**Project Design Phase**

**Proposed Solution Template**

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| Date | 28 June 2025 |
| Team ID | LTVIP2025TMID59386 |
| Project Name | Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management |
| 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) | Poultry farmers struggle to detect and differentiate between diseases like Salmonella, Newcastle Disease, and Coccidiosis at an early stage. Manual diagnosis is time-consuming, inaccurate, and requires expert intervention. |
|  | Idea / Solution description | Develop a deep learning-based mobile-compatible solution using transfer learning (ResNet18) to classify poultry diseases based on image data. The system includes data preprocessing, training, and deployment using Flask with an HTML frontend. |
|  | Novelty / Uniqueness | The solution uses a lightweight, efficient model (ResNet18) fine-tuned for poultry disease classification. Unlike traditional solutions, this is mobile-friendly, requires no expert intervention, and offers instant prediction. |
|  | Social Impact / Customer Satisfaction | Helps small-scale and rural poultry farmers by enabling early disease detection, reducing economic losses, and improving animal welfare. Increases access to AI tools for agricultural communities. |
|  | Business Model (Revenue Model) | Freemium model: The basic prediction service is free. Revenue can be generated through subscription for advanced analytics, disease reports, veterinary integrations, or via partnerships with poultry farms and feed suppliers. |
|  | Scalability of the Solution | The model can be retrained for other animal diseases or crops. The system can be scaled as a SaaS platform with multi-language support, regional datasets, and integration with agriculture ministries or veterinary platforms. |