Image Processing Using Python

In [3]:
```python
# import Libraries
import numpy as np
import matplotlib.pyplot as plt
from PIL import Image
```

In [5]:
```python
np.__version__
```

Out[5]: `'1.26.4'`

In [9]:
```python
# get the image to diplay
lion_img = Image.open(r'/Users/babarhussain/Desktop/lion.jpg')
lion_img
```

Out[9]:

In [15]:
```python
# cover that image into array as backend to store

arr_img = np.array(lion_img)
print(arr_img)
print(type(arr_img))
print("The dimensions of image is:", arr_img.shape)
```

```
[[[ 2  3 12]
  [ 2  3 12]
  [ 2  3 12]
  ...
  [ 0  0  0]
  [ 0  0  0]
  [ 0  0  0]]

 [[ 2  3 12]
  [ 2  3 12]
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 [[ 2  3 12]
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 ...

 [[ 1  2  6]
  [ 1  2  6]
  [ 1  2  6]
  ...
  [40 20 18]
  [41 21 21]
  [40 19 20]]

 [[ 1  2  6]
  [ 1  2  6]
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  ...
  [41 21 19]
  [41 21 19]
  [40 20 18]]

 [[ 1  2  6]
  [ 1  2  6]
  [ 1  2  6]
  ...
  [41 21 19]
  [41 21 19]
  [40 20 18]]]
<class 'numpy.ndarray'>
The dimensions of image is: (600, 900, 3)
```
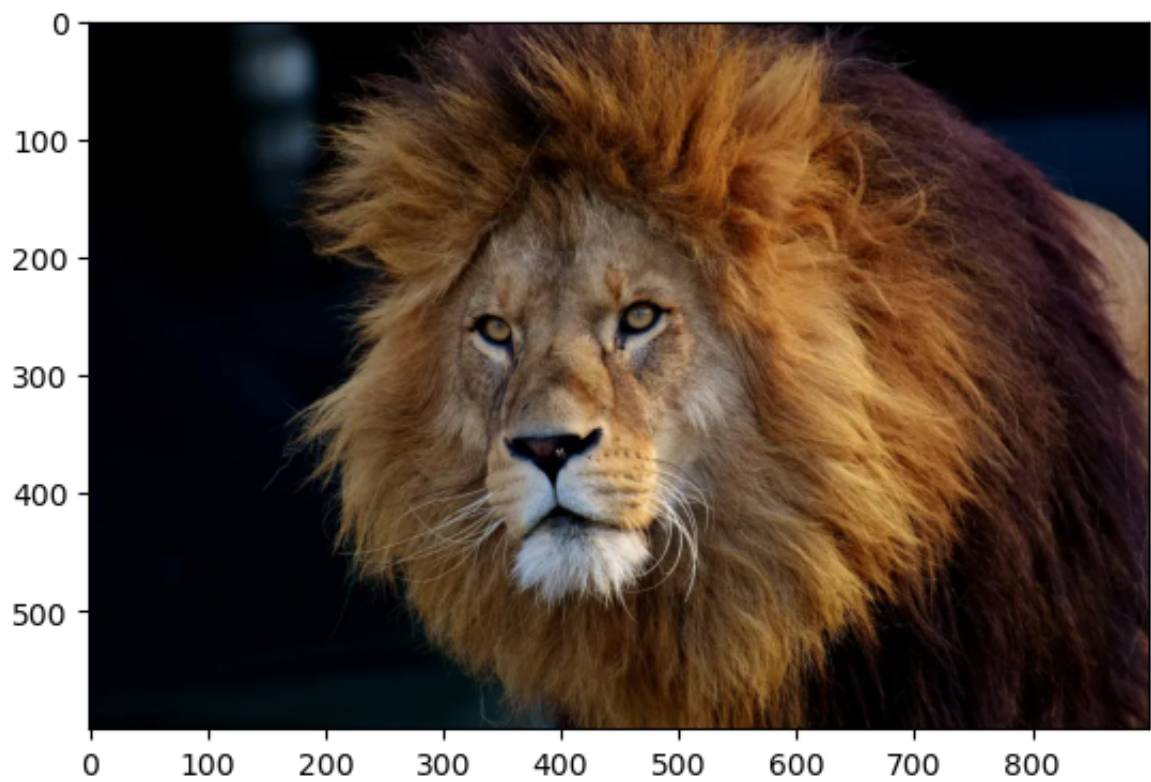
In [19]: # display image ino the axis

```
plt.imshow(arr_img)
```

