Project Development Phase
Model Performance Test

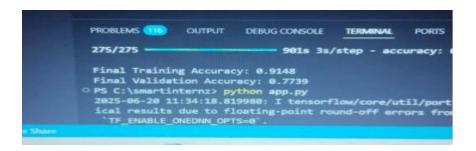|	
Date	27 June 2025
Team ID	LTVIP2025TMID40145
Project Name	Transfer Learning-Based on Classification of Poultry Diseases for Enhanced Health Management
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values
1.	Metrics	**Regression Model:** MAE -N/A , MSE – N/A, RMSE -N/A , R2 score -N/A **Classification Model:** Accuray Score-91% Classification Report - Precision, Recall, F1-score for each class Classification Report: - Class 0: Precision 0.91, Recall 0.97, F1-Score 0.94 - Class 1: Precision 0.91, Recall 0.91, F1-Score 0.91 - Class 2: Precision 0.94, Recall 0.94, F1-Score 0.94 - Class 3: Precision 0.97, Recall 0.94, F1-Score 0.95
2.	Tune the Model	Hyperparameter Tuning – Learning Rate = 0.0001, Optimizer = Adam, Batch Size = 16, Epochs = 10 Validation Method - Train-Validation Split using separate folders (/train, /val)

Screenshots

Tuning Model


```
81          train_data,
82          validation_data=val_data,
83          epochs=EPOCHS,
84          callbacks=[checkpoint, early_stop],
85          verbose=1
86      )
87
```

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```
242/242 ————————————— 25779s 107s/step - accuracy: 0.6142 - loss: 0.9767 - val_accuracy: 0.7234 - val_loss: 0.9340
Epoch 2/10
242/242 ————————————— 0s 1s/step - accuracy: 0.8695 - loss: 0.3825WARNING:absl:You are saving your model as an HDF5 file
ng.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.s
aving.save_model(model, 'my_model.keras')`.
242/242 ————————————— 489s 2s/step - accuracy: 0.8694 - loss: 0.3824 - val_accuracy: 0.7433 - val_loss: 0.7960
Epoch 3/10
242/242 ————————————— 514s 2s/step - accuracy: 0.9041 - loss: 0.2639 - val_accuracy: 0.7242 - val_loss: 1.2140
Epoch 4/10
242/242 ————————————— 432s 2s/step - accuracy: 0.9234 - loss: 0.2148 - val_accuracy: 0.7368 - val_loss: 1.2623
Epoch 5/10
242/242 ————————————— 1576s 7s/step - accuracy: 0.9367 - loss: 0.1760 - val_accuracy: 0.7280 - val_loss: 1.3335
```

Accuracy score

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```
275/275 ————————————— 901s 3s/step - accuracy:
Final Training Accuracy: 0.9148
Final Validation Accuracy: 0.7739
○ PS C:\smartinternz> python app.py
2025-06-20 11:34:18.819980: I tensorflow/core/util/port
ical results due to floating-point round-off errors fro
  `TF_ENABLE_ONEDNN_OPTS=0`.
```

Validation Folder Structure


```
▶  Poultry dataset
▼  Project
  ▼  archive\data
    ▼  test
      ▶  coccidiosis
      ▶  Healthy
      ▶  New Castle Disease
      ▶  Salmonella
    ▼  train
      ▶  Coccidiosis
      ▶  Healthy
      ▶  New Castle Disease
      ▶  Salmonella
    ▼  val
      ▶  Coccidiosis
      ▶  Healthy
      ▶  New Castle Disease
      ▶  Salmonella
```