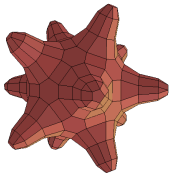

CS430 Computer Graphics

Project 1 – The PPM Format

In this project, you will write code to read and write images in PPM format. Your code should be able to read and write PPM files in P3 and P6 format.

Your program should be resistant to errors and should not segfault or produce undefined behavior. If an error occurs, it should print a message to stderr with "Error:" prefixed to a descriptive error message before returning a non-zero error code. I have a test suite designed to test the robustness of your program.

Your program (ppmrw) should have this usage pattern to convert a P3 or P6 image to P3:

ppmrw 3 input.ppm output.ppm

Your program (ppmrw) should have this usage pattern to convert a P3 or P6 image to P6:

ppmrw 6 input.ppm output.ppm

You should print an error if the image would not be 8 bit per channel.

Technical Objectives

Technical objectives describe the organizational or code-related features that are a required part of your program and will be evaluated in the technical objective rubric for this project. In grading technical objectives, we will ask the question "How well does this project provide evidence of the objective?"

- Ability to read P3 formatted images into memory
- Ability to write to P3 formatted images from memory
- Ability to read P6 formatted images into memory
- Ability to write to P6 formatted images from memory
- Use of C programming language
- Use of consistent coding style and commenting
- Working Makefile that builds the program

What do I turn in?

In BBLearn you should turn in a zip file of your project directory. Please be sure you meet these requirements (missing any of these points may cause you to lose many or all points):

- Your source directory should be named in COURSEID_PROJECT#_YOURID1_YOURID2_YOURID3 format. Please use all **lower** case for naming your directory. Under this naming convention my project directory would be **`cs430_1_jdp85`**.
- Your source directory should be zipped with the final file name being the project directory name with a ".zip" on the end. Using this convention my zip file would be **`cs430_1_jdp85.zip`**.
- Your repo must have a **`README.md`**.
- Your `README.md` must have a section called "# Authors" with your name(s) and email address(es) in it.
- Your `README.md` must have a section called "# Usage" that describes how to use your program (but should not deviate from the requirements stated here).
- Your `README.md` must have a section called "# Known Issues" that describes known issues in your program. If you know your program doesn't work, please say so.
- Your project must have a **`Makefile`** with an **all** rule that will build your program.
- Your project should **not** include binary files, temporary files, or other configuration files (e.g., for text editors or IDEs).

Your project directory should contain all the code for your program such that it can compile with gcc, clang, or cl without any special libraries (libc and libm are ok).

What rubric will be used to grade the assignment?

The grading rubric is posted on BBLearn.

When do I turn it in?

The due date is posted on BBLearn.

Graduate Student Extension (CS530)

If you are a graduate student, you should also implement P7 such that your program (ppmrw) supports this usage pattern to convert a P3, P6, or P7 image to P7:

ppmrw 7 input.ppm output.pam

You should print an error if the image would not be 8 bit per channel or not RGB(A). You should be able to support RGBA.