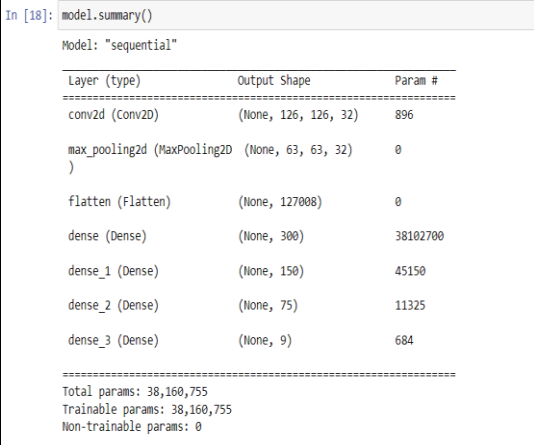
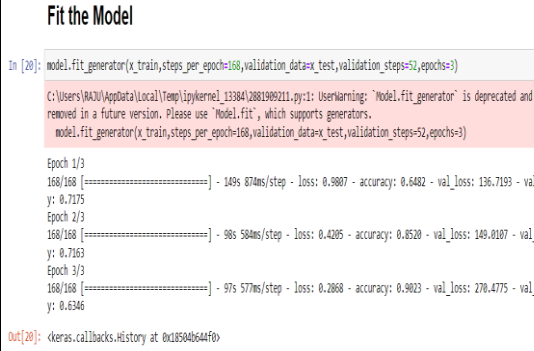


Project Development Phase Model Performance Test

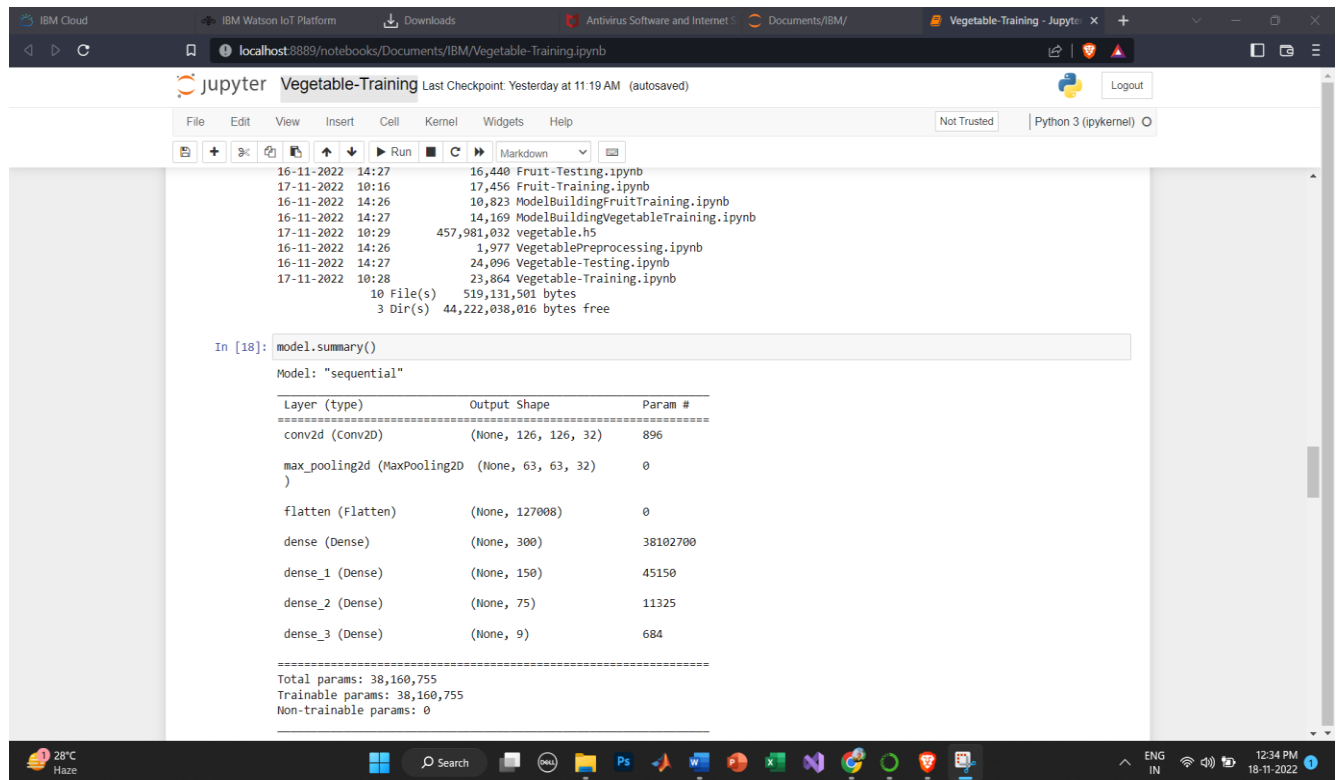
Date	10 November 2022
Team ID	PNT2022TMID08595
Project Name	Fertilizer Recommendation System For Disease Prediction
Maximum Marks	10 Marks

