

images_exploration

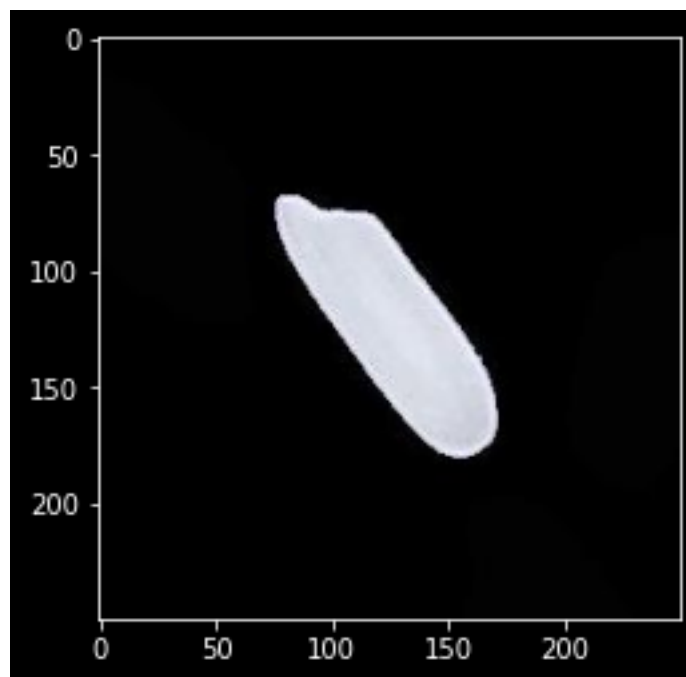
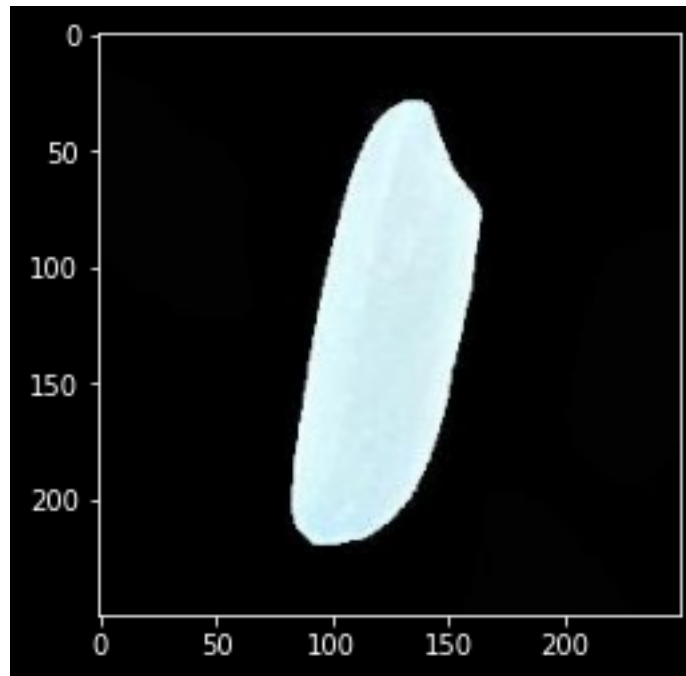
April 21, 2022

```
[ ]: from PIL import Image
import os
import random
import matplotlib.pyplot as plt
import numpy as np
```

