PROJECT DESCRIPTION:

**Image processing**

Load an image and test image processing methods implemented in Matlab.

• Load an image

• Convert to grayscale and HSL/HSV

• Binarize the image (pick your own threshold and rule, e.g. based on hue)

• Perform a translation and a rotation on an image. For the translation matrix for shifting the image, use the values, tx = 50, and ty = 30. Define rotation matrix for rotating the image by a rotation angle of 45 degrees.

• Apply smoothing filters (mean, Gaussian) to the input image, see how changing the parameters influences the result, discuss.

• Load and display the color image ‘peppers.png’. Examine the size of peppers by typing whose to find out the size of the image that you have read in.  
¬ (a) Convert the class uint8 color image peppers to a gray scale image, and display the full intensity range gray-scale image using the imshow command.  
¬ (b) Now change the intensity range [0 255] to a lower range [0 N]. Display and examine the resulting gray-scale image for different values of N ranging from 255 down to 8. Report: For what value of N do you begin to see some distortion?