

CSCI E-12 Assignment 1

150 points.

Due by Monday, February 24, 2014, 12 noon EST

Submit via the "Assignments" area of the course site.

<http://cscie12.dce.harvard.edu/assignments>

Assignment 1 focuses on creating valid markup documents and using semantic markup for text, tables, and forms. In addition, Assignment 1 offers an introduction to authoring CSS style rules to apply presentation styles to HTML/XHTML markup.

Goals:

1. **Become familiar and comfortable creating HTML/XHTML documents.** Create an HTML/XHTML document from existing text using semantic markup. Create an HTML/XHTML form and table.
2. **First step into CSS.** You will author a basic CSS document to include style rules for various XHTML elements.
3. **Use multiple browsers to test your work.** You will need to check your work in at least two HTTP clients (Web browsers, e.g. Chrome, Firefox, IE, Safari, Opera). You will need to include the "User-Agent" string of the browsers you used (there is a section in "answers.html" for this. To find the "User-Agent" string of your web browser, go to: <http://cscie12.dce.harvard.edu/browser.html>

Getting Started with Assignment 1

- You will submit your work via a ZIP file, as well as publish your work on the course web hosting server (morpheus.dce.harvard.edu).
- **Working on the course web hosting server.** Please create an obscurely named folder in your `public_html` directory that will contain your work for the course. The reason for the obscure name is to prevent intentional or unintentional browsing via the web of your hard work by others. For example, the user John Harvard might create a folder named `VeriTas_1636`.
- Download the Assignment 1 "zip" file from the course web site and unzip it.
- **Keep the file names and directory structures the same. We rely on the file names being consistent when we grade.**
 - You should see the following files/directories:

```
cscie12_assignment1
|-- answers.html
|-- js/
|-- harvard_guide.css
|-- harvard_guide_dce.html
|-- harvard_guide.txt
|-- lunch_special.css
|-- lunch_special.html
|-- us_census.html
-- us_census.txt
```

- **Validation**
 - **Your HTML/XHTML should validate** using the [W3C Markup Validation Service](http://validator.w3.org/) (<http://validator.w3.org/>). Documents should validate with no errors (warnings are acceptable). You have a choice of using HTML5, XHTML 1.0 Strict or Transitional, or HTML 4.01 Strict or Transitional, unless otherwise noted.
 - **Your CSS should validate** using the [W3C CSS Validation Service](http://jigsaw.w3.org/css-validator/) (<http://jigsaw.w3.org/css-validator/>). CSS should validate with no errors (warnings are acceptable).
 - **Unicorn – W3C’s Unified Validator.** You may wish to use [Unicorn](http://validator.w3.org/unicorn/) (<http://validator.w3.org/unicorn/>), W3C’s unified validator, which performs a variety of checks, including markup and CSS.
- **Edit "answers.html"** to provide the fully qualified URLs of your published XHTML and CSS documents on `morpheus.dce.harvard.edu`.
- When you are done with the assignment, zip the contents of your assignment folder and submit the zip file via the course site.

Part 1. Markup – "The Harvard Guide: Division of Continuing Education"

30 points. You will create an HTML5 document (note you can also use XHTML 1.0 Transitional or Strict, or HTML 4.01 Transitional or Strict) from an existing plain text document. You are given the text from a section of “The Harvard Guide” about the Division of Continuing Education. Your task is to apply markup to the text to make it into a valid HTML/XHTML document. Screenshots are given to provide clarity to the description and requirements.

