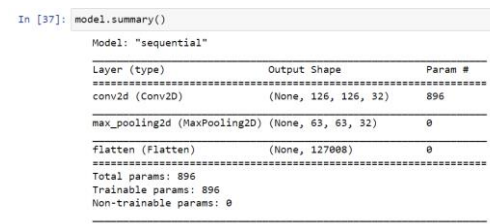
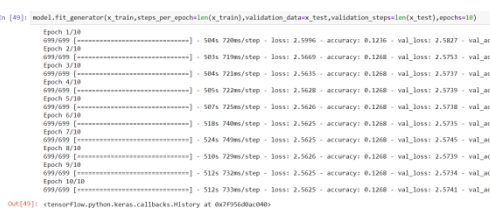


Project Development Phase Model Performance Test

| | |
|---------------|----------------------------------------------------------|
| Date | 21 November 2022 |
| Team ID | PNT2022TMID50383 |
| Project Name | 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> In [97]: 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 – 12.68 Validation Accuracy – 13.07 |  <pre> In [40]: model.fit_generator(x_train,steps_per_epoch=len(x_train),validation_data=x_test,validation_steps=len(x_test),epochs=10) Epoch 1/10 500/500 [.....] - loss: 7.0800/step - loss: 2.5996 - accuracy: 0.1216 - val_loss: 2.5827 - val_accor Epoch 2/10 500/500 [.....] - loss: 7.1300/step - loss: 2.5689 - accuracy: 0.1268 - val_loss: 2.5793 - val_accor Epoch 3/10 500/500 [.....] - loss: 7.2300/step - loss: 2.5635 - accuracy: 0.1268 - val_loss: 2.5737 - val_accor Epoch 4/10 500/500 [.....] - loss: 7.2200/step - loss: 2.5628 - accuracy: 0.1268 - val_loss: 2.5739 - val_accor Epoch 5/10 500/500 [.....] - loss: 7.2500/step - loss: 2.5626 - accuracy: 0.1268 - val_loss: 2.5738 - val_accor Epoch 6/10 500/500 [.....] - loss: 7.4800/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5735 - val_accor Epoch 7/10 500/500 [.....] - loss: 7.4900/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5745 - val_accor Epoch 8/10 500/500 [.....] - loss: 7.2900/step - loss: 2.5626 - accuracy: 0.1268 - val_loss: 2.5739 - val_accor Epoch 9/10 500/500 [.....] - loss: 7.3300/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5734 - val_accor Epoch 10/10 500/500 [.....] - loss: 7.3300/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5741 - val_accor Out[40]: <tensorflow.python.keras.callbacks.History at 0x795608ac09d0> </pre> |

Model Summary

```
In [37]: 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

```
In [49]: 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
699/699 [=====] - 504s 720ms/step - loss: 2.5996 - accuracy: 0.1236 - val_loss: 2.5827 - val_accuracy: 0.1307
Epoch 2/10
699/699 [=====] - 503s 719ms/step - loss: 2.5669 - accuracy: 0.1268 - val_loss: 2.5753 - val_accuracy: 0.1307
Epoch 3/10
699/699 [=====] - 504s 721ms/step - loss: 2.5635 - accuracy: 0.1268 - val_loss: 2.5737 - val_accuracy: 0.1307
Epoch 4/10
699/699 [=====] - 505s 722ms/step - loss: 2.5628 - accuracy: 0.1268 - val_loss: 2.5739 - val_accuracy: 0.1307
Epoch 5/10
699/699 [=====] - 507s 725ms/step - loss: 2.5626 - accuracy: 0.1268 - val_loss: 2.5738 - val_accuracy: 0.1307
Epoch 6/10
699/699 [=====] - 518s 740ms/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5735 - val_accuracy: 0.1307
Epoch 7/10
699/699 [=====] - 524s 749ms/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5745 - val_accuracy: 0.1307
Epoch 8/10
699/699 [=====] - 510s 729ms/step - loss: 2.5626 - accuracy: 0.1268 - val_loss: 2.5739 - val_accuracy: 0.1307
Epoch 9/10
699/699 [=====] - 512s 732ms/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5734 - val_accuracy: 0.1307
Epoch 10/10
699/699 [=====] - 512s 733ms/step - loss: 2.5625 - accuracy: 0.1268 - val_loss: 2.5741 - val_accuracy: 0.1307
```

```
Out[49]: <tensorflow.python.keras.callbacks.History at 0x7f956d0ac040>
```