Department of Computer Science and Engineering

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LAB 1. Image processing problems(Display,Increase & Decrease Brightness)

1.1.Introduction :

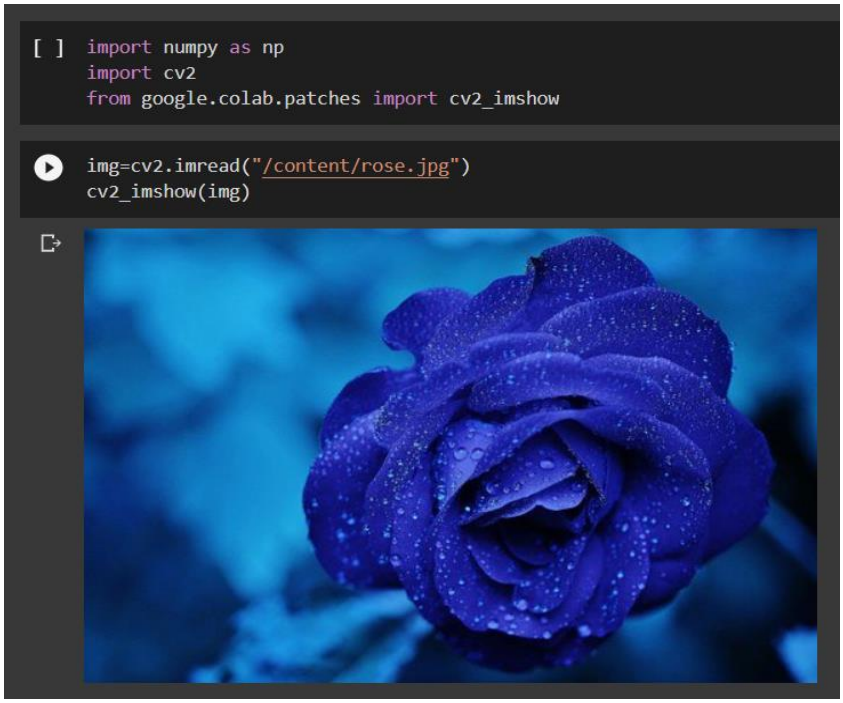
Image processing is a method that enhances image quality through the analysis and manipulation of a digitized image.

The aim of this report is to implement some sample image processing problems such as display, increase-decrease the brightness of the image.

I have implemented the code using the Google Colab environment .

1.2.Read an image and display:

- Open Google Colab.
- Import cv2.
- Paste a test image in the directory.
- Create variable to store image using imread() function.
- Display the image using imshow() function.



1.3.Increase the brightness of the image :

- Read the image using Image. open().
- Create ImageEnhance. Brightness() enhancer for the image.
- Enhance the image brightness using enhance() method, by the required factor.
- Factor must be greater than 1 to increase brightness.

```
im = Image.open("/content/rose.jpg")
factor = 1.5 #brightens the image
light_img = enhancer.enhance(factor)
light_img.save('brightened-image.png')
plt.imshow(light_img)
```

```
<matplotlib.image.AxesImage at 0x7f2077062250>
```

1.4.Decrease the brightness of the image:

- Read the image using Image. open().
- Create ImageEnhance. Brightness() enhancer for the image.
- Enhance the image brightness using enhance() method, by the required factor.
- Factor must be less than 1 to decrease brightness.

```
from PIL import Image, ImageEnhance

#read the image
im = Image.open("/content/rose.jpg")
factor = 0.5 #darkens the image
dark_img = enhancer.enhance(factor)
dark_img.save('darkened-image.png')
plt.imshow(dark_img)
```

```
<matplotlib.image.AxesImage at 0x7f2076eb3550>
```

1.5.Discussion:

- cv2. imread() method loads an image from the specified file.cv2 makes easier to find the package with search engines.
- If Factor=1 ,the brightness remain unchanged.
- If Factor<1 ,the brightness will decrease.
- If Factor>1 ,the brightness will increase.

1.6.Conclusion:

In this Experiment, implemented some simple image processing problem such as – display an image, Changing the of an image. These are the most basic thing with an image. When the brightness is adjusted, the entire range of tones within the image is raised or lowered accordingly.The image will have a higher percentage of darks or blacks and whites or highlights with minimal mid-tone.