**Project Design Phase**

**Proposed Solution Template**

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| Date | 22 February 2025 |
| Team ID | LTVIP2025TMID40233 |
| Project Name | Clean Tech: Transforming waste into Transfer Learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Manual blood cell classification is time-consuming, prone to human error, and depends on highly trained pathologists. This leads to diagnostic delays and inconsistencies, especially in under-resourced clinical environments. |
|  | Idea / Solution description | HematoVision uses pre-trained Convolutional Neural Networks (CNNs) through transfer learning to automate blood cell classification. It classifies cells such as eosinophils, lymphocytes, monocytes, and neutrophils from microscope images with high accuracy. The system reduces manual workload, increases speed, and ensures consistent diagnostics. |
|  | Novelty / Uniqueness | Uses transfer learning to leverage powerful pre-trained models  Reduces training time and improves accuracy  Works even with smaller datasets  Adaptable for integration into mobile/telemedicine platforms |
|  | Social Impact / Customer Satisfaction | Helps pathologists focus on complex cases  Brings quality diagnostics to rural and remote healthcare centers  Reduces diagnostic errors and improves turnaround time  Enhances medical training for students |
|  | Business Model (Revenue Model) | Freemium model for educational institutes and labs  Paid integration with hospital diagnostic systems  Subscription model for telemedicine providers  Custom enterprise deployment for large diagnostic chains |
|  | Scalability of the Solution | The model can be scaled to include more cell types and integrated with cloud-based diagnostic platforms. It can be adapted for use in mobile apps, APIs, or embedded in lab equipment for widespread use in both urban hospitals and rural clinics. |