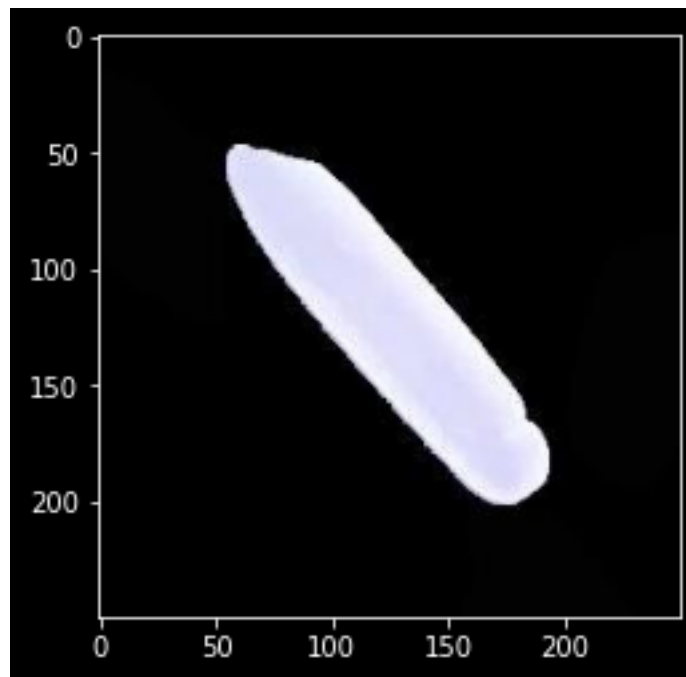
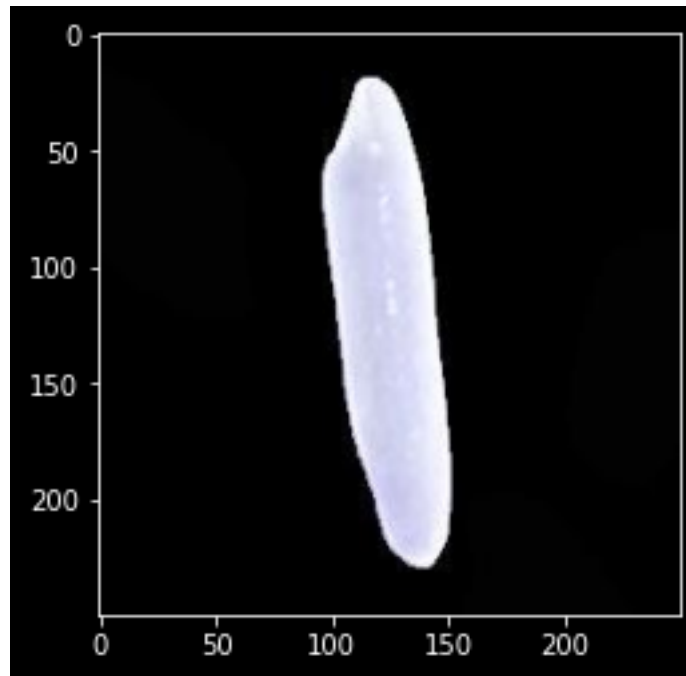
```
[ ]: os.chdir("../..")
IMAGES_FOLDER = "data/Rice_Image_Dataset"
CATEGORIES = os.listdir(IMAGES_FOLDER)
```

