

## **Problem Set „*OpenCV - Reading and displaying images*“**

### **Problem 1**

Write a program (or a notebook) that reads and displays images in different ways. Use image `DonaldDuck01.tif` for this problem. The image is a 3 channel RGB image.

1. Read the image as a gray scale image. and display it.
2. Read the image as a color scale image. and display it.
3. Display the different channels red, green and blue. Since each of the three channels is an intensity image, the result will be three grayscale images.
4. Display the different channels (red, green and blue) but retain their hue. You have to process the images.
5. Modify the original image: Copy the content of the green channel to both the blue and red channel. Display the result and compare it to the images displayed in subproblems 1 and 3.
6. Convert the original image to a grayscale image using the function `cv2.cvtColor()`. Use the docstring (help) available for this function to obtain information on the parameters.