Lab -3

CSET340- Advanced Computer Vision and Video analytics

Task-1:- In this task we will understand and manipulate an image.

1. Read the image
2. Display the image
3. Extraction of Image size
4. Calculation image pixels
5. Convert RGB to Grayscale image
6. Convert RGB to Grayscale image and Binary image by using a threshold.
    i. Also, Count the area of black pixels and size of image

Note:- OpenCV uses BGR (Blue, green,red) format. So when we open an image in cv2 it is BGR by default. We need to convert it into RGB, and then gray format. Give a new name to the image after every conversion.

Task-2:- In this task we will understand and manipulate the properties of an image.

1. Perform edge detection on an image using the following operators
    i. Sobel Operator
    ii. Prewitt Operator
    iii. Roberts Cross Operator
    iv. Canny Edge Detector
2. Perform image segmentation on an image using the following techniques
    i. Global Thresholding for Image Segmentation
    ii. Adaptive Thresholding
    iii. Edge Detection for Segmentation (Canny Edge Detection)
    iv. Region-Based Segmentation (Watershed Algorithm)

Note:-

- All submissions on LMS and marks will be deducted for late submission
- Submit both the .ipynb file and the doc file for assignment on LMS.