

AI Powered Nutrition Analyzer for Fitness Enthusiasts

Project development phase

Sprint-1

Date	12.11.2022
Team ID	PNT2022TMID37915
Project name	AI Powered Nutrition Analyzer for Fitness Enthusiasts

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

```
train_datagen=ImageDataGenerator(rescale=1./255,shear_range=0.2,zoom_range=0.2,horizontal_
text_dataset=ImageDataGenerator(rescale=1./255)
```

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

```
x_train = train_datagen.flow_from_directory("/content/drive",target_size = (64,64),
_____
class_mode = "categorical",batch_size = 24)
```

Found 12656 images belonging to 4 classes.

```
x_test = test_datagen.flow_from_directory("/content/drive",target_size = (64,64),
_____
class
```

Found 12702 images belonging to 4 classes.

```
import cv2
```

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

```
img
```

```

array([[[174, 188, 207],
[173, 187, 206],
[171, 185, 204],
...,
[181, 192, 206],
[180, 192, 204],
[179, 191, 203]],

[[175, 189, 208],
[174, 188, 207],
[174, 188, 207],
...,
[182, 193, 207],
[182, 193, 207],
[181, 193, 205]],

[[178, 192, 211],
[177, 191, 210],
[177, 191, 210],
...,
[184, 195, 209],
[184, 195, 209],
[184, 195, 209]],

...,
[[161, 185, 209],
[164, 188, 212],
[163, 191, 215],
...,
[184, 198, 216],
[186, 200, 218],
[187, 201, 220]],

[[157, 185, 209],
[158, 186, 210],
[156, 187, 210],
...,
[185, 199, 217],
[187, 201, 219],
[187, 201, 220]],

[[154, 186, 209],
[153, 185, 208],
[150, 182, 205],
...,
[187, 199, 217],
[188, 202, 221],
[189, 203, 222]]], dtype=uint8)

```

img.ndim

3

type(img) numpy.ndarray

```
img.shape
```

```
(256, 256, 3)
```

```
img_flag = cv2.imread("/content/drive/MyDrive/AI_IBM/Dataset/TEST_SET/APPLES/n07740461_119
```

```
img_flag
```

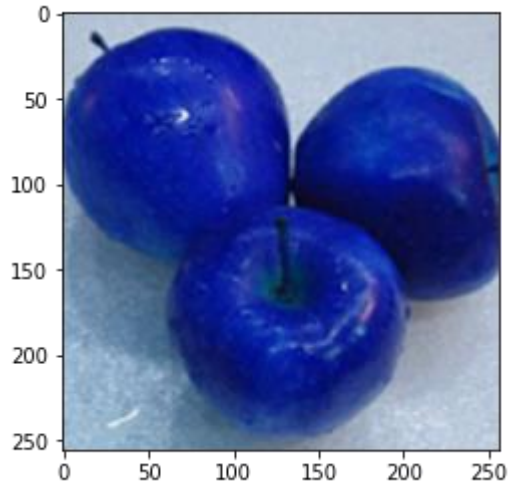
```
array([[[174, 188, 207],  
       [173, 187, 206],  
       [171, 185, 204],  
       ...,  
       [181, 192, 206],  
       [180, 192, 204],  
       [179, 191, 203]],  
      [[175, 189, 208],  
       [174, 188, 207],  
       [174, 188, 207],  
       ...,  
       [182, 193, 207],  
       [182, 193, 207],  
       [181, 193, 205]],  
      [[178, 192, 211],  
       [177, 191, 210],  
       [177, 191, 210],  
       ...,  
       [184, 195, 209],  
       [184, 195, 209],  
       [184, 195, 209]],  
      ...,  
      [[161, 185, 209],  
       [164, 188, 212],  
       [163, 191, 215],  
       ...,  
       [184, 198, 216],  
       [186, 200, 218],  
       [187, 201, 220]],  
      [[157, 185, 209],  
       [158, 186, 210],  
       [156, 187, 210],  
       ...,  
       [185, 199, 217],  
       [187, 201, 219],  
       [187, 201, 220]],  
      [[154, 186, 209],  
       [153, 185, 208],  
       [150, 182, 205],  
       ...,  
       [187, 199, 217],  
       [188, 202, 221],
```

```
[189, 203, 222]]], dtype=uint8)
```

```
import matplotlib.pyplot as plt
```

