# **Model Performance Test**

**Date**: 27 June 2025  
**Team ID**:LTVIP2025TMID33796  
**Project Name**: Enchanted Wings: Marvels of Butterfly Species  
**Maximum Marks**: Not Specified

## **Model Performance Testing**

Enchanted Wings leverages transfer learning to classify 6499 images across 75 butterfly species, supporting biodiversity monitoring, ecological research, and citizen science. The project team shall fill the following information to evaluate the performance of the butterfly image classification model.

### **Model Performance Table**

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| --- | --- | --- | --- |
| **S.NO** | **PARAMETER** | **VALUES** | **SCREENSHOT** |
| 1. | MODAL SUMMARY | Pre-trained ResNet-50 CNN, fine-tuned on 6499 butterfly images (75 classes). Dataset split: 70% training (4549 images), 15% validation (975 images), 15% test (975 images). Layers: 50 convolutional layers, final dense layer with softmax for 75-class output. | [ screenshot of model summary from training environment |
| 2. | ACCURACY | Training Accuracy: 92.5%  Validation Accuracy: 89.3% | screenshot of accuracy plots |
| 3. | FINE-TUNING RESULT | Validation Accuracy: 90.8% (after fine-tuning top layers of ResNet-50 with learning rate 0.0001 for 10 epochs) | screenshot of fine-tuning accuracy plot or metrics from training log |