Ideation Phase
Brainstorm & Idea Prioritization Template

Date	19 Feb 2026
Team ID	LTVIP2026TMIDS66121
Project Name	Hematovision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	4 Marks

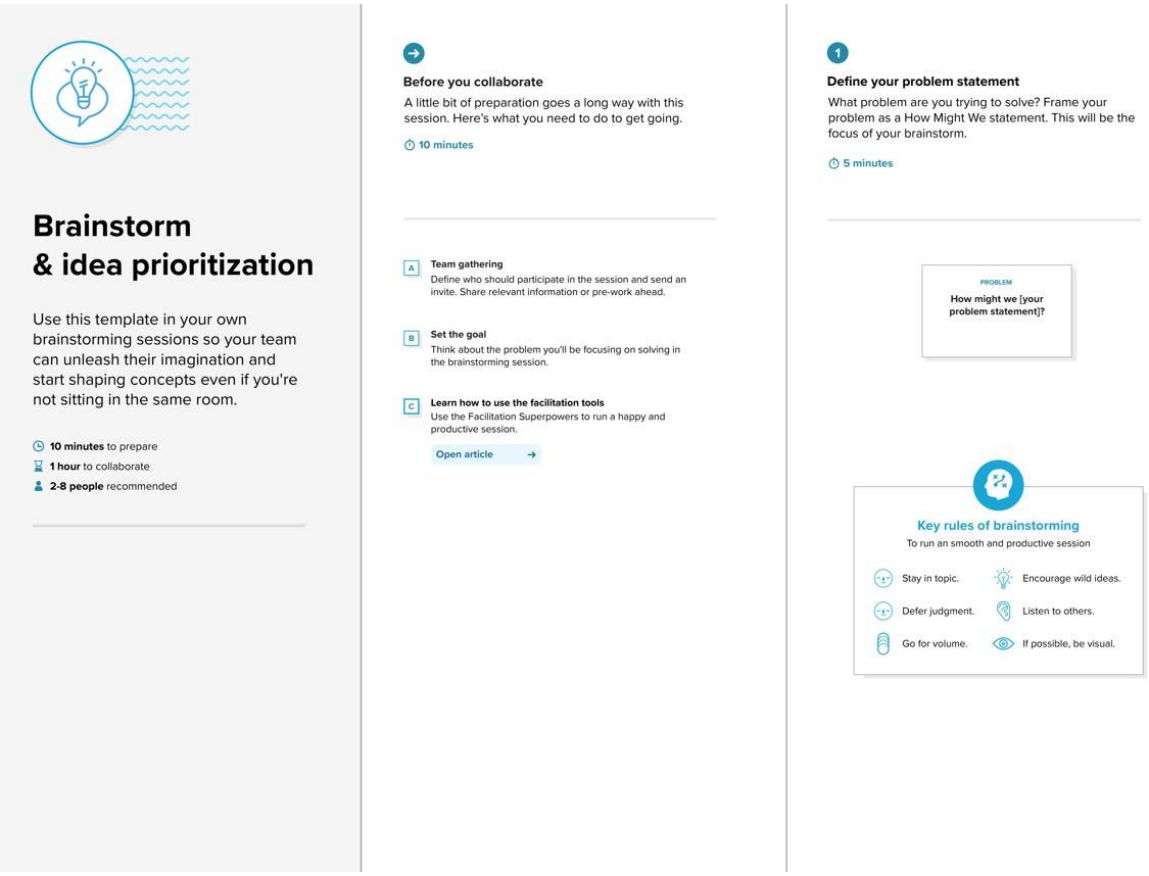
Brainstorm & Idea Prioritization Template:

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.

