

## Ideation Phase

### Brainstorm & Idea Prioritization Template

Date	31 January 2025
Team ID	LTVIP2026TMIDS42870
Project Name	electric motor temperature prediction using machine learning
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.

Reference: <https://www.mural.co/templates/brainstorm-and-idea-prioritization>

#### 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

●

#### Before you collaborate

To identify, brainstorm, and prioritize the best approach for solving the electric motor overheating problem using Machine Learning.

⌚ 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

To identify, brainstorm, and prioritize the best approach for solving the electric motor overheating problem using Machine Learning.

C

#### Learn how to use the facilitation tools

Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) →

😊

YH

1

#### Define your problem statement

How might we predict electric motor temperature accurately using machine learning techniques to prevent overheating and reduce unexpected failures?

⌚ 5 minutes

PROBLEM

How might we predict electric motor temperature accurately using machine learning techniques to prevent overheating and reduce unexpected failures?

🧠

#### 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

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### Brainstorm

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

10 minutes

TIP

You can select a sticky note and hit the pencil button to quickly edit to start drawing.

Person 1

Use Linear

Regression

Use

Random

Forest

Try

XGBoost

Person 2

Try Neural

Networks

Collect

weather

sensor data

Auto

hyperparameter

Person 3

Derivates

Outliers

Create

connecting

word system

Build a

dashboard

Person 4

Compare

model

performance

Use cross

validation

Hyperparameter

tuning

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

TIP

Add customisable tags to sticky notes to make it easier to find, browse, organise and integrate important ideas and themes within your map.

After brainstorming, similar ideas were clustered.

Cluster A – Data Preparation

Data cleaning

Handling missing values

Outlier removal

Feature scaling

Feature selection

Cluster B – Model Development

Linear Regression

Random Forest

XGBoost

Neural Networks

Cluster C – Evaluation

MSE

RMSE

R<sup>2</sup> Score

Cross-validation

Hyperparameter tuning

Cluster D – Deployment

Dashboard visualization

Alert system

Web app deployment

Each cluster was labeled with a clear sentence-style theme as recommended in the template.



## Step-3: Idea Prioritization

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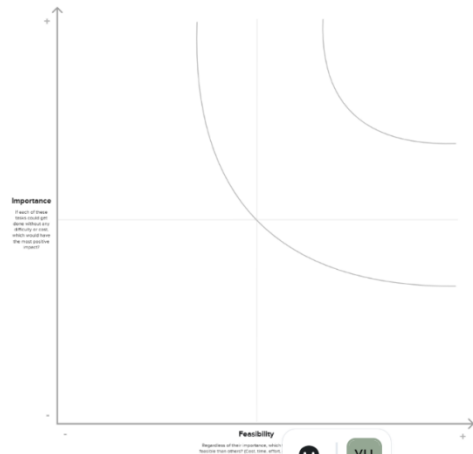
### Prioritize

Data preprocessing  
✓ Random Forest Regressor  
✓ Model comparison  
✓ Evaluation using MSE and R<sup>2</sup>  
✓ Basic visualization

20 minutes

TIP

Participants take out their markers to prioritise ideas using sticky notes on the grid. The facilitator can continue to add sticky notes to the grid during the session. It keeps on the screen.



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### After you collaborate

Develop and compare regression-based Machine Learning models (primarily Random Forest) to predict electric motor temperature using sensor data, with performance evaluation and visualization support.

#### Quick add-ons

- ☐ **Show the model**  
Show a new slide to the model with observations to keep them in the loop about the outcomes of the model.
- ☐ **Export the model**  
Export a copy of the model as a PMML or JSON file to attach to emails, include in reports, or save to your drive.

#### Keep moving forward

- Strategy blueprint**  
Define the components of a new idea or strategy.  
[Open the template](#)
- Customer experience journey map**  
Understand customer needs, emotions, and obstacles for an experience.  
[Open the template](#)
- Strengths, weaknesses, opportunities & threats**  
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.  
[Open the template](#)

