Sprint -3

Date 17 November 2022
Team ID PNT2022TMID33736
Project Name Project - AI-Powered Nutrition Analyzer for Fitness Enthusiasts

Data Collection

Drive Link : https://drive.google.com/drive/folders/1Fs-MwaF5qmHZi6-xn_IHNMLiuBYuWVn0

Download the dataset using the above given link

Unzipping the dataset

!unzip '/content/Dataset.zip'

inflating: Dataset/TRAIN_SET/PINEAPPLE/33_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/34_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/35_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/36_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/37_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/38_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/39_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/40_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/41_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/42_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/43_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/44_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/45_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/46_100.jpg inflating:

Dataset/TRAIN_SET/PINEAPPLE/47_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/48_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/49_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/4_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/50_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/51_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/52_100.jpg

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inflating: Dataset/TRAIN_SET/PINEAPPLE/57_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/58_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/59_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/5_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/60_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/61_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/62_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/63_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/64_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/65_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/66_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/67_100.jpg

inflating: Dataset/TRAIN_SET/PINEAPPLE/68_100.jpg

creating: Dataset/TRAIN_SET/WATERMELON/

inflating: Dataset/TRAIN_SET/WATERMELON/0_100.jpg

inflating: Dataset/TRAIN_SET/WATERMELON/100_100.jpg

Image ProProcessing

Importing the ImageDataGenerator Library

```
import numpy as np

import tensorflow as tf
from tensorflow.keras.models import Sequential

from tensorflow.keras import layers

from tensorflow.keras.layers import Dense,Flatten

from tensorflow.keras.layers import Conv2D,MaxPooling2D,Dropout

from keras.preprocessing.image import ImageDataGenerator
```

Config ImageDataGenerator Class

```
train_datagen = ImageDataGenerator(rescale = 1./255,shear_range=0.2, zoom_range=0.2, horizontal_flip=

True)

test_datagen = ImageDataGenerator(rescale = 1./255)
```

Applying Image DataGenerator Functionality To Trainset And Testset

#Applying Image DataGenerator Functionality To Trainset And Testset
x_train = train_datagen.flow_from_directory(r'/content/drive/MyDrive/DataSet-IBM/TRAIN_SET',

target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')

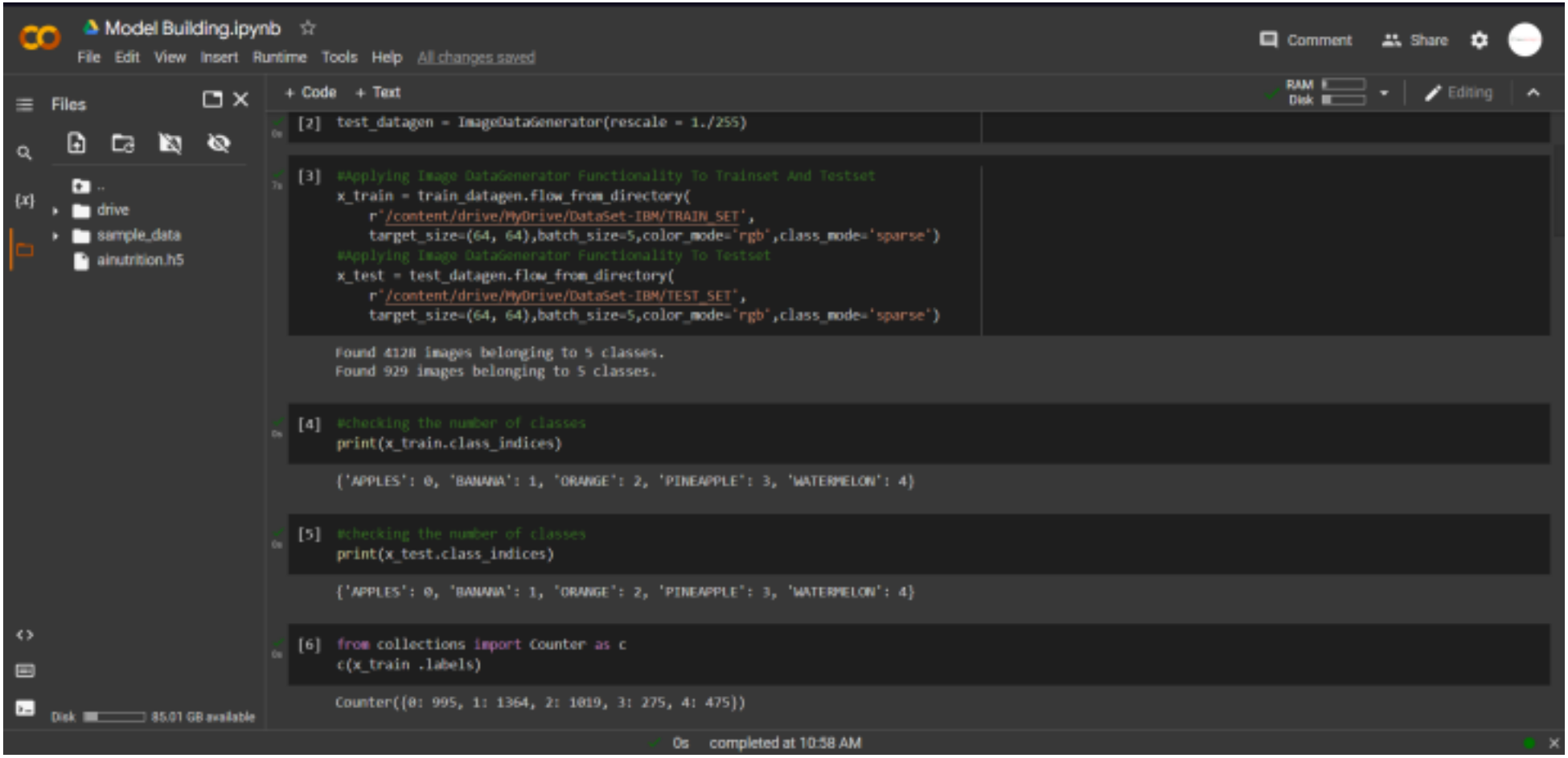
#Applying Image DataGenerator Functionality To Testset

x_test = test_datagen.flow_from_directory(r'/content/drive/MyDrive/DataSet-IBM/TEST_SET',

target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')

```
Found 4128 images belonging to 5 classes.
Found 929 images belonging to 5 classes.
```

Image PreProcessing


Model Building.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment
Share
Files
drive
sample_data
ainutrition.h5
Disk 85.01 GB available
+ Code + Text
RAM
Disk
Editing
[2] test_datagen = ImageDataGenerator(rescale = 1./255)
[3] #Applying Image DataGenerator Functionality To Trainset And Testset
x_train = train_datagen.flow_from_directory(
r'/content/drive/MyDrive/DataSet-IBM/TRAIN_SET',
target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')
#Applying Image DataGenerator Functionality To Testset
x_test = test_datagen.flow_from_directory(
r'/content/drive/MyDrive/DataSet-IBM/TEST_SET',
target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')
Found 4128 images belonging to 5 classes.
Found 929 images belonging to 5 classes.
[4] #checking the number of classes
print(x_train.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
[5] #checking the number of classes
print(x_test.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
[6] from collections import Counter as c
c(x_train .labels)
Counter({0: 995, 1: 1364, 2: 1019, 3: 275, 4: 475})
0s completed at 10:58 AM