How to load an image using opencv?

1) To load the image, the function used below

→ cv2.imread()

In opencv, images are represented as Numpy arrays.

* There are two different channel types of images

1) Single channel
2) Three channel

Single channel → We can represent it as 2D Matrix.

Eg. Black and white image

Three channel → This is what we typically work with

Eg. RGB Images

2) To know the shape of the numpy array; As we seen above that images are represented as Numpy array

(h, w, c) = image.shape[:3]

h → height
w → width
c → No. of channels

Lets Say, if we have 600 x 400 image what does this mean?

It means that it is 600 pixels wide/width & 400 pixels tall/height

So, In matrix height → Represents No. of Rows
width → Represents No. of Columns.

This is the reason we represent (h, w, c)

3) To Display the image width, height and number of channels

```
Print("width : {} pixels".format(w))
Print("height : {} pixels".format(h))
Print("channels : {} pixels".format(c))
```

4) To Show the image, we can use the below function

cv2.imshow("Title of the w", image)

This is the variable that used to read the image. It can be any name. Here we have used "image".

5) Once we show the image, we need to exit.

cv2.waitKey(0)

This Basically wait for user's input. Once the user presses any key; it will come out of the window.

6) To Save the image to the disk.

cv2.imwrite("Imagename.jpg", image)

This is nothing but what is the image name we want to save it as.