

## Homework #6 Introduction to Computing

Due: Oct. 30 (Saturday at 11:59 PM)

### **Image Manipulator Program**

Professor Smart N. Lazy wants you to write a program (`photoSlop.py`) to manipulate his vacation pictures. He would like a menu-driven program to:

- take a color (.gif) image and apply a sepia effect (p. 288 Project 8) to generate a .ppm image. (He is too cheap to buy an old-fashioned photograph of his family at Disney World)
- take a color (.gif) image and apply a lighten filter (p. 289 Project 9) of a user-specified amount to generate a .ppm image.
- take a color (.gif) image and apply a darken filter (p. 289 Project 9) of a user-specified amount to generate a .ppm image.
- take a color (.gif) image and apply a color filter (p. 289 Project 9) using user-specified red, green and blue amounts to generate a .ppm image.

You can download and extracting my modified Image class, the textbook example from:

<http://www.cs.uni.edu/~fienup/cs051f10/homework/hw6.zip>

Your program should run from inside the hw6 directory with a user interaction that looks something like:

```
Welcome to Photo Slop Image Processing Program

Select on the following:
1. Apply sepia effect
2. Apply lighten filter
3. Apply darken filter
4. Apply color filter
5. Quit

Enter your choice: 1

Enter photo file name: smokey.gif

Enter file name to receive the modified image: smokey_sepia
WARNING: The file 'smokey_sepia.ppm' already exists!
Do you want to wipe it out (y/n)? no
Enter file name to receive the modified image: smokey_sepia2

Close the sepia image window to continue and save the image

Select on the following:
1. Apply sepia effect
2. Apply lighten filter
3. Apply darken filter
4. Apply color filter
5. Quit

Enter your choice: 5
```

Follow the program format and structure described in section 2.6.4 of the text, and be sure to use good style:

- meaningful variable names with good style (i.e., useCamelCase)
- docstring comment at the start of the program
- use constants where appropriate with good style (ALL\_CAPS\_AND\_UNDERSCORES)
- **design your program first using top-down design!!!**
- **implement your design using functions**

Submit your homework electronically at [http://www.cs.uni.edu/~schafer/submit/which\\_course.cgi](http://www.cs.uni.edu/~schafer/submit/which_course.cgi)

The steps for the homework submission system are:

1. Write, run, debug, and test your program inside the hw6 folder. Zip the folder hw6 by right-clicking on it and selecting Send to | Compressed (zipped) folder. This should generate a hw6.zip file to be submitted.

2. Log on to the submission system at: [http://www.cs.uni.edu/~schafer/submit/which\\_course.cgi](http://www.cs.uni.edu/~schafer/submit/which_course.cgi)

(It is very likely that you will get some security certificate warnings when trying to use this. You may add an exception and accept the existing security certificate.) Use the same AD-ITS User name and password you use to log on the lab computers.

3. Select the course and section number of "810:051, Intro to Computer, Fienup". Click the "Continue".
4. Select the homework that you wish to submit: "HW 6: Image Manipulator". Click the "Continue" button.
5. Specify how many extra files you want to submit. Just leave it at 0. Click the "Continue" button.
6. Upload your program by Browsing and selecting your hw6.zip file. Click the "Continue" button.
7. The next page reports on the status of the upload(s). You can always continue to upload a better version of the program until the deadline. The newer file will replace an older file of the same name.