**Project Design Phase**

**Proposed Solution Template**

|  |  |
| --- | --- |
| Date | 24 June 2025 |
| Team ID | LTVIP2025TMID35409 |
| Project Name | HematoVision: Advanced Blood Cell Classification Using Transfer Learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Manual blood cell classification is time-consuming, error-prone, and requires skilled pathologists, which limits early diagnosis and affects treatment, especially in low-resource clinical settings. |
|  | Idea / Solution description | HematoVision uses deep learning and transfer learning (MobileNetV2) to build an AI-powered blood cell classifier deployed through a web interface, enabling fast, accurate, and automated blood cell identification. |
|  | Novelty / Uniqueness | The project leverages transfer learning to reduce training time and improve accuracy, while also offering a lightweight, web-deployable model suitable for clinics with limited computational resources. |
|  | Social Impact / Customer Satisfaction | HematoVision improves diagnostic speed and accuracy, supports overburdened healthcare staff, reduces dependency on human expertise, and makes modern diagnostic tools accessible even in remote or underserved regions. |
|  | Business Model (Revenue Model) | The solution can be monetized through B2B licensing to hospitals and diagnostic labs, subscription-based SaaS for healthcare networks, or integration into existing lab management systems with a pay-per-use model. |
|  | Scalability of the Solution | The system is scalable to include additional types of cells or diseases, deployable across multiple institutions via cloud or local servers, and customizable for different medical imaging datasets or formats. |