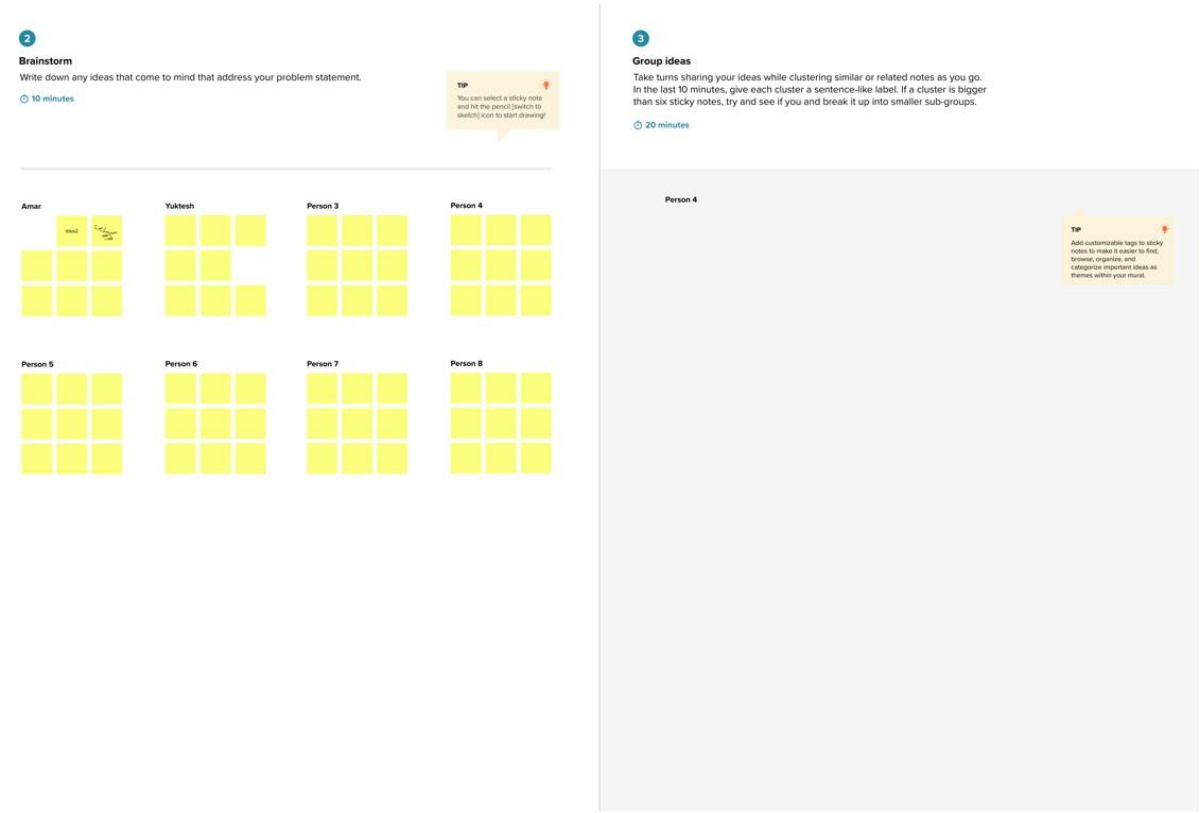
Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

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

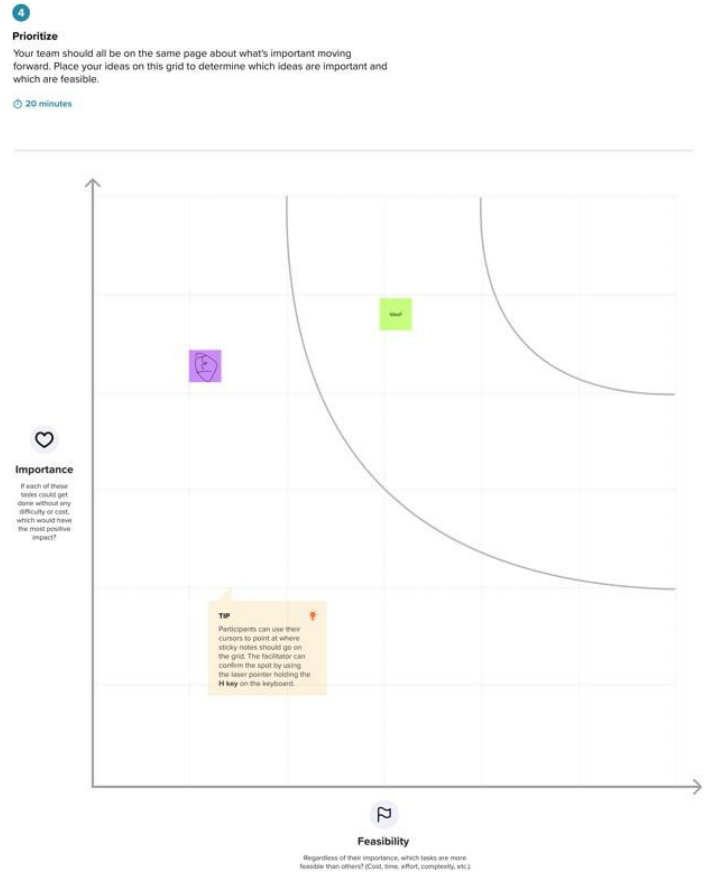
Step-1: Team Gathering, Collaboration and Select the Problem Statement