Out[19]:   <matplotlib.image.AxesImage at 0x137f87a10>

In [23]:
```
first_cl = arr_img.copy()
print(first_cl)
```

Out[19]:   <matplotlib.image.AxesImage at 0x137f87a10>

```
[[[ 2  3 12]
  [ 2  3 12]
  [ 2  3 12]
  ...
  [ 0  0  0]
  [ 0  0  0]
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  [ 0  0  0]
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 ...

 [[ 1  2  6]
  [ 1  2  6]
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  ...
  [40 20 18]
  [41 21 21]
  [40 19 20]]

 [[ 1  2  6]
  [ 1  2  6]
  [ 1  2  6]
  ...
  [41 21 19]
  [41 21 19]
  [40 20 18]]

 [[ 1  2  6]
  [ 1  2  6]
  [ 1  2  6]
  ...
  [41 21 19]
  [41 21 19]
  [40 20 18]]]
```
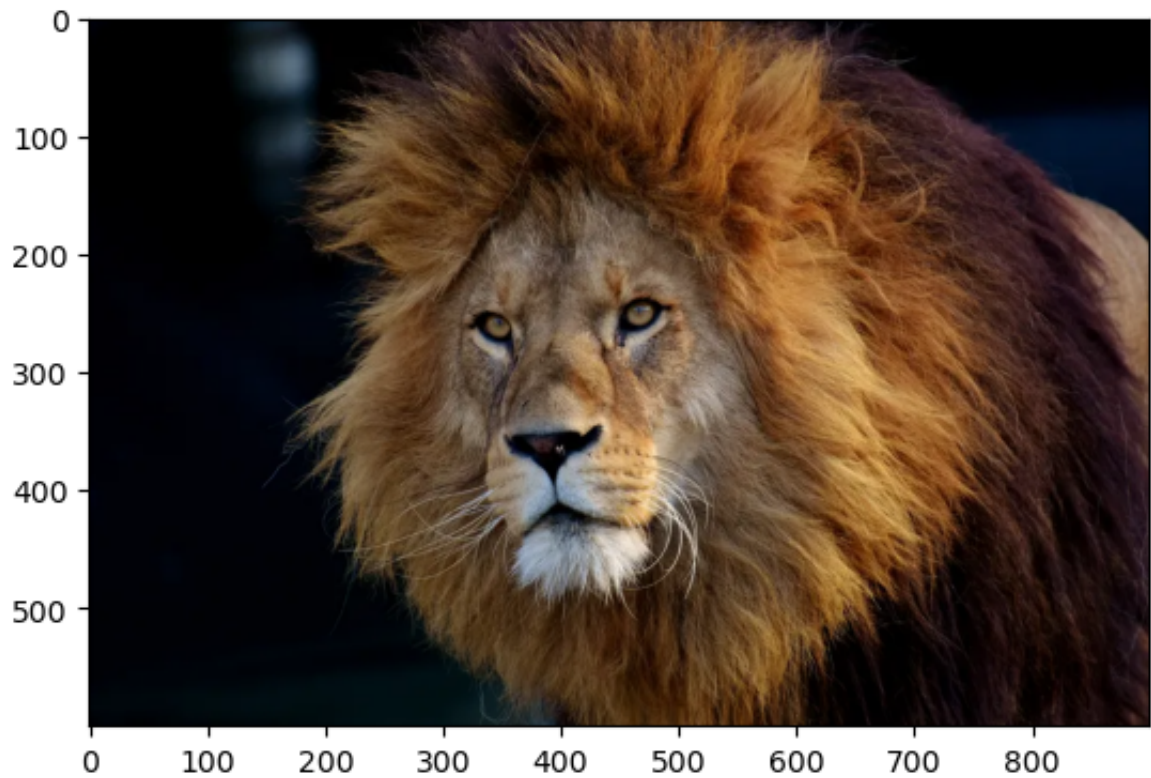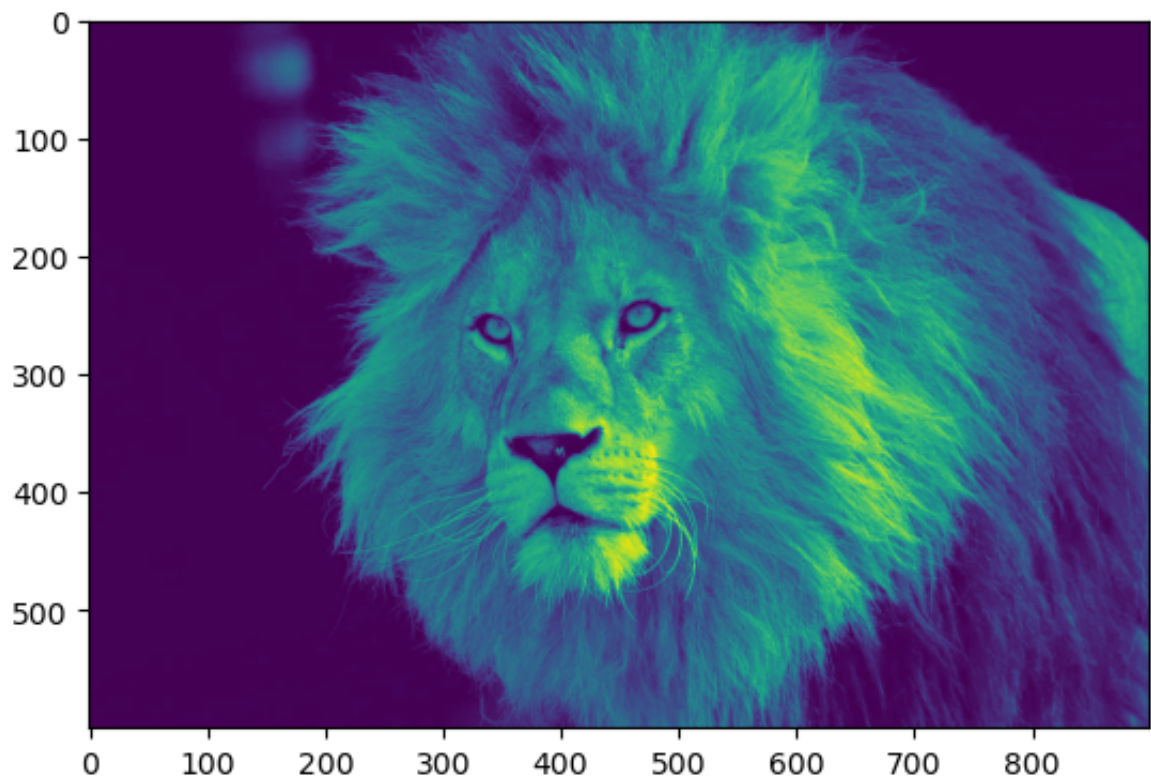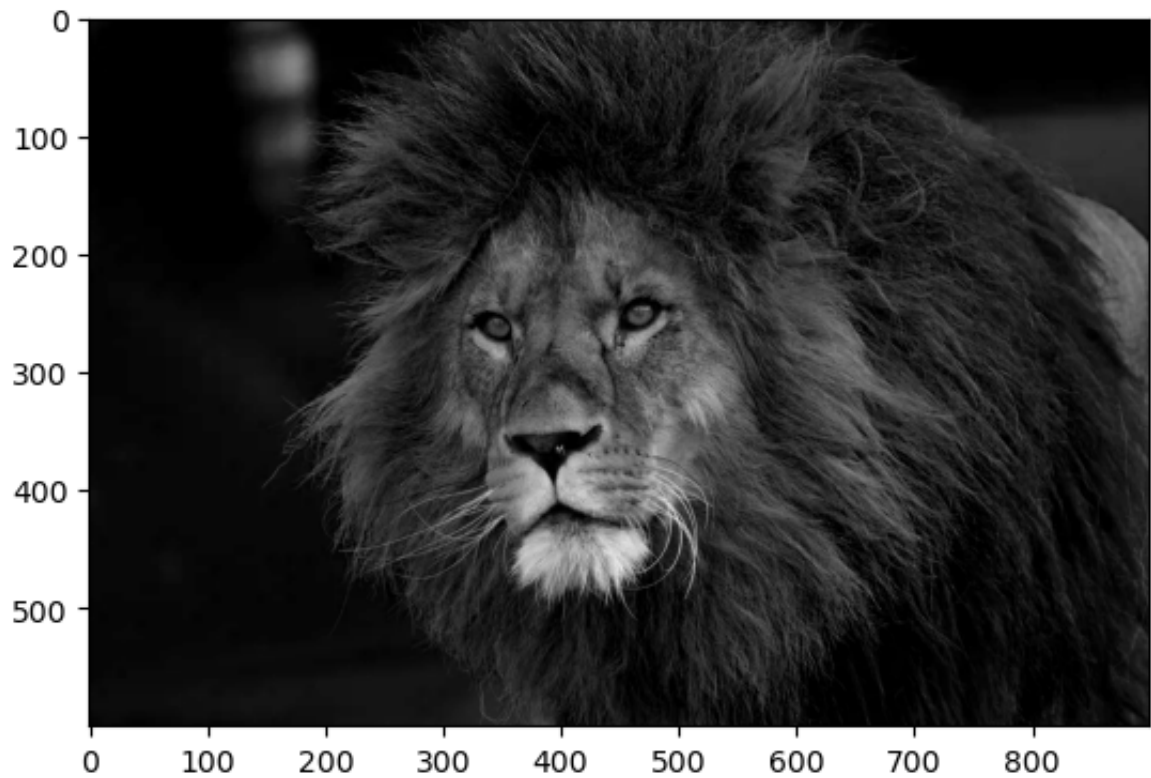
```
In [31]:  plt.imshow(first_cl)
```

```
Out[31]:  <matplotlib.image.AxesImage at 0x13979a330>
