CS110 Review Questions

This is *not* a "practice test." It is much longer than the test will be and covers more material. Some of the questions may be harder or more time-consuming than the test questions. Furthermore, this is not exhaustive: there may be kinds of questions on the test that are not exhibited here. Therefore, you should not study *only* by doing these questions. These questions are here for you to think about and to trigger your own thoughtful inquiry into the material.

Review your own notes, the lecture and lab notes, and the textbook reading in an inquisitive way: not only "do I understand this," but "can I explain it," and "can I use it," and even "what little bits of syntax are tricky here." Consider compiling your own summary of reference material, concepts and so forth.

Work through problems on your own without reference to the course material to test whether you actually understand it. While the test is open book and open notes, there will not be time to learn a technique or look up things on every problem and finish in 70 minutes.

Vocabulary

1. One advantage of the _____ image format is that it allows transparency.
2. Two examples of a JavaScript _____ are `alert()` and `prompt()`.
3. You can access information from an object (such as the Date object) by using a _____ (such as `getMonth()`).
4. A hyperlink like `<a href="fred.gif">` is an example of a(n) _____ URL.
5. A hyperlink like `<a href="http://www.yahoo.com/home.html">` is an example of a(n) _____ URL.

True/False

1. _____ JavaScript is case-sensitive except for the names of variables
2. _____ HTML is case-sensitive

Short Answer

For questions with numerical answers, show how you arrived at your answer and mark the answer clearly. For other questions, write 2–3 clear, concise, complete English sentences. Your answer will be graded 50% for correctness and 50% for quality of explanation.

1. What graphic format would be best for photographs of real-world stuff?

2. What decimal number does binary number 10101 represent?

3. What decimal number does hexadecimal number A9 represent?

4. Convert 75 to binary and to hexadecimal.

5. Consider 11_{10} and 11_2 (both decimal and binary). Which of the two is larger?

6. Every computer repeats several steps continuously. What are they?

7. Cars with bigger engines are faster than those with smaller engines. But smaller computers are often faster than larger computers. Why?

8. John W. Eirdo has just created a computer with a keyboard that can only use capital letters. His computer can represent the 26 letters of the English language, but he has no clue on how to represent numbers. Can you help him? What base is your arithmetic system?

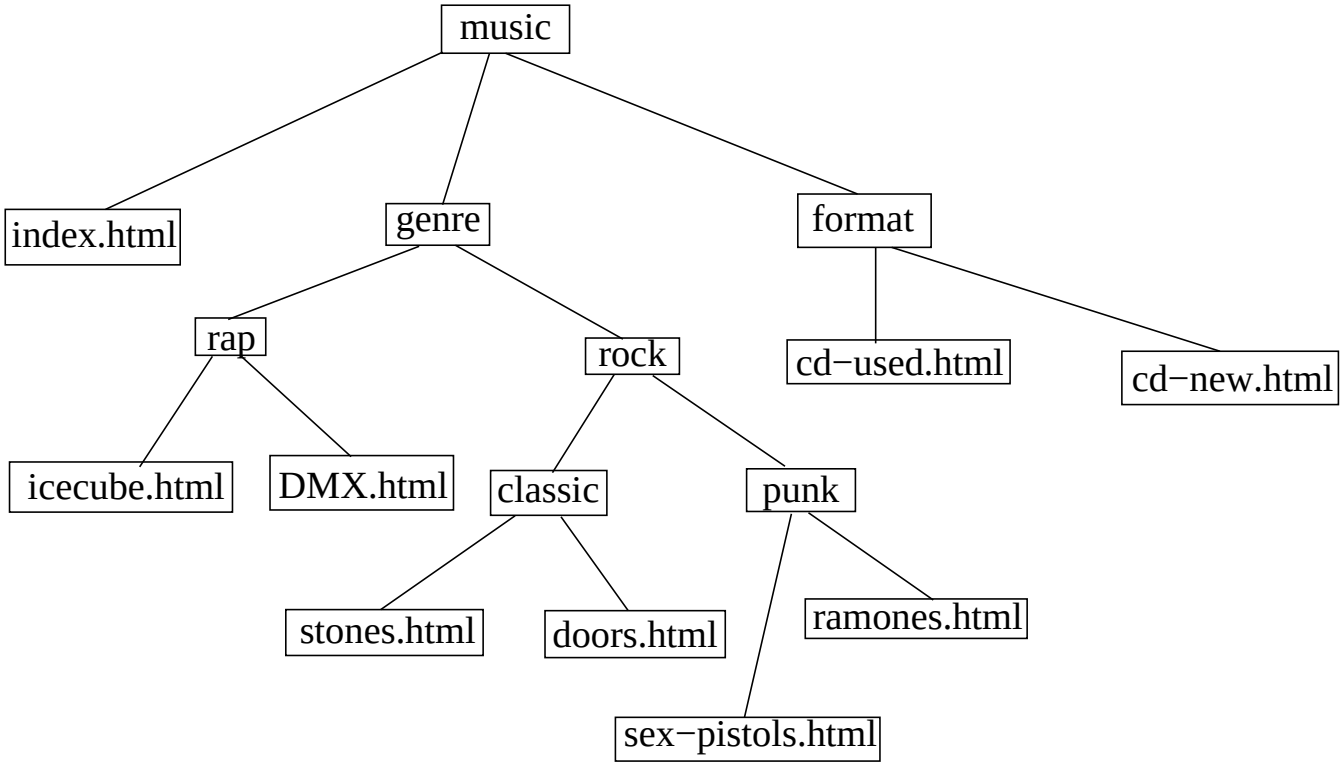
9. You're picking colors for a web site. Your client likes dark violet (#9400D3) and plum (#DDA0DD), and asks you to find a color that is "right in between." What color would you offer? Show your computations.

