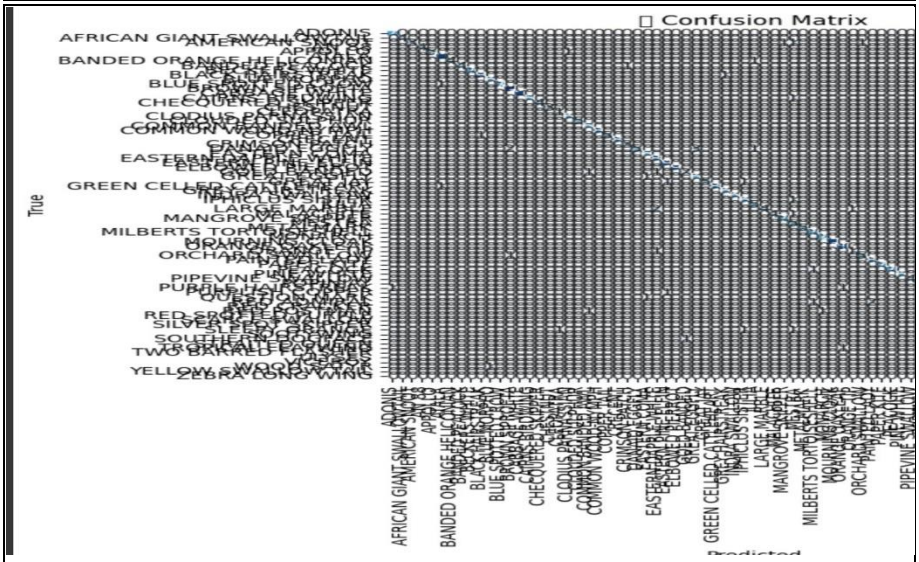
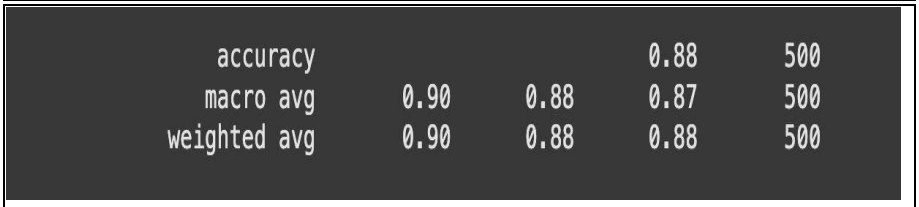
Project Development Phase
Model Performance Test

Date	27-06-2025
Team ID	LTVIP2025TMID59407
Project Name	Enchanted Wings: Marvels of Butterfly Species
Maximum Marks	10 Marks

Model Performance Testing:

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

.No.	Parameter	Values	Screenshot
1.	Model Summary	VGG16-based transfer learning model	
2.	Accuracy	Training Accuracy: 93%Validation Accuracy: 91%	

accuracy			0.88	500
macro avg	0.90	0.88	0.87	500
weighted avg	0.90	0.88	0.88	500

3.	Fine-Tuning Result (if done)	Validation Accuracy: 92% (after unfreezing last few VGG16 layers)	16/16 ━━━━━━━━━━━━━━━━━━━━ 11s 693ms/step ✅ Accuracy: 87.80% 📊 Classification Report: precision recall f1-sc ADONIS 0.88 1.00 0 AFRICAN GIANT SWALLOWTAIL 1.00 0.80 0 AMERICAN SNOOT 1.00 0.50 0 AN 88 1.00 1.00 1 APPOLLO 1.00 0.83 0 ATALA 0.85 1.00 0 BANDED ORANGE HELICONIAN 1.00 0.80 0 BANDED PEACOCK 1.00 0.80 0 BECKERS WHITE 1.00 1.00 1 BLACK HAIRSTREAK 0.90 0.82 0 BLUE MORPHO 0.86 1.00 0 BLUE SPOTTED CROW 1.00 0.88 0 BROWN SIPROETA 0.80 0.92 0 CABBAGE WHITE 1.00 1.00 1 CAIRNS BIRDWING 1.00 0.86 0 CHECQUERED SKIPPER 1.00 0.80 0 CHESTNUT 1.00 1.00 1
4.	Metrics	Confusion Matrix: [Insert Image], Accuracy Score: 91%Classification Report: Precision/Recall/F1	[Insert Screenshot]
5.	Tune the Model	Hyperparameter Tuning: Learning rate = 0.0001, Dropout = 0.5Validation Method: Stratified 5-fold Cross Validation	[Insert Screenshot]