```
from google.colab import drive
drive.mount('/content/drive')
```

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.m
```

```
cd /content/drive/MyDrive/DATA
```

```
/content/drive/MyDrive/DATA
```

```
ls
```

```
 TEST_SET/   TEST-SET.zip   TRAIN_SET/  'TRAIN_SET .zip'
```

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

```
train_datagen = ImageDataGenerator(rescale = 1./255, horizontal_flip = True, shear_range =
test_datagen = ImageDataGenerator(rescale = 1./255)
```

```
x_train = train_datagen.flow_from_directory(r"/content/drive/MyDrive/DATA/TRAIN_SET",targe
x_test = train_datagen.flow_from_directory(r"/content/drive/MyDrive/DATA/TEST_SET",target_
```

```
Found 162 images belonging to 5 classes.
                                    5 classes.
```

Saved successfully!

```
print(x_train.class_indices)
print(x_test.class_indices)
```

```
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
```

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

```
Counter({0: 162})
```

```
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Convolution2D, MaxPooling2D,Flatten, Dense
```

```
model = Sequential()
```

```
classifier = Sequential ()
```

```
classifier.add(Convolution2D(32,(3,3),activation = "relu", input_shape  = (64,64,3)))
```

```
classifier.add(MaxPooling2D(pool_size=(2,2)))


classifier.add(Convolution2D(32,(3,3),activation = "relu"))


classifier.add(MaxPooling2D(pool_size=(2,2)))


classifier.add(Flatten())


classifier.add(Dense(units = 128,activation='relu'))
#classifier.add(Dense(300,activation='relu'))
classifier.add(Dense(units =5, activation ='softmax'))


classifier.summary()
```

```
Model: "sequential_1"
_________________________________________________________________
 Layer (type)                 Output Shape              Param #
=================================================================
 conv2d (Conv2D)              (None, 62, 62, 32)        896

 max_pooling2d (MaxPooling2D  (None, 31, 31, 32)       0
 )

 conv2d_1 (Conv2D)            (None, 29, 29, 32)        9248

 max_pooling2d_1 (MaxPooling  (None, 14, 14, 32)       0

                                                        0

 dense (Dense)                (None, 128)               802944

 dense_1 (Dense)              (None, 5)                 645

=================================================================
Total params: 813,733
Trainable params: 813,733
Non-trainable params: 0
_________________________________________________________________
```

Saved successfully!

```
classifier.compile(loss = "sparse_categorical_crossentropy", metrics = ["accuracy"], optim


classifier.save('Nutrition Analyzer.h5')


from tensorflow.keras.models import load_model
from tensorflow.keras.preprocessing import image
import numpy as np
model = load_model("Nutrition Analyzer.h5")
```

```
from tensorflow.keras.utils import img_to_array
img = image.load_img(r'/content/drive/MyDrive/DATA/TEST_SET/BANANA/101_100.jpg', grayscale
x = img_to_array(img) #image to array
x = np.expand_dims(x,axis = 0)
predict_x=model.predict(x)
classes_x=np.argmax(predict_x,axis=-1)
classes_x
```

```
1/1 [==============================] - 0s 101ms/step
array([0])
```

```
img
```

```
index=['APPLES', 'BANANA', 'ORANGE','PINEAPPLE','WATERMELON']
result=str(index[classes_x[0]])
result
```

```
'APPLES'
```

```
import cv2
```

```
img = cv2.imread("/content/drive/MyDrive/DATA/TEST_SET/APPLES/n07740461_1191.jpg")
```



```
type(img)
```

```
NoneType
```

Colab paid products - Cancel contracts here

0s completed at 9:14 PM

Saved successfully!