Project Planning Phase

Image Preprocessing

Date	12 October 2022
Team ID	PNT2022TMID35969
	AI-powered Nutrition Analyzer for Fitness Enthusiasts

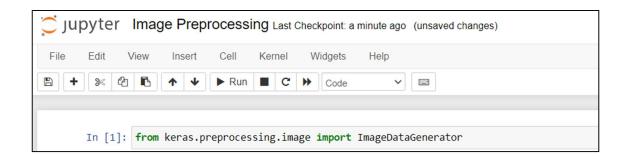
Import ImageDataGenerator Library

pip install tensorflow

```
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```



from keras.preprocessing.image import ImageDataGenerator



Configure ImageDataGenerator Class

```
In [2]: train_datagen = ImageDataGenerator(rescale=1./225, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)
In [3]: test_datagen = ImageDataGenerator(rescale=1./225)
```

Apply ImageDataGenerator Functionality to Train Set and Test Set

1. Performing Data Augmentation

```
# Data Augmentation of Train Set
x_train = train_datagen.flow_from_directory
(r'C:\Users\Deepshika\TRAIN_SET',target_size=(64,64),batch_size=5,color
_mode='rgb',class_mode='sparse')

# Data Augmentation of Test Set
x_test = train_datagen.flow_from_directory
(r'C:\Users\Deepshika\TEST_SET',target_size=(64,64),batch_size=5,color_
mode='rgb',class_mode='sparse')
```

```
Performing Data Augmentation

# Data Augmentation of Train Set
x_train = train_datagen.flow_from_directory (r'C:\Users\Deepshika\TRAIN_SET',target_size=(64,64),batch_size=5,color_mode='rgb',cl'
Found 2626 images belonging to 5 classes.

# Data Augmentation of Test Set
x_test = train_datagen.flow_from_directory (r'C:\Users\Deepshika\TEST_SET',target_size=(64,64),batch_size=5,color_mode='rgb',clast'
Found 1055 images belonging to 5 classes.
```

2. Check Number of Classes in Datasets

```
# Train Set
print(x_train.class_indices)

# Test Set
print(x_test.class_indices)
```

Check Number of Classes

```
# Train Set
print(x_train.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}

# Test Set
print(x_test.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
```

3. Number of Images in Each Class

```
from collections import Counter as c
# Train Set
c(x_train.labels)

# Test Set
c(x_test.labels)
```

Number of Images in Each Class

```
from collections import Counter as c
# Train Set
c(x_train.labels)

Counter({0: 606, 1: 445, 2: 479, 3: 621, 4: 475})

# Test Set
c(x_test.labels)

Counter({0: 157, 1: 287, 2: 160, 3: 294, 4: 157})
```