10. Which of these two colors is *lighter*: aliceblue (#F0F8FF) or cornflowerblue (#6495ED)?

Relative URLs

This section tests your understanding of the syntax of relative URLs, which are incredibly useful when designing all but the smallest of web sites.

You're creating a music web site with the following folder and file structure:



Give the relative URL for each of the following connections:

- From `cd-used.html` to `stones.html`

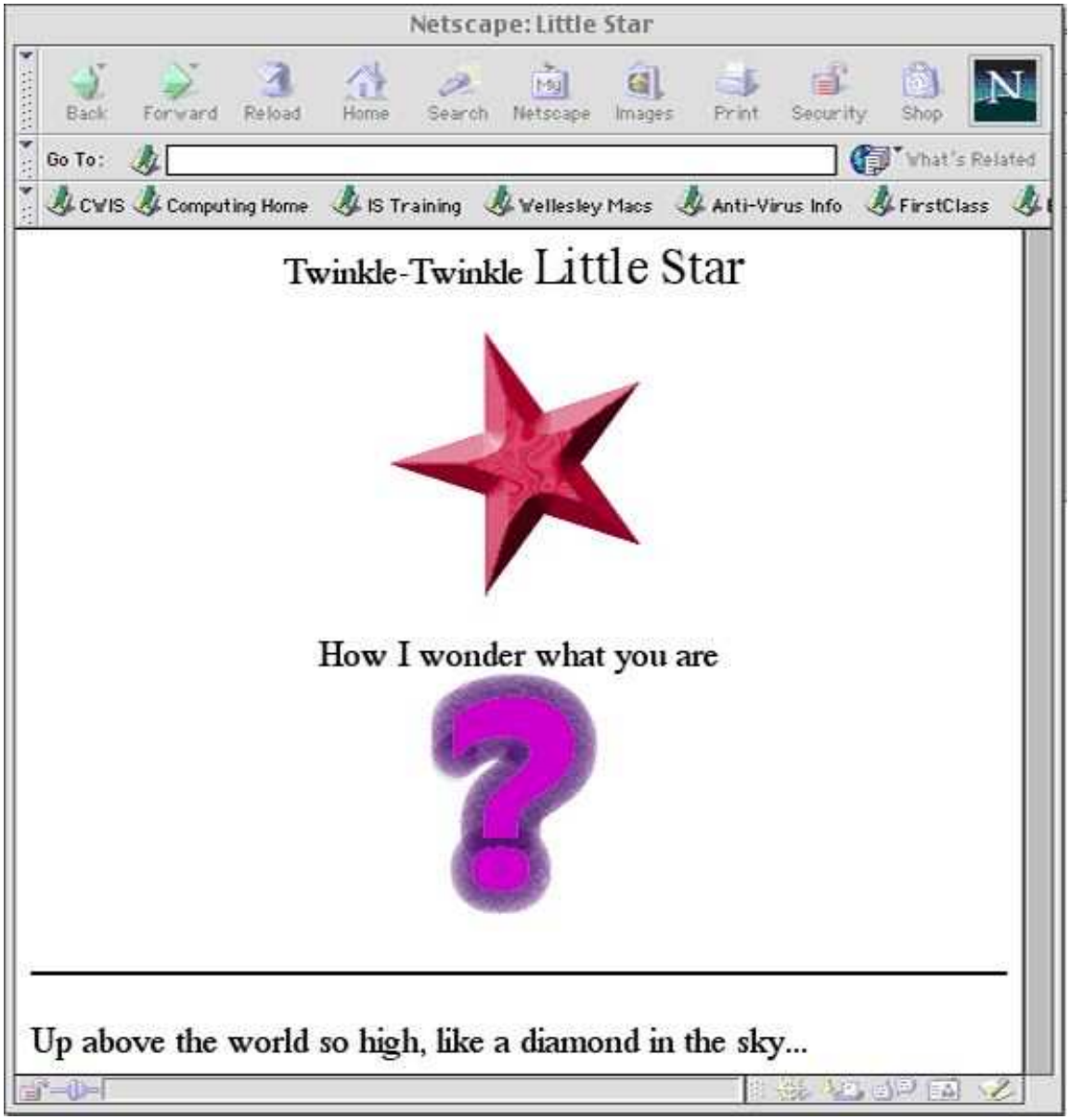
- From `icecube.html` to `ramones.html`

- From `doors.html` to `stones.html`

- From `index.html` to `DMX.html`

HTML

Write the complete HTML to produce this web page:



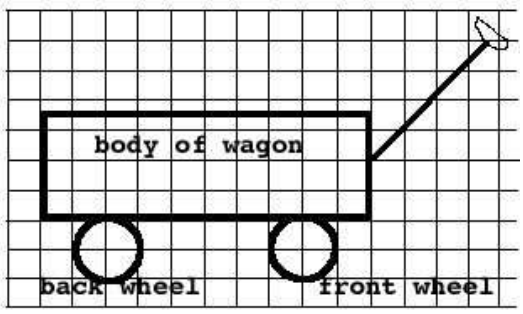
The image of this star comes from the following URL:

```
http://puma.wellesley.edu/~cs110/lectures/M02-fireworks/star1.gif
```

The image of the question mark comes from a local file, named `questionMark.gif`.

Image maps

You're working on a web site that sells wagons. The image on the left below will appear in the web site:




```
your_account
    public_html
        wagon
            wagon.html
            wheels
                frontwheel.html
        backwheel.html
        wagon.gif
```

The grid lines are not part of the image; they are only there to help you estimate coordinates. Each grid block is 10 pixels wide and 10 pixels high. For each wagon part, there is a corresponding URL with more information. Sadly, the files are not very organized, as you can see from the diagram on the right, above. The diagram gives the names of files and folders, with folder contents indented (you've seen this on many computer displays).

Assume that your code is in `wagon.html` and the image above is in `wagon.gif`. Write the HTML code that uses this image as an image map with the following properties:

1. front wheel links to `frontwheel.html`
2. backwheel links to `backwheel.html`
3. body of wagon links to `www.radioflyer.com`

You only need to write code for the image and imagemap — you do *not* need to write code for whole page. Hyperlinks should use relative and absolute URLs, as appropriate.

CSS

1. Suppose that you're writing a web site for an online store. In addition to its thousands of regular offerings, it occasionally has sale items, often dozens at a time. To make the sale items stand out, your boss says that they should be written in a bold font in lime green. How do you solve this problem? Briefly explain your design decisions.

