**ITEC 136 Lab 2 Name: \_\_\_Danielle Hooven\_\_\_\_\_**

## Assignment

Write a program that has three functions: sepia(), remove\_all\_red(), and gray\_scale() to process the image. Plot all four images. No global variables are allowed. Each function needs parameter(s) in order to manipulate and draw the image.

Sepia Tone images are those brownish colored images that may remind you of times past. The formula for creating a sepia tone is as follows:

newR = (R × 0.393 + G × 0.769 + B × 0.189)

newG = (R × 0.349 + G × 0.686 + B × 0.168)

newB = (R × 0.272 + G × 0.534 + B × 0.131)

Red removal from an image:

Simply set the R component to 0.

Gray scale conversion:

newR = (R × 0.289 + G × 0.587 + B × 0.114)

newG = (R × 0.289 + G × 0.587 + B × 0.114)

newB = (R × 0.289 + G × 0.587 + B × 0.114)

where R, G, and B are the original image pixel red, green and blue values.

***Hint****:* **Remember that RGB values must be integers between 0 and 255.**

You can get each pixel by using p = img.getPixel(col, row)

Components of each pixel can be retrieved by p.getRed(), p.getGreen(), p.getBlue()

## Grading Criteria

* Quality of the solution: 0 – 50 points
  + Documentation (internal comments) (0 – 5 points)
    - It is not uncommon for industry to impose a way of documenting software that is uniform across all programmers. Documentation standards are outlined in the same document referenced in the style bullet below.
  + Style (formatting, naming conventions and appearance of solution code) (0 – 5 points)
    - As listed in the action items of the course web page lab assignment, ensure that your solution code meets the documentation and style guidelines for this course. The documentation and style requirements Word document titled "DocumentationAndStyleGuidelines.doc” exists as a link on the lab assignment page. Review your code against this document.
  + Correctness (how the program works under test) (0 – 40 points)
    - The program should work, and be seen to work. The code should be robust.
* Note that grammar, spelling, and writing mechanics do not contribute to the total points for this assignment; however, improper grammar, poor spelling, or poor writing mechanics may result in significant point deductions.