Project Design Phase

Proposed Solution Template

Date: 15 February 2025
Team ID: LTVIP2026TMIDS91486
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 is a time-consuming and expertise-dependent task. Traditional microscopic analysis may lead to inconsistencies and human error. There is a need for an automated, accurate, and efficient system for blood cell classification.
2	**Idea / Solution Description**	HematoVision proposes an AI-powered blood cell classification system using Transfer Learning. The system accepts blood cell images, performs preprocessing, extracts features using a pretrained CNN model, and classifies cell types with high accuracy.
3	**Novelty / Uniqueness**	The solution leverages Transfer Learning to achieve high performance even with limited datasets. It reduces training time, improves accuracy, and minimizes computational cost compared to training models from scratch.
4	**Social Impact / Customer Satisfaction**	The system can assist laboratories, researchers, and diagnostic workflows by reducing manual workload, improving efficiency, and enabling faster decision-making. It enhances reliability and consistency in classification tasks.
5	**Business Model (Revenue Model)**	The solution can be offered as a software tool or API service for educational, research, or laboratory applications. Revenue can be generated via licensing, subscriptions, or institutional deployment.
6	**Scalability of the Solution**	The system architecture allows integration of additional datasets, new cell categories, and improved models. It can be extended for other image classification applications using similar deep learning pipelines.