The markup document you create should meet the *following requirements*:

- **File.** Use the `harvard_guide_dce.html` file.
- **Markup.** Validate as mentioned in the “Getting Started” section.
- **CSS.** Include a "link" element that refers to the `harvard_guide.css` CSS stylesheet file. You will edit this CSS file in Part 4 of this assignment.
- **Markup Semantics.**
 - Use `h1`, `h2`, and `h3` for the document titles and subtitles.
 - Use `p` for paragraph text
 - Use `ul` and `li` for lists
 - Hypertext Links
 - Add at least five hypertext links (`a` element) with appropriate `href` values.
 - At least two of these hypertext links should have `title` attributes.
 - **Table of Contents (Internal links).** Create a “table of contents” at the beginning of your XHTML document that contains links to chapter headings further down within the same document. For example, the table of contents link:


```
<li><a href="#hss">Harvard Summer School</a></li>
```

 would refer the browser down to the element within the same document that contains an id attribute value of “chapter1”:


```
<h3 id="hss">Harvard Summer School</h3>
```

1 The Harvard Guide **Page Title (h1)**

2

3 Division of Continuing Education **Page Sub Title (h2)**

4

5 The Division of Continuing Education in the Faculty
6 of Arts and Sciences is responsible for four major
7 programs:

8

9 * Harvard Summer School
10 * Harvard Extension School
11 * Harvard Institute for English Language P
12 * Harvard Institute for Learning in Retirement

13

14 The combined enrollments in these programs
15 approaches 20,000.

16

17

18 Harvard Summer School **Page Section Titles (h3)**

19

20 The Harvard Summer School, founded in 1871, is the
21 oldest academic summer session in the United
22 States. Each summer more than 5,000 students of all
23 ages come to Harvard from every state and nearly 80
24 foreign countries to study for eight weeks with
25 faculty from Harvard and other major American and
26 foreign universities. The open-enrollment program
27 sponsors nearly 200 day and evening courses in more
28 than 45 liberal arts fields.

29

30 The Summer School features a selective
31 college-level program for highly qualified
32 secondary school students, the Ukrainian Summer
33 Institute, as well as courses in premedical
34 sciences, expository and creative writing,
35 economics, and many foreign languages, among others.

36

37 Harvard Extension School **Page Section Titles (h3)**

38

39 The Harvard Extension School was founded by Harvard
40 President A. Lawrence Lowell in 1909 as an academic
41 evening program designed to serve the educational
42 interests and needs of the Greater Boston
43 community. The features of the Extension School
44 have remained constant from the beginning: open
45 enrollment, part-time evening study at Harvard,
46 coeducation for all ages, modest tuition rates, a
47 distinguished faculty drawn primarily from Harvard
48 University, and the opportunity to study for

Unordered List
Table of Contents
Link to internal anchors
or ids within page

Screenshot showing text to markup strategy.

The Harvard Guide

Division of Continuing Education

The Division of Continuing Education in the [Faculty of Arts and Sciences](#) is responsible for four major programs:

- [Harvard Summer School](#)
- [Harvard Extension School](#)
- [Harvard Institute for English Language Programs](#)
- [Harvard Institute for Learning in Retirement](#)

The combined enrollments in these programs approaches 20,000.

Harvard Summer School

The [Harvard Summer School](#), founded in 1871, is the oldest academic summer session in the United States. Each summer more than 5,000 students of all ages come to Harvard from every state and nearly 80 foreign countries to study for eight weeks with faculty from Harvard and other major American and foreign universities. The open-enrollment program sponsors [over 200 day and evening courses](#) in more than 45 liberal arts fields.

The Summer School features a selective college-level program for [highly qualified secondary school students](#), the [Ukrainian Summer Institute](#), as well as courses in premedical sciences, expository and creative writing, economics, and many foreign languages, among others.

Harvard Extension School

The [Harvard Extension School](#) was founded by Harvard [President A. Lawrence Lowell](#) in 1909 as an academic evening program designed to serve the educational interests and needs of the Greater Boston community. The features of the Extension School have remained constant from the beginning: open enrollment, part-time evening study at Harvard, coeducation for all ages, modest tuition rates, a distinguished faculty drawn primarily from Harvard University, and the opportunity to study for personal enrichment, career advancement, or degrees or certificates.

[More than 550 courses are offered each year](#), including health and computer sciences, liberal arts, administration and management, many foreign languages, and expository and creative writing, to nearly 13,000 students of all ages. In 91 years of operation, the Extension School has provided instruction to more than 350,000 people.

