Idea Prioritization Template

Date: 1 July 2025

Team ID: LTVIP2025TMID38158

Team Size: 5

Team Leader: Panguluri Naga Lohitha

Team member: Paladugu Mukunda Priya

Team member: Nagisetty Kalyani

Team member: Manda Sri Chakrapani

Team memer: Katragadda Tejaswini

Project Name: CleanTech: Transforming Waste Management with Transfer Learning

Maximum Marks: 4 Marks

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

Problem Statement:
Develop an AI-based tool to automate blood cell classification using transfer learning, improving diagnostic accuracy and reducing the burden on healthcare professionals.

Why This Problem?
Manual classification of blood cells is time-consuming, error-prone, and requires trained pathologists. Automating this with machine learning can improve accuracy and enable remote diagnostics.

Step-2: Brainstorm, Idea Listing and Grouping

Ideas Generated:

- Use VGG16 pre-trained CNN for transfer learning.
- Apply data augmentation for better generalization.
- Use Flask for a lightweight and deployable web interface.
- Enable real-time predictions from uploaded images.
- Build a GUI for use in medical colleges for training.
- Integrate the system with telemedicine portals.
- Deploy on cloud platforms for remote accessibility.

- Include interpretability features like Grad-CAM heatmaps.
- Add multilingual support for broader usability.
- Use the system for both diagnosis and medical training.

Grouping:

Technical Solutions: 1, 2, 4, 8

Application Integration: 3, 6, 7, 9

Educational Use: 5, 10

Step-3: Idea Prioritization

Idea No.	Idea Description	Impact	Feasibility	Priority
1	Use VGG16 for transfer learning	High	High	★★★★★
2	Data augmentation	High	High	★★★★★
3	Flask-based web application	High	High	★★★★★
4	Real-time prediction from images	High	Medium	★★★★☆
5	GUI for medical student training	Medium	High	★★★★☆
6	Telemedicine integration	High	Medium	★★★☆☆
7	Cloud deployment	High	Medium	★★★★☆
8	Add Grad-CAM or saliency maps for explainability	Medium	Medium	★★★☆☆

| 9 | Multilingual support | Medium | Low | ★★☆☆☆ |
| 10 | Dual-use for training and diagnosis | High | High | ★★★★★ |