Project Design Phase
Proposed Solution Template

Date	11 June 2025
Team ID	LTVIP2025TMID34708
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.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Poultry farmers face frequent disease outbreaks (Salmonella, Newcastle Disease, Coccidiosis) leading to high mortality and economic losses due to delayed or inaccurate diagnosis. Limited access to veterinary services and diagnostic labs in rural areas worsens the situation. There is a need for an accessible, accurate, and rapid disease classification system to improve poultry health management.
2.	Idea / Solution description	The project proposes a Transfer Learning-Based Machine Learning system that classifies poultry diseases into Salmonella, Newcastle Disease, Coccidiosis, and Healthy categories based on input data (symptoms, environmental data, biological sample findings). It will be integrated into a mobile application, enabling farmers to receive instant disease identification and recommended treatments, facilitating early action and improved disease control.
3.	Novelty / Uniqueness	> Uses transfer learning for high accuracy with limited data. > Provides immediate, actionable treatment recommendations. > Works offline, suitable for low-connectivity rural areas. > Modular design for future image-based lesion analysis. > Farmer-friendly mobile app interface aligned with local needs.
4.	Social Impact / Customer Satisfaction	> Reduces mortality rates and economic losses by enabling early detection. > Empowers smallholder farmers with data-driven disease management. > Improves food security and productivity in rural communities. > Builds confidence in farmers by reducing dependency on unavailable veterinary services.

		> Supports veterinary education and extension officers with modern diagnostic tools.
5.	Business Model (Revenue Model)	> **Freemium Model:** Free basic app with disease diagnosis; premium version with advanced analytics for commercial farms. > **Government and NGO Partnerships:** For rural health extension programs and smart agriculture initiatives. > **Data Services:** Provide anonymized poultry health data to researchers and policymakers. > **Training Modules:** Paid training for veterinary schools and extension officers.
6.	Scalability of the Solution	> Scalable across regions by training on local poultry disease data. > Can be integrated with IoT-based farm management systems in the future. > Expandable to web dashboards for government monitoring. > Potential extension to image-based diagnostics, predictive outbreak alerts, and integration with regional veterinary networks.