Some 5,000 degrees and certificates have been granted in the Extension School undergraduate and graduate programs.

Harvard Institute for English Language Programs

The [Harvard Institute for English Language Programs](#) was founded in 1950 to meet the language needs of post-World War II immigrants to the United States. During the academic year, the Institute offers part-time day and evening programs to non-native speakers from the Greater Boston community. During the summer session, intensive day, part-time evening, and a number of business programs are offered. The combined enrollment for the Institute's summer and academic year programs is more than 2,100.

Harvard Institute for Learning in Retirement

Example screenshot of the "The Harvard Guide: Division of Continuing Education". The unordered list of links is the table of contents, which are links to the page section headings within the document.

Part 2. Tables — United States Census Data

30 points. You will create a markup document (HTML5; or XHTML 1.0 Transitional or Strict; or HTML 4.01 Transitional or Strict) that contains data from the United States Census Bureau on the total population of the United States from 1790 to 2010. You are provided the data in a plain text format (file is `us_census.txt`; see screenshot on page 7) so you can get an idea of the layout and to provide you with a starting point to construct your table. You are also provided a set of style rules that will help with the table presentation (these style rules are in the `style` element within the head element of the `us_census.html` document). Also provided is Javascript that on “mouseover” will highlight the table cell and its associated header labels, assuming you have used “`scope`” or “`headers`” correctly.

The table you construct should meet the following requirements:

- **File.** Use the `us_census.html` file. I have provided some basic style rules for the table that I think will be helpful.
- **Markup.** Validate as HTML5, XHTML 1.0 Transitional or Strict, or HTML 4.01 Transitional or Strict.
- **Table Semantics.** Use `table`, `thead`, `tfoot`, `tbody`, `tr`, `th`, `td`, and `caption` elements.
- **Table Header Semantics.** Define an appropriate `thead` for this table.
- **Table Footer.** Should contain data attribution statement and a link to the U.S. Census Bureau (<http://www.census.gov/>).
- **Binding header labels to table data.** Use of “`scope`” attributes on the header table cells and also on the first table cell in each row (the “Year” value).
 - As an alternative to using “`scope`”, you can use the “`headers`” attribute to accomplish this.

```

1  ...United States Population from 1790 to 2010
2  -----
3  ...Year Total Population...
4  -----
5  ...2010 ...308,745,538
6  ...2000 ...285,230,516
7  ...1990 ...248,709,873
8  ...1980 ...226,542,199
9  ...1970 ...203,302,031
10 ...1960 ...179,323,175
11 ...1950 ...151,325,798
12 ...1940 ...132,164,569
13 ...1930 ...123,202,624
14 ...1920 ...106,021,537
15 ...1910 ...92,228,496
16 ...1900 ...76,212,168
17 ...1890 ...62,979,766
18 ...1880 ...50,189,209
19 ...1870 ...38,558,371
20 ...1860 ...31,443,321
21 ...1850 ...23,191,876
22 ...1840 ...17,063,353
23 ...1830 ...12,860,702
24 ...1820 ...9,638,453
25 ...1810 ...7,239,881
26 ...1800 ...5,308,483
27 ...1790 ...3,929,214
28 -----
29 ...Data from United States Census Bureau (http://www.census.gov/)
30 ...

```

Data in plain text format (us_census.txt)

**United States
Population from
1790 to 2010**

Year	Total Population
2010	308,745,538
2000	285,230,516
1990	248,709,873
1980	226,542,199
1970	203,302,031
1960	179,323,175
1950	151,325,798
1940	132,164,569
1930	123,202,624
1920	106,021,537
1910	92,228,496
1900	76,212,168
1890	62,979,766
1880	50,189,209
1870	38,558,371
1860	31,443,321
1850	23,191,876
1840	17,063,353
1830	12,860,702
1820	9,638,453
1810	7,239,881
1800	5,308,483
1790	3,929,214

Data from [United States Census Bureau](#)


