



MODY
UNIVERSITY
OF SCIENCE AND TECHNOLOGY

LAKSHMANGARH • RAJASTHAN

A Leading Women's University

DOMESTIC POLLUTION CONTROL SYSTEM

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Introduction

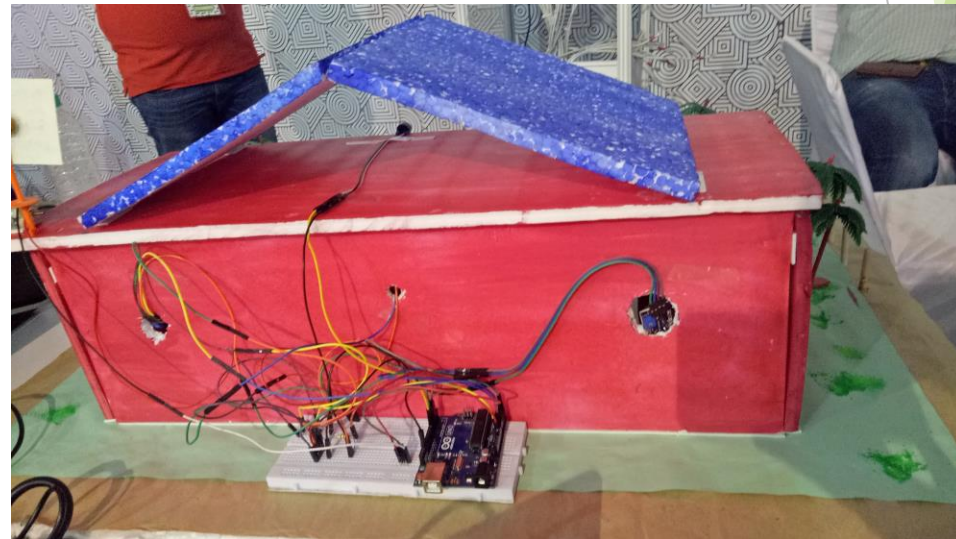
- ▶ What is pollution??

Pollution can be defined as anything and everything that harms our body and our environment.

- ▶ In this project we have focused on Domestic Pollution which comes under the topic of Indoor Pollution. LPG gas leakage, CO released by Gas Geysers, Other harmful gases like butane, propane etc are also causing deaths at home.
- ▶ The Light Intensity if not properly adjusted causes harm to human eyes.
- ▶ Social Media Pollution is also going to be the most hazardous pollution type in near future.

Type of project

- This is a prototype project. We have made a prototype of a sensor system that will be able to detect the poisonous gases and at the same time alert people about the miss happening that can be caused.



What is the problem?

- ▶ Originator: We are primarily focusing on Domestic Pollution. Domestic pollution is caused by various harmful gases being released by various devices as well as social media pollution and damage to eyes through too high and too low light intensity also comes under domestic pollution.
- ▶ As we all say "There are no roses without thorns" same way this domestic pollution started with the origination of LPG gas cylinders, Gas Geysers, Internet, Mobile Phones, Laptops, Desktops, etc.
- ▶ People are dying because of these gases being released by devices present at their houses.
- ▶ Social Media Pollution has not yet been recognized by the people that how much it is affecting us. Using social media has become one's undeniable addiction. It is psychologically affecting their lifestyles(Cyber Bullying) etc.
- ▶ Using laptops, mobile phones, watching television in too high or too low light intensity can cause complete blindness.

Evidence

- ▶ Woman, 2 Daughters Charred To Death While Cooking In Delhi's Jahangirpuri.

-NDTV

- ▶ LPG explosion leaves four of a family critical in Bengaluru.

-Indian Express

- ▶ 13 injured in LPG cylinder explosion in Delhi.

-NDTV

- ▶ BANGALORE: November 8, 2004: 35-year-old nurse; place: Mico Layout; found dead in bathroom, April 7, 2005: 13-year-old boy; JP Nagar; found dead in bathroom, May 29, 2005: 19-year-old engineering student; Byatrayanapura; found dead in bathroom.

