

Smoke Detection System

By
TYIT_11_Burhanuddin Dilshad
TYIT_13_Brijesh Gami
TYIT_16_Viraj Gholap

Guided by :
Prof. Uday Rote



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



Introduction

- A smoke alarm is critical for the early detection of a fire in your home and could mean the difference between life and death.
- Fires can occur in a variety of ways and in any room of your home. But no matter where or how, having a smoke alarm is the first key step toward your family's safety.



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



Problem Statement

The main aim of the project is to study the working principle of smoke detection system and to design and construct of the smoke detection system and using Arduino and help in avoiding accident by alerting the user.



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



How does it work ?

- A smoke detection system is number of devices working together to detect and warn people through audio appliances when smoke detected..
- When threshold voltage remain at minimum level that time green light still on.
- When the smoke reaches certain level, it will make sound a buzzer and a red LED will turn on.



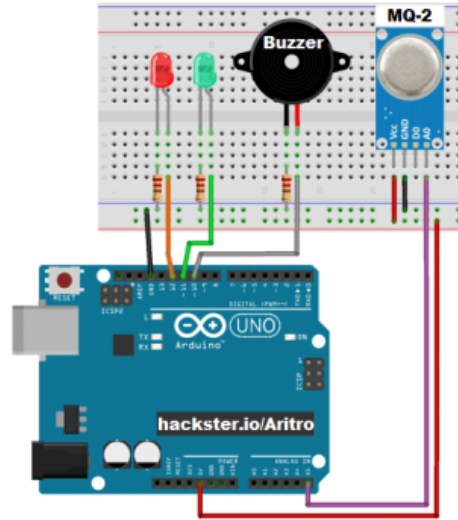
SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



Implementation

Circuit diagram for Smoke Detection :



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



Components

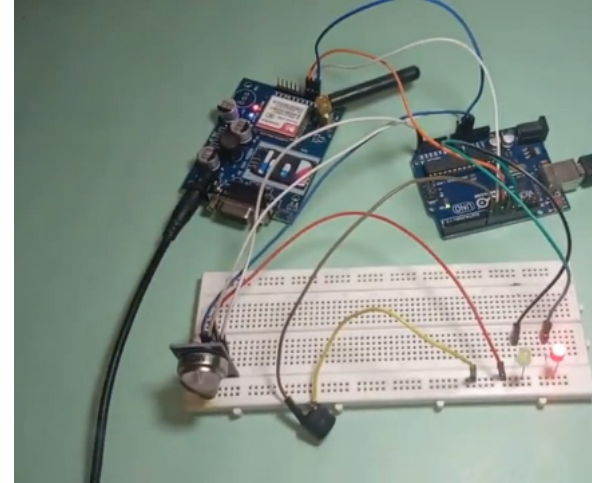
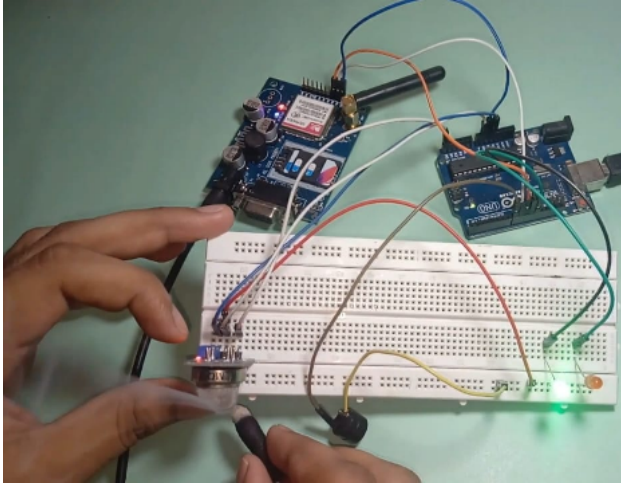


SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



Implementation Photo



**SOMAIYA
VIDYAVIHAR**

K J Somaiya Institute of Engineering & Information Technology



Conclusion

This system can be of great in domestic as well as industrial settings to detect smoke and alert people on an impending fire since smoke is a precursor for fire, instead of relying on heat/temperature sensors which sounds alarm when the fire has already started. This can go a long way in helping to save human life.



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



Future Scope

Motion sensor cameras can also be installed which will detect any motion in the house plus record the video at that moment and house owner can see live video on his phone. It can also capture the images of the affected area in order to guide the fire brigades. This will help the authorities to know about the severity of the fire and hence they can prepare the help according to that.



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



References

- [1] "Smoke Alarms in U.S. Home Fires". nfpa.org. September 2015. Archived from the original on 2017-07-29. Retrieved 2017-07-28.
- [2] "Smoke Alarm Myths Explained". The World Fire Safety Foundation. Archived from the original on 2014-10-06. Retrieved 2014-09-03.
- [3] Residential Smoke Alarm Performance, Thomas Cleary, Building and Fire Research Laboratory, National Institute of Standards and Technology, UL Smoke and Fire Dynamics Seminar. November, 2007.
- [4] "SMOKE ALARM SAFETY TIPS". Safety Information. National Fire Protection Association. Archived from the original on 2009-08-21. Retrieved 2009-05-17.
- [5] "Smoke Alarms". Hansard - Mr Christopher Gulaptis MP, Private Member's Statements, New South Wales Parliamentary Debates, Legislative Assembly New South Wales, Australia 20 June 2013, pp.22218. Archived from the original on 29 October 2013. Retrieved 2013-06-26 .



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology



Thank You



SOMAIYA
VIDYAVIHAR

K J Somaiya Institute of Engineering & Information Technology

