

Image Processing

Arithmetic Operations on Images using Python OpenCV

Instructor : PhD, Associate Professor Leyla Muradkhanli

Arithmetic operations on images

- Addition
- Subtraction
- Multiplication
- Division

Image Addition

OpenCV Addition

```
import cv2
```

```
import numpy as np
```

```
# Reading image files
```

```
img1 = cv2.imread('sample1.jpg')
```

```
img2 = cv2.imread('sample2.jpg')
```

```
# Applying OpenCV addition on images
```

```
img = cv2.add(img1, img2)
```

```
# Saving the output image
```

```
cv2.imwrite('output.jpg', img)
```

```
cv2.imshow('image addition', img)
```

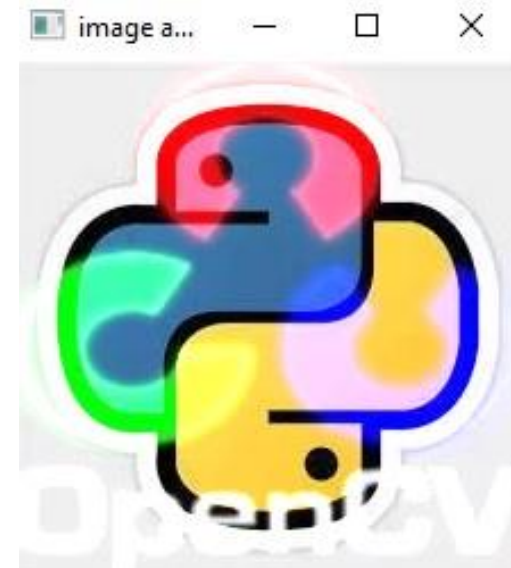
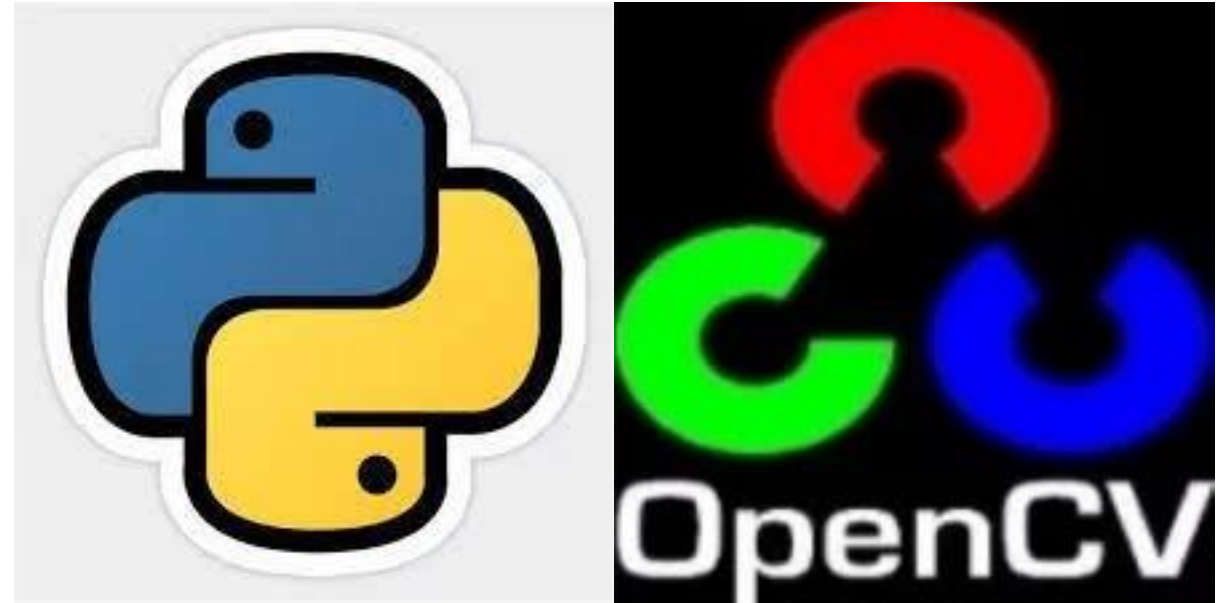


Image Subtraction

```
import cv2
import numpy as np

# Reading image files
img1 = cv2.imread('sample-img-1.jpg')
img2 = cv2.imread('sample-img-2.jpg')

# Applying OpenCV subtraction on images
fimg = cv2.subtract(img1, img2)
```

```
# Saving the output image
cv2.imwrite('output.jpg', fimg)
```

Output:



Image Multiplication

```
import cv2
import numpy as np

# Reading image file
img = cv2.imread('sample_img.jpg')

# Applying OpenCV scalar multiplication on image
img = cv2.multiply(img, 1.5)

# Saving the output image
cv2.imwrite('output.jpg', img)
cv2.imshow('image multiplication', img)Output:
```

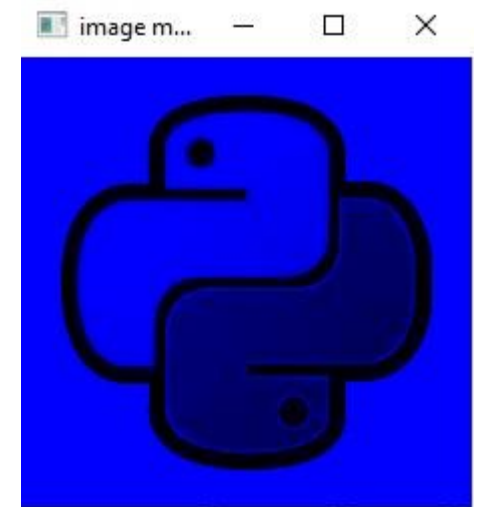
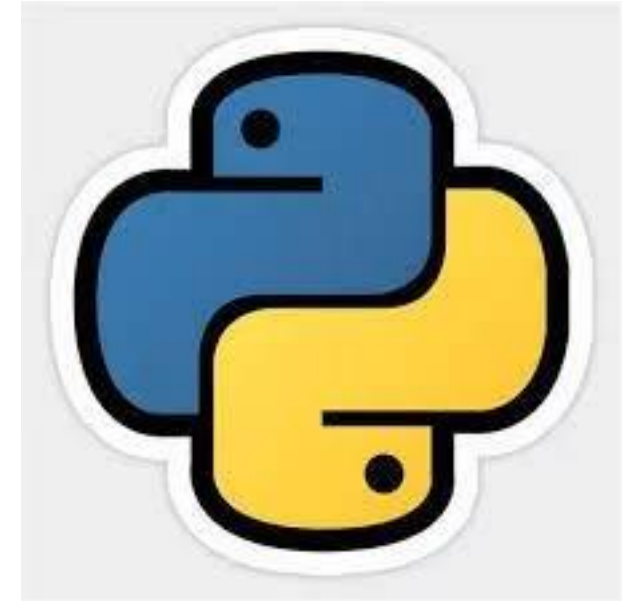


Image Division

```
import cv2
import numpy as np

# Reading image file
img = cv2.imread('sample_img.jpg')

# Applying OpenCV scalar division on image
imgd = cv2.divide(img, 2)

# Saving the output image
cv2.imwrite('output.jpg', imgd)
cv2.imshow('image division', imgd)
```

Output:

