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Industrial Plant Security System

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ABSTRACT

The industry protection system using Arduino is a system designed to protect industries from losses due to accidents using Internet of things. Gas leakages may lead to fires leading to huge industrial losses, also instant fire detection is needed in case of furnace blasts or other conditions. Also low lighting in industries may create improper work conditions increasing the probability of accidents. The system makes use of Arduino to achieve this functionality.

The system makes use of light and gas sensing to detect fire, gas leakage as well as low lighting to avoid any industrial accidents and prevent losses. The system consists of light, gas and interfaced with Arduino and LCD screen. The sensor data is constantly scanned to record values and check for fire, gas leakage or low light and then this data is transmitted online.

Index Terms

1. Introduction

Now days due to reduction of man power and increase in need of security it is necessary to increase the bye any means. The solution of this problem is make an automatic system or specialized system for doing all or some of security purpose work. This tends the world towards automation. Automation means by making specialized machines such as robot, automatically handling system, and sensor based system and automatically security provide and to reduce human efforts in industry there is risk of fire so we use fire sensor. In any case fire occurs then siren and water pump gets turn on. We use gas sensor, It detects toxic gases and automatically turn on siren and fan. This system provides security and automation to the plant. We use fire sensor, gas sensor, ultra sonic sensor. All this process is done automatically with the help of arduino.

2. Problem Statement

In industries there will be so many problem creates when we are in working condition like some time gas leakages. Another situation as like fire occurs. .Therefore in such critical situation can handle to avoid such accidents we use detecting sensors to monitor several parameters in industry which alerts before accidents

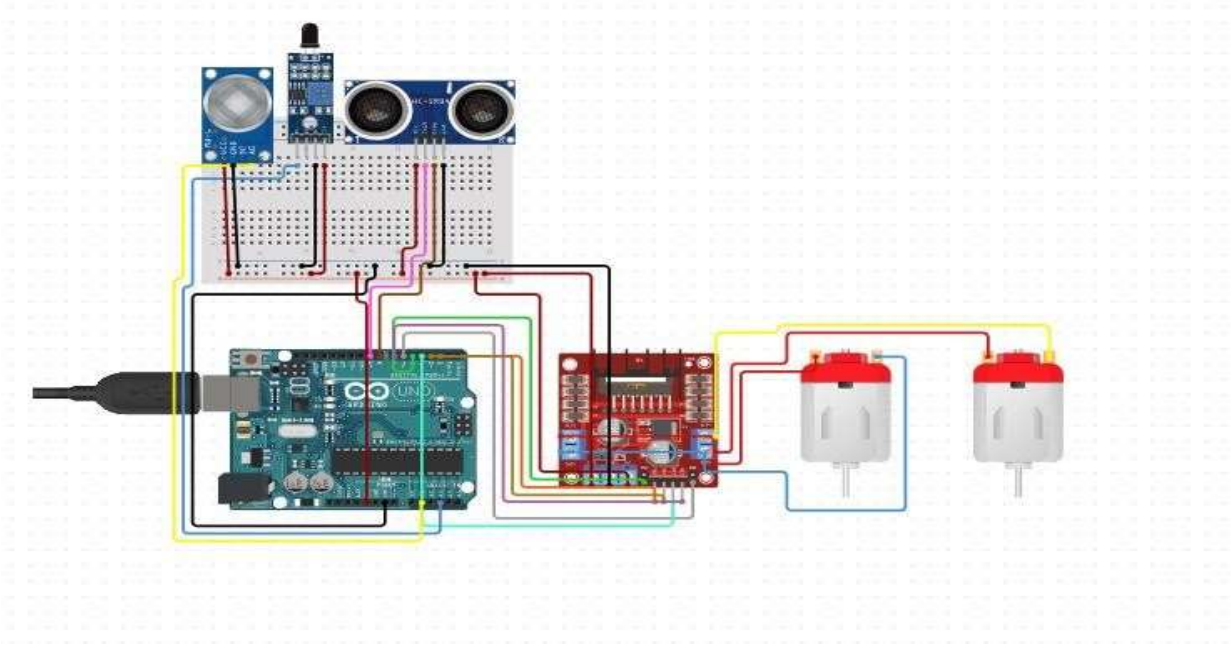
3. Objectives

1. The first goal of many industrial manufacturing facilities is safety.
2. Security of machinery and many moving parts.
3. Employee safety is a priority.

