

## ✓ LAB 1 DIP

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- Section: B

### AIM

To study and perform basi/c operations used in image processing.

- Reading an image.
- Displaying an image.
- Saving an image.
- Converting an image to grayscale.
- Rotating an image.
- Resizing an image.

```
!pip install opencv-python numpy pandas --quiet
```



```
[notice] A new release of pip is available: 23.0.1 -> 24.3.1
[notice] To update, run: pip install --upgrade pip
```

```
import os
import numpy as np
import pandas as pd
import cv2
```

```
img = cv2.imread('../assets/lina.jpeg')
(h,w,d) = img.shape
```

```
print('width = {}, height={}, depth={}'.format(w,h,d))
```



```
width = 225, height=225, depth=3
```

```
cv2.imshow('Lina',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```



```
2024-12-23 10:50:28.947 python[38957:29452231] _TIPPropertyIsValid called with 16 on nil context!
2024-12-23 10:50:28.947 python[38957:29452231] imkxpc_getApplicationProperty:reply: called with incorrect property value
2024-12-23 10:50:28.947 python[38957:29452231] Text input context does not respond to _valueForTIProperty:
```

# Image

```
img = cv2.imread('../assets/lina.jpeg',cv2.IMREAD_GRAYSCALE)
cv2.imshow('Lina',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

# Save image

```
cv2.imwrite('../assets/output/1/lina_gray.jpg',img)
```



```
True
```

# Read a grayscale image and then turn it color

```
img = cv2.imread('../assets/alex.jpeg', cv2.IMREAD_GRAYSCALE)
img = cv2.cvtColor(img,cv2.COLOR_GRAY2RGB)
cv2.imshow('Lina',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

# Rotate image by different angles

```
img = cv2.imread('../assets/alex.jpeg')
img = cv2.rotate(img,cv2.ROTATE_90_CLOCKWISE)
cv2.imshow('Lina',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

```

2024-12-23 11:07:21.481 python[38957:29452231] _TIPropertyValueIsValid called with 16 on nil context!
2024-12-23 11:07:21.481 python[38957:29452231] imkxpc_getApplicationProperty:reply: called with incorrect property value
2024-12-23 11:07:21.481 python[38957:29452231] Text input context does not respond to _valueForTIProperty:
2024-12-23 11:07:23.152 python[38957:29452231] _TIPropertyValueIsValid called with 16 on nil context!
2024-12-23 11:07:23.152 python[38957:29452231] imkxpc_getApplicationProperty:reply: called with incorrect property value
2024-12-23 11:07:23.152 python[38957:29452231] Text input context does not respond to _valueForTIProperty:

```

```
# rotate image by 180
```

```

img = cv2.imread('../assets/alex.jpeg')
img = cv2.rotate(img, cv2.ROTATE_180)
cv2.imshow('Lina', img)
cv2.waitKey(0)
cv2.destroyAllWindows()

```

```
# Resize image to 224 by 224
```

```

img = cv2.imread('../assets/alex.jpeg')
img = cv2.resize(img, (224, 224))
cv2.imshow('Lina', img)
cv2.waitKey(0)
cv2.destroyAllWindows()

```

```
# Doing above same operations on cameraman image
```

```

img = cv2.imread('../assets/cameraman.png')
img = cv2.resize(img, (224, 224))

```

```

cv2.imshow('Lina', img)
cv2.waitKey(0)
cv2.destroyAllWindows()

```

```
img = cv2.imread('../assets/cameraman.png')
```

```

img = cv2.rotate(img, cv2.ROTATE_180)
img = cv2.resize(img, (224, 224))
cv2.imshow('Lina', img)
cv2.waitKey(0)
cv2.destroyAllWindows()

```

```

2024-12-23 11:34:34.532 python[38957:29452231] _TIPropertyValueIsValid called with 16 on nil context!
2024-12-23 11:34:34.532 python[38957:29452231] imkxpc_getApplicationProperty:reply: called with incorrect property value
2024-12-23 11:34:34.532 python[38957:29452231] Text input context does not respond to _valueForTIProperty:
2024-12-23 11:34:44.464 python[38957:29452231] _TIPropertyValueIsValid called with 16 on nil context!
2024-12-23 11:34:44.464 python[38957:29452231] imkxpc_getApplicationProperty:reply: called with incorrect property value
2024-12-23 11:34:44.464 python[38957:29452231] Text input context does not respond to _valueForTIProperty:

```

```
img = cv2.imread('../assets/cameraman.png')
```

```

img = cv2.rotate(img, cv2.ROTATE_90_CLOCKWISE)
img = cv2.resize(img, (224, 224))
cv2.imshow('Lina', img)
cv2.waitKey(0)
cv2.destroyAllWindows()

```

Start coding or [generate](#) with AI.