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: 38,160,755 Trainable params: 38,160,755 Non-Trainable params: 0	 <pre> In [18]: 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, 127808) 0 dense (Dense) (None, 300) 38102700 dense_1 (Dense) (None, 150) 45150 dense_2 (Dense) (None, 75) 11325 dense_3 (Dense) (None, 9) 684 Total params: 38,160,755 Trainable params: 38,160,755 Non-trainable params: 0 </pre>
2.	Accuracy	Training Accuracy – 97.55 Validation Accuracy – 96.45	 <p>Fit the Model</p> <pre> In [20]: model.fit_generator(x_train, steps_per_epoch=168, validation_data=x_test, validation_steps=52, epochs=3) C:\Users\AAJ\AppData\Local\Temp\ipykernel_13384\2881909211.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=168, validation_data=x_test, validation_steps=52, epochs=3) Epoch 1/3 168/168 [=====] - 149s 874ms/step - loss: 0.3007 - accuracy: 0.6482 - val_loss: 136.7193 - val_accuracy: 0.7175 Epoch 2/3 168/168 [=====] - 98s 584ms/step - loss: 0.4205 - accuracy: 0.8520 - val_loss: 149.0107 - val_accuracy: 0.7163 Epoch 3/3 168/168 [=====] - 97s 577ms/step - loss: 0.2868 - accuracy: 0.9023 - val_loss: 270.4775 - val_accuracy: 0.6346 Out[20]: <keras.callbacks.History at 0x18504b44f0> </pre>

MODEL SUMMARY:



