CSE 190 M, Summer 2011
Final Exam, Part 2 (LECTURE)
Friday, August 19, 2011

Name: _____

TA / Section: _____

Student ID #: _____

Rules:

- You have **60 minutes** to complete this part of the exam.
  You may receive a deduction if you keep working after the instructor calls for papers.
- This test is open-book/notes. You may use any paper resources other than practice exams.
- You may *not* use any computing devices, including calculators, cell phones, or music players.
- Unless otherwise indicated, your code will be graded on proper behavior/output, not on style.
- Please do not abbreviate code, such as writing ditto marks ("") or ellipses (…).
- If you enter the room, you must turn in an exam and will not be permitted to leave without doing so.
- You must show your **Student ID** to a TA or instructor for your submitted exam to be accepted.

Good luck!

Problem	Description	Earned	Max
1	HTML/CSS Tracing		15
2	HTML/CSS Coding		15
3	JavaScript/DOM		20
TOTAL	**Day's Total Points**		**50**

Problem	Description	Earned	Max
4	AJAX		15
5	PHP		20
6	SQL		15
TOTAL	**Day's Total Points**		**50**

TOTAL	**Exam Total Points**		**100**

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4. Ajax/XML

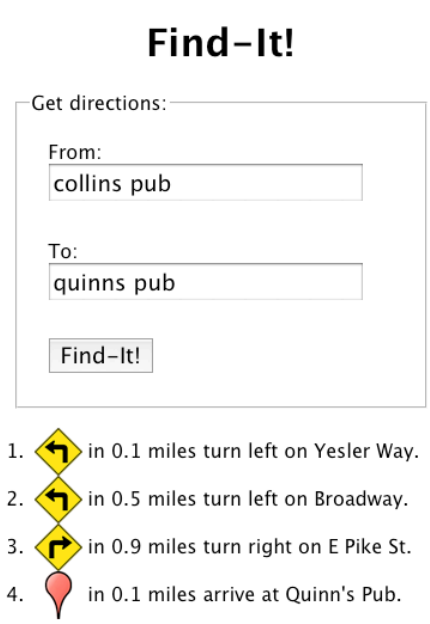
Suppose that there is a web service named `findit.php`, located on your web server in the same directory as your code. This service outputs XML data describing turn-by-turn directions from a given origin to a given destination. In this problem you will write Ajax JavaScript code to contact the web service (using a GET request), examine its XML data, and display the series of directions contained in it on the page.

The XML data returned by the web service consists of an overall document element called `directionlist` that contains a series of one or more `direction` elements inside it. Each `direction` element has three attributes: a `distance` attribute containing the distance to travel before the next turn; a `turn` attribute indicating the direction of the turn; and a `street` attribute indicating the name of the street to turn at.

To indicate arrival at the destination, the last `direction` element in the list will not have a `street` attribute. The format matches the following example (though it might have more/fewer than 3 directions):

```
<?xml version="1.0" encoding="UTF-8"?>
<directionlist from="Collins Pub" to="Quinn's Pub">
    <direction distance="0.1" turn="left" street="Yesler Way" />
    <direction distance="0.5" turn="left" street="Broadway" />
    <direction distance="0.9" turn="right" street="E Pike St" />
    <direction distance="0.1" turn="arrive" />
</directionlist>
```

Assume the code you are writing will go into `findit.js`, linked from the following page:



You should perform the search when the button with the ID of `find` is clicked, by initiating an AJAX request to the `findit.php` service and passing it two parameters — `from` and `to` — containing the values entered in the text boxes. The text boxes have IDs `from` and `to` respectively. Assume valid input to both text boxes.

Results should be injected as list items into the `ol` with the ID of `directions`. Each list item first contains an image whose source is equal to the value of the `turn` attribute with '`.png`' at the end. (For example, the right-turn image is `right.png`.)

For regular directions you should use the following format:

[image] in [distance] miles turn [turn] on [street].

When indicating arrival, however, the message is slightly different:

[image] in [distance] miles arrive at [destination].

You may assume that the XML data is valid in the format described previously, and that the .php service is reachable and no failures occur during the AJAX request. You may also assume that **Prototype** has been loaded prior to your script.

4. **Ajax/XML (writing space)**

5. PHP

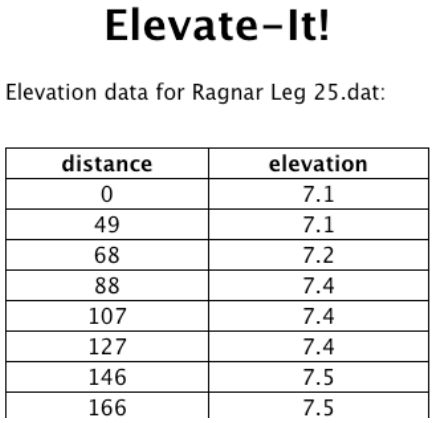
Write the PHP code for a self-submitting form page with two states:

When a **parameter is not passed**, output a form to select (from a dropdown box) an elevation profile to display. The options in the dropdown should be the names of **all files in the current directory** that end in `.dat`. as follows:

The form on this page should submit back to itself. When a **parameter called `profile` is passed**, load the file of the given name, and output its contents in a table. The data in the file will be in the following format:

```
0,7.1
49,7.1
68,7.2
...
```

Each line contains two numbers, separated by a comma. The first number represents a distance, and the second represents an elevation, both in meters. You should output these two numbers in a table as follows:



At the end of your page, you should print a **cumulative gain/loss** which indicates the total amount of elevation gained or lost, as follows:

802	11.4
820	11.6
838	11.8
855	11.9
878	12

Total gain/loss: 408.7

Your code doesn't need to output a complete XHTML page; assume that your output will be put inside the page's `body`. You will receive a small deduction if you use `print` or `echo` statements in your solution.

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5. PHP (writing space)

6. SQL

Some actors are known for working with particular directors. **Write a SQL query that finds a list of all actors in the imdb database who worked on two films with the same director.**

Show the first and last name of the director, then the first and last name of the actor. Each combination of actor and director should be listed only once. Recall the `imdb` database tables:

actors

id	first_name	last_name	gender
433259	William	Shatner	M
797926	Britney	Spears	F
831289	Sigourney	Weaver	F
...			

movies

id	name	year	rank
112290	Fight Club	1999	8.5
209658	Meet the Parents	2000	7
210511	Memento	2000	8.7
...			

roles

actor_id	movie_id	role
433259	313398	Capt. James T. Kirk
433259	407323	Sgt. T.J. Hooker
797926	342189	Herself
...		

directors

id	first_name	last_name
24758	David	Fincher
66965	Jay	Roach
72723	William	Shatner
...		

movies_directors

director_id	movie_id
24758	112290
66965	209658
72723	313398
...	

movies_genres

movie_id	genre
209658	Comedy
313398	Action
313398	Sci-Fi
...	

If you unnecessarily join too many tables together that are not needed for the query, you will not receive full credit.
