PRACTICAL - 9

Name: Shivanshu Anant Suryakar

PRN: 1841048

Batch: B3

Class: L.Y Computer Engineering

Aim: Python program to illustrate Opening and Closing morphological operation on an image.

Theory:

Morphological operations are used to extract image components that are useful in the representation and description of region shape. Morphological operations are some basic tasks dependent on the picture shape. It is typically performed on binary images. It needs two data sources, one is the **input image**, the second one is called **structuring component**. Morphological operators take an input image and a structuring component as input and these elements are then combines using the set operators. The objects in the input image are processed depending on attributes of the shape of the image, which are encoded in the structuring component.

Opening is similar to erosion as it tends to remove the bright foreground pixels from the edges of regions of foreground pixels. The impact of the operator is to safeguard foreground region that has similarity with the structuring component, or that can totally contain the structuring component while taking out every single other area of foreground pixels. Opening operation is used for removing internal noise in an image.

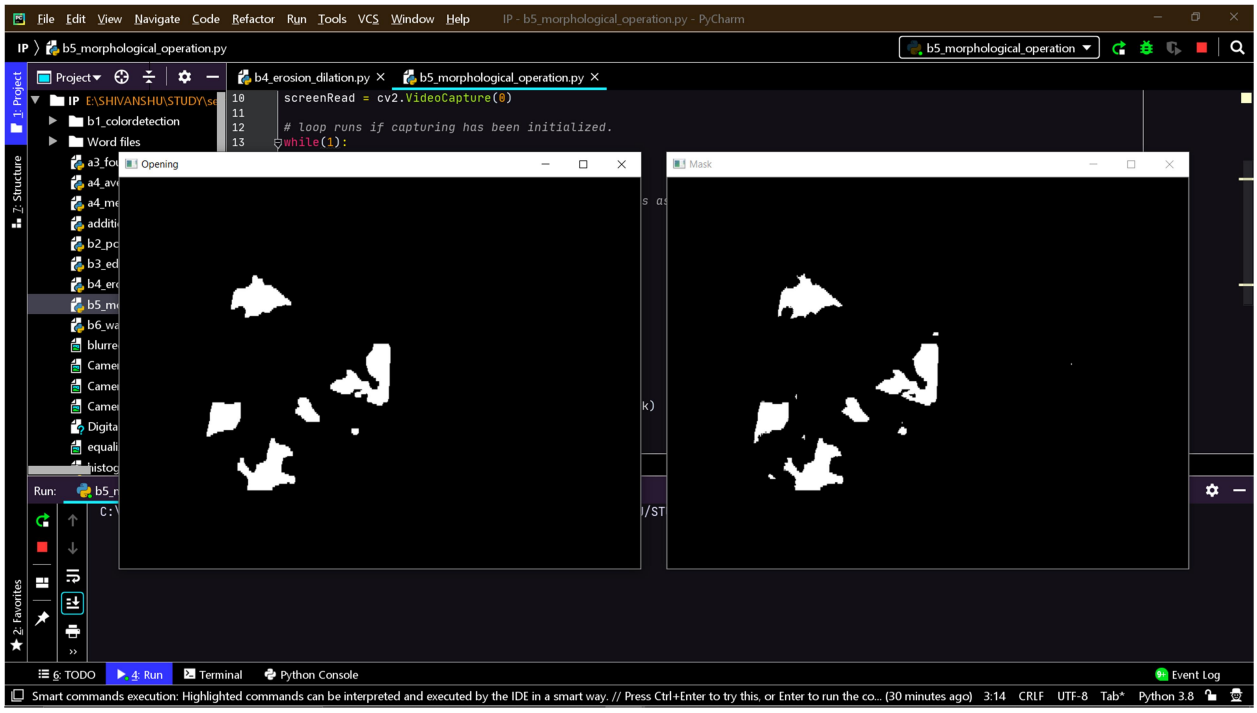
Opening is erosion operation followed by dilation operation.

These are a set of image processing operations where the shapes of the image's objects are manipulated. Similar to convolutional kernels, morphological operations utilize a structuring element to transform each pixel of an image to a value based on its neighbors' value.

Requirements:

- Open CV
- numpy

Output:



The original image is a book having Blue color spread over various parts. The white region shows that part of the book

Conclusion:

In this practical we have learnt about Opening and Closing morphological operation on an image.