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# Image Preprocessing

## Applying ImageDataGenerator Functionality To Train And Test Set

In [ ]:

```
from tensorflow.keras.preprocessing.image import ImageDataGenerator
```

In [ ]:

```
# Testing Datagen test_datagen =
ImageDataGenerator(rescale=1/255)
# Training Datagen train_datagen =
ImageDataGenerator(rescale=1/255,zoom_range=0.2,horizontal_flip=True,vertica
l_flip=False)
```

In [ ]:

```
# Training Dataset
x_train=train_datagen.flow_from_directory(r'/content/drive/MyDrive/Dataset/t
raining_set',target_size=(64,64), class_mode='categorical',batch_size=900)
# Testing Dataset
x_test=test_datagen.flow_from_directory(r'/content/drive/MyDrive/Dataset/tes
t_set',target_size=(64,64), class_mode='categorical',batch_size=900)
```

In [ ]:

```
print("Len x-train : ",len(x_train)) print("Len x-test
: ", len(x_test))
```

In [ ]:

```
# The Class Indices in Training Dataset x_train.class_indices
```

In [ ]:

```
traindf=pd.read_csv('/content/drive/images_and_labels.txt',dtype=str,sep='\s
')  traindf.columns =
['image','label','none1','none2','none3']
traindf.drop(['none1', 'none2','none3'], axis=1)
```

In [ ]:

```
datagen=ImageDataGenerator(rescale=1./255.,validation_split=0.25)
```

In [ ]:

```
train_generator=datagen.flow_from_dataframe
(
dataframe=traindf,
directory="/content/drive/",
x_col="image",   y_col="label",
subset="training",
batch_size=32,   seed=42,
shuffle=True,
```

```
class_mode="categorical",
target_size=(150,150)
)
```

In [ ]:

```
validation_generator=datagen.flow_from_dataframe
(   dataframe=traindf,
directory="/content/drive/",
x_col="image",   y_col="label",
subset="validation",
batch_size=32,   seed=42,
shuffle=True,
class_mode="categorical",
target_size=(150,150)
)
```