2. For a website for a newspaper, you decide to mimic the look of a newspaper and have the content of the site in columns, but just three columns each 2 inches wide. How would you do this?

3. It turns out that HTML has a special code to produce a bullet, namely `&bull;`. So, one could do a bullet list as follows:

```
<p>Here is a list of items:
<p style="margin-left: 3em">&bull; apples
<p style="margin-left: 3em">&bull; bananas
<p style="margin-left: 3em">&bull; dates
```

   The result can be indistiguishable from conventional bullet lists. Indeed, many GUI programs for creating web sites do exactly this. What advantages or disadvantages does this have compared to conventional bullet lists?

JavaScript

1. What is the result of the following code?

```
<script type="text/JavaScript">
   x = 7;
   y = 5;
   z = 14;
   x = y;
   z = z % x;
   alert(y + z);
</script>
```

2. What is the result of the following code?

```
<script type="text/JavaScript">
   a = 1;
   a = a + 1;
   b = "a is " + a;
   a = 5;
   alert(b);
</script>
```

3. Write some JavaScript code that would ask a user for their name, and then greet them by name in the first sentence of the web page. You don't have to write the whole web page, of course, just give the beginning, so that we can see how you would solve this problem.

4. Write some JavaScript code that asks the user for their age and then computes and displays how old they will be in the year 2058. An acceptable answer works for this year; a perfect answer works for any year before 2058.

```
<html>
    <head>




    </head>
    <body>









    </body>
</html>
```

5. Newspaper offices and similar places often have clocks that show the time in other cities (London, Paris, Tokyo, etc.). Write a web page for use here at Wellesley that shows the time in London and San Franciso. FYI, London is 5 hours ahead of us, so if it's 7am here, it's noon there. Similarly, San Francisco is 3 hours behind us, so when it's 9pm here, it's only 6pm there.

6. What would your solution to the previous problem show if the page is on `puma.wellesley.edu` but is displayed on a browser running on a computer at Oxford University in England?