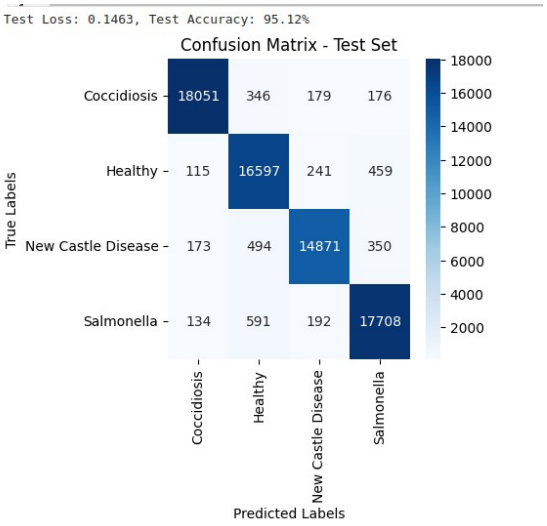
Project Report Format

7.RESULTS

```
Epoch 1/10, Training Loss: 0.2411, Val Loss: 0.2176, Train Accuracy: 90.87%, Val Accuracy: 91.85%, Time: 1259.6
9 seconds
Epoch 2/10, Training Loss: 0.1524, Val Loss: 0.1834, Train Accuracy: 94.28%, Val Accuracy: 93.40%, Time: 1264.2
0 seconds
Epoch 3/10, Training Loss: 0.1193, Val Loss: 0.1624, Train Accuracy: 95.50%, Val Accuracy: 93.99%, Time: 1269.6
9 seconds
Epoch 4/10, Training Loss: 0.0961, Val Loss: 0.1557, Train Accuracy: 96.40%, Val Accuracy: 94.31%, Time: 1257.0
1 seconds
Epoch 5/10, Training Loss: 0.0786, Val Loss: 0.1590, Train Accuracy: 97.04%, Val Accuracy: 94.48%, Time: 1251.4
0 seconds
Epoch 6/10, Training Loss: 0.0658, Val Loss: 0.1455, Train Accuracy: 97.54%, Val Accuracy: 95.11%, Time: 1250.4
7 seconds
Epoch 7/10, Training Loss: 0.0542, Val Loss: 0.1711, Train Accuracy: 97.98%, Val Accuracy: 94.63%, Time: 1258.9
9 seconds
Epoch 8/10, Training Loss: 0.0460, Val Loss: 0.1598, Train Accuracy: 98.29%, Val Accuracy: 95.08%, Time: 1256.2
6 seconds
Epoch 9/10, Training Loss: 0.0388, Val Loss: 0.1704, Train Accuracy: 98.58%, Val Accuracy: 95.02%, Time: 1261.2
0 seconds
Epoch 10/10, Training Loss: 0.0343, Val Loss: 0.1774, Train Accuracy: 98.74%, Val Accuracy: 95.03%, Time: 1265.
70 seconds
Training complete
```



	precision	recall	f1-score	support
Coccidiosis	0.98	0.96	0.97	18752
Healthy	0.92	0.95	0.94	17412
New Castle Disease	0.96	0.94	0.95	15888
Salmonella	0.95	0.95	0.95	18625
accuracy			0.95	70677
macro avg	0.95	0.95	0.95	70677
weighted avg	0.95	0.95	0.95	70677

8.ADVANTAGES & DISADVANTAGES

Advantages:

1. **Accurate Predictions**: Uses ResNet-18, a powerful deep learning model, for high disease classification accuracy.
2. **User-Friendly Interface**: Simple web interface for non-technical users such as farmers or veterinarians.
3. **Fast Processing**: Predictions are generated within seconds using local deployment.
4. **Cost-Effective**: No need for cloud resources or internet connectivity for prediction.
5. **Offline Deployment**: Can work without internet once the model is loaded locally.
6. **Scalable**: Can be easily upgraded to detect more diseases or deploy on cloud.

Disadvantages:

1. **Limited to Local System**: Currently runs only on local machine, not accessible remotely.
2. **Model Training Not Included**: Only inference (prediction) is implemented; model training must be done separately.
3. **Limited Dataset**: Accuracy depends on quality and size of training data; small datasets may reduce performance.
4. **No Real-Time Detection**: Batch or manual upload is required; no real-time camera integration.
5. **No Mobile Support Yet**: Currently web-only, not mobile-optimized.

9.CONCLUSION

This project successfully demonstrates an AI-based solution for poultry disease detection using image classification. A pre-trained ResNet-18 model was used to classify poultry diseases based on image input. The web interface, built using Flask, allows users to upload images and get real-time predictions. The system is fast, user-friendly, and efficient, and can be deployed locally without heavy infrastructure.

10. FUTURE SCOPE

- **Model Improvement**: Train custom models using larger poultry datasets to improve accuracy.
- **Mobile App Integration**: Develop Android/iOS versions for field usage by farmers.
- **Live Detection**: Integrate live camera feed for real-time poultry monitoring.
- **Disease Report Generation**: Generate downloadable reports and prescribe recommendations.
- **Multilingual UI**: Add support for regional languages to reach a broader audience.

11. APPENDIX

Source Code

Available in the GitHub repository below. The repository includes:

- Flask backend
- Model loading script
- HTML templates
- Image preprocessing functions

Dataset Link

If you used a public dataset:

Poultry Disease Dataset

Kaggle Dataset-https://www.kaggle.com/datasets/chandrashekarnatesh/poultry-diseases

GitHub & Project Demo Link

- **GitHub Repository**: s
- **Deployed Link**: https://huggingface.co/spaces/Bharathchilaka/poultry-infer-api