4. List of Components

Sr.no	Component	Quantity
1	Ardunioo Uno	1
2	MQ-6 GasSensor	1
3	Flame Sensor	1
4	Ultrasonic Sensor	1
5	Motor Driver	1

5. Design



6. Working

- We use IR sensor as a fire sensor in fire occurs red LED, BUZZER, WATER PUMP, MOTOR gets turns on and display messege fire fire fire…
- We use LPG MQ6 as a gas sensor if occurs yellow LED BUZZER, FAN MOTOR gets turns on and display message gas leack…
- We use Ultrsonic sensor as object detecting sensor if object is detect buzzer get turn on.

7. Advantages and Applications

Advantages: -

1.Protect employees.

Now days we spend lots of money on industrial security products to better protect themselves, These investments offer improved safety, as well as peace of mind. However, although we spend a majority of our waking hours working in an office, retail store, restaurant, or other business environment, business owners often fail to provide the same level of security and protection for employees. In today's blogpost. we look at the important of making employees fell safe at work, and why a few simple investment in employee safety can offer big dividends for business owners.

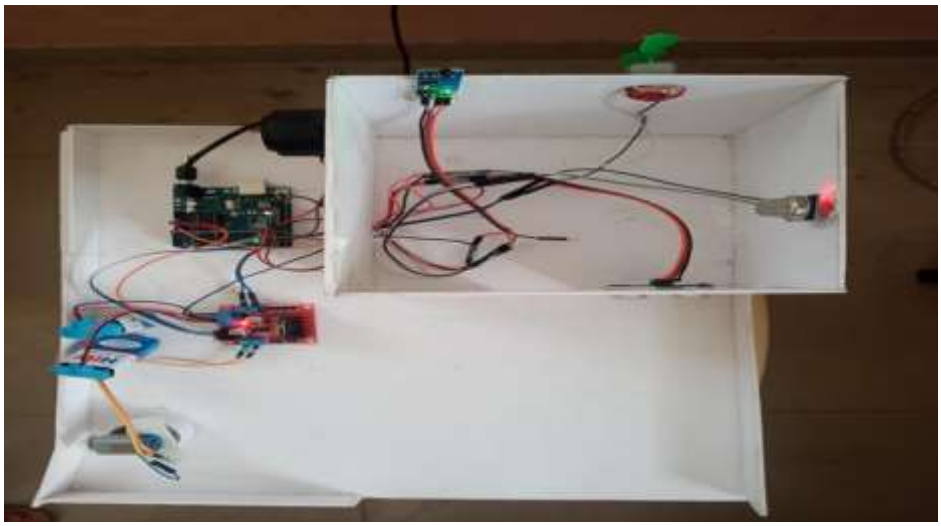
2.Improves the customer Experience.

For physical businesses, it is essential to keep your business premises in order and protect it from thieves and other unwanted intruders. This is not just to protect your business, but to help you survey our customers better without hassles or disruptions. In fact, advances in security systems have made even remote monitoring of your business premises possible

Applications: -

1. 1.Petrol pump
2. 2.Industry
3. 3.Company
4. 4.Mines

8. Result and Conclusion



9. Conclusion

A fire and gas hazard control has been designed, implemented and found working. This system has solved the problem caused by gas leakage in our surrounding which lead to fire outbreak that has caused the death of its victims. This system has been designed to carry out the detection and notify the presence of a Liquefied Petroleum Gas (LPG) in our surroundings. It also detect and notify the presence of fire in the environment then fight the fire outbreak itself using fire extinguisher and the water sprinkling system. The construction was made such that maintenance and repairs are done easily incase the system breaks down or if a fault occurs.This system can be applied in residential places, offices and hotels. With this system safety is assured.

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