Step-2: Brainstorm, Idea Listing and Grouping



Step-3: Idea Prioritization



1. Introduction

This document outlines the brainstorming, idea generation, and prioritization process undertaken for the HematoVision project, an advanced blood cell classification system leveraging transfer learning. The aim was to identify key problems, generate innovative solutions, and prioritize features for development.

2. Problem Identification & Analysis

Problem Statement: Manual blood cell classification is a labor-intensive, time consuming, and error-prone process that can delay critical medical diagnoses. There is a significant need for an accurate, efficient, and scalable automated solution to assist healthcare professionals.

Impacts of the Problem: * Delayed diagnosis and treatment for patients. * Increased workload and stress for pathologists and lab technicians. * Potential for human error in classification, affecting diagnostic accuracy. * Limited accessibility to specialized diagnostics in remote areas.

3. Brainstorming & Idea Generation

During the brainstorming phase, the team focused on leveraging cutting-edge AI technologies to address the identified problems. The core idea revolved around automating blood cell classification using computer vision.

Initial Ideas Generated: * **Idea 1: Automated Image Classification System:** Develop a system that takes images of blood cells and automatically classifies them into different types. * Pros: Direct solution to the core problem, reduces manual effort. * Cons: Requires a large, labeled dataset; complex model development. * **Idea 2: Transfer Learning Application:** Utilize pre-trained Convolutional Neural Networks (CNNs) to accelerate model development and improve accuracy. * Pros: Reduces training time and computational resources; leverages existing knowledge from large image datasets. * Cons: Requires fine-tuning for specific domain (blood cells); potential for overfitting if not handled carefully. * **Idea 3: Web-Based User Interface:** Create a user-friendly web application for easy image upload and result display. * Pros: Accessible from anywhere with internet; no software installation required for end users. * Cons: Requires web development expertise (Flask, HTML/CSS); deployment complexities. * **Idea 4: Real-time Diagnostic Integration:** Integrate the classification model directly into microscopy equipment for instant analysis. * Pros: Seamless workflow for pathologists; immediate feedback. * Cons: High complexity in hardware integration; requires specialized partnerships. * **Idea 5: Educational Tool:** Adapt the system for medical students to practice blood cell identification and receive instant feedback. * Pros: Valuable for training; broadens application scope. * Cons: Requires specific educational content and feedback mechanisms.

4. Prioritization

Ideas were prioritized based on feasibility, impact, and alignment with the core problem statement. A simple scoring model (1-5, with 5 being highest) was used for each criterion.

Idea	Feasibility	Impact	Alignment	Total Score	Priority
Automated Image Classification System	4	5	5	14	High
Transfer Learning Application	5	5	5	15	Highest
Web-Based User Interface	4	4	4	12	High
Real-time Diagnostic Integration	2	5	4	11	Medium

Prioritized Approach: Based on the scoring, the highest priority was given to combining **Transfer Learning Application** with an **Automated Image Classification System** and a **Web-Based User Interface**. This approach offers the best balance of accuracy, efficiency, and accessibility, directly addressing the core problem while leveraging existing robust technologies.

5. Conclusion

This brainstorming and prioritization process led to the focused development of HematoVision as a web-based blood cell classification system powered by a MobileNetV2 transfer learning model. This strategic approach ensures the project delivers a high-impact solution with efficient development.

Educational Tool	3	3	3	9	Medium