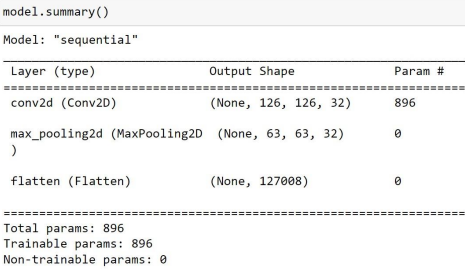
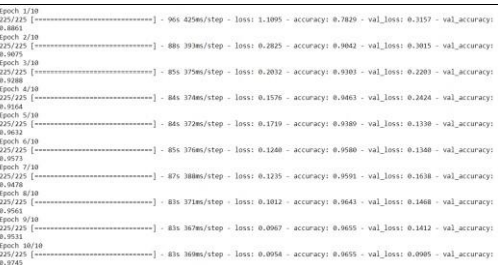


## Project Development Phase Model Performance Test

Date	12 November 2022
Team ID	PNT2022TMID36289
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	<p>Total params: 896</p> <p>Trainable params: 896</p> <p>Non-trainable params: 0</p>	 <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	<p>Training Accuracy – 96.55</p> <p>Validation Accuracy – 97.45</p>	 <pre> epoch 1/10 [.....] - 965.425ms/step - loss: 1.1095 - accuracy: 0.7825 - val_loss: 0.3157 - val_accuracy: 0.8861 epoch 2/10 [.....] - 886.393ms/step - loss: 0.2825 - accuracy: 0.9042 - val_loss: 0.3015 - val_accuracy: 0.9075 epoch 3/10 [.....] - 856.375ms/step - loss: 0.2002 - accuracy: 0.9303 - val_loss: 0.2203 - val_accuracy: 0.9289 epoch 4/10 [.....] - 846.374ms/step - loss: 0.1576 - accuracy: 0.9463 - val_loss: 0.2424 - val_accuracy: 0.9164 epoch 5/10 [.....] - 846.374ms/step - loss: 0.1719 - accuracy: 0.9389 - val_loss: 0.1338 - val_accuracy: 0.9633 epoch 6/10 [.....] - 856.376ms/step - loss: 0.1248 - accuracy: 0.9588 - val_loss: 0.1348 - val_accuracy: 0.9771 epoch 7/10 [.....] - 876.388ms/step - loss: 0.1235 - accuracy: 0.9591 - val_loss: 0.1638 - val_accuracy: 0.9678 epoch 8/10 [.....] - 836.371ms/step - loss: 0.1012 - accuracy: 0.9643 - val_loss: 0.1468 - val_accuracy: 0.9561 epoch 9/10 [.....] - 836.387ms/step - loss: 0.0967 - accuracy: 0.9655 - val_loss: 0.1412 - val_accuracy: 0.9531 epoch 10/10 [.....] - 836.369ms/step - loss: 0.0954 - accuracy: 0.9655 - val_loss: 0.0905 - val_accuracy: 0.9745 </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
```