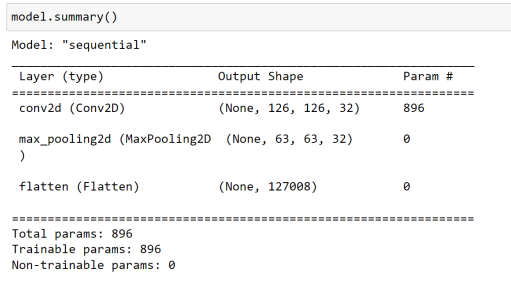
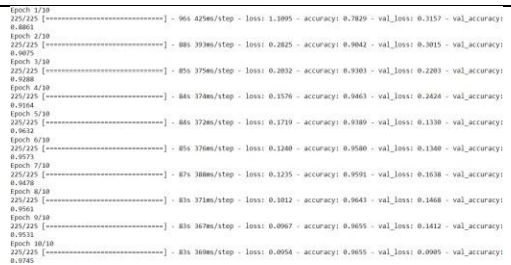


## Project Development Phase Model Performance Test

Date	12 November 2022
Team ID	PNT2022TMID01288
Project Name	Project - Fertilizers Recommendation System for Disease Prediction
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: 896 Trainable params: 896 Non-trainable params: 0	 <pre> model.summary() Model: "sequential" Layer (type)                Output Shape                Param # ----- conv2d (Conv2D)              (None, 126, 126, 32)        896 max_pooling2d (MaxPooling2D) (None, 63, 63, 32)          0 flatten (Flatten)            (None, 127008)              0 Total params: 896 Trainable params: 896 Non-trainable params: 0 </pre>
2.	Accuracy	Training Accuracy – 96.55  Validation Accuracy – 97.45	 <pre> Epoch 1/10: 100% [#####] - loss: 1.1895 - accuracy: 0.9829 - val_loss: 0.3157 - val_accuracy: 0.9880 Epoch 2/10: 100% [#####] - loss: 0.8825 - accuracy: 0.9882 - val_loss: 0.3015 - val_accuracy: 0.9875 Epoch 3/10: 100% [#####] - loss: 0.8537 - accuracy: 0.9303 - val_loss: 0.2203 - val_accuracy: 0.9280 Epoch 4/10: 100% [#####] - loss: 0.8457 - accuracy: 0.9376 - accuracy: 0.9463 - val_loss: 0.2428 - val_accuracy: 0.9164 Epoch 5/10: 100% [#####] - loss: 0.8457 - accuracy: 0.9376 - accuracy: 0.9389 - val_loss: 0.1338 - val_accuracy: 0.9832 Epoch 6/10: 100% [#####] - loss: 0.8537 - accuracy: 0.9303 - accuracy: 0.9500 - val_loss: 0.1340 - val_accuracy: 0.9571 Epoch 7/10: 100% [#####] - loss: 0.8760 - accuracy: 0.9591 - accuracy: 0.9591 - val_loss: 0.1638 - val_accuracy: 0.9470 Epoch 8/10: 100% [#####] - loss: 0.8374 - accuracy: 0.9643 - accuracy: 0.9643 - val_loss: 0.1468 - val_accuracy: 0.9561 Epoch 9/10: 100% [#####] - loss: 0.8367 - accuracy: 0.9655 - accuracy: 0.9655 - val_loss: 0.1412 - val_accuracy: 0.9531 Epoch 10/10: 100% [#####] - loss: 0.8054 - accuracy: 0.9655 - accuracy: 0.9655 - val_loss: 0.0905 - val_accuracy: 0.9505 </pre>

## Model Summary

```
model.summary()
```

Model: "sequential"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 126, 126, 32)	896
max_pooling2d (MaxPooling2D)	(None, 63, 63, 32)	0
flatten (Flatten)	(None, 127008)	0
Total params: 896		
Trainable params: 896		
Non-trainable params: 0		

## Accuracy

```
model.fit_generator(x_train, steps_per_epoch=len(x_train), validation_data=x_test, validation_steps=len(x_test), epochs=10)
```

```
Epoch 1/10
225/225 [=====] - 96s 425ms/step - loss: 1.1095 - accuracy: 0.7829 - val_loss: 0.3157 - val_accuracy: 0.8861
Epoch 2/10
225/225 [=====] - 88s 393ms/step - loss: 0.2825 - accuracy: 0.9042 - val_loss: 0.3015 - val_accuracy: 0.9075
Epoch 3/10
225/225 [=====] - 85s 375ms/step - loss: 0.2032 - accuracy: 0.9303 - val_loss: 0.2203 - val_accuracy: 0.9288
Epoch 4/10
225/225 [=====] - 84s 374ms/step - loss: 0.1576 - accuracy: 0.9463 - val_loss: 0.2424 - val_accuracy: 0.9164
Epoch 5/10
225/225 [=====] - 84s 372ms/step - loss: 0.1719 - accuracy: 0.9389 - val_loss: 0.1330 - val_accuracy: 0.9632
Epoch 6/10
225/225 [=====] - 85s 376ms/step - loss: 0.1240 - accuracy: 0.9580 - val_loss: 0.1340 - val_accuracy: 0.9573
Epoch 7/10
225/225 [=====] - 87s 388ms/step - loss: 0.1235 - accuracy: 0.9591 - val_loss: 0.1638 - val_accuracy: 0.9478
Epoch 8/10
225/225 [=====] - 83s 371ms/step - loss: 0.1012 - accuracy: 0.9643 - val_loss: 0.1468 - val_accuracy: 0.9561
Epoch 9/10
225/225 [=====] - 83s 367ms/step - loss: 0.0967 - accuracy: 0.9655 - val_loss: 0.1412 - val_accuracy: 0.9531
Epoch 10/10
225/225 [=====] - 83s 369ms/step - loss: 0.0954 - accuracy: 0.9655 - val_loss: 0.0905 - val_accuracy: 0.9745
```