

Project Design Phase
Proposed Solution Template

Date	19 February 2026
Team ID	LTVIP2026TMIDS40157
Project Name	HematoVision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Manual blood cell classification in laboratories is time-consuming, labor-intensive, and prone to human error. It requires skilled pathologists and may delay detection of serious diseases such as Leukemia and Anemia. There is a need for an automated, accurate, and scalable diagnostic support system.
2.	Idea / Solution description	HematoVision is an AI-based blood cell classification system using transfer learning with pre-trained CNN models. Trained on 12,000 annotated blood cell images, it classifies white blood cells (eosinophils, lymphocytes, monocytes, neutrophils) quickly and accurately, assisting pathologists in faster diagnosis.
3.	Novelty / Uniqueness	The project leverages transfer learning to improve classification accuracy while reducing training time and computational cost. Unlike traditional manual methods, HematoVision provides automated, real-time classification and can be integrated into telemedicine platforms and educational tools.
4.	Social Impact / Customer Satisfaction	The system improves healthcare accessibility by supporting remote diagnostics and rural healthcare centers. It reduces diagnostic delays, minimizes human error, enhances patient care, and increases confidence among healthcare professionals.
5.	Business Model (Revenue Model)	Subscription-based model for hospitals and diagnostic labs. Licensing the software to healthcare institutions. Integration services for hospital management systems. Future expansion as a SaaS-based AI diagnostic platform.
6.	Scalability of the Solution	The solution can be scaled across multiple hospitals and laboratories. It can be extended to classify additional blood disorders and abnormal cells. Cloud-based deployment allows nationwide or global accessibility.