

CS 312 - Assignment 4

HTML-CSS-DBs

Due 11:59pm on Monday, March 12



<http://alternateidea.com/blog/articles/2006/2/12/the-camping-framework-rails-scaffolding-and-dangers-of-html-generation>

For this assignment, we will be playing with HTML, CSS and some basic DB construction and querying. This project is another solo project.

1 XHTML 1.0 Strict

Your software development professor, being a solidly-mediocre web designer, has not made the course web page XHTML 1.0 compliant. Your job is to make it compliant *without* changing how the page is currently displayed (on Firefox in the labs).

All of you should have a folder titled `public.html` in your home directory. Any files and directories that you put inside this folder will be made available on the CS web server at:

`http://www.cs.middlebury.edu/~yourusername/`

for example, all of mine are available at:

`http://www.cs.middlebury.edu/~dkauchak/`

To setup your own copy of the class web page do the following:

- create a folder called `cs312-page` in your `public.html` folder
- make that folder publicly executable (`chmod a+x cs312-page`)
- `cd` into that directory and then make an empty `index.html` file by typing the following `touch index.html`
- go to the course web page and view the source for the page. Copy this page into your favorite text editor and then save the file **as a random file name in your cs312-page folder**. Make sure the filename is random to avoid other people inadvertently looking at it. As an aside, you are bound by the honor code not to poke around in other people's directories.
- make all the files in this directory publicly readable `chmod a+r *`

You should now be able to go to:

`http://www.cs.middlebury.edu/~yourusername/cs312-page/your-random-html-filename.html`

in your web browser and see a copy of the course web page.

You can now check to see the compliance to XHTML 1.0 of this page using the compliance checker linked from the course web page.

Fix all of the errors and warnings to make your page compliant. As I mentioned in class, it is generally good style to separate the .html file and the style code, so feel free to create a separate CSS style file to help you complete this.

You will be graded based on compliance and not changing the visual look of the page as well as the elegance of your solution. For example, inline `style` tags in the table won't get you a lot of points.

2 Tables+CSS

<http://www.cs.middlebury.edu/~dkauchak/classes/cs312/assignments/assign04/ratings.html>

contains a basic table. Create a copy of this file with a random name in your `cs312-page` folder.

Your task is to edit this html file and to create two style files to make the table look like the following:

Version 1:

Restaurant	City	Visit date	Rating
Christophe's on the Green	Vergennes	February 14, 2007	5/5
Dog Team Tavern	New Haven	May 20, 2005	3/5
Eat Good Food	Middlebury	December 20, 2007	3/5
Five Spice Cafe	Burlington	July 16, 2007	Jane 3/5
			John 2/5
Gourmet Buffet	South Burlington	November 17, 2006	3/5

Restaurant ratings

Version 2:

Restaurant ratings

Restaurant	City	Visit date	Rating
Christophe's on the Green	Vergennes	February 14, 2007	5/5
Dog Team Tavern	New Haven	May 20, 2005	3/5
Eat Good Food	Middlebury	December 20, 2007	3/5
Five Spice Cafe	Burlington	July 16, 2007	Jane 3/5 John 2/5
Gourmet Buffet	South Burlington	November 17, 2006	3/5

You may make any changes you want to the html file, however, once you're done, you should have a single .html file and two .css files. To switch between these two table versions you'll have to edit the html and change which .css file is linked, *however, besides this, you should not have to make any other changes to your final .html file to make it's appearance change between the two.*

When you're done, make sure that the html file is still XHTML 1.0 compliant and that your CSS files are also compliant. You can check CSS compliance at:

<http://jigsaw.w3.org/css-validator/>

Hints

- The course web page has a link for the available CSS properties. For this problem in particular, the following *might* be useful:

```
background-color
border
border-collapse
caption-side
color
font
padding
text-align
```

- Try and get the colors close to the ones I've put together, but it doesn't have to be perfect.
- The font that I used for one of the captions is "italic large Verana, serif".
- The html/css example from class might also have some useful information.
- The w3c has a decent example of some of the table properties:
http://www.w3schools.com/css/css_table.asp

3 Database queries

Download the `world.db` database from lecture:

<http://www.cs.middlebury.edu/~dkauchak/classes/cs312/examples/SQL/world.db>

For each of the questions below, provide a the SQLite query that answers it. For each answer, save *both* your query and the solution in a file called `sql_answers.txt`. For example, if I asked you the question "What are all the languages that are are spoken by at least 99% of the population in some country?" you would include an entry in your file:

```
sqlite> select distinct Language from CountryLanguage where Percentage > 99;
Arabic
Creole English
Crioulo
Dhivehi
English
Faroese
Haiti Creole
Italian
Japanese
Korean
Rwanda
Serbo-Croatian
Spanish
```

Read the hints section below before you start working on these!

1. How do I get the names of all countries in Eastern Asia?
2. How do I get the name and population of all countries in Asia with a population between 20 and 50 million?
3. How do I get the name and life expectancy of the 10 countries with the world's highest life expectancies?
4. How do I get the name and head of state of all countries whose head of state's name begins with a 'G' or a 'K'?
5. How do I get an alphabetized list of all the cities in Malaysia (assume I don't know its country code)?
6. How do I get all the official languages spoken in North America?
7. How do I get the names of all the countries where at least 50% of the population speaks English?
8. How do I get the country name and GNP for the country with the largest GNP?
9. How do I get the number of cities in South America?
10. How do I get the country name and capital city for all the countries in South America alphabetized by country name, with the column headings labeled 'Country' and 'Capital'?
11. **Optional:** How do I get the country name, city, and city population for the largest city in the world?

Hints/advice:

- Make sure you understand what each of the entries in each of the tables means. Run a few general queries on each table to see some example data.
- Make sure you understand how the table are linked to each other. Both the City and CountryLanguage tables references the Country table via the CountryCode/Code. Also, the Capital column in the Country table is a link to the City table via it's ID.

- Recall that you can do regular expression-like searches using `LIKE`. `'%'` matches zero or more characters. Play with `LIKE` on a few examples to make sure you understand how it matches.
- Remember when you do a `JOIN` you can reference columns in particular tables using a `.`, for example `Country.Name` vs. `City.Name`.
- SQLite doesn't really support booleans, they're just integers. 0 is false and 1 is true.
- You can use the result of a query as part of another query. For example, in our friends database, if we wanted to find the friend with the lowest ID we could issue the following query (there are other ways of doing it, but I wanted to illustrate a point):

```
select * from friends where friend_id=(select min(friend_id) from friends);

1|Smith|Joe|jsmith@woohoo.com|1
```

To nest another select query, you just put it in parenthesis.

What to submit

As always, create a folder with your name and assignment number on it and follow the normal directions for submitting. Within this folder, your submission should include the following:

- For Problem 1, create a folder called `problem1` and add:
 - your fixed `.html` file
 - any associated `.css` files
 - a text file called `url.txt` that contains the url for your fixed page
- For problem 2, create a folder called `problem2` and add:
 - your modified `.html` file
 - your two `.css` files with clear names indicating which is which

- a text file called `url.txt` that contains the url for each of these files
- Your `sql.answers.txt` file with your queries and answers clearly labeled.

Grading

criterion	points
XHTML 1.0	10
Tables+CSS	15
SQL (1.5 points each)	15
Total	40