Example screenshot of the data in an XHTML table

Part 3. Forms – "Lunch Special"

40 points. You will create a web-based version of a paper form for the "Dado Tea Lunch Special". ([Dado Tea](#) is a local establishment with two locations, one in Harvard Square, across the street from the 53 Church Street Computer facility). Screenshots (see page 9) are given to provide clarity to the description and requirements. The purpose of the assignment is to focus on creating the different types of form input elements (input text, choose one, choose all that apply, pull-down menu, submit button) – using appropriate "name", "value" and "id" attributes for them, as well as using the "label" element to associate text labels with these input elements. *Any type of Javascript integration in the form is left to a future assignment and is not part of this assignment.*

The markup document you create should meet the *following requirements*:

- **File.** Use the `lunch_special.html` file.
- **Markup.** Validate as HTML5 (you can also use XHTML 1.0 Strict or Transitional or HTML 4.01 Strict or Transitional).
- **CSS.** Include a link element that refers to the `lunch_special.css` CSS file. You will edit this CSS file in Part 4 of this assignment.
- **Form Markup.**
 - **Parameter names and values.** You choose the parameter names and values for the form input elements.
 - **Action of form.** Use `action="http://morpheus.dce.harvard.edu/cgi-bin/echo.cgi"` in the form element.
 - **Method.** Use "post" as the method attribute value for the form element.
 - **Fieldset and Legend.** Use `fieldset` and `legend` elements to group the form into sections
 - **Labels.** Create a `label` element for all text, radio, and checkbox input elements
 - **Days and Sandwiches.** It is OK to list all the days of the week as the paper form does. To only allow the "Friday" choices to be available on a "Friday" is a type of form validation that is beyond the scope of this assignment (as are other types of form validation and total price computation)
 - **Input types.**
 - Text input for name
 - Radio buttons for here/to go, sandwich choice, breads, cheeses, snacks
 - Checkboxes for sandwich fillings and spreads
 - Pull-down option for drink choice
 - **Breads.** Make the default bread choice "French" (i.e. use the `checked` or `checked="checked"` attribute/value).
 - **Cheeses.** Include a "No cheese" default option for the "Cheeses" radio group. Otherwise, if you select a cheese and then change your mind that you don't want cheese, there is no way to unselect a radio group (you can choose a different choice, but can't un-select all choices)
 - **Drinks.**
 - Use `optgroup` elements to group the drink choices. In the example, I chose to group by "Black Tea", "Green Tea", and "Coffee".
 - The example shows the "Large Drink" choice implemented as a checkbox. You may replicate this or use a radio group with "Regular" and "Large" choices.

LUNCH SPECIAL		\$7.24
Monday-Friday 11am-3pm		
NAME :		
<input type="radio"/> Here <input type="radio"/> To Go		
SANDWICHES (choose one)		
M: <input type="radio"/> Pesto Tofu Salad <input type="radio"/> Chicken Salad		
T: <input type="radio"/> Greek Salad Wrap <input type="radio"/> Tuna Salad		
W: <input type="radio"/> Hummus <input type="radio"/> Turkey		
Th: <input type="radio"/> Carrot-Ginger Wrap <input type="radio"/> Egg Salad		
F: <input type="radio"/> Veggie <input type="radio"/> Tuna Salad		
BREADS (choose one)	CHEESES (add 50¢)	
<input type="radio"/> 7 grain	<input type="radio"/> Feta	
<input type="radio"/> French	<input type="radio"/> Fresh Mozzarella	
<input type="radio"/> Wheat Wrap	<input type="radio"/> Swiss	
SPREADS (✓ all that apply)	FILLINGS (✓ all that apply)	
<input type="radio"/> Mayonnaise	<input type="radio"/> Tomato	
<input type="radio"/> Honey Mustard	<input type="radio"/> Mixed Greens	
<input type="radio"/> Pesto	<input type="radio"/> Cucumber	
<input type="radio"/> Olive	<input type="radio"/> Red Onion	
SNACKS (choose one)		
<input type="radio"/> Apple <input type="radio"/> Banana		
<input type="radio"/> Potato Chips		
DRINKS (choose one • add 50¢ for large drink)		
HOT COFFEE	Lrg	ICED COFFEE Lrg
<input type="radio"/> Coffee		<input type="radio"/> Coffee
<input type="radio"/> Decaf Coffee		<input type="radio"/> Decaf Coffee
HOT GREEN TEA		ICED GREEN TEA
<input type="radio"/> Sencha		<input type="radio"/> Sencha
<input type="radio"/> Decaf Green		<input type="radio"/> Decaf Green
HOT BLACK TEA		ICED BLACK TEA
<input type="radio"/> Keemun		<input type="radio"/> Keemun
<input type="radio"/> Decaf Keemun		<input type="radio"/> Decaf Keemun
		
