Project Design Phase
Proposed Solution Template

Date	15 February 2026
Team ID	LTVIP2026TMIDS49741
Project Name	HematoVision: Advanced Blood Cell Classification Using Transfer Learning
Maximum Marks	

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Manual blood cell analysis is time-consuming, prone to human error, and requires trained specialists. Accurate classification of different blood cell types (neutrophils, lymphocytes, eosinophils, monocytes) is critical for disease diagnosis.
2.	Idea / Solution description	Develop an AI-based system using transfer learning on pre-trained deep learning models to automatically classify blood cells from microscopic images. The solution leverages Haemovision datasets for training and validation, providing fast, accurate, and reliable classification.
3.	Novelty / Uniqueness	Unlike traditional automated systems, this model uses transfer learning to improve accuracy with limited labeled data. It reduces the need for extensive training datasets and can adapt quickly to new image types or staining techniques.
4.	Social Impact / Customer Satisfaction	Enables faster and more reliable blood tests, aiding early detection of blood disorders. Reduces workload for lab technicians, improves diagnostic accuracy, and benefits hospitals, clinics, and patients
5.	Business Model (Revenue Model)	Can be offered as software for hospitals and diagnostic labs on a subscription or license basis. Integration with lab management systems adds value. Potential revenue from AI healthcare SaaS platforms or partnerships with medical device companies.
6.	Scalability of the Solution	Can be extended to classify rare blood cell types or integrate with other hematology diagnostics. Scalable to multiple hospitals, clinics, and labs worldwide, with cloud deployment for real-time analysis.