

# **READ AND WRITE AN IMAGE**

## **' AIM**

To write a python program using OpenCV to do the following image manipulations. i) Read, display, and write an image. ii) Access the rows and columns in an image. iii) Cut and paste a small portion of the image.

## **' Software Required:**

Anaconda - Python 3.7 Jupyter lab

## **' Algorithm:**

### **' Step1:**

Choose an image and save it as a filename.jpg

### **' Step2:**

Use imread(filename, flags) to read the file.

### **' Step3:**

Use imshow(window\_name, image) to display the image.

### **' Step4:**

Use imwrite(filename, image) to write the image.

### **' Step5:**

End the program and close the output image windows.

## **' Program:**

```
# Developed By: Surendar.S  
# Register Number, 212220230051
```

## **' To Read,display the image**

```
import cv2                                         Surendar_212220230051
color_img=cv2.imread('img.jpg',1)
cv2.imshow('Surendar_212220230051',color_img)
cv2.waitKey(0)                                     Surendar_212220230051
```

## ' To write the image

```
import cv2
color_img=cv2.imread('img.jpg',1)
w=cv2.imwrite('1.png',color_img)
cv2.imshow('Surendar_212220230051',color_img)
cv2.waitKey(0)
```

## ' Find the shape of the Image

```
import cv2
import random
color_img=cv2.imread('img.jpg',1)
print(color_img.shape)
```

## ' To access rows and columns

```
import cv2
import random
color_img=cv2.imread('img.jpg',1)
for i in range(100):
    for j in range(color_img.shape[1]):
        color_img[i][j]=
[random.randint(0,255),random.randint(0,255),random.randint(0,255)]
cv2.imshow('Surendar_212220230051',color_img)
cv2.waitKey(0)
```

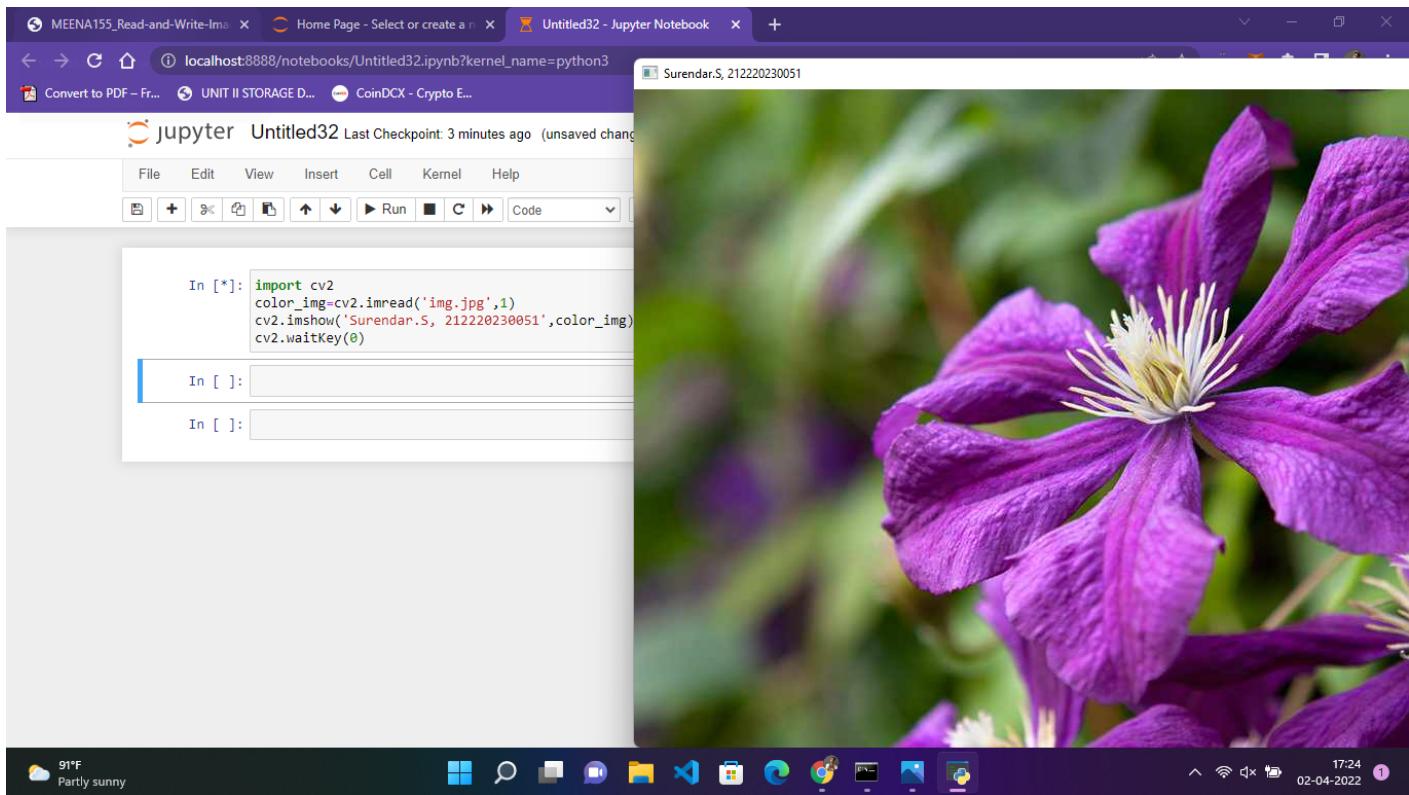
## ' To cut and paste portion of image

```
import cv2
color_img=cv2.imread('img.jpg',-1)
```

