

Project Development Phase
Model Performance Test

Date	15 February 2026
Team ID	LTVIP2026TMIDS91602
Project Name	Smart sorting
Maximum Marks	4 Marks

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Model Summary	<p>Input Shape : (224, 224, 3)</p> <p>Number of Classes : 29</p> <p>Total Parameters : 27,575,135 (~105.19 MB)</p> <p>Trainable Parameters : 12,860,445 (~49.06 MB)</p> <p>Non-trainable Parameters : 14,714,688 (~56.13 MB)</p> <p>Optimizer Parameters : 2 (~12 Bytes)</p> <p>Top Dense Layer Size : 512 units</p> <p>Final Output Layer : Dense(29)</p> <p>Dropout Layer Used : Yes (before final output)</p> <p>Base Model : VGG16 (pre-trained on ImageNet)</p> <p>Architecture Summary :</p> <ul style="list-style-type: none"> - 5 Convolutional Blocks (Conv2D + MaxPooling2D) - Flatten layer - Dense(512) + Dropout - Dense(29) for classification 	<pre> Layer (Type) Output Shape Param # === input_layer (InputLayer) (None, 224, 224, 3) 0 block1_conv1 (Conv2D) (None, 112, 112, 64) 1,792 block1_conv2 (Conv2D) (None, 112, 112, 64) 36,928 block1_pool (MaxPooling2D) (None, 112, 112, 64) 0 block2_conv1 (Conv2D) (None, 56, 56, 128) 73,856 block2_conv2 (Conv2D) (None, 56, 56, 128) 147,088 block2_pool (MaxPooling2D) (None, 56, 56, 128) 0 block3_conv1 (Conv2D) (None, 28, 28, 256) 295,168 block3_conv2 (Conv2D) (None, 28, 28, 256) 590,000 block3_conv3 (Conv2D) (None, 28, 28, 256) 590,000 block3_pool (MaxPooling2D) (None, 28, 28, 256) 0 block4_conv1 (Conv2D) (None, 14, 14, 512) 1,180,160 block4_conv2 (Conv2D) (None, 14, 14, 512) 2,359,000 block4_conv3 (Conv2D) (None, 14, 14, 512) 2,359,000 block4_pool (MaxPooling2D) (None, 14, 14, 512) 0 block4_conv4 (Conv2D) (None, 7, 7, 512) 2,359,000 block4_conv5 (Conv2D) (None, 7, 7, 512) 2,359,000 block4_pool (MaxPooling2D) (None, 7, 7, 512) 0 flatten (Flatten) (None, 28704) 0 dense (Dense) (None, 12) 12,480,368 dropout (Dropout) (None, 12) 0 dense_1 (Dense) (None, 29) 14,877 Total params: 27,575,135 (105.19 MB) Trainable params: 12,860,445 (49.06 MB) Non-trainable params: 14,714,688 (56.13 MB) Optimizer params: ~12.00 B </pre>
2.	Accuracy	<p>Training Accuracy : 94.00%</p> <p>Validation Accuracy: 93.20%</p>	<pre> >> ----- >> Model Name : VGG16 (Transfer Learning) >> Dataset Size : ~30,000 images >> Epochs Trained : 5 >> Training Accuracy : 94.00% >> Validation Accuracy: 93.20% >> Loss Function : Categorical Crossentropy >> Optimizer : Adam >> </pre>

3.	Fine Tuning Result(if Done)	Validation Accuracy -91.43%	
----	------------------------------------	-----------------------------	---