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[ ]: print_num_images = 2
for category in CATEGORIES:
    images_path = os.path.join(IMAGES_FOLDER, category)
    images_to_print = random.choices(
        os.listdir(images_path), k=print_num_images
    )
    print(f"Category: {category}")
    for image in images_to_print:
        img = plt.imread(os.path.join(images_path, image))
        plt.imshow(img)
        plt.show()
```

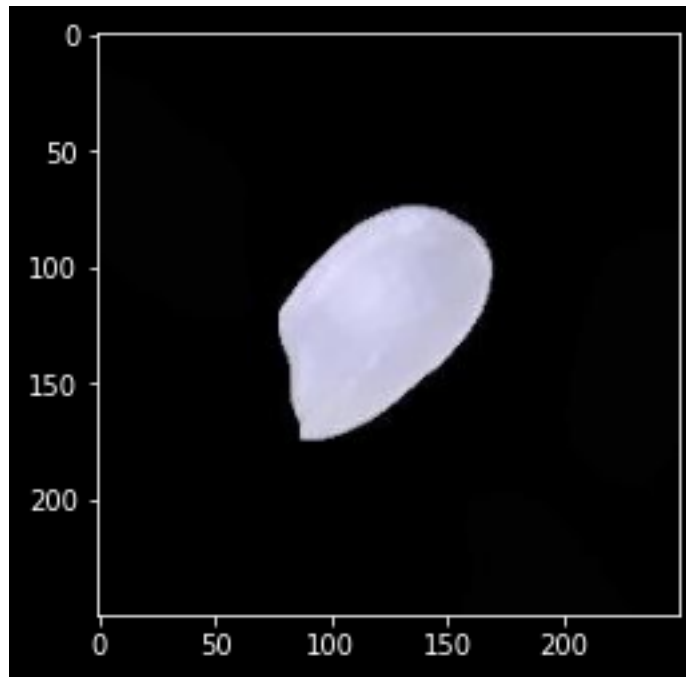
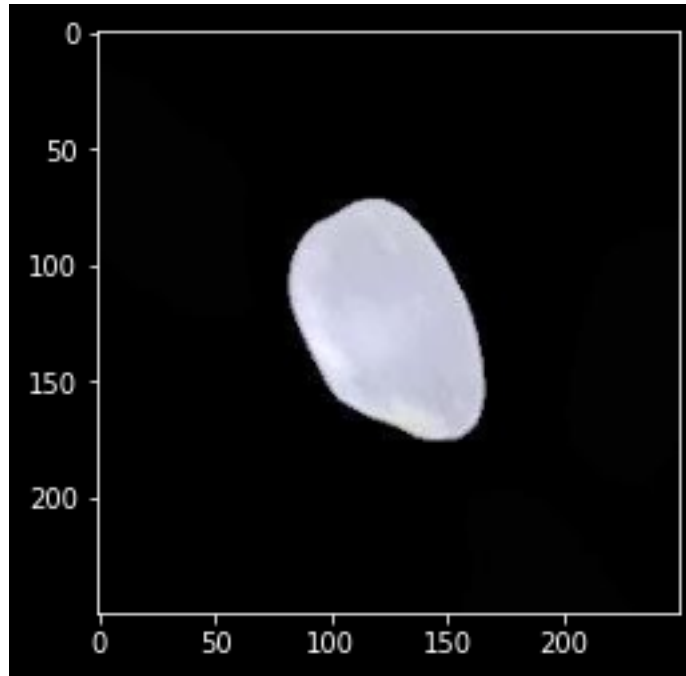
Category: Jasmine



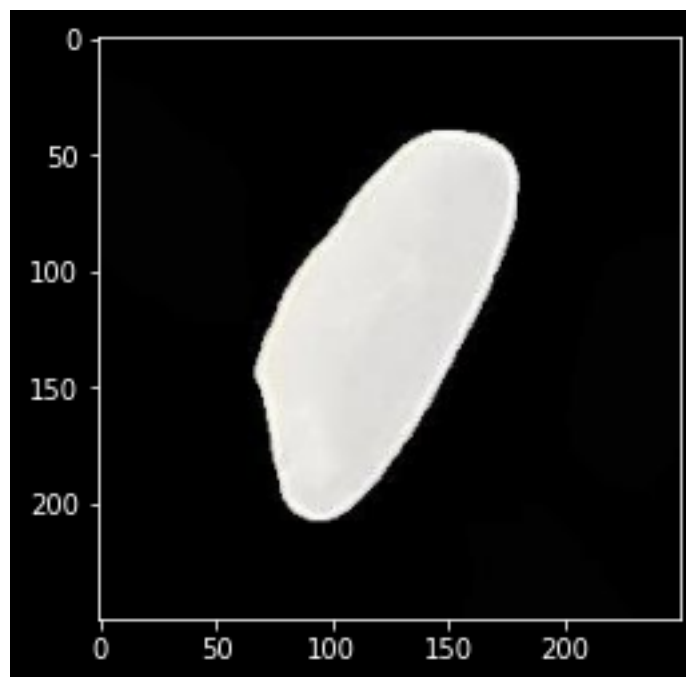
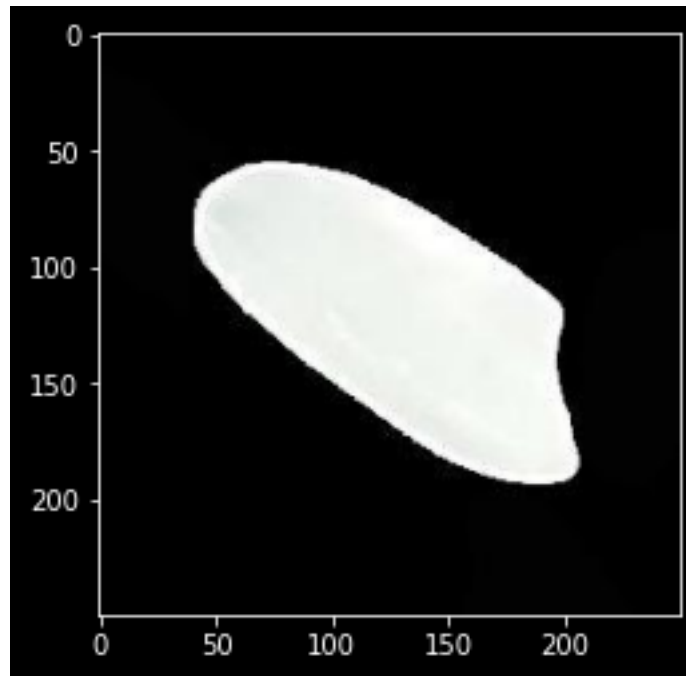
Category: Basmati



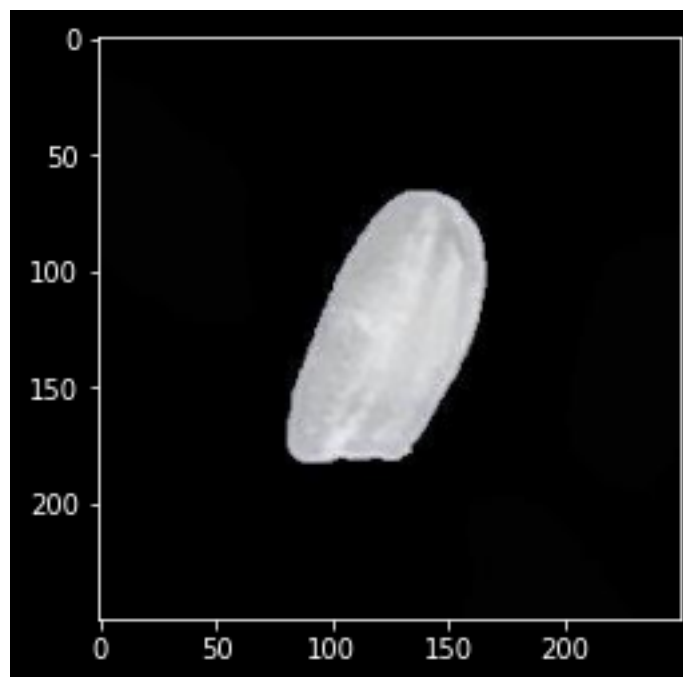
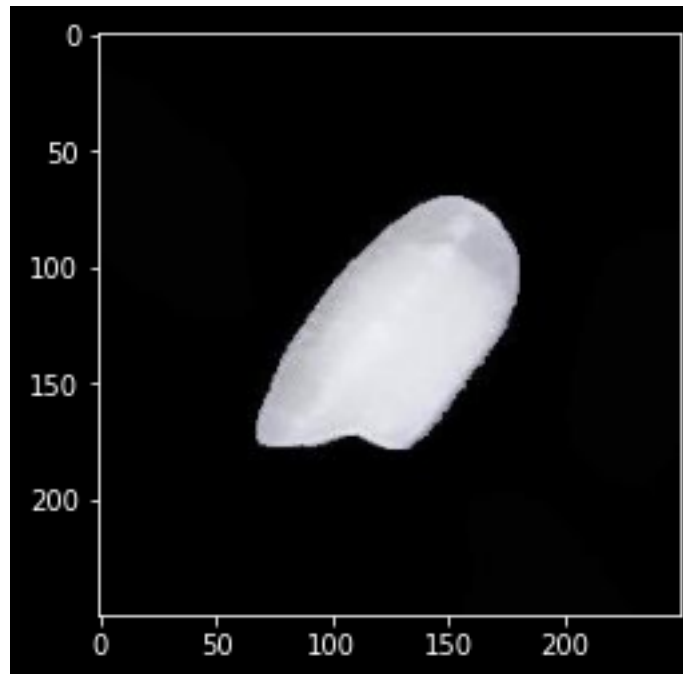
Category: Karacadag



Category: Ipsala



Category: Arborio



