```
%===========================================================================
====
%LOADS DATASET
%===========================================================================
====
pkg load image

directory_path = '/Users/charlesdavi/Desktop/grocery_IM_dataset/';

counter = 1;

for k = 1 : 3

num_images = 10;

category_number = k;

directory = [directory_path int2str(k) '/'];

for i = 1 : num_images

I = imread([directory int2str(i) '.jpg']);

IMG_array{counter} = I;
IMG_category{counter} = k; %stores the classifier associated with the image
counter = counter + 1;

endfor

endfor

%===========================================================================
====
%DISPLAYS PARTITIONED IMAGE
%===========================================================================
====

%lime---------------------
I = IMG_array{1};

[final_avg_matrix final_indexes] = partition_image_vectorized(I); %this is to size the partitions for the
entire dataset

N = size(final_avg_matrix,2); %we take the second dimension, because of repeat entries in the first
dimensions

avg_matrix(:,:,1) = final_avg_matrix(1:N,:);
avg_matrix(:,:,2) = final_avg_matrix(N+1:2*N,:);
avg_matrix(:,:,3) = final_avg_matrix(2*N+1:3*N,:);

im_size = size(I);

[average_color_image] = generate_avg_color_image_vect(avg_matrix, im_size);
```

```matlab
figure, imshow(average_color_image)

file_path = '/Users/charlesdavi/Desktop/grocery_IM_dataset/lime.png';

saveas(gcf,file_path);

%avocado---------------------

avg_matrix = [];

I = IMG_array{11};

[final_avg_matrix final_indexes] = partition_image_vectorized(I); %this is to size the partitions for the
entire dataset

N = size(final_avg_matrix,2); %we take the second dimension, because of repeat entries in the first
dimensions

avg_matrix(:,:,1) = final_avg_matrix(1:N,:);
avg_matrix(:,:,2) = final_avg_matrix(N+1:2*N,:);
avg_matrix(:,:,3) = final_avg_matrix(2*N+1:3*N,:);

im_size = size(I);

[average_color_image] = generate_avg_color_image_vect(avg_matrix, im_size);

figure, imshow(average_color_image)

file_path = '/Users/charlesdavi/Desktop/grocery_IM_dataset/avocado.png';

saveas(gcf,file_path);


%grapefruit---------------------

avg_matrix = [];

I = IMG_array{21};

[final_avg_matrix final_indexes] = partition_image_vectorized(I); %this is to size the partitions for the
entire dataset

N = size(final_avg_matrix,2); %we take the second dimension, because of repeat entries in the first
dimensions

avg_matrix(:,:,1) = final_avg_matrix(1:N,:);
avg_matrix(:,:,2) = final_avg_matrix(N+1:2*N,:);
avg_matrix(:,:,3) = final_avg_matrix(2*N+1:3*N,:);

im_size = size(I);

[average_color_image] = generate_avg_color_image_vect(avg_matrix, im_size);
```

```
figure, imshow(average_color_image)

file_path = '/Users/charlesdavi/Desktop/grocery_IM_dataset/grapefruit.png';

saveas(gcf,file_path);
```