

Exercises II

CSE Bridge Workshop, August 2008

Image Transformations

Create filter functions to do the following:

1. Reduce the green in an image by 50%.
2. Eliminate all of the red and blue from an image, leaving just the green. (Or just leave the blue or red and eliminate the other two colors. Or...)
3. Convert an image to black and white.
 - a. Try it first by simply averaging the rgb values for each pixel.
 - b. If you have time, use the “better” rgb weights from the slides to compute luminance values. How does the result compare to the simple average? Is the quality of the result different for different images?
4. Think up and implement at least one other transformation. Or find some ideas on the web.
5. (If we get to “if” today – otherwise try this tomorrow.) Implement a function with the heading:

```
substitute(picture, oldColor, newColor, threshold)
```

This function should replace all pixels whose color is within the distance threshold of oldColor with newColor. Use this to replace all the white teeth in a picture with purple. You’ll need to use the image tools to figure out the initial rgb values for the teeth to be replaced.