**Project Design Phase**

**Proposed Solution Template**

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| **Date** | 27 June 2025 |
| **Team ID** | LTVIP2025TMID59764 |
| **Project Name** | Hematovision: Advanced Blood Cell Classification using Transfer Learning |
| **Maximum Marks** | 2 Marks |

**Proposed Solution Template:**

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| **S.No.** | **Parameter** | **Description** |
| 1. | Problem Statement (Problem to be solved) | To develop a robust, automated system that classifies blood cells accurately using transfer learning, improving diagnostic speed and accuracy in hematology. |
|  | Idea / Solution description | High-resolution microscopic images of blood smears labeled with cell types (e.g., WBC, RBC, Platelets, abnormal cells). |
|  | Novelty / Uniqueness | Use pre-trained model weights from ImageNet and fine-tune the final few layers (or entire model depending on dataset size). |
|  | Social Impact / Customer Satisfaction | Class imbalance (e.g., fewer abnormal cell samples)  - Variability in image quality  - Need for expert-annotated datasets |
|  | Business Model (Revenue Model) | Deploy as a web/mobile interface or integrated into hospital diagnostics software using Flask/Django for inference. |
|  | Scalability of the Solution | Extract spatial and textural features from images using convolutional layers. |