Sprint-1

Image Preprocessing

Dataset:

 In our dataset we have collected images of the five variety of fruits.

* Apple
* Orange
* Pineapple
* Watermelon
* Banana

Drive link [: https://drive.google.com/file/d/1jzDjV7jYcIzlIieagaJdubMJ3YeLsry1/view?usp=share\_link](https://drive.google.com/file/d/1jzDjV7jYcIzlIieagaJdubMJ3YeLsry1/view?usp=share_link)

Image Preprocessing:

* **Importing The ImageDataGenerator Library** from keras.preprocessing.image import ImageDataGenerator

* **Configuring ImageDataGenerator Class** train\_datagen = ImageDataGenerator(rescale=1./255,shear\_range=0.2,zoom\_range=0.2,horizont al\_flip=True)

test\_datagen=ImageDataGenerator(rescale=1./255)

* **Applying Image DataGenerator Functionality To Trainset And Testset** x\_train = train\_datagen.flow\_from\_directory(r'/content/Dataset/TRAIN\_SET',

target\_size=(64, 64),batch\_size=5,color\_mode='rgb',class\_mode='sparse')

x\_test = test\_datagen.flow\_from\_directory( r'/content/Dataset/TEST\_SET', target\_size=(64, 64),batch\_size=5,color\_mode='rgb',class\_mode='sparse')

# Data Collection

Download the dataset [here](https://drive.google.com/file/d/1jzDjV7jYcIzlIieagaJdubMJ3YeLsry1/view)

# Unzipping the dataset

!unzip '/content/Dataset.zip' inflating: Dataset/TRAIN\_SET/WATERMELON/r\_288\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_289\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_28\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_290\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_291\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_292\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_293\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_294\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_295\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_296\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_297\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_298\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_299\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_29\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_2\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_300\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_301\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_302\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_303\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_304\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_305\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_306\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_307\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_308\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_309\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_30\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_310\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_311\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_312\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_313\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_314\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_315\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_31\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_32\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_33\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_34\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_35\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_36\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_37\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_38\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_39\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_3\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_40\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_41\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_42\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_43\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_44\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_45\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_46\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_4\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_50\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_57\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_5\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_6\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_7\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_81\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_8\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_9\_100.jpg



# Image Preprocessing

#Importing The ImageDataGenerator Library

from keras.preprocessing.image import ImageDataGenerator

# Image Data Augmentation

#Configure ImageDataGenerator Class train\_datagen = ImageDataGenerator(rescale=1./255,shear\_range=0.2,zoom\_range=0.2,horizonta 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/Dataset/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/Dataset/TEST\_SET',

target\_size=(64, 64),batch\_size=5,color\_mode='rgb',class\_mode='sparse')

Found 4118 images belonging to 5 classes. Found 929 images belonging to 5 classes.

#checking the number of classes print(x\_train.class\_indices)

{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}

#checking the number of classes print(x\_test.class\_indices) {'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}

from collections import Counter as c c(x\_train .labels)

Counter({0: 995, 1: 1354, 2: 1019, 3: 275, 4: 475})

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