NAALAIYA THIRAN

INDUSTRY - SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM

VIJAYARAJ D
YOGESH BALAJI G
VIGNESH V M
VIGNESH M S

Dr.S.R.MALATHI

DOMAIN

- Internet of Things (IoT)

OBJECTIVE

The aim of this project is to create a smart fire management system that includes a gas sensor, a flame sensor, and temperature sensors to detect environmental changes. The exhaust fans are activated based on the temperature readings and the presence of any gases. If a flame is detected, the sprinklers will activate automatically. Authorities and the Fire Station are notified of any emergency alerts.

LITERATURE SURVEY

- Book based on our project

  Introduction to Fire Alarm System by *NIYAJ B*

- Research papers based on our project

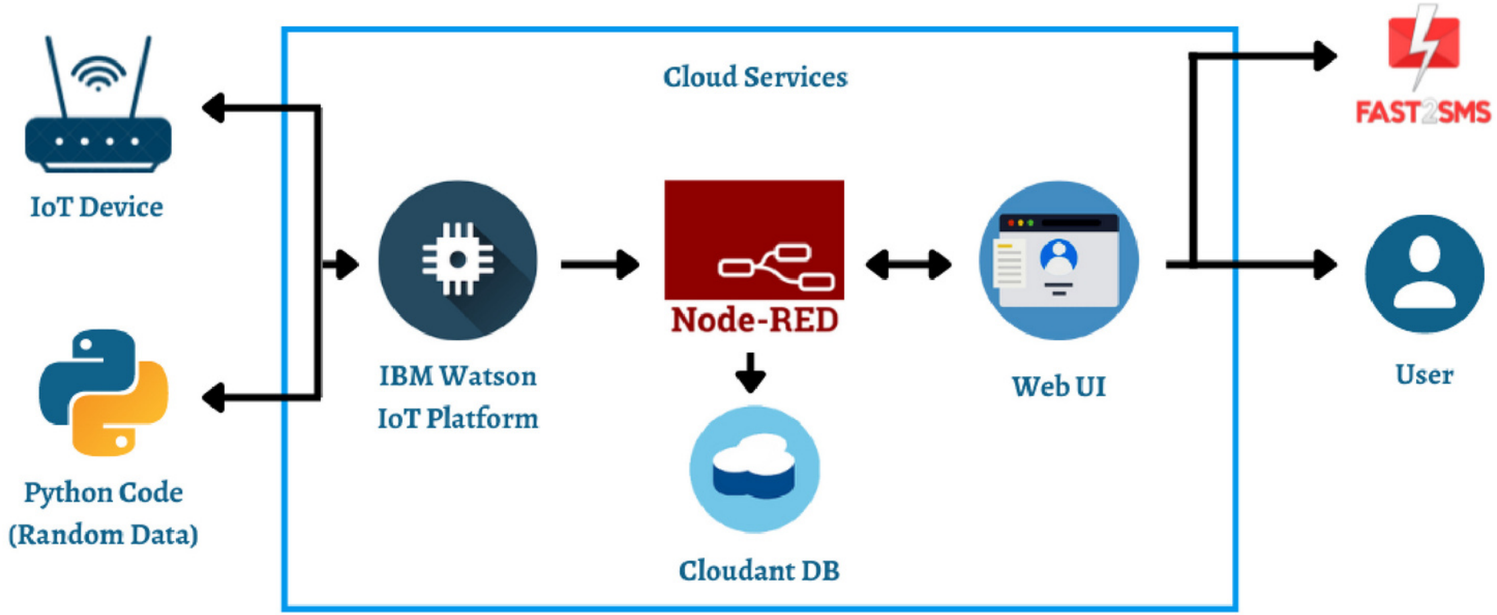
  https://www.researchgate.net/publication/280620907_Developed_Intelligent_Fire_alarm_system

  https://www.researchgate.net/publication/333538169_Intelligent_fire_detection_and_alert_system_using_labVIEW

- Existing analysis based on our project

  https://www.nbmcw.com/article-report/others/intelligent-fire-alarm-systems-for-new-age-smart-buildings.html

PROPOSED SOLUTION



Software Required:

Python IDLE

Solution:

- The smart fire management system includes a Gas sensor, Flame sensor and temperature sensors to detect any changes in the environment.
- Based on the temperature readings and if any Gases are present the exhaust fans are powered ON.
- If any flame is detected the sprinklers will be switched on automatically.
- Emergency alerts are notified to the authorities and Fire station.

MONTH 1

For the first month, we are planning to complete the Interfacing of Flame Sensor, Exhaust fan and automatic Sprinkler with Raspberry pi.

MONTH 2

The second month is all about interfacing the hardware with NodeRed and cloud Storage.

MONTH 3

In the third month, we are planning to develop the web dashboard and Mobile Application for our project.

REFERENCES

- Ananthram Swami, Qing Zhao, and Yao-WinHong, "Wireless Sensor Networks, Signal Processing and Communications Perspectives," Copyright© 2007 John Wiley & Sons Ltd, the Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, England.

- Z. Liu, J. Makar and A. K. Kim, "Development of Fire Detection Systems in the Intelligent Building," 12th International Conference on Automatic Fire Detection, Gaithersburg, MD., 2001, pp. 561-573, www.nrc.ca/irc/ircpubs, Institute for Research in Construction, National Research Council of Canada, Ottawa, Canada

- Jeffrey S. Tubbs, "Intelligent Fire Alarm Systems," Fire Protection Engineering Journal by the Society of Fire Protection Engineer (SFPE), ISSN 1524 – 500X, Issue No. 11, September 2011, OH, USA.

- Raúl Costa, Nuno Cachulo, and Paulo Cortez, "An Intelligent Alarm Management System for Large-Scale Telecommunication companies," Proceeding EPIA '09 Proceedings of the 14th Portuguese Conference on Artificial Intelligence: Progress in Artificial ntelligence Springer- erlag Berlin, Heidelberg©2009.

THANK YOU