📄 **Proposed Solution – Poultry Disease Classifier**

🗓️ **Date**: 26 June 2025
🆔 **Team ID**: LTVIP2025TMID36880
👄 **Project Name**: Transfer Learning Based Classification of Poultry Diseases for Enhanced Health Management
🎯 **Maximum Marks**: 2 Marks

✅ **Proposed Solution:**

We propose the development of a **web-based AI application** that uses **deep learning and transfer learning techniques** to classify poultry diseases based on uploaded images of birds. This system will provide an **instant, automated, and non-invasive diagnosis**, eliminating the need for expensive laboratory testing or veterinary visits—especially in rural or underserved areas.

At the core of this solution is **MobileNetV2**, a lightweight and efficient convolutional neural network pretrained on the ImageNet dataset. By applying transfer learning, we retain the model's general feature extraction capabilities while customizing it for poultry disease classification. The final model is fine-tuned to distinguish between four disease categories:

- **Newcastle Disease**
- **Coccidiosis**
- **Salmonella**
- **Healthy**

The platform is built using **Streamlit**, a powerful and minimalistic Python framework for building interactive web apps. This ensures a **fast, clean, and responsive user interface**, accessible from desktop or mobile devices without needing technical expertise.

🔧 **Key Functionalities:**

- 📤 **Image Upload**: Farmers or vets can upload an image of the poultry bird.
- 🧠 **Model Prediction**: The model processes the image and predicts the class label using the trained MobileNetV2 architecture.
- 📊 **Result Display**: The prediction is shown along with the confidence score, helping the user interpret the result.

- 💡 **Offline Capability**: Once deployed locally, it can run without an internet connection.

This solution is designed to be **lightweight, scalable, and field-deployable**, making it suitable for widespread adoption in the agriculture and veterinary sectors. It reduces diagnosis time from hours/days to seconds and increases access to decision-making tools for those who need them the most.

By combining AI with accessible UI technologies, this project bridges the gap between modern healthcare and rural veterinary needs.