No Substitutions		

*Paper Lunch Special form
from Dado Tea
(used with permission)*

Dado Tea Lunch Special

Monday — Friday
11am — 3pm
\$7.24

Includes sandwich, snack, and drink.

Order Information
Name <input type="text"/>
<input type="radio"/> Here <input type="radio"/> To Go
Sandwiches
Monday <input type="radio"/> Pesto Tofu Salad <input type="radio"/> Chicken Salad
Tuesday <input type="radio"/> Greek Salad Wrap <input type="radio"/> Tuna Salad
Wednesday <input type="radio"/> Hummus <input type="radio"/> Turkey
Thursday <input type="radio"/> Carrot-Ginger Wrap <input type="radio"/> Egg Salad
Friday <input type="radio"/> Veggie <input type="radio"/> Tuna Salad
Sandwich Options
Breads <input type="radio"/> 7 Grain <input checked="" type="radio"/> French <input type="radio"/> Wheat Wrap
Cheeses (add 50¢) <input checked="" type="radio"/> No Cheese <input type="radio"/> Feta <input type="radio"/> Fresh Mozzarella <input type="radio"/> Swiss
Spreads <input type="checkbox"/> Mayonnaise <input type="checkbox"/> Honey Mustard <input type="checkbox"/> Pesto <input type="checkbox"/> Olive
Fillings <input type="checkbox"/> Tomato <input type="checkbox"/> Mixed Greens <input type="checkbox"/> Cucumber <input type="checkbox"/> Red Onion
Snack and Drink
Snacks <input type="radio"/> Apple <input type="radio"/> Banana <input type="radio"/> Potato Chip
Drinks <input type="text" value="Hot Black Tea - Keemun"/> <input type="button" value="v"/> <input type="checkbox"/> Large drink (add 50¢)
<input type="button" value="Place Order"/>

Black Tea

Hot Black Tea - Keemun

Hot Black Tea - Decaf Keemun

Iced Black Tea - Keemun

Iced Black Tea - Decaf Keemun

Green Tea

Hot Green Tea - Sencha

Hot Green Tea - Decaf

Iced Green Tea - Sencha

Iced Green Tea - Decaf

Coffee

Hot Coffee

Hot Decaf Coffee

Iced Coffee

Iced Decaf Coffee

*Example Web Lunch Special Form.
Select options with optgroups are
shown.*

Part 4. Introduction to CSS for "The Harvard Guide" and "Dado Tea Lunch Special"

50 points (25 points for each CSS stylesheet document). You will create CSS stylesheets that will be applied to your markup documents from earlier parts of the assignment ("The Harvard Guide: Division of Continuing Education" and "Dado Tea Lunch Special form"). The purpose of this part of the assignment is to begin learning how to author CSS by writing style rules for element selectors. We are expecting stylesheets that have a relatively small number of basic style rules whose effect is to simply improve the overall presentation of the markup documents.

