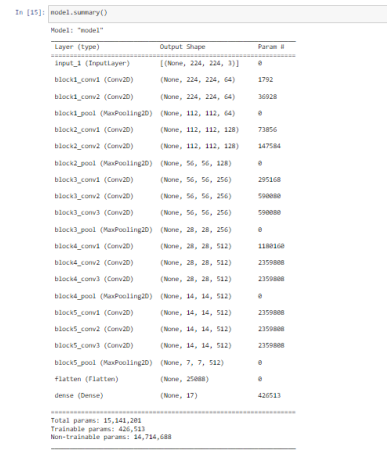
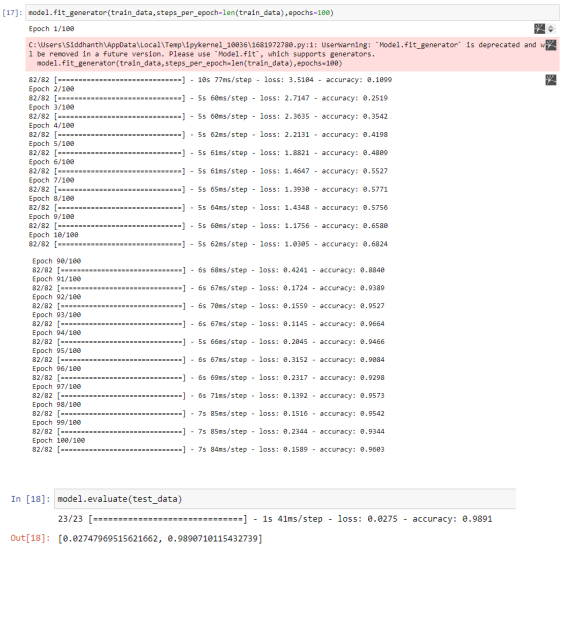
Project Development Phase
Model Performance Test

Date	3 November 2023
Team ID	Team-592681
Project Name	Early Diagnosis Of Nail Diseases
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: 15,141,201** **Trainable params: 426,513** **Non-trainable params: 14,714,688**	
2.	Accuracy	Training Accuracy - 96.03 Testing Accuracy - 98.91	

3.	Confidence Score (Only Yolo Projects)	Class Detected - NA Confidence Score - NA	Not Applicable

Screenshot:

Model Summary

```
In [15]: model.summary()
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

 dense (Dense)               (None, 17)                426513

=================================================================
Total params: 15,141,201
Trainable params: 426,513
Non-trainable params: 14,714,688
_________________________________________________________________
```

Train Accuracy

In [17]:
```
model.fit_generator(train_data,steps_per_epoch=len(train_data),epochs=100)
```

```
Epoch 1/100
C:\Users\Siddhanth\AppData\Local\Temp\ipykernel_10036\1681972780.py:1: UserWarning: `Model.fit_generator` is deprecated and wi
l be removed in a future version. Please use `Model.fit`, which supports generators.
  model.fit_generator(train_data,steps_per_epoch=len(train_data),epochs=100)
82/82 [==============================] - 10s 77ms/step - loss: 3.5104 - accuracy: 0.1099
Epoch 2/100
82/82 [==============================] - 5s 60ms/step - loss: 2.7147 - accuracy: 0.2519
Epoch 3/100
82/82 [==============================] - 5s 60ms/step - loss: 2.3635 - accuracy: 0.3542
Epoch 4/100
82/82 [==============================] - 5s 62ms/step - loss: 2.2131 - accuracy: 0.4198
Epoch 5/100
82/82 [==============================] - 5s 61ms/step - loss: 1.8821 - accuracy: 0.4809
Epoch 6/100
82/82 [==============================] - 5s 61ms/step - loss: 1.4647 - accuracy: 0.5527
Epoch 7/100
82/82 [==============================] - 5s 65ms/step - loss: 1.3930 - accuracy: 0.5771
Epoch 8/100
82/82 [==============================] - 5s 64ms/step - loss: 1.4348 - accuracy: 0.5756
Epoch 9/100
82/82 [==============================] - 5s 60ms/step - loss: 1.1756 - accuracy: 0.6580
Epoch 10/100
82/82 [==============================] - 5s 62ms/step - loss: 1.0305 - accuracy: 0.6824

Epoch 90/100
82/82 [==============================] - 6s 68ms/step - loss: 0.4241 - accuracy: 0.8840
Epoch 91/100
82/82 [==============================] - 6s 67ms/step - loss: 0.1724 - accuracy: 0.9389
Epoch 92/100
82/82 [==============================] - 6s 70ms/step - loss: 0.1559 - accuracy: 0.9527
Epoch 93/100
82/82 [==============================] - 6s 67ms/step - loss: 0.1145 - accuracy: 0.9664
Epoch 94/100
82/82 [==============================] - 5s 66ms/step - loss: 0.2045 - accuracy: 0.9466
Epoch 95/100
82/82 [==============================] - 6s 67ms/step - loss: 0.3152 - accuracy: 0.9084
Epoch 96/100
82/82 [==============================] - 6s 69ms/step - loss: 0.2317 - accuracy: 0.9298
Epoch 97/100
82/82 [==============================] - 6s 71ms/step - loss: 0.1392 - accuracy: 0.9573
Epoch 98/100
82/82 [==============================] - 7s 85ms/step - loss: 0.1516 - accuracy: 0.9542
Epoch 99/100
82/82 [==============================] - 7s 85ms/step - loss: 0.2344 - accuracy: 0.9344
Epoch 100/100
82/82 [==============================] - 7s 84ms/step - loss: 0.1589 - accuracy: 0.9603
```

Out[17]:
```
<keras.callbacks.History at 0x257bfd1e3e0>
```

Test Accuracy

In [18]:
```
model.evaluate(test_data)
```

```
23/23 [==============================] - 1s 41ms/step - loss: 0.0275 - accuracy: 0.9891
```

Out[18]:
```
[0.02747969515621662, 0.9890710115432739]
```