-Times Of India

- ▶ SURAT: An 18-year-old girl died of suffocation caused reportedly by the gas geyser in the bathroom of her house

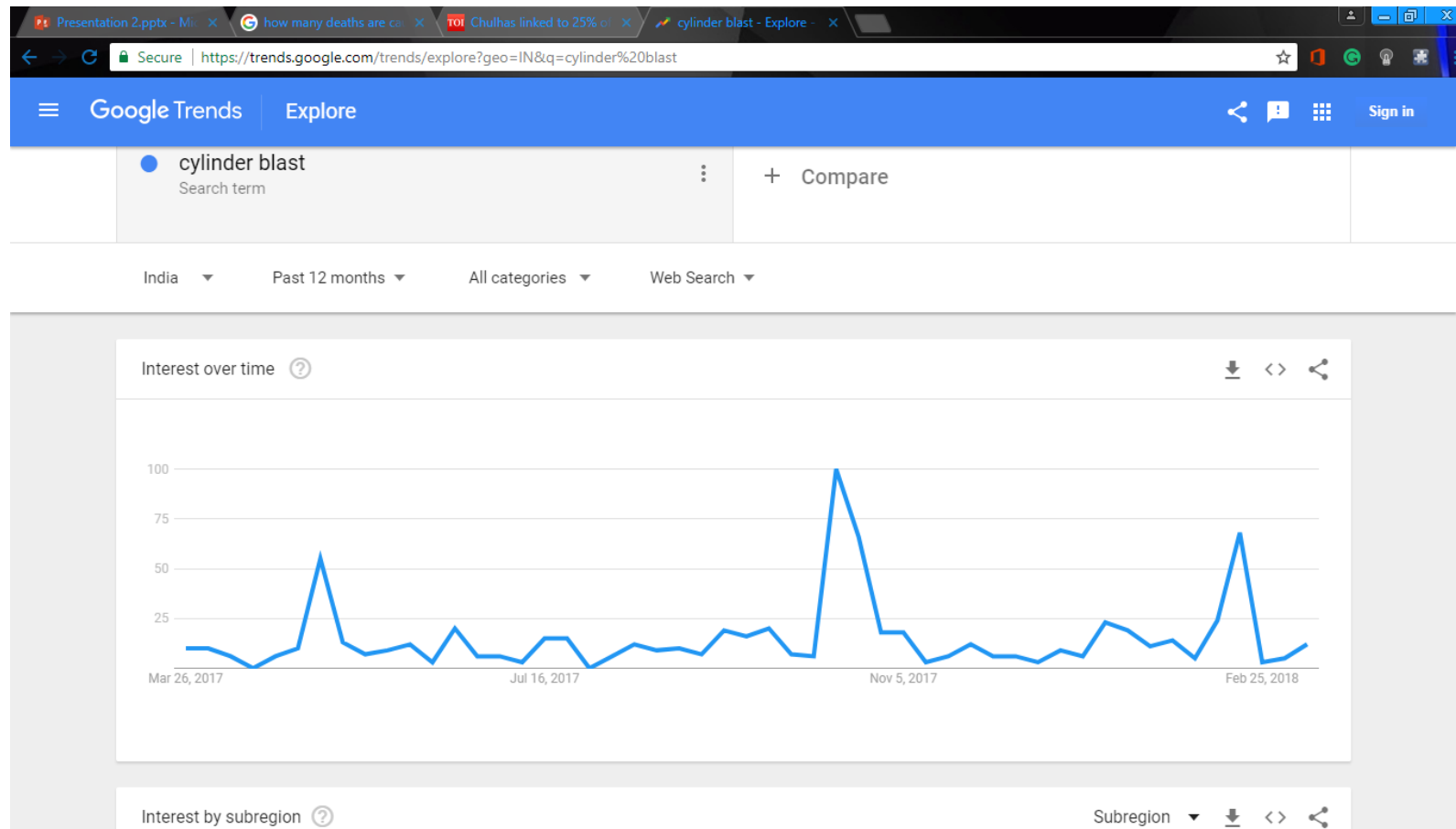
-Times Of India

- ▶ Ghaziabad: Couple found dead in their bathroom of their Indirapuram flat, autopsy report inconclusive and quite relating to

-The Hindu

Statistics

Deaths due to LPG cylinder blast



Affected Community

- ▶ Each and every household is affected by Domestic Pollution today!!