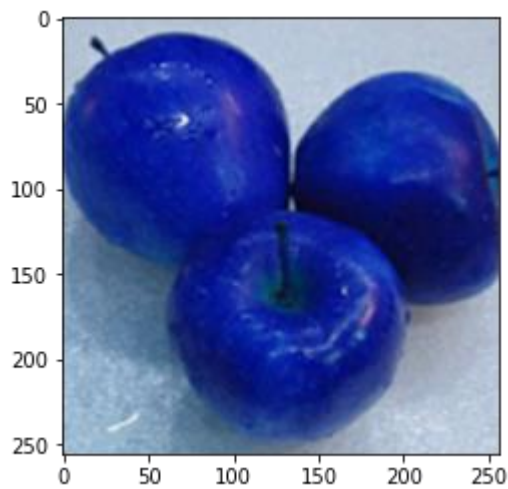
```
plt.imshow(img)
```

```
<matplotlib.image.AxesImage at 0x7fda968014d0>
```



```
plt.imshow(img_flag)
```

```
<matplotlib.image.AxesImage at 0x7fda962e0190>
```



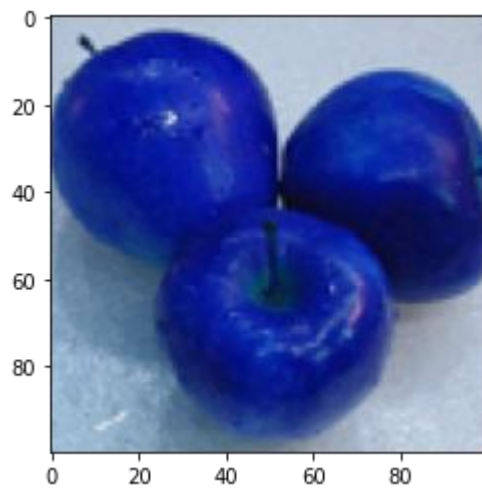
```
resized_img = cv2.resize(img,(100,100))
```

```
resized_img.shape (100,
```

```
100, 3)
```

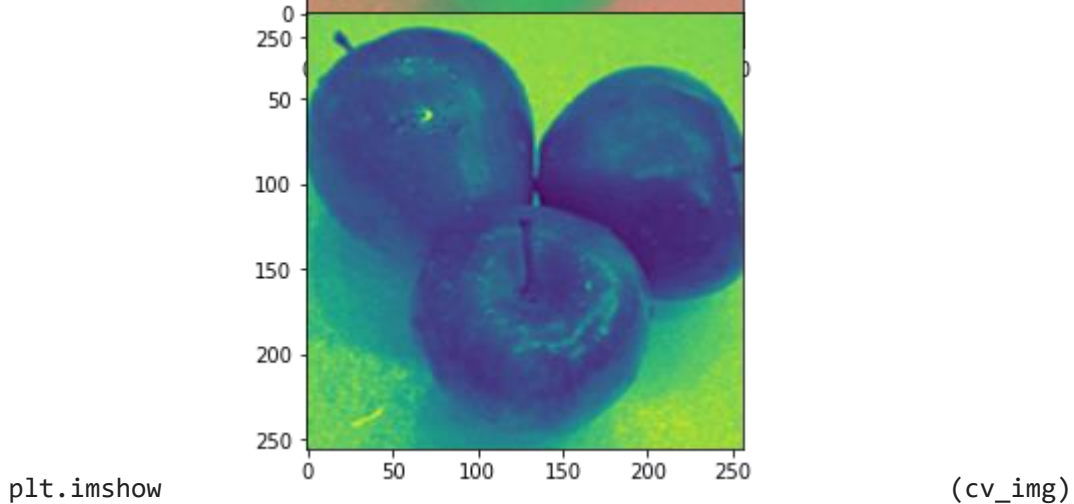
```
plt.imshow(resized_img)
```

```
<matplotlib.image.AxesImage at 0x7fda962c7f90>
```



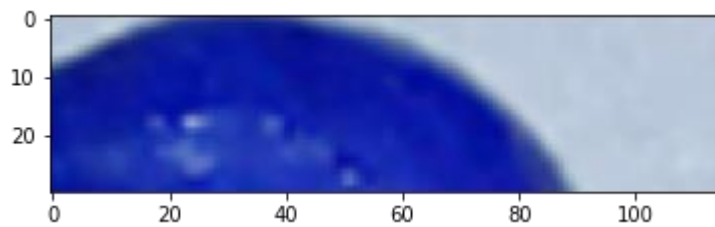
```
cv_img = cv2.cvtColor(img,cv2.COLOR_BGR2YCR_CB)
```

```
plt.imshow(cv_img)
<matplotlib.image.AxesImage at 0x7fda96233810>
```



```
roi_img = img[50:280,35:150] roi_img
= img[10:40,35:150]
```

```
plt.imshow(roi_img)
<matplotlib.image.AxesImage at 0x7fda961935d0>
```



