Ideation Phase
Brainstorm & Idea Prioritization

Date	17 September 2022
Team ID	PNT2022TMID47460
Project Name	Industry-specific intelligent fire management system
Maximum Marks	4 Marks

Step:- 1

Template

Brainstorm & idea prioritization

Industry-specific intelligent fire management system

10 minutes to prepare
1 hour to collaborate

Athira V R
Arunraj G
Indhumathi K
Hariharan S

Step :- 2

1

Define your problem statement

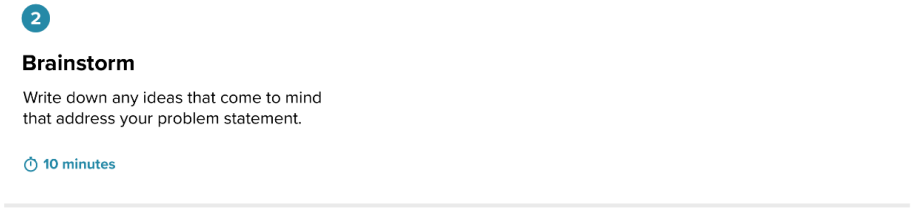
This is a textbox...

5 minutes

Background: Fire is the rapid oxidation of a material in the exothermic chemical process of combustion, releasing heat, light and various reaction products. Although it's a natural process, it can lead to great destruction. On average, everyday 35 people killed due to Fire-related accidents in the five years between 2016 and 2020, according to a report by Accidental Deaths and Suicides in India (ADSI), maintained by the National Crime Records Bureau. Fire is one of the major concerns when analyzing the potential risks on the building. Industrial Fires and Explosions cost companies and governments billions of Rupees every year apart from the loss of life, which can't be described in monetary terms. These Fires not only results only in huge loss of Lives and Property but also disrupt production in the Industry. The Nilflisk says that the five major causes of industrial fires and explosions are Combustible dust, hot works, Flammable liquids and gases, equipment and machinery and Electrical hazards.

Objective: For an industry develop an Industry-Specific Intelligent Fire Management System
* That can detect any changes in environment like detecting hazardous gas, flame detection and temperature that can lead to fire and exploitation incident.
* Based on the temperature readings and if any Gases are present the exhaust fans should be powered ON automatically to replaces contaminated and stale air with fresh, healthy air.
* If any flame is detected the sprinklers will be switched on automatically.
* Emergency alerts are notified to the authorities and Fire station. So that the authorities and Fire Fighters can control the situation.

Step :- 3



ARUN RAJ G

System to detect the place of fire.

To send the alert to the fire station in case of large fire burst

Early detection of building fire.

Easy to use the system.

To display the output from each sensor

Record keeping should be done.

Control actions should be taken automatically

Early warning is given to evaculate the workers.

INDHUMATHI K

User-friendly software application

Once fire occurred, the information center should promptly pushes the escape route to the worker's mobile phone and issued the alarm on the mobile phone.

MQ-7 sensor can detect CO anywhere from 20 to 2000 ppm.

The system automatically finds the best escape route to workers.

HARIHARAN S

Early fire detection by analyzing visual smoke characteristics such as color, dynamic texture, gray tones, etc. The system was tested using standard videos containing smoke.

ANFIS technology is used to design a fire detection control system and reduce false alarms

DHT22 is used which gives us two important measurements required for a smart fire monitoring system.

The MQ-7 Gas Sensor is used for the proposed system which is sensitive to carbon monoxide.

