Project Design Phase
Proposed Solution Template

Date	28 June 2025
Team ID	LTVIP2025TMID41715
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 often face significant losses due to the late detection or misdiagnosis of diseases in birds. Manual inspection is time-consuming, error-prone, and infeasible for large flocks. There is a need for a scalable and accurate automated disease classification system to detect poultry diseases early and reduce mortality and economic losses.
2.	Idea / Solution description	The proposed solution leverages transfer learning using pre-trained deep convolutional neural networks (CNNs) to classify common poultry diseases from images of affected birds. The model will be fine-tuned on a dataset of labeled poultry disease images to accurately detect and differentiate between diseases such as Newcastle disease, Fowlpox, and Coccidiosis. A mobile or web-based interface will be developed for real-time disease prediction from captured images.
3.	Novelty / Uniqueness	This solution uses transfer learning to reduce training time and data requirements while maintaining high classification accuracy. Unlike traditional machine learning methods or manual veterinary diagnosis, this approach combines automation, accuracy, and accessibility. The integration with a user-friendly interface makes it practical for rural and small-scale farmers without technical expertise.
4.	Social Impact / Customer Satisfaction	Early and accurate diagnosis of poultry diseases can significantly reduce mortality rates, improve poultry health, and increase farm productivity. The solution empowers farmers with a reliable, cost-effective tool for disease management, reducing their dependence on expensive or delayed veterinary services. This

		directly supports food security and rural livelihoods.
5.	Business Model (Revenue Model)	The product can be monetized through a freemium model—basic disease detection features are free, while advanced analytics, recommendations, and veterinary consultations are part of a premium subscription. Additional revenue streams may include partnerships with poultry farms, cooperatives, and veterinary service providers.
6.	Scalability of the Solution	The system is highly scalable—once trained, the model can be deployed across various platforms (web, mobile) and can support multiple languages. It can be expanded to include more poultry diseases or adapted for use in diagnosing diseases in other livestock with minimal re-training. Cloud-based deployment ensures ease of access across geographic locations.