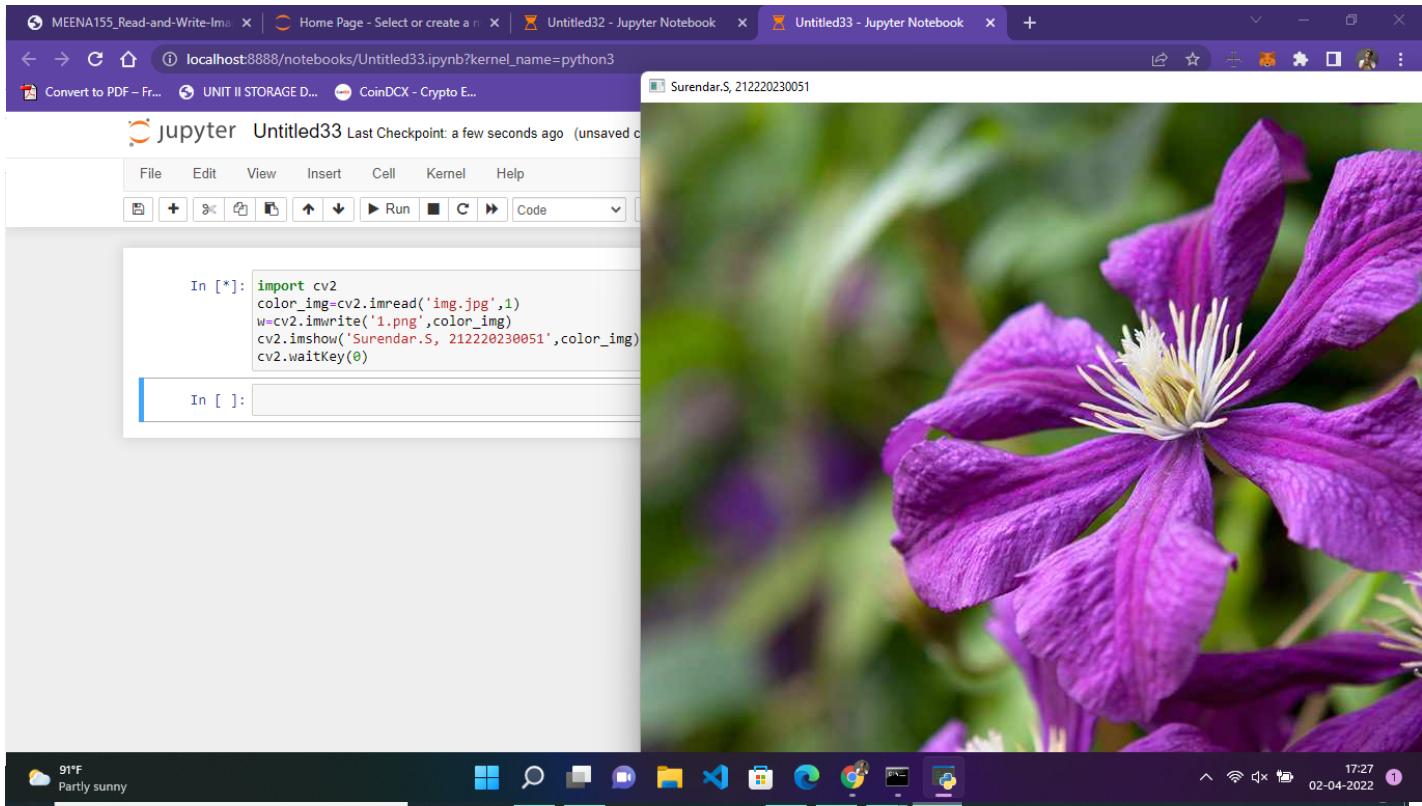
```
tag=color_img[300:400,300:400]
color_img[50:150,50:150]=tag
cv2.imshow('Surendar_212220230051',color_img)
cv2.waitKey(0)
```

