

Ideation Phase

Brainstorm & Idea Prioritization

Date	15 September 2022
Team ID	PNT2022TMID17850
Project Name	Gas Leakage Monitoring & Alerting system for Industries
Maximum Marks	4 Marks


Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Step-1: Team Gathering, Collaboration and Select the Problem Statement

Template



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
 1 hour to collaborate
 2-8 people recommended

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Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

A Team gathering
 Decide who should participate in the session and send an invite. Share relevant information or prework ahead.

B Set the goal
 Think about the problem you'll be focusing on solving in the brainstorming session.

C Learn how to use the facilitation tools
 Use the Facilitation Superpowers to run a happy and productive session.

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1 Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

Problem

Gas leakage leads to various accidents resulting into both financial loss as well as human injuries in human's daily life. **Environment** gives the most significant impact to their health issues. The risk of fire, explosion, suffocation, all are based on their physical properties such as flammability, toxicity etc. The number of deaths due to the explosion of gas cylinders has been increasing in recent years. The reason for such neglect on is due to substandard cylinders, old vessels, worn out regulations and lack of awareness using gas cylinders add to risks. Inspections by oil companies found that many LPG consumers are unaware of safety checks of gas cylinders. In order to minimize or eliminate the hazard of gas leakage there is a need for a system to detect and alert on such incidences leading to the development of this project.

Key rules of brainstorming

To run a smooth and productive session:

Stay in topic.

Encourage wild ideas.

Defer judgment.

Listen to others.

Go for volume.

If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

Dhamodaran.S.M

Usage of MQ-2 Sensor

GSM Message

Turn off gas after detection

Deekshith.K

Ventilation System

Detects small gas leakage

Usage of Potentiometer

Ahalyaa.K

Usage of Arduino Board

Warning message in LCD

Buzzer Alert

Haribhabhu.C

Raspberry Pi

Infrared Detection

Safety precautionary

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 can break it up into smaller sub-groups.

🕒 20 minutes

IoT Development

Alerting system is essential

A safety system must be developed

High concentration of gases can affect humans

Step-3: Idea Prioritization

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

• Each of these tracks could get done without any difficulty or cost, which would have the most positive impact

Feasibility

Regardless of their importance, which tracks are more feasible than others? (Cost, time, effort, complexity, etc.)

Cost-Effective Installation

Highest Accuracy

Also can be used commercially and in home

Instant Results

Ensure workers safety

TIP

Participants can use their thumbs to point to where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the H key on the keypad.