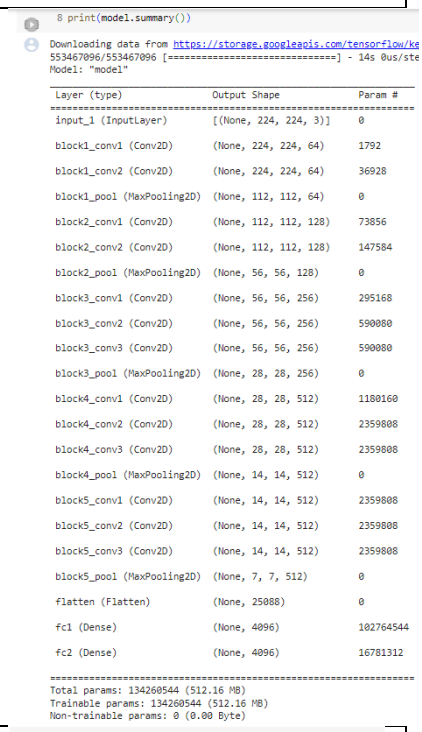
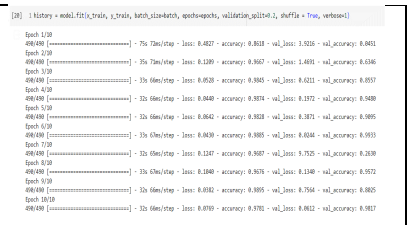
Project Development Phase
Model Performance Test

Date	9 November 2023
Team ID	Team-591950
Project Name	Project - Image Caption Generation
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.	Model Summary	Total params: 134260544 Trainable params: 134260544 Non-trainable params: 0	
2.	Accuracy	Training Accuracy - 97.81% Validation Accuracy – 98.17%	
3.	Confidence Score (Only Yolo Projects)	Class Detected - NA Confidence Score - NA	NOT APPLICABLE

Model Summary:-

```
8 print(model.summary())
```

```
Downloading data from https://storage.googleapis.com/tensorflow/keras-applicat
553467096/553467096 [==============================] - 14s 0us/step
Model: "model"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 input_1 (InputLayer)        [(None, 224, 224, 3)]     0

 block1_conv1 (Conv2D)       (None, 224, 224, 64)      1792

 block1_conv2 (Conv2D)       (None, 224, 224, 64)      36928

 block1_pool (MaxPooling2D)  (None, 112, 112, 64)      0

 block2_conv1 (Conv2D)       (None, 112, 112, 128)     73856

 block2_conv2 (Conv2D)       (None, 112, 112, 128)     147584

 block2_pool (MaxPooling2D)  (None, 56, 56, 128)       0

 block3_conv1 (Conv2D)       (None, 56, 56, 256)       295168

 block3_conv2 (Conv2D)       (None, 56, 56, 256)       590080

 block3_conv3 (Conv2D)       (None, 56, 56, 256)       590080

 block3_pool (MaxPooling2D)  (None, 28, 28, 256)       0

 block4_conv1 (Conv2D)       (None, 28, 28, 512)       1180160

 block4_conv2 (Conv2D)       (None, 28, 28, 512)       2359808

 block4_conv3 (Conv2D)       (None, 28, 28, 512)       2359808

 block4_pool (MaxPooling2D)  (None, 14, 14, 512)       0

 block5_conv1 (Conv2D)       (None, 14, 14, 512)       2359808

 block5_conv2 (Conv2D)       (None, 14, 14, 512)       2359808

 block5_conv3 (Conv2D)       (None, 14, 14, 512)       2359808

 block5_pool (MaxPooling2D)  (None, 7, 7, 512)         0

 flatten (Flatten)           (None, 25088)             0

 fc1 (Dense)                 (None, 4096)              102764544

 fc2 (Dense)                 (None, 4096)              16781312

=================================================================
Total params: 134260544 (512.16 MB)
Trainable params: 134260544 (512.16 MB)
Non-trainable params: 0 (0.00 Byte)
```

Accuracy:-

```
[20]  1 history = model.fit(x_train, y_train, batch_size=batch, epochs=epochs, validation_split=0.2, shuffle = True, verbose=1)
```

```
Epoch 1/10
490/490 [==============================] - 75s 72ms/step - loss: 0.4827 - accuracy: 0.8618 - val_loss: 3.9216 - val_accuracy: 0.0451
Epoch 2/10
490/490 [==============================] - 35s 71ms/step - loss: 0.1209 - accuracy: 0.9667 - val_loss: 1.4691 - val_accuracy: 0.6346
Epoch 3/10
490/490 [==============================] - 33s 66ms/step - loss: 0.0528 - accuracy: 0.9845 - val_loss: 0.6211 - val_accuracy: 0.8557
Epoch 4/10
490/490 [==============================] - 32s 66ms/step - loss: 0.0440 - accuracy: 0.9874 - val_loss: 0.1972 - val_accuracy: 0.9480
Epoch 5/10
490/490 [==============================] - 32s 66ms/step - loss: 0.0642 - accuracy: 0.9828 - val_loss: 0.3871 - val_accuracy: 0.9095
Epoch 6/10
490/490 [==============================] - 33s 67ms/step - loss: 0.0430 - accuracy: 0.9885 - val_loss: 0.0244 - val_accuracy: 0.9933
Epoch 7/10
490/490 [==============================] - 32s 65ms/step - loss: 0.1247 - accuracy: 0.9687 - val_loss: 9.7525 - val_accuracy: 0.2630
Epoch 8/10
490/490 [==============================] - 33s 67ms/step - loss: 0.1040 - accuracy: 0.9676 - val_loss: 0.1340 - val_accuracy: 0.9572
Epoch 9/10
490/490 [==============================] - 32s 66ms/step - loss: 0.0382 - accuracy: 0.9895 - val_loss: 0.7564 - val_accuracy: 0.8025
Epoch 10/10
490/490 [==============================] - 32s 66ms/step - loss: 0.0769 - accuracy: 0.9781 - val_loss: 0.0612 - val_accuracy: 0.9817
```