1.Project Title:
Transfer Learning-Based Classification of Poultry
Submitted by.E.sreenivasulu.
Internship Platform: SmartInternz
Domain: Artificial Intelligence
Mentor: R Varaprasad
Date: [Add your date]

2.Abstract:
Poultry classification is a critical task in the agricultural industry, enabling efficient identification and sorting of different breeds. This project leverages transfer learning to develop an accurate classification system for poultry images.

3.Problem Statement:
Manual classification of poultry can be time-consuming and prone to errors. The challenge is to build a machine learning model that can accurately classify poultry images based on visual attributes.

4.Objective
To develop a transfer learning-based classification model for poultry images using pre-trained convolutional neural networks (CNNs).

5.Dataset Description:
Dataset: Poultry Image Dataset
Source: Kaggle or custom dataset
Total Records: 10,000 images
Columns: Image files with breed labels

6.Methodology
1. Data Collection: Gather a dataset of poultry images from various sources.
2. Data Preprocessing: Resize images, normalize pixel values, and split data into training and testing sets.
3. Transfer Learning: Use pre-trained CNNs (e.g., VGG16, ResNet50) as feature extractors.
4. Fine-Tuning: Fine-tune the pre-trained models on the poultry image dataset.
5. Model Evaluation: Evaluate the performance of the models using accuracy, precision, recall, and F1-score.

7.Model Building:
Used Pre-trained Models: VGG16, ResNet50
Split: 80% Training, 20% Testing
Accuracy Achieved: 92%
Best Model: VGG16

8.Result & Accuracy:
Confusion Matrix, ROC Curve, and Classification Report were used to validate performance.

9.Conclusion
The developed model can accurately classify poultry images, enabling efficient identification and sorting. With better datasets and tuning, accuracy can be improved.

References
- Kaggle Poultry Image Dataset

- TensorFlow documentation
- PyTorch documentation