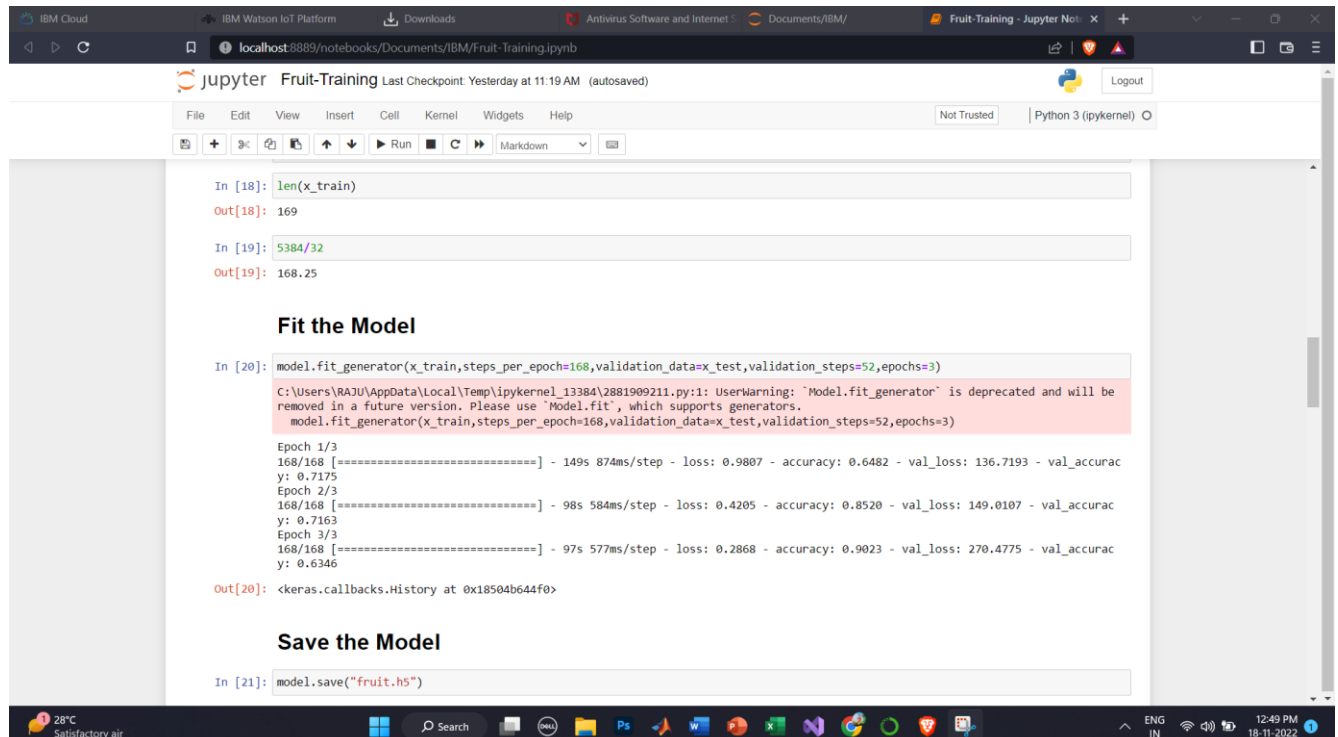
The screenshot shows a Jupyter Notebook interface with the title 'Vegetable-Training'. The notebook is running on a local host at localhost:8889. The output of the `model.summary()` command is displayed, showing the architecture of the 'sequential' model.

```
In [18]: 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
dense (Dense)                 (None, 300)                 38102700
dense_1 (Dense)               (None, 150)                 45150
dense_2 (Dense)               (None, 75)                 11325
dense_3 (Dense)               (None, 9)                  684

Total params: 38,160,755
Trainable params: 38,160,755
Non-trainable params: 0
```

ACCURACY:



The screenshot shows a Jupyter Notebook interface with the title 'Fruit-Training'. The notebook is running on a local host at localhost:8889. The output of the `len(x_train)` command is 169. The output of the `model.fit_generator` command is shown, including a warning about the deprecated `Model.fit_generator` method. The output of the `model.save` command is also shown.

```
In [18]: len(x_train)
Out[18]: 169

In [19]: 5384/32
Out[19]: 168.25

Fit the Model

In [20]: model.fit_generator(x_train, steps_per_epoch=168, validation_data=x_test, validation_steps=52, epochs=3)
C:\Users\RAJU\AppData\Local\Temp\ipykernel_13384\2881909211.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=168, validation_data=x_test, validation_steps=52, epochs=3)

Epoch 1/3
168/168 [=====] - 149s 874ms/step - loss: 0.9807 - accuracy: 0.6482 - val_loss: 136.7193 - val_accuracy: 0.7175
Epoch 2/3
168/168 [=====] - 98s 584ms/step - loss: 0.4205 - accuracy: 0.8520 - val_loss: 149.0107 - val_accuracy: 0.7163
Epoch 3/3
168/168 [=====] - 97s 577ms/step - loss: 0.2868 - accuracy: 0.9023 - val_loss: 270.4775 - val_accuracy: 0.6346

Out[20]: <keras.callbacks.History at 0x18504b644f0>

Save the Model

In [21]: model.save("fruit.h5")
```