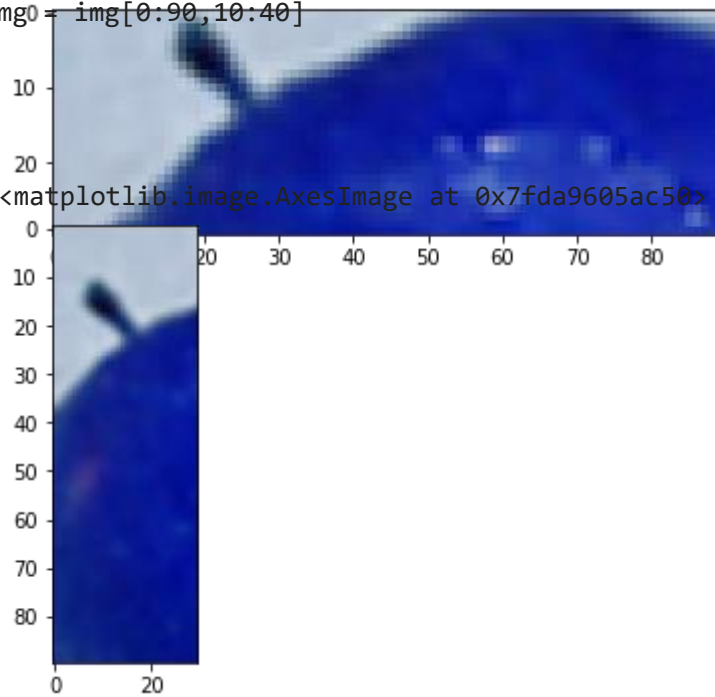
```
roi_img = img[10:40,0:90]
```

```
plt.imshow(roi_img)
```

```
<matplotlib.image.AxesImage at 0x7fda960f3610>
```

```
roi_img = img[0:90,10:40]
```

```
<matplotlib.image.AxesImage at 0x7fda9605ac50>
```



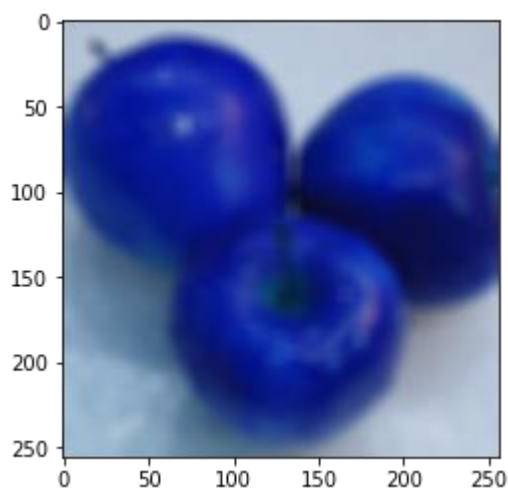
```
plt.imshow
```

```
(roi_img)
```

```
img_bl = cv2.blur(img,(10,10))
```

```
plt.imshow(img_bl)
```

```
<matplotlib.image.AxesImage at 0x7fda96041b10>
```



```
img_gbl = cv2.GaussianBlur(img,(5,5),0)
```

```
plt.imshow(img_gbl)
```

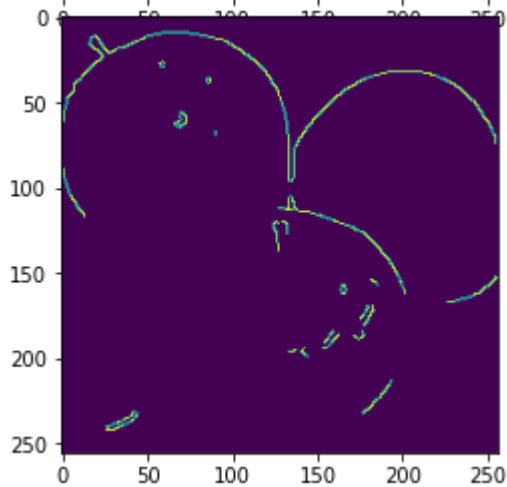
```
<matplotlib.image.AxesImage at 0x7fda95fb41d0>
```



```
img_edge = cv2.Canny(img,230,350)
```

```
plt.imshow(img_edge)
```