```

```
In [35]: plt.imshow(first_cl[:,:,0])
```
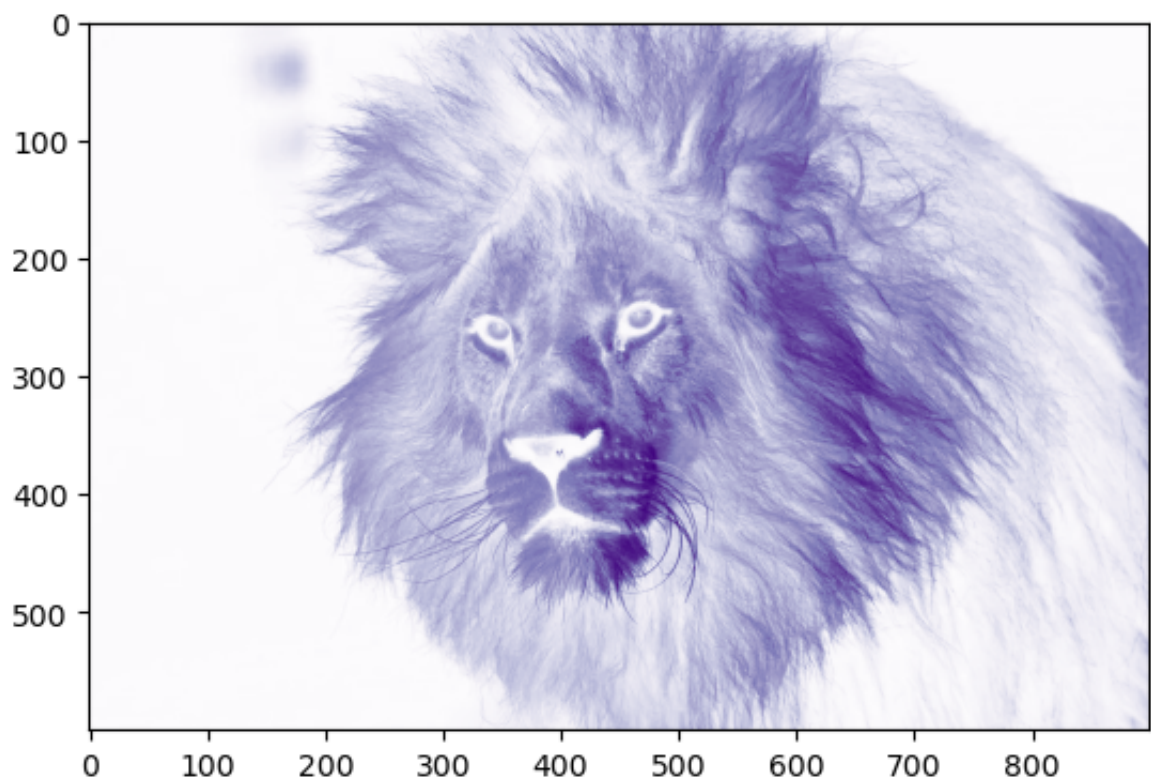
Out[35]: <matplotlib.image.AxesImage at 0x1399dce00>


```
In [69]: plt.imshow(first_cl[:,:,2], cmap = "gray")
```

Out[69]: <matplotlib.image.AxesImage at 0x13e447ec0>

In [75]:
```python
plt.imshow(first_cl[:,:,0], cmap="Purples")
```

Out[75]: <matplotlib.image.AxesImage at 0x13eb29c40>

In [ ]:

In [ ]:

In [ ]: