













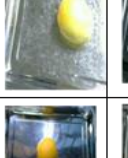





















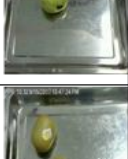
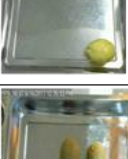
















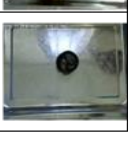
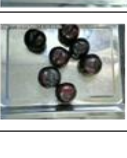

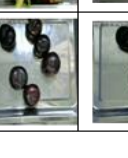
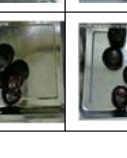















# Fruit Dataset Description

# 1.Fruit Sample Table


N	Fruit Name	Total Images						
1.	Apple Categories	5024						
2.	Banana	3027						
3.	Mango	4154						
4.	Orange	3012						
5.	Peach	2629						
6.	Pear	3012						
7.	Tomatoes	2171						
8.	Guava	4008						
9.	Kiwi	4173						
10	Persimmon	2072						
11	Pitaya	2501						
12	Plum	2298						

13	Pomegrate	2167						
14	Carambola	2080						
15	Muskmelon	2078						
	Total Images	44406						

## Dataset (Total Dataset samples for 15 types of Fruits)

S/N	Fruit Name	Fruit Images	S/N	Fruit Name	Fruit Images
1	Apple	5025	9	Kiwi	4173
2	Banana	3027	10	Persimmon	2072
3	Mango	4154	11	Pitaya	2501
4	Orange	3012	12	Pomegranate	2298
5	Peach	2929	13	Carambola	2167
6	Pear	3012	14	Muskmelon	2078
7	Tomatoes	2171	15	Guava	4008
8	Plum	2298		<b>Total Images for 15 Categories of Images</b>	<b>44406</b>

## Apple Fruits

Fruit Name	Images				
Apple A	957				
Apple B	740				
Apple C	870				
Apple D	1033				
Apple E	664				
Apple F	1338				

## 2 Dataset formats

All the images are in PNG format

## 3 Directory Path

There are 15 different kind of fruits consisting of 44406 images. For 15 different categories there are 15 folders in our dataset and their sub-categories of fruits were kept in sub-folders like for apple there is one folder and inside the main folder there are six sub-folders for sub-categories.

Example

Apple (Main folder)

Apple A  
Apple B  
Apple C  
Apple D  
Apple E  
Apple F

Sub-folders

Sub-categories of all fruits are exit in their relevant sub-folders

## 4 Image Size

The original size of the images is **320×258×3** here 3 represent channel all the images is color image so, for color images channel=3

## 5 Camera Specification

We used HD Logitech web camera to took the pictures with 5-megapixel snapshots.

## 6 Dataset Collection

The database used in this study is comprising of 44406 fruit images, which we collected in a period of 6 months. The images were made with in our lab's environment under different scenarios which we mention below. We captured all the images on a clear background with resolution of 320×258 pixels. We used HD Logitech web camera to took the pictures. During collecting this database, we created all kind of challenges, which, we have to face in real-world recognition scenarios in supermarket and fruit shops such as light, shadow, sunshine, pose variation, to make our model robust for, it might be necessary to cope with illumination variation, camera capturing artifacts, specular reflection shading and shadows. We tested our model's robustness in all scenarios and it perform quit well.

All of images were stored in RGB color-space at 8 bits per channel. The images were gathered at various day times of the day and in different days for the same category. These features increase the dataset variability and represent more realistic scenario. The Images had large variation in quality and lighting. Illumination is one of those variations in imagery. In fact, illumination can make two images of same fruit less similar than two images of different kind of fruits. We were used our own intelligent weight machine and camera to captured all images. The fruit dataset was collected under relatively unconstrained conditions. There are also images with the room light on and room lights off, moved the camera and intelligent weight machine near to the windows of our lab than open windows, closed windows, open window curtains, closed curtains. For a real application in a supermarket, it might be necessary to cope with illumination variation, camera capturing artifacts, specular reflection shading and shadows. Below are the few conditions which we were considered during collected dataset.

- Pose Variations with different categories of fruits
- Variability on the number of elements of fruits
- Used HD camera with 5-megapixel snapshots
- Same color but different Category fruits images with illumination variation
- Cropping and partial occlusion

- Different color same category fruit images
- Different lighting conditions (e.g. fluorescent, natural light some of the fruits shops and supermarkets are without sunshine so it can easily affect the recognition system)
- Six different kind of apple fruit images
- Three categories of mango fruit with specular reflecting shading and shadows
- Three categories of Kiwi fruit images
- Natural and artificial lighting effect on images
- Partial occlusion with hand

## Note

If you need further information regarding dataset please  
Feel free to contact me  
Email Id [israrhussain46@gmail.com](mailto:israrhussain46@gmail.com)