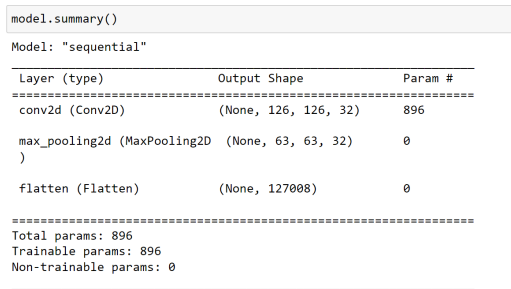
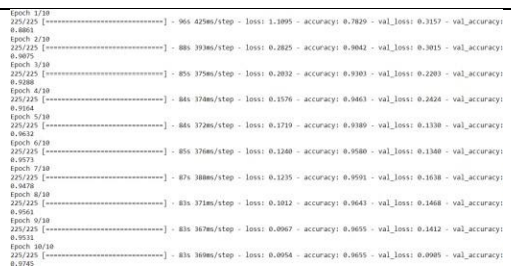


Project Development Phase Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID17868
Project Name	Project - Fertilizers Recommendation System for Disease Prediction
Maximum Marks	10 Marks

Model Performance Testing:

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: 225/225 [=====] - loss: 0.4250/step - loss: 1.8995 - accuracy: 0.7829 - val_loss: 0.3157 - val_accuracy: 0.8881 Epoch 2/10: 225/225 [=====] - loss: 0.3936/step - loss: 0.3825 - accuracy: 0.9842 - val_loss: 0.3015 - val_accuracy: 0.9875 Epoch 3/10: 225/225 [=====] - loss: 0.3758/step - loss: 0.2832 - accuracy: 0.9303 - val_loss: 0.2203 - val_accuracy: 0.9388 Epoch 4/10: 225/225 [=====] - loss: 0.3786/step - loss: 0.3576 - accuracy: 0.9463 - val_loss: 0.2428 - val_accuracy: 0.9564 Epoch 5/10: 225/225 [=====] - loss: 0.3726/step - loss: 0.3719 - accuracy: 0.9389 - val_loss: 0.1338 - val_accuracy: 0.9632 Epoch 6/10: 225/225 [=====] - loss: 0.3768/step - loss: 0.3240 - accuracy: 0.9588 - val_loss: 0.1348 - val_accuracy: 0.9573 Epoch 7/10: 225/225 [=====] - loss: 0.3886/step - loss: 0.3235 - accuracy: 0.9591 - val_loss: 0.1638 - val_accuracy: 0.9478 Epoch 8/10: 225/225 [=====] - loss: 0.3718/step - loss: 0.3812 - accuracy: 0.9643 - val_loss: 0.1468 - val_accuracy: 0.9561 Epoch 9/10: 225/225 [=====] - loss: 0.3678/step - loss: 0.4067 - accuracy: 0.9655 - val_loss: 0.1412 - val_accuracy: 0.9533 Epoch 10/10: 225/225 [=====] - loss: 0.3686/step - loss: 0.4054 - 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)
```

C:\Users\Sree Ram\AppData\Local\Temp\ipykernel_13228\1582812018.py:1: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit`, which supports generators.

```
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