PROJECT DEVELOPMENT PHASE

SPRINT 1

TOPIC : AI powered nutrition analyzer for fitness enthusiasts

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TEAM MEMBERS:

Data Collection

We Collected images of different food items organized into subdirectories based on their respective names as shown in the project structure.

In this project, we have collected images of 5 types of food items apples, 'banana', 'orange', 'pineapple' and 'watermelon', they are saved in the respective subdirectories with their respective names.

DATASET LINK:

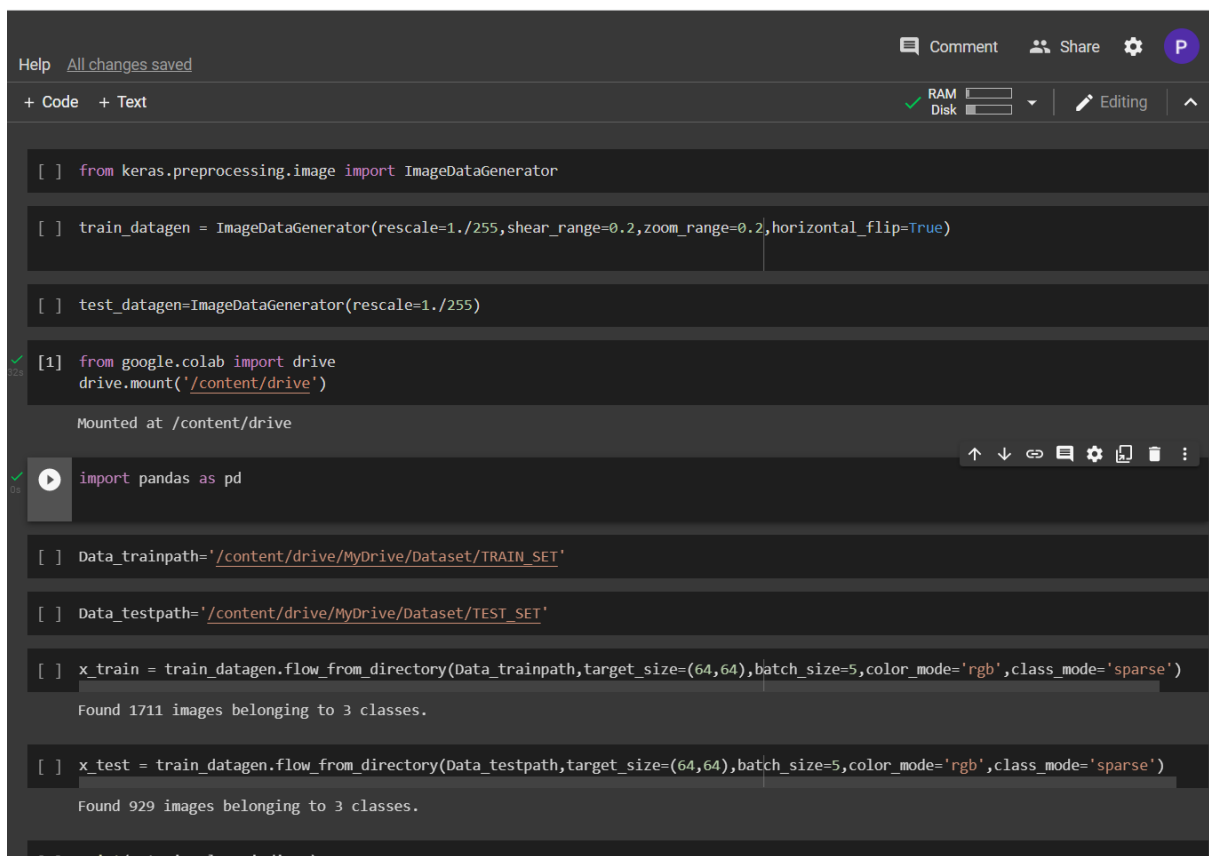https://drive.google.com/drive/folders/1yNVuLA2hxIstOcDV58enyD74Y9drEs6Y?usp=sharing
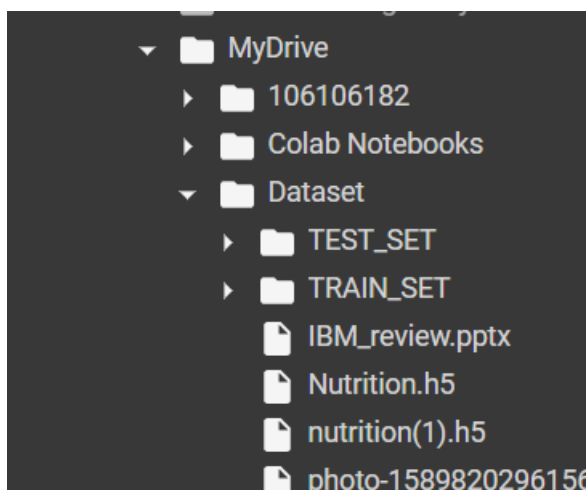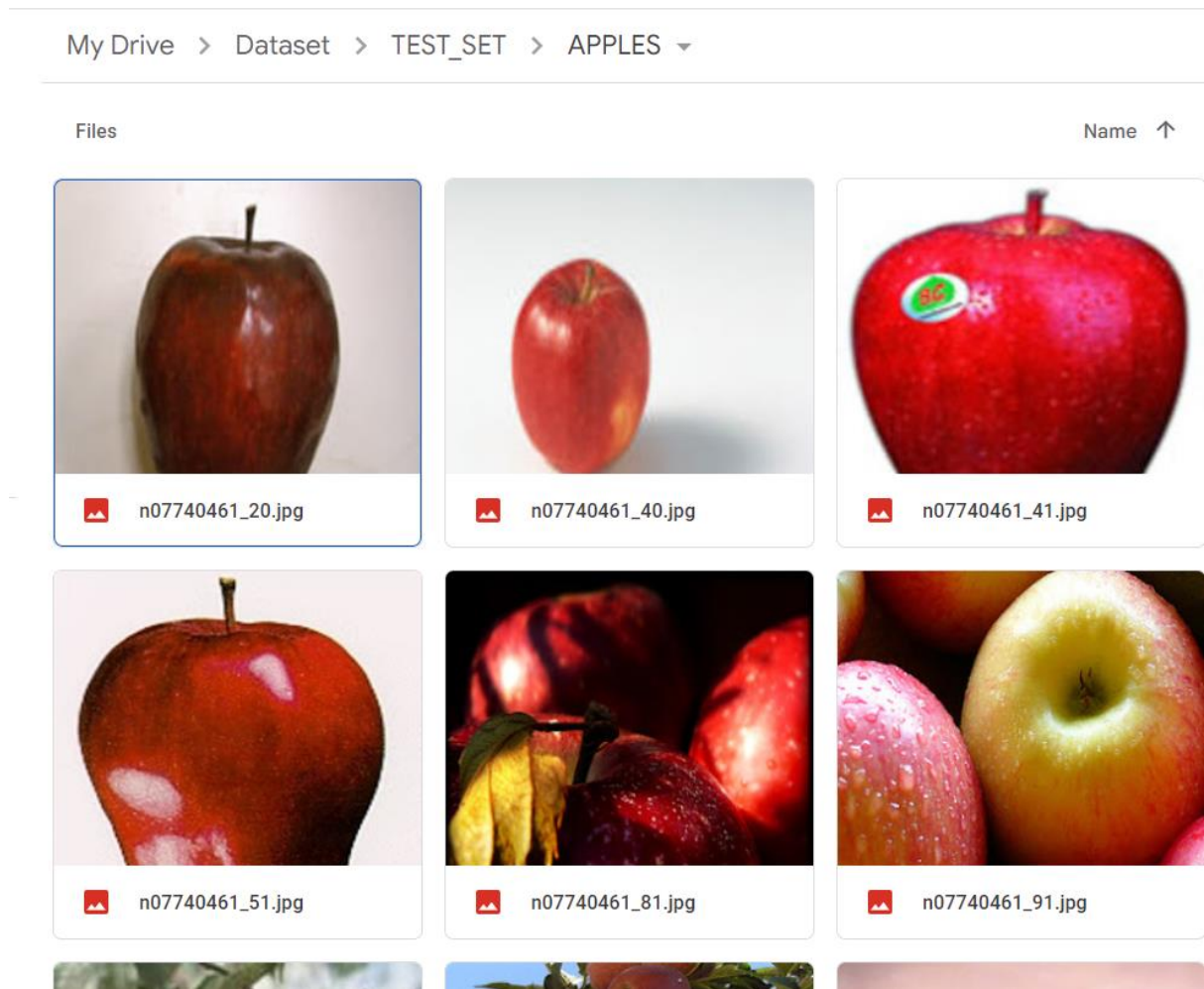
IMAGE PREPROCESSING

