

# Ideation Phase

## Brainstorm & Idea Prioritization Template

Date	23 September 2022
Team ID	PNT2022TMID23879
Project Name	Machine Learning-Based Predictive Analysis for Aircraft Engine
Maximum Marks	4 Marks


### Brainstorm & Idea Prioritization Template:

#### Reference:

<https://app.mural.co/invitation/mural/snscollegeofengineering7699/1663847822287?sender=u6cb99026d3116fe4a94c0742&key=83464249-1198-468b-bca1-aa2f712d4ce2>

### 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**

Define who should participate in the session and send an invite. Share relevant information or pre-work 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

Causes lot of time and cost more funds to take repair measures

PROBLEM

Causes threat to human life and danger to environment when not observed at correct time

PROBLEM

May lead to increase in customer complaints and affects the company's reputation

PROBLEM

Fuel contamination may occur due to engine malfunction which may leads to biodiversity damage

## Step-2: Brainstorm, Idea Listing and Grouping

2

### Brainstorm

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

10 minutes

TIP  
You can create sticky notes with the paper (or with a digital tool) to use for brainstorming.

#### NARMATHA D

By using the RTD sensor we can detect excess heat in advance

Elastic-net regression used to compare the values

We can use the random forest algorithm to make the prediction

Using DNN for the engine maintenance

#### SOWNDHARYA S

Using the Linear Regression we can make predictions in numerical values

Usage of light GBM classifier

CatBoost recognize the sound and pictures

To ensure the correct level of humidity using sensors

#### SRINIDI M

Usage of Ridge regression for finding true value

Ensemble method used to predict the best value

Using the probabilistic reasoning for the prediction

By using the Decision Tree algorithm we can make the precise prediction

#### VIDHYA N

We can use the Naive Bayes algorithm for the prediction

Lasso regression goal is to acquire a subset

We can use different algorithms for finding the efficient algorithms

Using PCA algorithms which can be used for feature extraction

3

### Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, 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

By using the RTD sensor we can detect excess heat in advance

Elastic-net regression used to compare the values

We can use the random forest algorithm to make the prediction

Using DNN for the engine maintenance

Usage of Ridge regression for finding true value

Ensemble method used to predict the best value

Using the probabilistic reasoning for the prediction

By using the Decision Tree algorithm we can make the yes/no prediction

Using the Linear Regression we can make predictions in numerical values

Usage of light GBM classifier

CatBoost recognize the sound and pictures

To ensure the correct level of humidity using sensors

We can use the Naive Bayes algorithm for the prediction

Lasso regression goal is to acquire a subset

We can use different algorithms for finding the efficient algorithms

Using PCA algorithms which can be used for feature extraction

## Step-3: Idea Prioritization

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### 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

