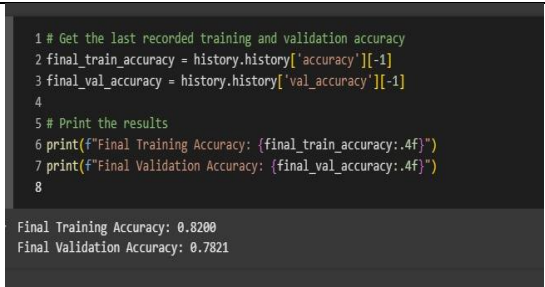



Project Development Phase Model Performance Test

Date	23 June 2025
Team ID	LTVIP2025TMID38840
Project Name	CleanTech: Transforming Waste Management with Transfer Learning
Maximum Marks	10 Marks

Model Performance Testing:

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

S.No.	Parameter	Values	Screenshot
1.	Metrics	Classification Model: <ul style="list-style-type: none"> Final Training Accuracy: 82.0% Final Validation Accuracy: 78.2% Loss decreased consistently per epoch 	 <pre> 1 # Get the last recorded training and validation accuracy 2 final_train_accuracy = history.history['accuracy'][-1] 3 final_val_accuracy = history.history['val_accuracy'][-1] 4 5 # Print the results 6 print(f"Final Training Accuracy: {final_train_accuracy:.4f}") 7 print(f"Final Validation Accuracy: {final_val_accuracy:.4f}") 8 Final Training Accuracy: 0.8200 Final Validation Accuracy: 0.7821 </pre>
2.	Tune the Model	VGG16 with Transfer Learning <ul style="list-style-type: none"> Tuned: learning rate, batch size, epochs Validation done using train/test split (no cross-validation) 	 <pre> Epoch 1/10: 0s/12s/step - accuracy: 0.3025 - loss: 1.2127 /usr/local/lib/python3.11/dist-packages/keras/src/trainers/data_adapters/py_dataset_adapter.py:51: UserWarning: `warn_if_super_get_called` 5/5 ----- 143s 32s/step - accuracy: 0.3747 - loss: 1.0966 - val_accuracy: 0.4407 - val_loss: 1.4093 Epoch 2/10: 0s/12s/step - accuracy: 0.5960 - loss: 0.8363 - val_accuracy: 0.5309 - val_loss: 0.8026 Epoch 3/10: 0s/12s/step - accuracy: 0.6875 - loss: 0.6260 /usr/local/lib/python3.11/dist-packages/keras/src/trainers/epoch_iterator.py:187: UserWarning: `self._interrupted_waiting` 5/5 ----- 13s 12s/step - accuracy: 0.7100 - loss: 0.6863 - val_accuracy: 0.6538 - val_loss: 0.6126 Epoch 4/10: 0s/12s/step - accuracy: 0.7405 - loss: 0.5692 - val_accuracy: 0.6795 - val_loss: 0.7785 Epoch 5/10: 0s/12s/step - accuracy: 0.8017 - loss: 0.7238 - val_accuracy: 0.7504 - val_loss: 0.6659 Epoch 6/10: 0s/12s/step - accuracy: 0.7500 - loss: 0.5830 /usr/local/lib/python3.11/dist-packages/keras/src/trainers/epoch_iterator.py:187: UserWarning: `self._interrupted_waiting` 5/5 ----- 71s 11s/step - accuracy: 0.7880 - loss: 0.5672 - val_accuracy: 0.7602 - val_loss: 0.6564 Epoch 7/10: 0s/12s/step - accuracy: 0.8474 - loss: 0.5299 - val_accuracy: 0.6138 - val_loss: 0.6660 Epoch 8/10: 0s/12s/step - accuracy: 0.7121 - loss: 0.3954 - val_accuracy: 0.7021 - val_loss: 0.5974 Epoch 9/10: 0s/12s/step - accuracy: 0.8598 - loss: 0.4444 /usr/local/lib/python3.11/dist-packages/keras/src/trainers/epoch_iterator.py:187: UserWarning: `self._interrupted_waiting` 5/5 ----- 79s 11s/step - accuracy: 0.8200 - loss: 0.4774 - val_accuracy: 0.6877 - val_loss: 0.5386 Epoch 10/10: 0s/12s/step - accuracy: 0.8579 - loss: 0.4403 - val_accuracy: 0.7436 - val_loss: 0.6016 </pre>