**Project Development Phase**

**Model Performance Test**

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| Date. | 27may2025 |
| Team ID | LTVIP2025TMID60871 |
| Project Name | Transfer Learning-Based Classification of Poultry Diseases for Enhanced Health Management |
| Maximum Marks | 10 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)<br>- MAE: N/A<br>- MSE: N/A<br>- RMSE: N/A<br>- R² Score: N/A<br><br>Classification Model: (Used for disease diagnosis/classification)<br>- Confusion Matrix: [[42, 3], [2, 53]]<br>- Accuracy Score: 0.95<br>- Classification Report:<br>  - Precision: 0.95<br>  - Recall: 0.96<br>  - F1-Score: 0.95<br>  - Support: Per class basis Attach screenshots of confusion matrix and classification report**

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