The CSS documents you author should meet the *following requirements*:

- **Files.** Use the `harvard_guide.css` and `lunch_special.css` files.
- **CSS should validate with no errors.** Your CSS files should validate with the [W3C CSS Validation Service](http://jigsaw.w3.org/css-validator/), <http://jigsaw.w3.org/css-validator/> (CSS level 2.1 **or level 3**; no errors; warnings are acceptable).
- **Small number of CSS rules (4-6) that use element selectors to define a small number (8 to 12) property/value pairs.** We are expecting each stylesheet document to use element selectors to specify 4 sets of style rules and a dozen or so CSS property/value pairs. For example, the screenshot example of The Harvard Guide has 10 property/value pairs, and the screenshot example of the Lunch Special has screenshot has 18 property/value pairs.
- **Screenshot examples below (pages 11-12) are not meant to be reproduced exactly.** The example screenshots are just my samples, and are not meant as a rigid guide to be reproduced exactly. Feel free exercise your own creativity here, and not be bound by mine.
- **Not Expected.**
 - **"class" and "id".** Using "class" and "id" selectors is not required.
 - **Position.** Use of CSS "positioning" properties is not required.
- **Doing more is not forbidden (but won't get you more points).** You can author more style rules. You can add `class` and `id` attributes to your HTML/XHTML markup and apply style rules based upon `class` and `id` names.
- **Evaluation**
 - CSS Validation (level 2.1 or 3) with no errors.
 - Presence of 4 or more CSS rules to define 8 or more property/value pairs.
 - Do the style rules improve the look of the page?

The Harvard Guide

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The combined enrollments in these programs approaches 20,000.

Harvard Summer School

The [Harvard Summer School](#), founded in 1871, is the oldest academic summer session in the United States. Each summer more than 5,000 students of all ages come to Harvard from every state and nearly 80 foreign countries to study for eight weeks with faculty from Harvard and other major American and foreign universities. The open-enrollment program sponsors [nearly 200 day and evening courses](#) in more than 45 liberal arts fields.

The Summer School features a selective college-level program for [highly qualified secondary school students](#), the [Ukrainian Summer Institute](#), as well as courses in premedical science, [expository and creative writing, economics, and](#) many foreign languages, among others.

Harvard's Secondary School Program (SSP). SSP is open to all high school students who will graduate in 2010, 2011, or 2012, and meet the application and admission criteria.

Harvard Extension School

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[More than 550 courses are offered each year](#), including health and computer sciences, liberal arts, administration and management, many foreign languages, and expository and creative writing, to nearly 13,000 students of all ages. In 91 years of operation, the Extension School has provided instruction to more than 350,000 people.

Some 5,000 degrees and certificates have been granted in the Extension School undergraduate and graduate programs.

Harvard Institute for English Language Programs

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Example screenshot of the "The Harvard Guide: Division of Continuing Education" with a small number of CSS rules applied. Shown is a mouse hover over an "a" link with a "title" attribute.

Lunch Special

Monday — Friday
11am — 3pm
\$7.24

Includes sandwich, snack, and drink.

Order Information

Name

☐ Here
☐ To Go

Sandwiches

Monday
☐ Pesto Tofu Salad
☐ Chicken Salad

Tuesday
☐ Greek Salad Wrap
☐ Tuna Salad

Wednesday
☐ Hummus
☐ Turkey

Thursday
☐ Carrot-Ginger Wrap
☐ Egg Salad

Friday
☐ Veggie
☐ Tuna Salad

Sandwich Options

Breads
☐ 7 Grain
☒ French
☐ Wheat Wrap

Cheeses (add 50¢)
☒ No Cheese
☐ Feta
☐ Fresh Mozzarella
☐ Swiss

Spreads
☐ Mayonnaise
☐ Honey Mustard
☐ Pesto
☐ Olive

Fillings
☐ Tomato
☐ Mixed Greens
☐ Cucumber
☐ Red Onion

Snack and Drink

Snacks
☐ Apple
☐ Banana
☐ Potato Chip

Drinks

☐ Large drink (add 50¢)

Place Order

Example screenshot of the "Dado Tea Lunch Special" with a small number of CSS rules applied.