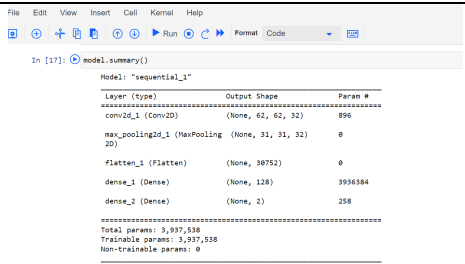
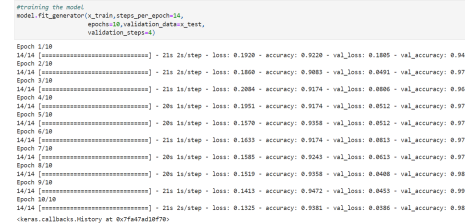


Project Development Phase Model Performance Test

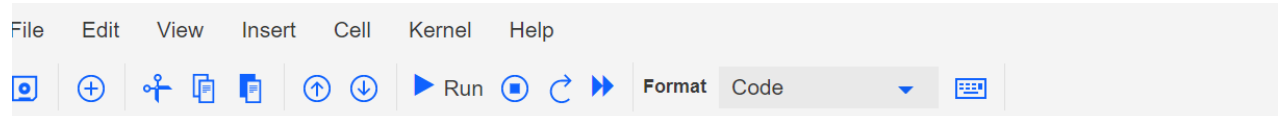
Date	19 November 2022
Team ID	PNT2022TMID35819
Project Name	Project - Emerging Methods for Early Detection Of Forest Fires
Maximum Marks	10 Marks


Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot
1.	Model Summary	Attached below	 <pre> In [17]: model.summary() Model: "sequential_1" Layer (type) Output Shape Param # ----- conv2d_1 (Conv2D) (None, 62, 62, 32) 896 max_pooling2d_1 (MaxPooling (None, 31, 31, 32) 0 2D) flatten_1 (Flatten) (None, 98752) 0 dense_1 (Dense) (None, 128) 3936384 dense_2 (Dense) (None, 2) 258 ----- Total params: 3,937,538 Trainable params: 3,937,538 Non-trainable params: 0 </pre>
2.	Accuracy	Training Accuracy - 0.9835 Validation Accuracy – 0.991	 <pre> Printing the model: model_fit_generator(x_train_steps_per_epoch=14, epochs=16, validation_data=(x_test, validation_steps=4)) Epoch 1/16 14/14 [=====] - 21s 2s/step - loss: 0.1938 - accuracy: 0.9128 - val_loss: 0.1885 - val_accuracy: 0.9421 Epoch 2/16 14/14 [=====] - 21s 1s/step - loss: 0.1869 - accuracy: 0.9882 - val_loss: 0.0491 - val_accuracy: 0.9752 Epoch 3/16 14/14 [=====] - 21s 1s/step - loss: 0.2084 - accuracy: 0.9174 - val_loss: 0.0886 - val_accuracy: 0.9609 Epoch 4/16 14/14 [=====] - 20s 1s/step - loss: 0.1951 - accuracy: 0.9174 - val_loss: 0.0512 - val_accuracy: 0.9752 Epoch 5/16 14/14 [=====] - 20s 1s/step - loss: 0.1576 - accuracy: 0.9558 - val_loss: 0.0512 - val_accuracy: 0.9752 Epoch 6/16 14/14 [=====] - 21s 1s/step - loss: 0.1633 - accuracy: 0.9174 - val_loss: 0.0613 - val_accuracy: 0.9752 Epoch 7/16 14/14 [=====] - 20s 1s/step - loss: 0.1385 - accuracy: 0.9243 - val_loss: 0.0613 - val_accuracy: 0.9752 Epoch 8/16 14/14 [=====] - 20s 1s/step - loss: 0.1319 - accuracy: 0.9358 - val_loss: 0.0408 - val_accuracy: 0.9835 Epoch 9/16 14/14 [=====] - 21s 1s/step - loss: 0.1413 - accuracy: 0.9472 - val_loss: 0.0459 - val_accuracy: 0.9917 Epoch 10/16 14/14 [=====] - 21s 2s/step - loss: 0.1325 - accuracy: 0.9381 - val_loss: 0.0386 - val_accuracy: 0.9835 (learn_val_history at 0x7fa7a08f78) </pre>

Model Summary:



In [17]:  `model.summary()`

Model: "sequential_1"

Layer (type)	Output Shape	Param #
=====		
conv2d_1 (Conv2D)	(None, 62, 62, 32)	896
max_pooling2d_1 (MaxPooling 2D)	(None, 31, 31, 32)	0
flatten_1 (Flatten)	(None, 30752)	0
dense_1 (Dense)	(None, 128)	3936384
dense_2 (Dense)	(None, 2)	258
=====		
Total params: 3,937,538		
Trainable params: 3,937,538		
Non-trainable params: 0		

Accuracy:

```
#training the model
model.fit_generator(x_train, steps_per_epoch=14,
                    epochs=10, validation_data=x_test,
                    validation_steps=4)
```

```
Epoch 1/10
14/14 [=====] - 21s 2s/step - loss: 0.1920 - accuracy: 0.9220 - val_loss: 0.1805 - val_accuracy: 0.9421
Epoch 2/10
14/14 [=====] - 21s 2s/step - loss: 0.1860 - accuracy: 0.9083 - val_loss: 0.0491 - val_accuracy: 0.9752
Epoch 3/10
14/14 [=====] - 21s 1s/step - loss: 0.2084 - accuracy: 0.9174 - val_loss: 0.0806 - val_accuracy: 0.9669
Epoch 4/10
14/14 [=====] - 20s 1s/step - loss: 0.1951 - accuracy: 0.9174 - val_loss: 0.0512 - val_accuracy: 0.9752
Epoch 5/10
14/14 [=====] - 20s 1s/step - loss: 0.1570 - accuracy: 0.9358 - val_loss: 0.0512 - val_accuracy: 0.9752
Epoch 6/10
14/14 [=====] - 21s 1s/step - loss: 0.1633 - accuracy: 0.9174 - val_loss: 0.0813 - val_accuracy: 0.9752
Epoch 7/10
14/14 [=====] - 20s 1s/step - loss: 0.1585 - accuracy: 0.9243 - val_loss: 0.0613 - val_accuracy: 0.9752
Epoch 8/10
14/14 [=====] - 20s 1s/step - loss: 0.1519 - accuracy: 0.9358 - val_loss: 0.0408 - val_accuracy: 0.9835
Epoch 9/10
14/14 [=====] - 21s 1s/step - loss: 0.1413 - accuracy: 0.9472 - val_loss: 0.0453 - val_accuracy: 0.9917
Epoch 10/10
14/14 [=====] - 21s 2s/step - loss: 0.1325 - accuracy: 0.9381 - val_loss: 0.0386 - val_accuracy: 0.9835
<keras.callbacks.History at 0x7fa47ad10f70>
```