life. The objectives of the project were to provide information on fire alarm system in Vietnam and Finland, to show the similarities and differences with systems in both countries. For practical part, Arduino Uno was used as the control unit with other necessary components. Upon completing this project, the author has demonstrated how a fire detection and alarm system works and analysed the system standards in the above-mentioned countries.Moreover,the fire alarm system using the Aurdino Uno was tested and found to work successfully.

Methodology:
The project consist of smoke sensor ,flame sensor, LED and Buzzer, Arduino Uno as its primary components. The fire can be detected by the flame sensor and the smoke sensor also detect fires by sensing small particles in the air.

Paper5:

Fire Detection and Intimation System

Publication year: 2010/2011

Author name: Wambura Makongo

Journal name: DAR ES SALAAM INSTITUTE OF TECHNOLOGY

Summary:
This report designing and implementing Fire detection and intimation system for Dar es salaam Institute of Technology hostel. The institute hostel use Fire extinguishers in hostel but these extinguishers are not totally working. in case of fire outbreak, the Institute has no any system for fire detection which can detect smoke before it outbreak. Also all workshops, laboratories, offices, classes and Library fire detection systems. Thus, by designing a Fire detection an Intimation system which detects smoke in case of fire outbreak in the hostel will encourage or be a starting point for the Institute.

Methodology:
This project is being done under prototyping-based methodology. In this prototyping –based methodology, the analysis, design, and implementation phases are performed concurrently and all these three phases are performs repeatedly until the system is completed.