Assignment 1

Language :

- python

Libraries used :

- Numpy
- Math
- Random

Functions implemented

- threashold(src, dist, breakPoint)
    - Src : the source image path
    - Dst: the distination path to store the thresholded image
    - breakPoint : the threshold value

- resize(imagePath, width, height)
    - Src: the source image path
    - Width: The output image width
    - Height : The output image height
    - Returns : the resized image

- blend(image1, image2, ratio)
    - image1 : the first image to be blended
    - image2 : the second image to be implemented
    - Ratio : the blending ratio (0, 1)
    - Returns the blended image

- increase_brightness(image, percent)
    - src : the source mage path
    - Brightness increase value.
    - Returns Image with it's brightness increased by the percent value
- solveAffine(m,o)
    - M : matrix 1
    - O: matrix 2
    - Returns affine matrix from m1 to m2

- applyMatrix(src , matrix)
    - src : the source mage path
    - Matrix : the affine matrix
    - Returns : the image after applying the geometric transformation

Questions

1. Load Image (L1.jpg) and convert it to binary using thresholding

Before

After

2. Blend Images (L1.jpg) with resized image (logo.jpg) with a ratio 4:1

L2

Logo

Blended image

3. Load Image (L2.jpg) and adjust its brightness with a value of 50

Before

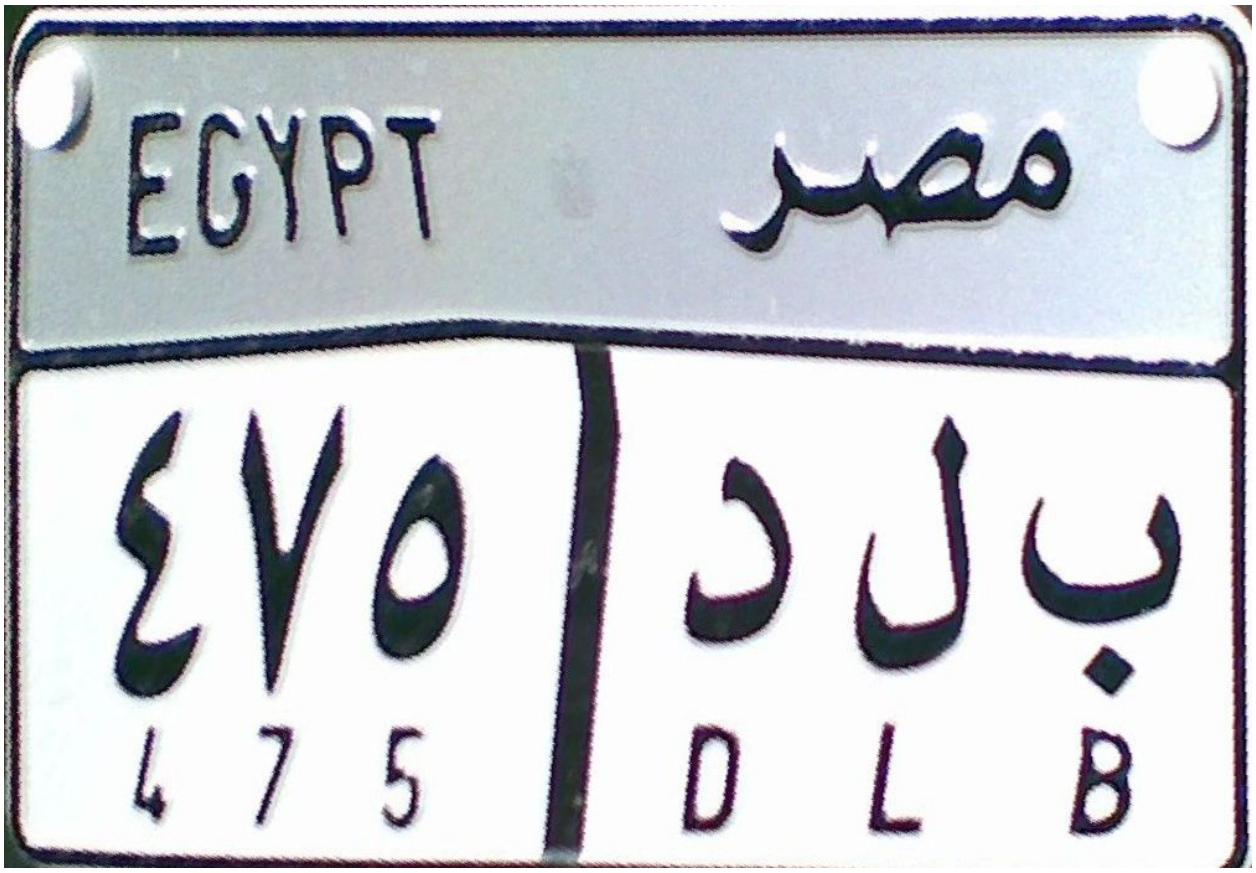
After

4. Load Image (L3.jpg), implement affine transformation to get a front view of the plate (hint: you may not use OpenCV existing method)

Before

Using one affine matrix

Using two consecutive affine matrices



5. Load Image (L4.jpg) and apply homography transformation to get a front view of the plate (Hint: you may use OpenCV existing method)

before

After