How long we have been working on this idea and why?

- ▶ We have been working on this idea since past one year. We have already talked to our university management and two other institutes to support our startup idea.
- ▶ What motivated us to start working on this project was the aversion of the rise in the number of deaths happening due to the leakage of harmful gases.
- ▶ People are dying every now and then because of LPG gas leakage, gases released by Gas Geyser, Cylinder blasts etc.
- ▶ Social media also has devastating effects on today's youth where it's banal use has caused mental inability, alienation from the reality etc.

Reasons



Gas Geysers being used in bathrooms releases Carbon Monoxide and other harmful gases that can cause dizziness, nausea and even death.



Leakage of LPG gas from cylinders causes suffocation and may even lead to blast of the cylinder taking lives.



Intensity of light plays a vital role in the quality of our eyes and eyesight. Too low or too high, both are injurious to our eyes. Prolonged hours of working on laptops, watching television



Social Media Pollution is also of a big concern now. People are becoming addicted to this term named "SOCIAL MEDIA". Usage of social media for prolonged hours can generate arrogant attitude, irritability in humans. Too much usage of social media is affecting the mentality of humans psychologically thereby reducing their efficiency.

Social Media is driving us away from the reality. Because of this social media a "Pretentious" type of attitude is being developed in the youth.



The Idea

- ▶ The idea behind our work is to design a microcontroller based domestic pollution detecting and alerting system.
- ▶ This project detects the presence of hazardous gases like LPG, CO, Butane and Propane that are causing domestic pollution.
- ▶ If these gases exceed the normal level then an alarm goes off immediately and also send an alert message (SMS) to the authorized person. As many times when we are in rush we forget to turn off the nob of the stove hence leading to cylinder blasts etc.
- ▶ We use mobile phones, watch television at various light intensities and we don't know which range of intensity is safe and which is harmful for our eyes. This problem can be solved by our project we are using Light intensity sensor also to moderate the usage of screens at night. As soon as the sensor detects that the intensity is too high or too low for our eyes as per the level set by us.

Continued..

- ▶ Social Media Pollution is going to be one of the most hazardous pollution type in near future as today's youth is completely dependent upon social media, it is adversely affecting the lifestyle of our youth. Each country is solely dependent on their youth and if it is only not that efficient then the development of the country will turn stagnant. We can help our country by making the youth aware about its consequences and side effects. We have created a web browser that will alert the person using any kind of social media for more than the specified hours. Our web browser will start an audio message if the person continuously keep using any website.

Details of project

- ▶ **Concept:** Our concept is based on Domestic Pollution. According to us pollution should not be only connected with air, soil, water, noise pollution rather anything and everything that causes harmful affects to human body as well as environment is known as pollution. Here in this project we have worked on detecting, alerting and curbing Domestic Pollution. Our's is a sensor and arduino based system to detect harmful gases indoors, combined with light intensity detection as well as Social-Media pollution alert web browser.
- ▶ **Method:** We are using MQ6 and MQ7 sensors to detect different levels of Butane(LPG) gas and Carbon Monoxide gas respectively. The values fetched by the sensors are passed as input parameters to the JAVA program via Arduino. The computing algorithms coded in JAVA continuously monitors the values received from the arduino and checks whether it is above the set limit. If it exceeds the limit then an alert message will be sent to the authorized people. This message sending is done by a message server which can easily send bulk messages at a very low price. We have also created a web browser for social media pollution control is based on JAVA language, JAVAFX.

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- ▶ Feasibility: Our one unit is costing around 900 INR.
- ▶ Challenges: Our biggest challenge is creating awareness among people.
Making our device more cheaper.
- ▶ Socio economic impact: This automated system can minimize deaths and also create awareness among youth regarding Social Media Pollution.

S.W.O.T. analysis

- ▶ Strength:
 - ▶ Highly computational in comparison to the products present in the market.
 - ▶ Centralised server using cloud.
- ▶ Weakness:
 - ▶ Internet is our backbone.
- ▶ Opportunities:
 - ▶ It is a good startup project for us and if it will be working fine in Indian market we can also extend it in other asian countries.
- ▶ Threats:
 - ▶ Our project is multidisciplinary because it includes fields like environmental science and medical sciences.

