

## Problem Set 5: Multimedia

*due Wednesday, 22 November 2006, by 5:30 P.M. ET*

This problem set requires the use of Adobe Photoshop, which is installed on computers in the Science Center and at 53 Church Street; it is also available for download as expiring freeware on the course's website.

You must submit this problem set via upload to the dropbox on the course's website.

### Multiple Choice (without the choice). (5 points each.)

What file format is each of the descriptions below describing? For each description, write the name (or, if appropriate, acronym) of the file format being described. Rest assured that more than one file format might be described by some description; you need name only one. However, you should not name the same file format more than once.

1. high-resolution graphics format
2. uncompressed audio format
3. supports transparency
4. lossy compressed graphics format
5. streaming video format
6. file format on store-bought DVDs
7. format of Windows wallpapers
8. video format created by Microsoft
9. lossless compressed audio format
10. file format on store-bought CDs

### Things that make you go hmmmmmm. (10 points each.)

11. Many institutions have strategic initiatives in place to make more full and innovative use of technology. Harvard University films some courses' lectures and makes them available to students online. Duke University also makes some courses' material (*e.g.*, lecture notes, language lessons, music lessons) available for download to iPods. Potential buyers can view sample book chapters online at Amazon.com. Customers at some Starbucks can burn music to CD-Rs. MIT offers many of its undergraduate course materials online for free via OpenCourseWare. Cite at least three changes, upgrades, or initiatives that an institution of your choice (*e.g.*, your business, school, employer, club, *etc.*) has recently implemented or could implement to utilize more innovatively or fully existing *multimedia* technology. In a sentence or two, justify why each change, upgrade, or initiative would be helpful.

12. In recent years, the Recording Industry Association of America (RIAA) has monitored illegal file-sharing and pursued legal action against its participants. In a short paragraph, how, technically speaking, might the RIAA be able to know who is sharing what? (Never mind discovery through lawsuits; focus only on technological means.)

**Your First Exhibit! (20 points.)**

13. If you haven't noticed already, the banner atop E-1's website changes every twenty-four hours. (Recall the website's recent exhibition of Halloween-themed imagery.) Moreover, you can manually change the banner yourself, simply by clicking on it. Note, however, that only the banner's background changes; the banner's text and shape remain fixed.

In the sections and workshop following Lecture 7, you were introduced to Adobe Photoshop, the de facto standard graphics-design tool for Mac OS and Windows. Your mission for this question, if you choose to accept it—just kidding, you have to accept it—is to design your own, “signed” banner for the course's website!

To provide a framework for your creativity, we have made a template for this banner available for download in PSD format. You may download this template from the URL below.

<http://www.fas.harvard.edu/~csciel/template/>

Upon opening this file in Photoshop, you will notice (provided you've selected “Show Layers” from the Windows menu) that it includes five layers, all of which have been locked by us. You are expected to create at least one new layer containing your design. Although you are allowed to change the color, font, and size of the text in our locked layers (by temporarily unlocking them), you should not remove that text altogether. Your design *must* be of the shape below.



The simplest way to confine your design to this shape is to place your new layer(s) beneath our “Opaque Overlay” layer.

In addition to your design, your name, your initials, or “by Anonymous” must be incorporated somehow into the confines of this shape *or* placed in the space just below this shape, as suggested by the below.



If you opt to place your name or initials in the space just below this shape, as suggested by the above, you may want to create a layer just for your name or initials, and place that layer atop our “Opaque Overlay” layer.

Ultimately, you must submit a PSD version of your final work as well as a GIF or JPEG version (whichever is more appropriate). These files must be named `username-banner.psd` and either `username-banner.gif` or `username-banner.jpg`, where `username` is your FAS username. You will not be graded on the artistic merits of your graphic. However, you will be graded on the basis of your fulfillment of this problem’s guidelines as well as (if not a distant student) on the extent to which you took advantage of the design techniques taught in section.

### **Your First Critic. (10 points.)**

14. In one or more paragraphs, each of five sentences or more, describe the work that went into your banner’s design. You may want to use one or more of the following questions as points for departure. What decisions did you make during the design process? What techniques did you use? What effects did you deploy? What filters did you try out but decide not to use? What features of Photoshop did you stumble upon during your work?

**Extra Credit. (5 points.)**

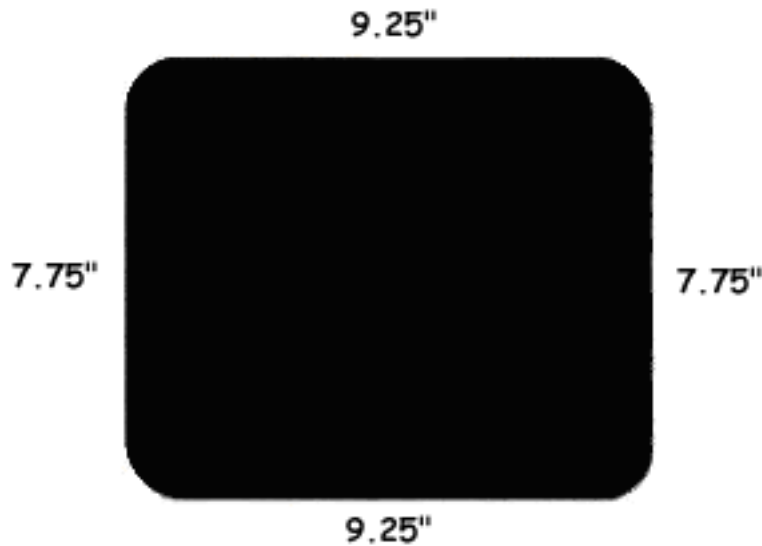
15. It is not uncommon for graduates of Computer Science E-1 to exclaim, the moment they submit their final project,

## **“I survived Computer Science E-1!”**

Never mind those other things they say.

Anyhow, it is in expectation of this sentiment that we launch a contest—a contest to determine the author of this year’s “I survived Computer Science E-1!” mousepad. Come semester’s end, each student will exit E-1 with this souvenir in hand: a mousepad bearing the winning design.

For up to five points of extra credit and a shot at having your work immortalized, design a candidate for Fall 2006’s mousepad, with your name or initials somehow incorporated. Your design should somehow incorporate the notion of surviving E-1, and it must explicitly contain the phrase “I survived Computer Science E-1,” “I survived CSCI E-1”, or “I survived E-1.” Your design’s resolution must be 300 or 600 dpi (dots per inch). Moreover, it must measure 9.25" × 7.75" and allow for a bit of curvature around the edges, as suggested by the figure below.



In fact, be sure to keep any text or important content at least 0.75" away from the mouse pad’s edges, lest any requisite cropping detract from your design.

You must submit a PSD version of your final work as well as a JPEG version. These files should be named `username-survival.psd` and `username-survival.jpg`, where `username` is your FAS username.

Go on, give it a shot. You have nothing to lose!