

Ideation Phase

Brainstorm & Idea Prioritization Template

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|---------------|-----------------------------------------------------------------|
| Date | 1 June 2025 |
| Team ID | LTVIP2025TMID32454 |
| Project Name | Clean Tech:Transforming Waste Management with Transfer 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

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

Invite:

- ML engineers
- Environmental scientists
- Waste management professionals

B

Get the user

To generate innovative, viable ideas for how **DeepTech's smart waste classification system** can be improved, scaled, or applied to new settings.

C

Learn how to use the facilitation tools

Familiarize yourself with:

- Transfer learning basics
- Environmental impact of smart waste tech
- Visual brainstorming tools (like Miro or MURAL)

[Open article](#) →


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

How might we use transfer learning to improve the accuracy and efficiency of waste classification in municipal systems?



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

TIP
You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!

Person 1

- Use IR thermal imaging for better detection
- Add anomaly detection for unknown waste types
- Train models on region-specific waste types

Person 2

- Gamify recycling via smart bins
- Create educational displays on bins
- Build a mobile app for household waste sorting

Person 3

- Send real-time data to city dashboards
- Use drones for outdoor waste monitoring
- Optimize routes based on bin fill levels

Person 4

- Send real-time data to city dashboards
- Gamify recycling via smart bins
- Add anomaly detection for unknown waste types

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 customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

1: Smart Sorting Technology

Focused on improvements to automated waste sorting systems using deep learning.

- Use transfer learning with multi-modal sensors (IR + RGB).
- Fine-tune the model with locally sourced waste images.
- Apply real-time object detection on conveyor belts.
- Implement continuous learning from incorrect classifications.

Cluster 2: Public Engagement & Behavior Change

Making the system interactive, educational, and user-friendly to encourage proper disposal.

- Add gamification to smart bins (e.g., points for correct sorting).
- Display classification results on a small bin screen.
- Use a mobile app to give recycling tips based on what's thrown.
- Send notifications if waste is repeatedly misclassified.

Step-3: Idea Prioritization

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

TIP

Participants can use their cursors to point at 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 keyboard.

