EMERGING METHODS FOR EARLY DETECTION OF FOREST

FIRE MODEL BUILDING

SAVE THE MODEL

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Project Name	Project- Emerging Methods for Early detection of forest fire

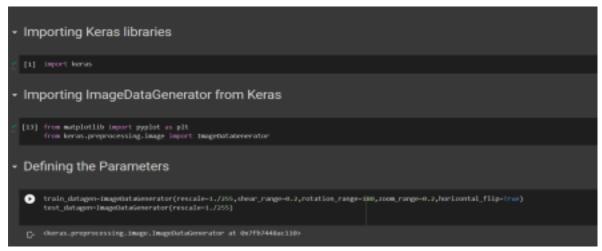
SAVE THE MODEL

Your model is to be saved for future purposes. This saved model also is integrated with an android application or web application in order to predict something.

IMPORT LIBRARIES:

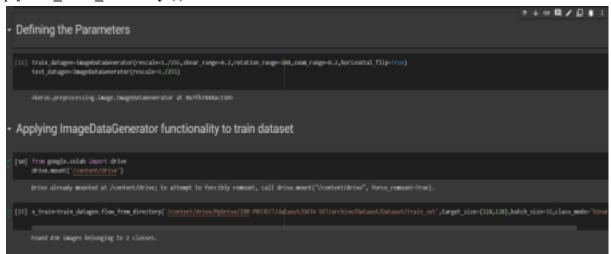
Importing Keras libraries
 import keras
 Importing ImageDataGenerator from Keras
 from keras.preprocessing.image import ImageDataGenerator

IMPORT ImageDataGenerator FROM KERAS:



APPLYING ImageDataGenerator to train dataset:

plyflow from directory () methodfor Train folder.



APPLYING ImageDataGenerator to test dataset:

Applying the flow from directory () methodfortest folder.



IMPORTING MODEL BUILDING LIBRARIES:

11/8/22, 1:16 AM Main code - Colaboratory

Importing Model Building Libraries

```
#to define the linear Initialisation import sequential
from keras.models import Sequential
#to add layers import Dense
from keras.layers import Dense
#to create Convolutional kernel import convolution2D
from keras.layers import Convolution2D
#import Maxpooling layer
from keras.layers import MaxPooling2D
#import flatten layer
from keras.layers import Flatten
import warnings
warnings.filterwarnings('ignore')
```

INITIALIZING THE MODEL:

- Initializing the model

```
model=Sequential()
```

ADDING CNN LAYERS:

Adding CNN Layers

```
model.add(Convolution2D(32,(3,3),input_shape=(128,128,3),activation='relu'))
#add maxpooling layers
model.add(MaxPooling2D(pool_size=(2,2)))
#add faltten layer
model.add(Flatten())
```

ADDING DENSE LAYERS:

- Add Dense layers

```
#add hidden layers
model.add(Dense(150,activation='relu'))
#add output layer
model.add(Dense(1,activation='sigmoid'))
```

CONFIGURING THE LEARNING PROCESS:

configuring the learning process

```
model.compile(loss='binary_crossentropy',optimizer="adam",metrics=["accuracy"])
```

TRAINING THE MODEL:

Training the model

```
model.fit_generator(x_train,steps_per_epoch=14,epochs=10,validation_data=x_test,validation
  Epoch 1/10
  Epoch 2/10
  14/14 [------ 0.3427 - accuracy: 0.86;
  Epoch 3/10
  Epoch 4/10
  Epoch 5/10
  14/14 [========================== ] - 29s 2s/step - loss: 0.1926 - accuracy: 0.924
  Epoch 6/10
  14/14 [=========================== ] - 30s 2s/step - loss: 0.1971 - accuracy: 0.92f
  Epoch 7/10
  Epoch 8/10
  Epoch 9/10
  ckeras.callbacks.History at 0x7fd537101390>
 4
```

SAVE THE MODEL:

Save the model

```
model.save("forest.h5")
```