We use Keras' ImageDataGenerator class to perform data augmentation. i.e, we are using some kind of parameters to process our collected data. The word "augment" means to make something "greater" or "increase" something (in

this case, data), the Keras ImageDataGenerator class actually works by: Accepting a batch of images used for training. Taking this batch and applying a series of random transformations to each image in the batch (including random rotation, resizing, shearing, etc.). the original batch with the new, randomly transformed batch. Training the CNN on this randomly transformed batch (i.e., the original data itself is not used for training).

+ Code   + Text

RAM ▭
Disk ▬   ▾   ✏ Editing

```python
import pandas as pd
```

```python
Data_trainpath='/content/drive/MyDrive/Dataset/TRAIN_SET'
```

```python
Data_testpath='/content/drive/MyDrive/Dataset/TEST_SET'
```

```python
x_train = train_datagen.flow_from_directory(Data_trainpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
```

```
Found 1711 images belonging to 3 classes.
```

```python
x_test = train_datagen.flow_from_directory(Data_testpath,target_size=(64,64),batch_size=5,color_mode='rgb',class_mode='sparse')
```

```
Found 929 images belonging to 3 classes.
```

```python
print(x_train.class_indices)
```

```
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2}
```

```python
print(x_test.class_indices)
```

```
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2}
```

```python
from collections import Counter as c
c(x_train .labels)
```

```
Counter({1: 692, 2: 1019})
```