Project Development Phase
Model Performance Test

Date.	27june 2025
Team ID	LTVIP2025TMID60871
Project Name	Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	

Model Performance Testing Template

S.No. Parameter Values Screenshot

**1. Model Metrics Regression Model: (Used for potential disease severity prediction or duration estimation – if applicable)
- MAE: N/A
- MSE: N/A
- RMSE: N/A
- R^2 Score: N/A

Classification Model: (Used for disease diagnosis/classification)
- Confusion Matrix: [[42, 3], [2, 53]]
- Accuracy Score: 0.95
- Classification Report:
 - Precision: 0.95
 - Recall: 0.96
 - F1-Score: 0.95
 - Support: Per class basis Attach screenshots of confusion matrix and classification report**

**2. Model Tuning & Validation Hyperparameter Tuning:
- Used GridSearchCV for tuning
- Best Parameters:
 - Learning Rate: 0.0001
 - Batch Size: 32
 - Epochs: 25

Validation Method:
- Stratified 5-Fold Cross Validation used to ensure balanced class representation during training and evaluation Attach screenshot of tuning logs or summary results**

Health Management Context Explanation

This classification model enhances poultry health management by enabling early, accurate, and automated detection of diseases through image-based diagnosis. By integrating transfer learning, the system improves model accuracy even with limited disease-specific data, supporting faster decision-making for veterinarians and poultry farmers. This contributes to reduced mortality, targeted treatment, and improved productivity.