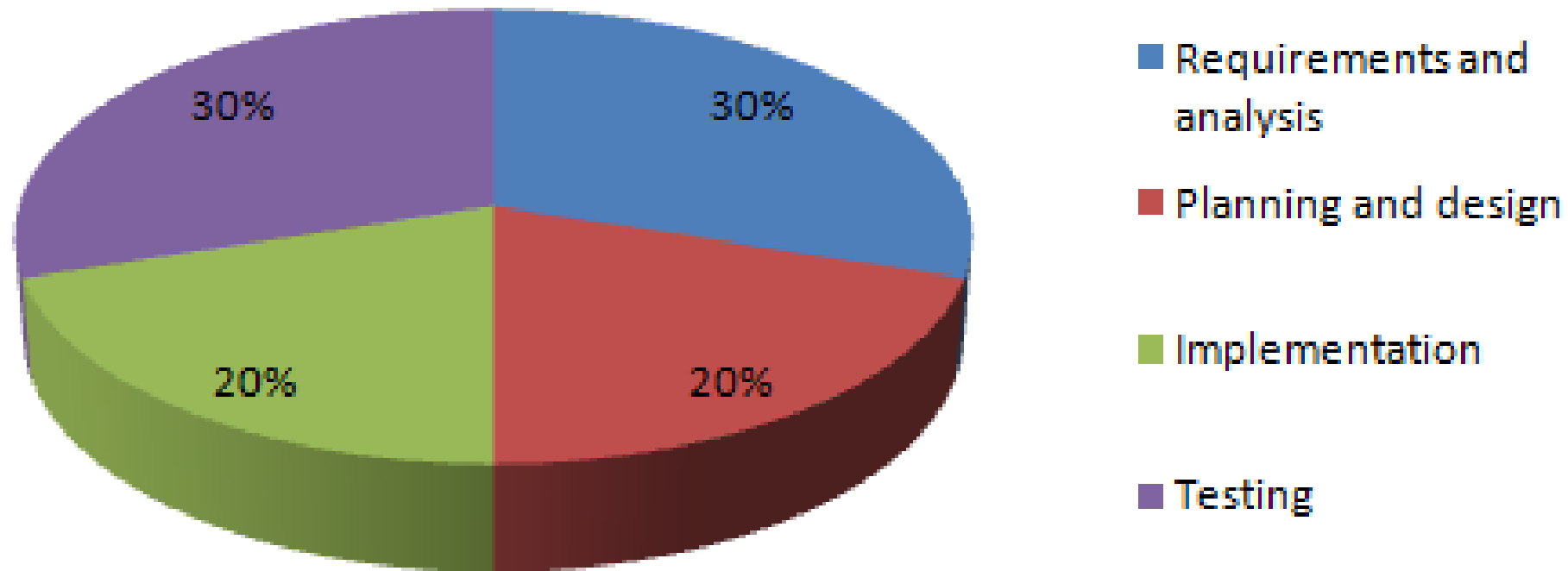
Probable Outcomes

- ▶ Citizens will be protected by harmful gases in their presence as well as in their absence.
- ▶ Our sensor system has been created by integrating arduino with JAVA and our sensor system consists of various sensors, we can customize our product according

Problem Statement

- ▶ Our project focuses on alerting the people about the disaster that may take place in their presence as well as absence from their home by the leakage of certain poisonous gases.
- ▶ The tender also gives a glimpse of how to alert people about Social media pollution.
- ▶ It also senses the intensity of light and alert people when it's augmentation has reached to a level that is injurious for our health.

Time



Marketing Strategy

- ▶ Our marketing strategy would be based on firstly creating awareness among urban and rural areas.
- ▶ Awareness campaigns could be set up.
- ▶ Street plays can be done depicting deaths of people due to cylinder blasts,

Advantages

- ▶ The advantage of this automated detection and alerting system over the manual method is that it offers quick response time and accurate detection of an emergency and in turn leading faster diffusion of the critical situation.

Future Aspects

- ▶ Future accomplishments for this project can be accomplished by adding new sensors such as signal strength and radiation sensor which can detect the most safe place to stay. Using advance level machine learning algorithms to have a better understanding of the environments to have enhanced parameters.

Thank you