Ideation Phase  
Brainstorm & Idea Prioritization Template

Date: 27 June 2025

Team ID: LTVIP2025TMID45505

Project Name: CleanTech: 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

Our team identified the critical challenge in urban waste management: inefficient and manual waste segregation. After discussion, we selected the problem of building an AI-based system to classify waste images automatically into Biodegradable, Recyclable, or Trash categories.

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

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| --- | --- | --- |
| Idea No. | Proposed Idea | Group/Theme |
| 1 | Use VGG16 pre-trained model for faster, accurate training | Transfer Learning |
| 2 | Deploy the model using Flask for local testing | Web Deployment |
| 3 | Design a clean and simple HTML UI for image uploads | Frontend Design |
| 4 | Include support for real-time prediction | User Interaction |
| 5 | Optimize training with early stopping and dropout | Model Optimization |
| 6 | Use data augmentation to improve generalization | Data Handling |

## Step-3: Idea Prioritization

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| --- | --- | --- |
| Priority | Idea Description | Justification |
| High | Use VGG16 pre-trained model | Ensures accuracy with less data and training time |
| High | Deploy with Flask | Enables quick testing and demonstration |
| Medium | Add real-time prediction support | Enhances usability |
| Low | Add multi-user login system | Useful but not essential for core functionality |