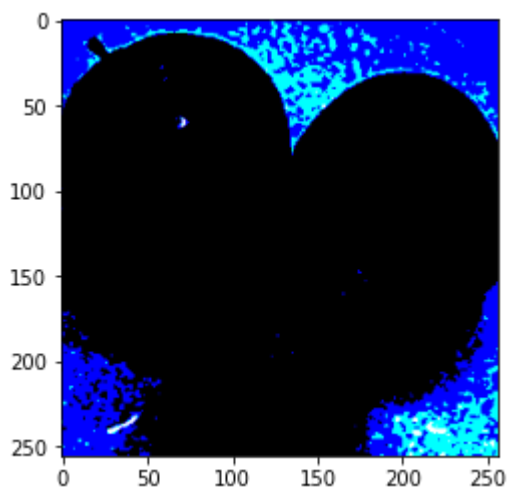
```
<matplotlib.image.AxesImage at 0x7fda95f1a850>
```



```
thresh, thresh_img = cv2.threshold(img, 200, 255, cv2.THRESH_BINARY)
```

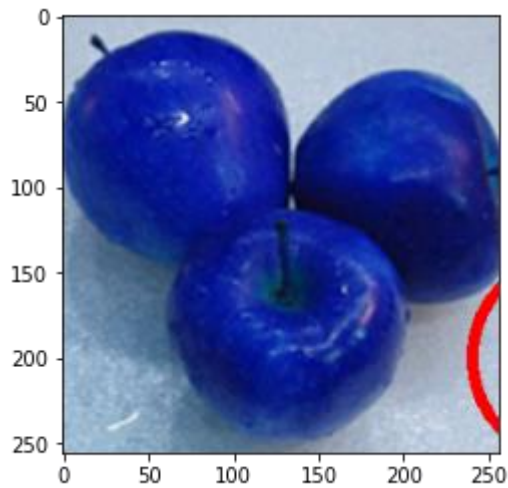
```
plt.imshow(thresh_img)
```

```
<matplotlib.image.AxesImage at 0x7fda962ab910>
```



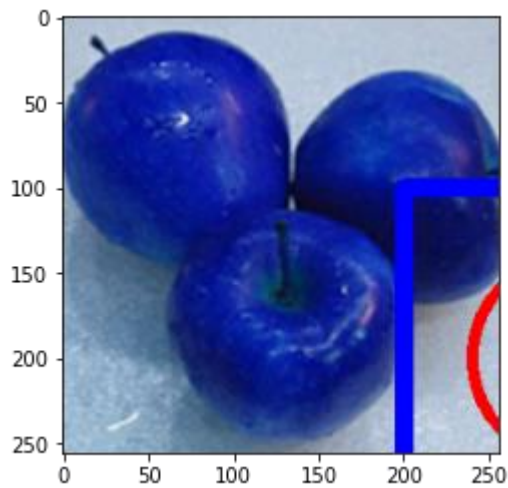
```
circle = cv2.circle(img,(300,200),60,(255,0,0),5)
```

```
plt.imshow(img)
<matplotlib.image.AxesImage at 0x7fda96021850>
```



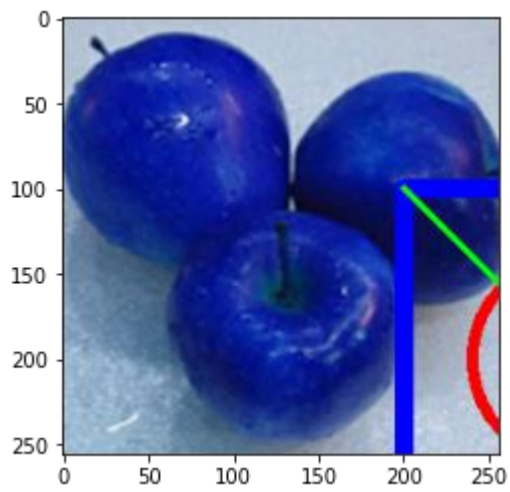
```
rectangle = cv2.rectangle(img,(200,100),(400,300),(0,0,255),10)
```

```
plt.imshow(img)
<matplotlib.image.AxesImage at 0x7fda95e23b50>
```



```
line = cv2.line(img,(200,100),(400,300),(0,255,0),3)
```

```
plt.imshow(img)
<matplotlib.image.AxesImage at 0x7fda95e15250>
```

```
text = cv2.putText(img,"Opencv",(200,50),cv2.FONT_HERSHEY_SIMPLEX,2,(255,255,255),5)
```

```
plt.imshow(img)
```

<matplotlib.image.AxesImage at 0x7fda95d7a910>

