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General Instructions

- DO NOT WRITE YOUR NAME ON ANY PAGE EXCEPT THIS ONE!

- You have 75 minutes

- You are permitted to use one 8.5 x 11 sheet of notes, (both sides) which you must turn in with your exam. Put your name on it. You won't get it back, so make a copy before you come to the exam. It *is* permitted for your notes to be a laser print or photocopy.

- **Pace Yourself!!!!!**

  Pay attention to the point values. When there are 10 minutes left, skim through and be sure you have at least written *something* for the questions that are worth many points.

- Read *all* the directions *carefully* on each problem.

1. (6 pts) Illustrate how to write a comment in each of the following languages by putting the word "comment" inside a comment.

  - HTML

  - Java

  - JSP

  [HF p.8 (html), p.52 (Java),
  http://copland.udel.edu/p̃conrad/cisc474/05S/knowledge/jsp.html (JSP)]

2. (10 pts) An HTTP request stream may include form parameters. Briefly describe where these form parameters appear when each of the following methods is used, and give an example of how they are formatted within the HTTP request stream:

  - GET

- POST

[HF p. 10, 12-16, p. 108-111]

0.1 MIME types

3. MIME types can appear in both HTTP request headers and HTTP response headers. Answer all of the following questions about "MIME types", and HTTP request and response headers.

   - (4 pts) What is a MIME type?

   - (3 pts) Which side receives and interprets a response header; the browser, or the web server?

   - (3 pts) Which of the following applications would generate an HTTP request header: Internet Explorer, or Resin?

   - (4 pts) Describe "in general" a circumstance when a MIME type would appear in an HTTP request header (I don't need the exact syntax for the request heder—a general description is good enough.)

   - (4 pts) Describe "in general" a circumstance in which a MIME type would appear in an HTTP response header, and what the receiver of that MIME type would do with it. (I don't need the exact syntax of the response header—a general description is good enough.)

4. **(10 pts)** Mary and Fred are a happy couple in most respects; they've been married for four years, have a lovely home in the suburbs, and both have good jobs in the software industry. They also have their own web servers at home where they host their own blogs in which they share their vacation pictures, pictures of their kids, and their views on various topics with friends and family.

However, on one topic, they can't agree. Mary is a champion of open source technologies, including the Firefox browser. Her entire web server runs open source technologies. Mary has nothing but contempt for a company known as Mocrisift, which makes a browser known as Entirnit Oxpleror. Fred, on the other hand, thinks that Mary's contempt for Mocrisift is irrational, and thinks that using Mocrisift software is a very reasonable choice for most users.

Mary would like to build into the welcome page on her server (which is written as a JSP) some code that checks what browser each person visiting her site is using, and if they are using Firefox, to send them a little congratulatory message. If they are using the dreaded Entirnit Oxpleror, she'd like to gently suggest they try something else.

What will the code in the JSP look like to accomplish this? If you don't remember the exact syntax, sketch out something close, and explain (in proper JSP comments) how it works "in principle"... that is, explain what features of the Java Servlet/JSP/HTTP/HTML/Web Container programming system allow Mary to acheive her goal. Stated simply: how does the server side "know" which browser mary is using, and how does she make something different display on the user's browser in both cases?

(Extra space in case you need it)

Total Points: 44