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19AIE303 - Signal and Image Processing

Assignment 1

Use OpenCV library to do the following:

1. a) Open the given colour image 'Lenna.png', convert it to **grayscale** and save as 'grayLenna.jpg'.
   b) In the code comment: a) **How many grayscale shades** can be represented in this image? And b) What does it depend on?
   c)Change the image to contain **four grayscale shades** in all. Equally space these four values (white, two equally spaced grays and black). Save this image as gray4Lenna.jpg.

2. Open the image 'calvinHobbes.jpeg'. The size is 225x225. **Scale it up** to 450x450 and save the scaled image as 'chScaled.jpg'.

   You may need these functions:
   cv2.cvtColor()
   cv2.resize()
   cv2.imwrite() → to save the output file

What to submit:
1. **A single python file** containing **code and comments** for both the questions. Demarcate both questions using comments
2. **Output images** from both question