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**ROLLNO: 37**

**SYMCA-SEM-IV**

**SUBJECT: IMAGE PROCESSING AND COMPUTER VISION**

**Ex no: 1**

**Date: 02-1-2020**

**Problem Statement:**

Display image

**Program:**

import cv2

import dlib

import numpy as np

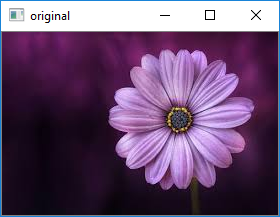
img=cv2.imread('flower.jpg')

cv2.imshow('original',img)

cv2.waitkey(0)

cv2.destoryAllwindows()

**Output:**



**Ex no: 2**

**Date: 02-1-2020**

**Problem Statement:**

Display gray image

**Program:**

import cv2

import dlib

import numpy as np

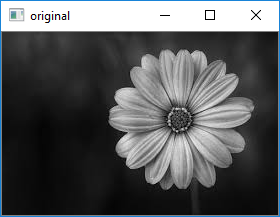
img=cv2.imread('flower.jpg',0)

cv2.imshow('original',img)

cv2.waitkey(0)

cv2.destoryAllwindows()

**Output:**



**Ex no: 3**

**Date: 02-01-2020**

**Problem Statement:**

Color handling

**Program:**

import cv2

image=cv2.imread('face.jpg')

cv2.imshow('original',image)

cv2.circle(image,(200,85),25,(0,255,0),-1)

cv2.circle(image,(40,75),25,(0,0,255),-1)

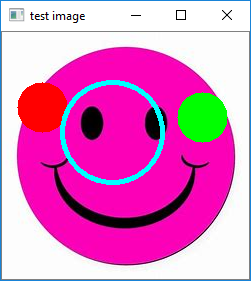
cv2.circle(image,(110,100),50,(255,255,0),3)

cv2.imshow("test image",image)

cv2.waitKey(0)

cv2.destoryAllwindow()

**Output:**

**Ex no: 4**

**Date: 02-01-2020**

**Problem Statement:**

Image negative

**Program:**

import cv2

image=cv2.imread('clown1.jpg')

cv2.imshow('original',image)

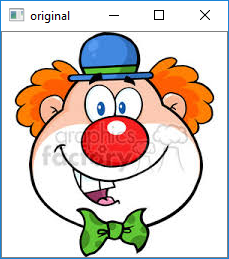
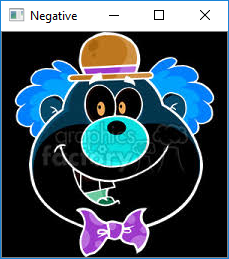
img\_not=cv2.bitwise\_not(image)

cv2.imshow("Negative",img\_not)

cv2.waitKey(0)

cv2.destoryAllWindows()

**Output:**

**Ex no: 5**

**Date: 02-01-2020**

**Problem Statement:**

Contrast stretching

**Program:**

import cv2

from matplotlib import pyplot as plt

img1=cv2.imread('images.jpg')

img=cv2.cvtColor(img1,cv2.COLOR\_BGR2RGB)

nmax=255

nmin=0

out=cv2.normalize(img1,None,alpha=nmin,beta=nmax,norm\_type=cv2.NORM\_MINMAX)

plt.subplot(1,2,1),plt.imshow(img)

plt.title('original'),plt.xticks([]),plt.yticks([])

plt.subplot(1,2,2),plt.imshow(out,cmap='gray')

plt.title('output image'),plt.xticks([]),plt.yticks([])

plt.show()

**Output:**



**Ex no: 6**

**Date: 02-01-2020**

**Problem Statement:**

Thresholding

**Program:**

from cv2 import \*

from matplotlib import pyplot as plt

img1=cv2.imread('download.jpg')

img=cv2.cvtColor(img1,cv2.COLOR\_BGR2RGB)

ret,thresh1=threshold(img1,120,255,THRESH\_BINARY)

ret,thresh2=threshold(img1,120,255,THRESH\_BINARY\_INV)

ret,thresh3=threshold(img1,120,255,THRESH\_TRUNC)

ret,thresh4=threshold(img1,120,255,THRESH\_TOZERO)

ret,thresh5=threshold(img1,120,255,THRESH\_TOZERO\_INV)

images=[img,thresh1,thresh2,thresh3,thresh4,thresh5]

titles=["Original","THRESH\_BINARY","THRESH\_BINARY\_INV","THRESH\_TRUNC","THRESH\_TOZERO","THRESH\_TOZERO\_INV"]

for i in range(6):

plt.subplot()

plt.imshow(images[i],cmap="gray")

plt.title(titles[i])

plt.xticks([])

plt.yticks([])

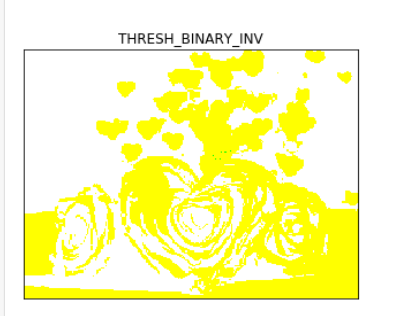
plt.show()

waitKey(0)

destroyAllWindows()

**Output:**



**Ex no: 7**

**Date: 02-01-2020**

**Problem Statement:**

log transformation

**Program:**

import cv2

import numpy as np

img=cv2.imread('flower.jpg')

img\_log=(np.log(img+1)/(np.log(1+np.max(img))))\*255

img\_log=np.array(img\_log,dtype=np.uint8)

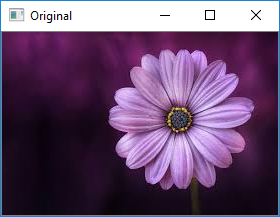
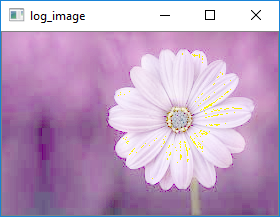
cv2.imshow('log\_image',img\_log)

cv2.imshow('Original',img)

cv2.waitKey(0)

cv2.destroyAllWindows()

**Output:**

**Ex no: 8**

**Date: 02-01-2020**

**Problem Statement:**

Power law transformation

**Program:**

import cv2

import numpy as np

img=cv2.imread('boat.jpg')

cv2.imshow('Original',img)

im1=img/255.0

im\_power\_law\_transformation=cv2.pow(im1,0.6)

cv2.imshow("power law tansformation",im\_power\_law\_transformation)

cv2.waitKey(0)

cv2.destroyAllWindows()

**Output:**

