Chapter 7 — Lists and Tables

Web sites often need to display data in a formatted manner. This chapter will show how to display bulleted lists, numbered lists, definition lists, and tables. At the end of the chapter additional table tags and formatting will be shown.

Learning Outcomes for this Chapter

Upon completion of the reading of this chapter and assignments found at the end, a student should be able to:

- create numeric and bulleted lists of items on a page,
- display lists of data that contain sub-lists,
- create tables to display rows and columns of data,
- add cells with header information to tables,
- cause cells on a table to span multiple columns or rows.

Lists

Lists on a webpage are an excellent way to organize information for the ease of viewers. Lists can be ordered, unordered and description lists. The ordered and unordered have a similar syntax. All lists and items within a list, by default, are displayed as flow elements. You should choose the appropriate type of list depending on your semantic need.

Ordered and Unordered Lists

Ordered lists (`<ol>...</ol>`) are numbered, and the order that you insert your items communicates the level of importance.[85] Unordered lists (`<ul>...</ul>`), on the other hand, are normally bulleted and the order of the items is unimportant. [86]

The ordered and unordered list tags dictate the type of list and hold the list elements that are written inside of the `<li>...</li>` child tags. For instance, an unordered list of fruit would be written as such:

```
<ul>
    <li>Apple</li>
    <li>Banana</li>
    <li>Pear</li>
    <li>Orange</li>
</ul>
```

---

85   https://developer.mozilla.org/en-US/docs/Web/HTML/Element/ol
86   https://developer.mozilla.org/en-US/docs/Web/HTML/Element/ul

Lists may be nested inside other lists to create outlines or add detail. Be sure to include sublists inside the list item tags of the parent list.

CSS tricks on ordered and unordered lists:

- Different icon and number style — in CSS use the **list-style-type** to modify the way a list looks [87]

- lists are often used within the nav section to warp the anchors for formatting using **display: inline-block;** or **display: inline;**

```
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <title>Nested Lists</title>
    </head>
    <body>
        <section>
            <h1>Nested Lists</h1>
            <ol>
                <li>Item One</li>
                <li>Item Two
                    <ul>
                        <li>such and more</li>
                        <li>stuff and crud</li>
                    </ul>
                </li>
                <li>Item Three</li>
            </ol>
        </section>
        <footer>
            <p><small>&copy; 2015 The SYW2L Project
                <a href="http://www.syw2l.org">http://www.syw2l.org</a>
                </small></p>
        </footer>
    </body>
</html>
```
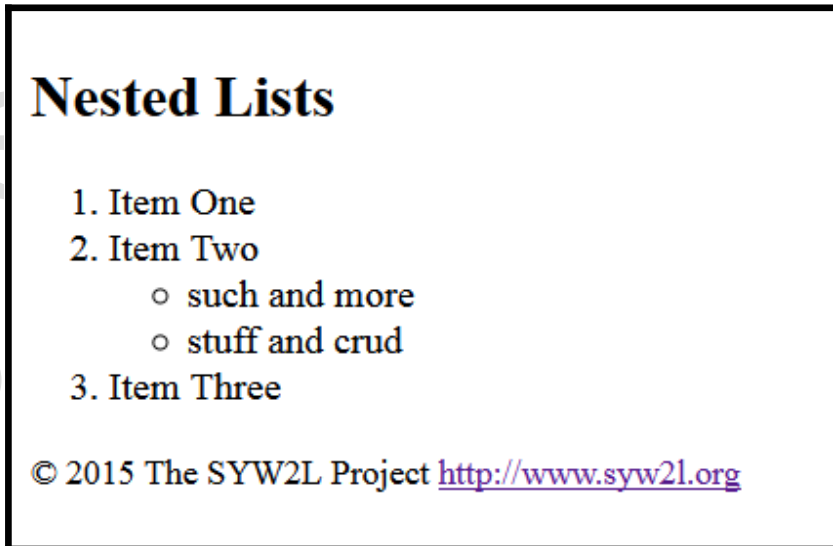
---

[87]   https://developer.mozilla.org/en-US/docs/Web/CSS/list-style-type

Illustration 21: Ordered and Unordered lists

Description Lists

Another type of list is the Description List (`<dl>...</dl>`) which is used to list terms and their definitions.[88] It is written similarly to the ordered and unordered list, except that `<dt>...</dt>` (description term) and `<dd>...</dd>` (description definition) tags are used.[89] A description list of two words that have the same meaning and a word with two meanings would be written as:

```
<dl>
    <dt>balanced</dt>
    <dt>fair</dt>
    <dd>decision that is good for everybody</dd>
    <dt>false</dt>
    <dd>not true</dd>
    <dd>misleading</dd>
</dl>
```

A description list may contain several terms that share a definition and a term with several definitions. You muse always end a term or group of terms with at least one definition. Keep in mind that lists all have semantic meanings and should not be used to indent text.

---

88   https://developer.mozilla.org/en-US/docs/Web/HTML/Element/dl
89   https://developer.mozilla.org/en-US/docs/Web/HTML/Element/dt

```html
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <title>Glossary Using Description List</title>
    </head>
    <body>
        <section>
            <h1>Glossary Using Description List</h1>
            <dl>
                <dt>Netiquette</dt>
                <dd>Guidelines for etiquette on the Internet.
                <a href="http://www.faqs.org/rfcs/rfc1855.html"
                target="_blank">rfc1855</a>
                </dd>
                <dt>foo</dt>
                <dt>bar</dt>
                <dd>Meta syntatic variables that have no specific meaning or
                definition. <a href="http://www.faqs.org/rfcs/rfc3092.html"
                target="_blank">rfc3092</a>
                </dd>
            </dl>
        </section>
        <footer>
            <p><small>&copy; 2015 The SYW2L Project
            <a href="http://www.syw2l.org">http://www.syw2l.org</a>
            </small></p>
        </footer>
 1|     </body>
</html>
```

Glossary Using Description List

Netiquette
  Guidelines for etiquette on the Internet. rfc1855
foo
bar
  Meta syntatic variables that have no specific
  meaning or definition. rfc3092

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Illustration 22: A Definition List (Glossary)

Tables

Using tables on a webpage is another great way to organize information. Tables should ONLY be used for data that needs to be displayed in a tabular format. Older HTML often used tables to format pages and for general layout, this is not an appropriate use of tables.