```
[ ]: NUMBER_OF_IMAGES_FROM_CATEGORY_TO_ANALYZE = 1000
categories = []
images = []
```

```

for category in CATEGORIES:
    images_path = os.path.join(IMAGES_FOLDER, category)
    category_images = os.listdir(images_path)[
        :NUMBER_OF_IMAGES_FROM_CATEGORY_TO_ANALYZE
    ]
    categories += [category] * len(category_images)
    print(f"Category: {category}")
    for image in category_images:
        img = plt.imread(os.path.join(images_path, image))
        images.append(img)

```

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Category: Jasmine
Category: Basmati
Category: Karacadag
Category: Ipsala
Category: Arborio

```

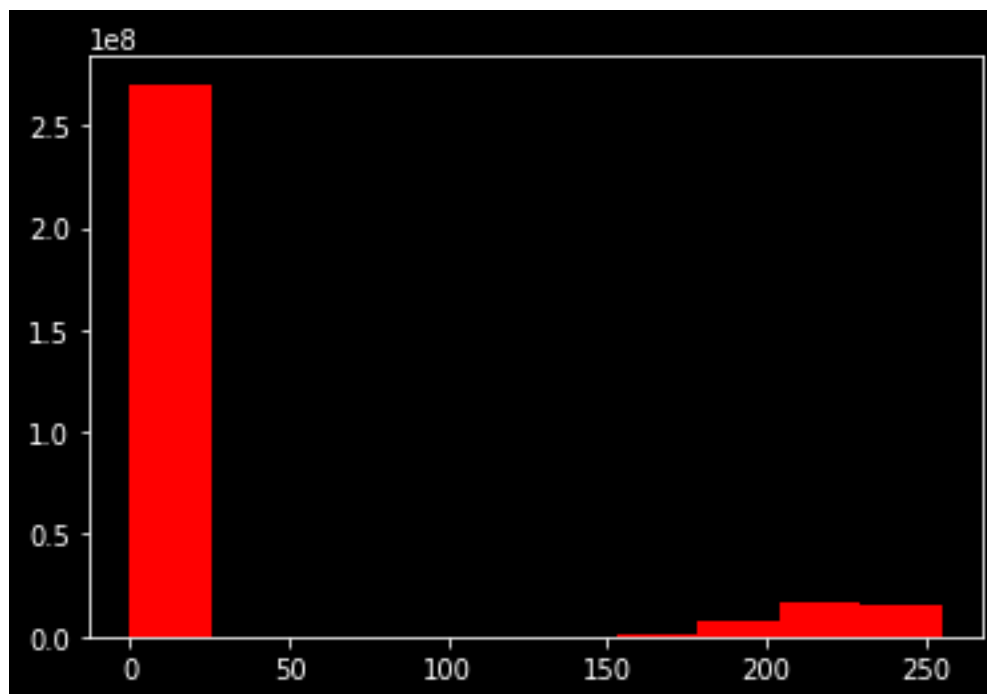
```
[ ]: images = np.array(images).reshape(-1, 250 * 250, 3)
```

```
[ ]: images.shape
```

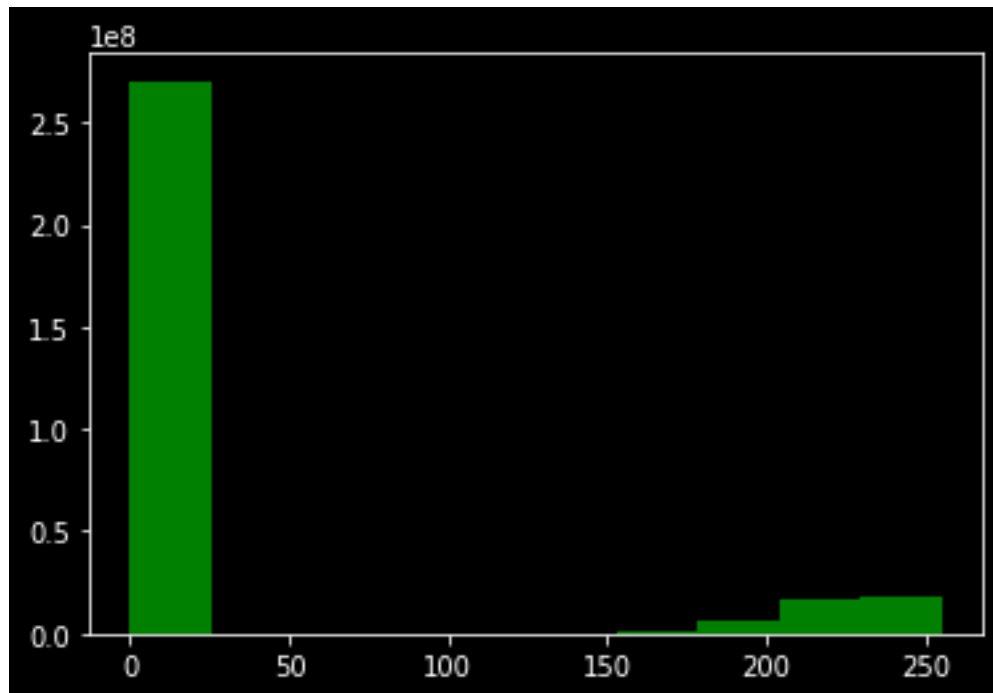
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[ ]: (5000, 62500, 3)
```

```
[ ]: flattened_images = images.reshape((-1, 3))
```

```
[ ]: plt.hist(flattened_images[:, 0], color="red")
plt.show()
```



```
[ ]: plt.hist(flattened_images[:, 1], color="green")  
plt.show()
```



```
[ ]: plt.hist(flattened_images[:, 2], color="blue")  
plt.show()
```