

FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

TEAM ID : PNT2022TMID44701

**TEAM MEMBERS : KARTHI M (732519104009)
KEERTHIVASAN K(732519104013)
MANICKA VASAKAR G(732519104016)
SABARI K (732519104022)**

**DEPARTMENT : COMPUTER SCIENCE & ENGINEERING
COLLEGE NAME : SHREE VENKATESWARA HI-TECH
ENGINEERING COLLEGE,GOBI**

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 1/30 25/25 [====] - loss: 1.3895 - accuracy: 0.7829 - val_loss: 0.3157 - val_accuracy: 0.8861 Epoch 2/30 25/25 [====] - loss: 0.2825 - accuracy: 0.9042 - val_loss: 0.3015 - val_accuracy: 0.8895 Epoch 3/30 25/25 [====] - loss: 0.2032 - accuracy: 0.9303 - val_loss: 0.2203 - val_accuracy: 0.9088 Epoch 4/30 25/25 [====] - loss: 0.1576 - accuracy: 0.9463 - val_loss: 0.2424 - val_accuracy: 0.9184 Epoch 5/30 25/25 [====] - loss: 0.1719 - accuracy: 0.9389 - val_loss: 0.1330 - val_accuracy: 0.9634 Epoch 6/30 25/25 [====] - loss: 0.1240 - accuracy: 0.9580 - val_loss: 0.1340 - val_accuracy: 0.9573 Epoch 7/30 25/25 [====] - loss: 0.1235 - accuracy: 0.9591 - val_loss: 0.1638 - val_accuracy: 0.9458 Epoch 8/30 25/25 [====] - loss: 0.1012 - accuracy: 0.9643 - val_loss: 0.1468 - val_accuracy: 0.9561 Epoch 9/30 25/25 [====] - loss: 0.0907 - accuracy: 0.9655 - val_loss: 0.1412 - val_accuracy: 0.9511 Epoch 10/30 25/25 [====] - loss: 0.0954 - accuracy: 0.9635 - val_loss: 0.0905 - val_accuracy: 0.9745</pre>

Model Summary

<pre>model.summary()</pre>		
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
```