Apply Image Data Generator Functionality to Trainset And Testset

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Project Name	**AI-Powered Nutrition Analyzer for FitnessEnthusiasts**

Let us apply Image Data Generator functionality to Trainset and Testset byusing the following code

For Training set using flow from directory function.

This function will return batches of images from the sub directories 'apples', 'banana','orange', 'pineapple', 'watermelon' together with labels 0 to 4{'apples': 0, 'banana': 1, 'orange': 2, 'pineapple': 3, 'watermelon': 4}

Arguments:

- directory: Directory where the data is located. If labels are "inferred", it should contain subdirectories, each containing images for a class. Otherwise, the directory structure is ignored.
- batch_size: Size of the batches of data. Default: 32.
- target_size: Size to resize images after they are read from disk.
- class_mode:

  - ‘int': means that the labels are encoded as integers (e.g. for sparse_categorical_crossentropy loss).

  - 'categorical' means that the labels are encoded as a categoricalvector (e.g. for categorical_crossentropy loss).

  - 'binary' means that the labels (there can be only 2) are encodedas float32 scalars with values 0 or 1 (e.g. for binary crossentropy).

  - None (no labels).

Applying ImageDataGenerator functionality to trainset and testset

```
[ ] from tensorflow.keras.preprocessing.image import ImageDataGenerator
    train_datagen = ImageDataGenerator(rescale= 1./255,horizontal_flip = True,vertical_flip = True,zoom_range = 0.2)
    test_datagen = ImageDataGenerator(rescale= 1./255)
```

```
[ ] x_train = train_datagen.flow_from_directory("/content/drive/MyDrive/Dataset/TRAIN_SET",target_size = (64,64),
                                                class_mode = "categorical",batch_size = 24)
```

```
Found 1702 images belonging to 5 classes.
```

```
[ ] x_test = test_datagen.flow_from_directory("/content/drive/MyDrive/Dataset/TEST_SET",target_size = (64,64),
                                              class_mode = "categorical",batch_size = 24)
```

```
Found 1051 images belonging to 5 classes.
```

We notice that 1701 images are belonging to 5 classes for training and1051 images belong to 5 classes for testing purposes.