

Image Preprocessing

Preprocessing the Dataset images and feed them on to the model for training

Team ID	PNT2022TMID30319
Project Name	Fertilizers Recommendation System For Disease Prediction

1. Import ImageDataGenerator Library

```
import numpy as np
from PIL import Image
import matplotlib.pyplot as plt
import pandas as pd
import tensorflow
import keras
import os
import cv2
import glob
from skimage import io
import random
import numpy as np
import matplotlib.pyplot as plt %matplotlib inline
from keras.preprocessing import image
from tensorflow.keras.preprocessing.image
import ImageDataGenerator,load_img,img_to_array
from numpy import expand_dims
```

2. Configure ImageDataGenerator Class

```
train_data_gen = ImageDataGenerator(rescale = 1./255,
                                     shear_range = 0.2,
                                     zoom_range = 0.2,
                                     horizontal_flip = True,
                                     validation_split = 0.30)
test_data_gen = ImageDataGenerator(rescale = 1./255,
                                    validation_split = 0.30)
```

3. Applying ImageDataGenerator functionality to the trainset and test set

```
training_set = train_data_gen.flow_from_directory(path,  
                                                  target_size=(64,64),  
                                                  batch_size=100,  
                                                  class_mode='categorical',  
                                                  shuffle=True,  
                                                  color_mode='rgb',  
                                                  subset = 'training')  
  
testing_set = test_data_gen.flow_from_directory(path,  
                                                  target_size=(64,64),  
                                                  batch_size=100,  
                                                  class_mode='categorical',  
                                                  shuffle=True,  
                                                  color_mode='rgb',  
                                                  subset = 'validation')
```

Found 15311 images belonging to 2 classes.
Found 6561 images belonging to 2 classes.

```
training_set = train_data_gen.flow_from_directory(path1,  
                                                  target_size=(128,128),  
                                                  batch_size=32,  
                                                  class_mode='categorical',  
                                                  shuffle=True,  
                                                  color_mode='rgb',  
                                                  subset = 'training')  
  
testing_set = test_data_gen.flow_from_directory(path2,  
                                                  target_size=(128,128),  
                                                  batch_size=32,  
                                                  class_mode='categorical',  
                                                  shuffle=True,  
                                                  color_mode='rgb',  
                                                  subset = 'validation')
```

Found 3770 images belonging to 6 classes.
Found 503 images belonging to 6 classes.