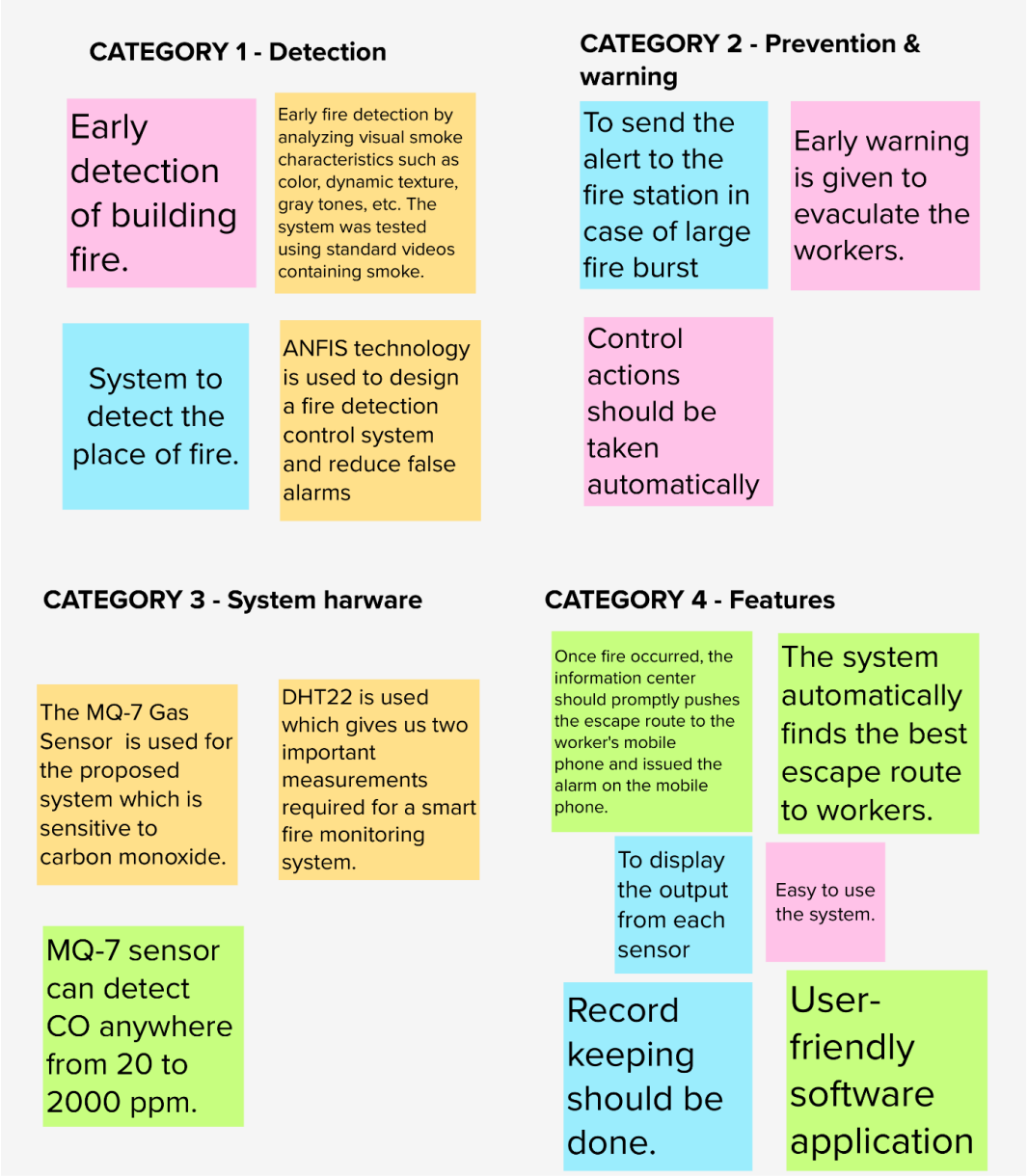
Step :- 4

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes



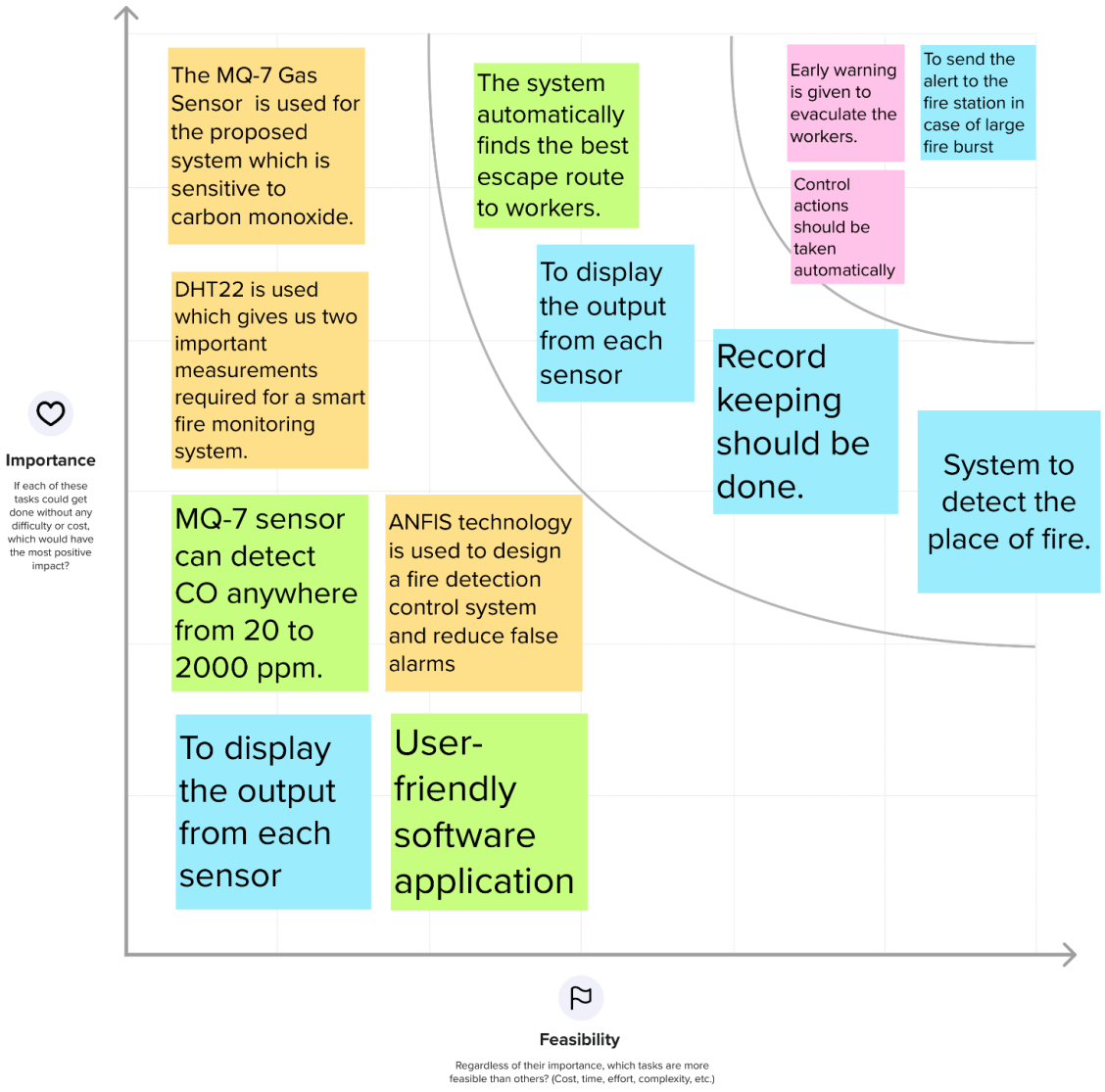