## ' Output:

### ' i) Read and display the image



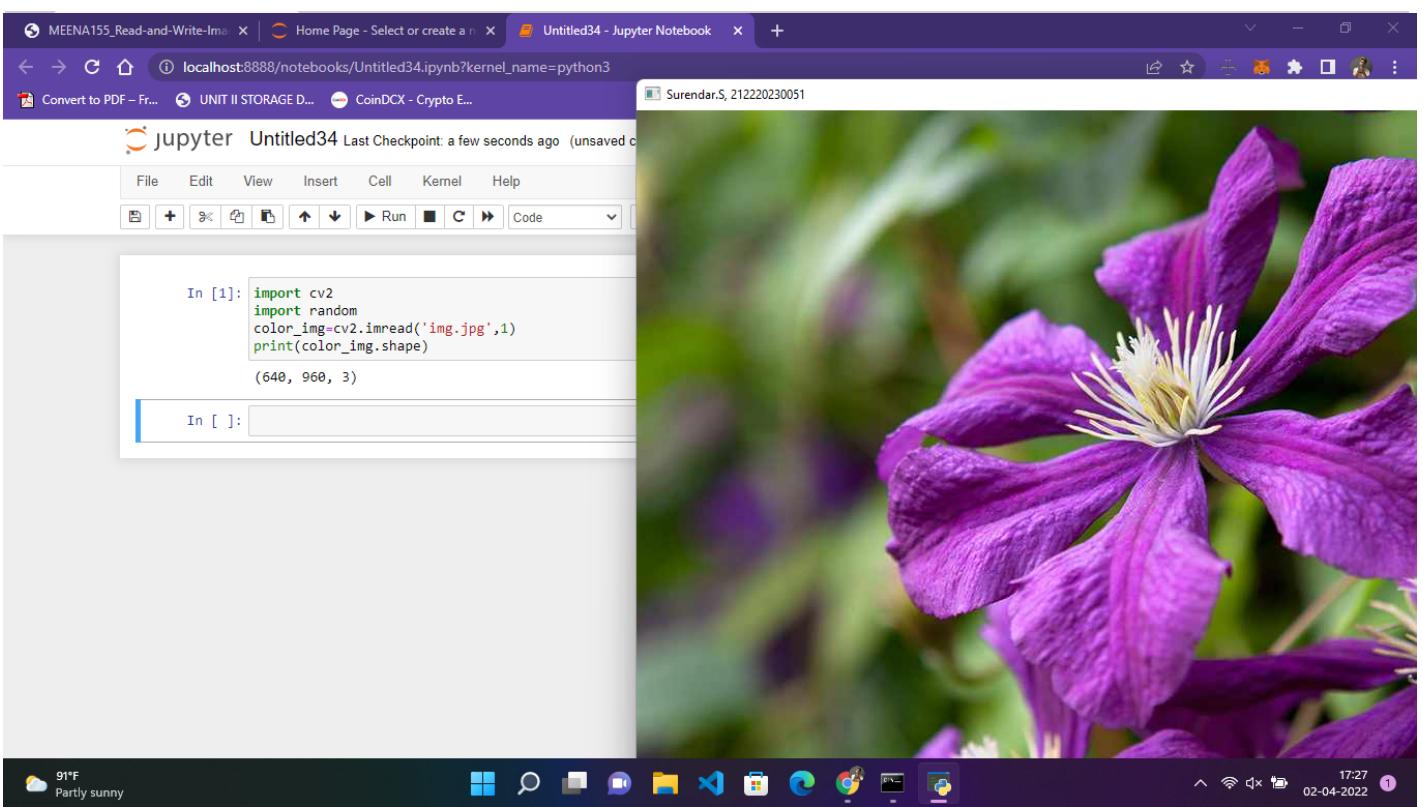
### ' ii) Write the image



A screenshot of a Windows desktop showing a Jupyter Notebook interface. The notebook has two tabs open: 'Untitled33 - Jupyter Notebook' and 'Untitled33 - Jupyter Notebook'. The code in the first cell reads an image from 'img.jpg', writes it to '1.png', and displays it using 'cv2.imshow'. The resulting image is a close-up of a purple flower with a yellow center.

```
In [*]: import cv2  
color_img=cv2.imread('img.jpg',1)  
w=cv2.imwrite('1.png',color_img)  
cv2.imshow('Surendar.S, 212220230051',color_img)  
cv2.waitKey(0)
```

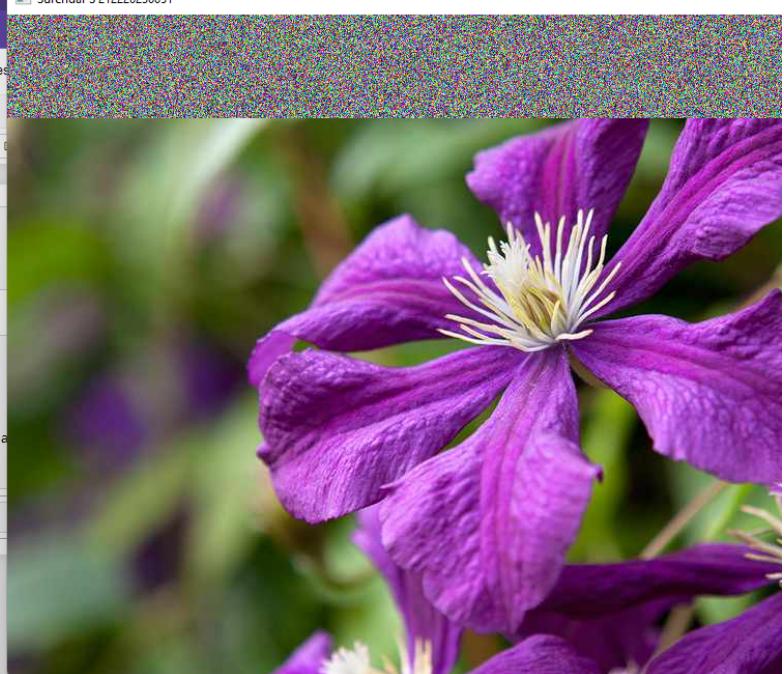
### ' iii)Shape of the Image



A screenshot of a Windows desktop showing a Jupyter Notebook interface. The notebook has two tabs open: 'Untitled34 - Jupyter Notebook' and 'Untitled34 - Jupyter Notebook'. The code in the first cell imports cv2 and random, reads an image from 'img.jpg', and prints its shape. The output shows the dimensions as (640, 960, 3). The resulting image is a close-up of a purple flower with a yellow center.

```
In [1]: import cv2  
import random  
color_img=cv2.imread('img.jpg',1)  
print(color_img.shape)  
(640, 960, 3)
```

### ' iv)Access rows and columns



A screenshot of a Windows desktop showing a Jupyter Notebook window. The notebook displays Python code for reading an image and applying random noise. The output cell shows the original image of a purple clematis flower.

```
In [1]: import cv2
import random
color_img=cv2.imread('img.jpg',1)
print(color_img.shape)
(640, 960, 3)

In [*]: import cv2
import random
color_img=cv2.imread('img.jpg',1)
for i in range(100):
    for j in range(color_img.shape[1]):
        color_img[i][j]=[random.randint(0,255),random.randint(0,255),random.randint(0,255)]
cv2.imshow('Surendar S 212220230051',color_img)
cv2.waitKey(0)
```

## v)Cut and paste portion of image



A screenshot of a Windows desktop showing a Jupyter Notebook window. The notebook displays Python code for reading an image and extracting a specific region. The output cell shows the original image of a purple clematis flower with a small rectangular crop highlighted in the top-left corner.

```
In [*]: import cv2
color_img=cv2.imread('img.jpg',-1)
tag=color_img[300:400,300:400]
color_img[50:150,50:150]=tag
cv2.imshow('Surendar S 212220230051',color_img)
cv2.waitKey(0)
```

## Result:

Thus the images are read, displayed, and written successfully using the python program.