Exam Prep: PPM Image Manipulation in Java

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Abstract

In this class we will play around with the ppm image format so you have more confidence and ability to be able to complete the midterm exam.

1 It's Hard to Find a Good Greenman

Last week we used a *greenman.png* image to do some image manipulation tasks. This week we will focus on *.ppm* images - but where do we find a good one to play with? Use **imagemagick**. Note that imagemagick is a command line tool that is popular among linux and macOS users - I don't know if windows users like it or not, though I think you can download it. Anyway, I want to change the mage from *png* format to *ppm*. Here's what the command looks like. If you're on Linux or Mac, you might want to check this program out because it is very userful. Here's how I convert to ppm:

```
melvyn@thinkpad$ convert greenman.png greenman_bin.ppm
melvyn@thinkpad$ head -n4 greenman_bin.ppm
# a bunch of unreadable junk
# this is because the image is in BINARY ppm format. Check the
  ppm
# specification here and see that P6 is a binary format
# https://en.wikipedia.org/wiki/Netpbm_format
melvyn@thinkpad$ head -n1 greenman_bin.ppm
P6
```

For our purposes, we want to use the image in ASCII format, not binary. So I do the command like this:

```
$ convert greenman.png -compress none greenman_ascii.ppm
$ head -n4 greenman_ascii.ppm
P3
WxH
255
... a bunch of numbers between 0 - 255 written in ASCII.
```

2 View PPM

3 Create a PPM

4 Read it into memory

5 Any pixel that is background should be made white

6 Write the modified image back out to a file

7 View the image and see that it is modified