Step :- 5

4

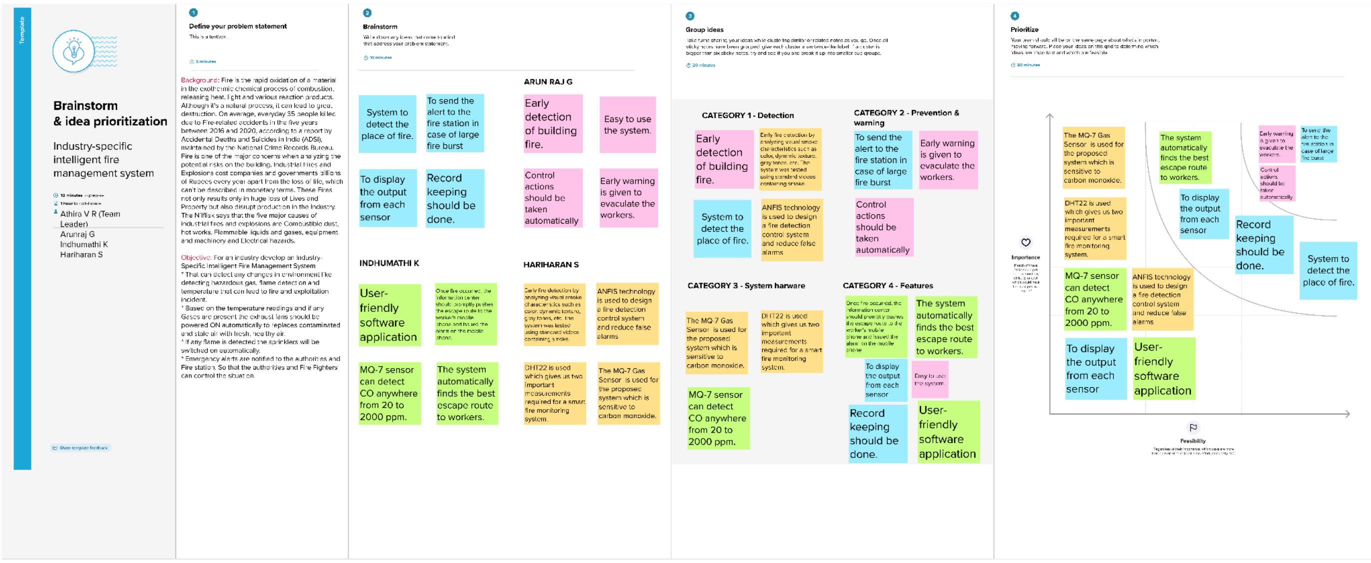
Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes



Complete Brain stroming map



Template
Brainstorm
& idea prioritization
Industry-specific intelligent fire management system
10 minutes to prepare
1 hour to collaborate
Athira V R (Team Leader)
Arunraj G
Indhumathi K
Hariharan S
Share template feedback
1
Define your problem statement
This is a textbox.
5 minutes
Background: Fire is the rapid oxidation of a material in the exothermic chemical process of combustion, releasing heat, light and various reaction products. Although it's a natural process, it can lead to great destruction. On average, everyday 35 people killed due to Fire-related accidents in the five years between 2016 and 2020, according to a report by Accidental Deaths and Suicides in India (ADSI), maintained by the National Crime Records Bureau. Fire is one of the major concerns when analyzing the potential risks on the building. Industrial Fires and Explosions cost companies and governments billions of Rupees every year apart from the loss of life, which can't be described in monetary terms. These Fires not only results only in huge loss of Lives and Property but also disrupt production in the Industry. The Nilfisk says that the five major causes of Industrial fires and explosions are Combustible dust, hot works, Flammable liquids and gases, equipment and machinery and Electrical hazards.
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* If any flame is detected the sprinklers will be switched on automatically.
* Emergency alerts are notified to the authorities and Fire station. So that the authorities and Fire Fighters can control the situation.
2
Brainstorm
Write down any ideas that come to mind that address your problem statement.
10 minutes
System to detect the place of fire.
To send the alert to the fire station in case of large fire burst
To display the output from each sensor
Record keeping should be done.
ARUN RAJ G
Early detection of building fire.
Easy to use the system.
Control actions should be taken automatically
Early warning is given to evaculate the workers.
INDHUMATHI K
User-friendly software application
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HARIHARAN S
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DHT22 is used which gives us two important measurements required for a smart fire monitoring system.
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20 minutes
CATEGORY 1 - Detection
Early detection of building fire.
Early fire detection by analyzing visual smoke characteristics such as color, dynamic texture, gray tones, etc. The system was tested using standard videos containing smoke.
System to detect the place of fire.
ANFIS technology is used to design a fire detection control system and reduce false alarms
CATEGORY 2 - Prevention & warning
To send the alert to the fire station in case of large fire burst
Early warning is given to evaculate the workers.
Control actions should be taken automatically
CATEGORY 3 - System harware
The MQ-7 Gas Sensor is used for the proposed system which is sensitive to carbon monoxide.
DHT22 is used which gives us two important measurements required for a smart fire monitoring system.
MQ-7 sensor can detect CO anywhere from 20 to 2000 ppm.
CATEGORY 4 - Features
Once fire occurred, the information center should promptly pushes the escape route to the worker's mobile phone and issued the alarm on the mobile phone
The system automatically finds the best escape route to workers.
To display the output from each sensor
Easy to use the system.
Record keeping should be done.
User-friendly software application
4
Prioritize
Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.
20 minutes
Importance
Feasibility
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DHT22 is used which gives us two important measurements required for a smart fire monitoring system.
MQ-7 sensor can detect CO anywhere from 20 to 2000 ppm.
ANFIS technology is used to design a fire detection control system and reduce false alarms
To display the output from each sensor
User-friendly software application
The system automatically finds the best escape route to workers.
To display the output from each sensor
Record keeping should be done.
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