Simple tables are written using the **<table>...</table>** tag containing rows of **<tr>...</tr>** tags and columns of data using **<td>...</td>** tags. [90] [91]

The size of a table is determined with the number of rows and columns you create. Usually you would want to define the same number of columns on each row. In the example below, we create a table with three rows and two columns.

```
<table>
    <tr>
        <td>Susan</td>
        <td>Jones</td>
    </tr>
```

---

90 https://html.spec.whatwg.org/multipage/tables.html#the-table-element
91 https://developer.mozilla.org/en-US/docs/Web/HTML/Element/td

```
    <tr>
        <td>Billy</td>
        <td>Smith</td>
    </tr>
    <tr>
        <td>Sally</td>
        <td>Rogers</td>
    </tr>
</table>
```

There are other optional tags that can be used for tables to specify headers and captions. The table header, **`<th>...</th>`** tag, is a semantic tag that marks table cells as heading information about the column. [92] The **`<caption>...</caption>`** tag can be added as the very first tag in the **`<table>...</table>`** to add caption information.[93]

```
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <title>Table - th &amp; caption</title>
    </head>
    <body>
        <table>
            <caption>My MLB Teams</caption>
            <tr><th>Name</th><th>City</th></tr>
            <tr><td>Reds</td><td>Cincinnati</td></tr>
            <tr><td>Royals</td><td>Kansas City</td></tr>
            <tr><td>Orioles</td><td>Baltimore</td></tr>
        </table>
        <footer>
            <p><small>&copy; 2020 The SYW2L Project
                <a href="http://www.syw2l.org">http://www.syw2l.org</a>
                </small></p>
        </footer>
    </body>
</html>
```

---

92   https://developer.mozilla.org/en-US/docs/Web/HTML/Element/th
93   https://developer.mozilla.org/en-US/docs/Web/HTML/Element/caption

My MLB Teams
Name   City
Reds   Cincinnati
Royals Kansas City
Orioles Baltimore

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Illustration 23: Table with Caption and Headers

Tables with Span and Style

Sometimes when you are creating a table you will have cells that need to span across multiple rows or columns. This can be done with the **rowspan** and **colspan** attributes. Simply add the attribute to your **<td>...</td>** tag and specify the number of cells that it will span across. For instance, let's say that you have a cell that you would like to span two rows. The correct HTML is written as such:

```
<td rowspan="2">example text</td>
```

Keep in mind that both a **rowspan** and a **colspan** can be used in the same tag.

Adding a table to your document will display information in columns and rows. However, it will not generate its own border and will thus appear as floating text on your webpage. In previous versions of HTML, adding a border to a table could be done using the **border** attribute inside of the **<table>** tag but it is no longer recommended in HTML. Instead, a border should be added in CSS, and is written as such:

```
table {
    border: 1px solid gray
}
td {
    border: 1px solid gray
}
th {
    border: 1px solid gray
}
```

or with the combined CSS selector

```
table, th, td {
      border: 1px solid gray
}
```

Below is an example of properly written tables in an HTML and CSS document. Keep in mind that tables are used only for data that needs to be displayed as such and not for formatting.

```
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <link href="table.css" rel="stylesheet" type="text/css">
        <title>Tables</title>
    </head>
    <body>
        <section>
            <h1>Table with Rowspan and Colspan</h1>
            <table>
                <caption>Common Tree Names and Genus</caption>
                <tr>
                    <th>Tree Name</th>
                    <th>Genus</th>
                </tr>
                <tr><td>Chestnut</td><td>Castanea</td></tr>
                <tr><td>Cherry</td><td rowspan=2>Prunus</td></tr>
                <tr><td>Plum</td></tr>
                <tr><td>Maple</td><td>Acer</td></tr>
                <tr><td colspan=2>Sequoia</td></tr>
            </table>
        </section>
        <footer>
            <p><small>&copy; 2015 The SYW2L Project
                <a href="http://www.syw2l.org">http://www.syw2l.org</a>
                </small></p>
        </footer>
    </body>
</html>
```

```
/* table.css - Formatting for tables */

table, td, th { border: 1px solid gray }
```

Illustration 24: Table with Row and Column Spanning

Advanced Topics for Exploration

More Table Organization

Along with the **`<th>`...`</th>`** and **`<caption>`...`</caption>`** tags, there are other optional tags that can be used to better organize your tables. The **`<thead>`...`</thead>`**, **`<tfoot>`...`</tfoot>`**, and **`<tbody>`...`</tbody>`** tags go directly in the table and contain rows.

- **`<thead>`...`</thead>`** — Rows that define the table header. This is often used if your table has more than one row containing **`<th>`...`</th>`** tags. Not to be confused with the **`<th>`...`</th>`** tag.

- **`<tfoot>`...`</tfoot>`** — Rows that define the footer of the table. This tag should be after the **`<thead>`...`</thead>`** and before the **`<tbody>`...`</tbody>`**. Even though it was defined before the body rows, it will be displayed at the bottom of the table.

- **`<tbody>`...`</tbody>`** — The table body tag should contain all of the detail rows of the table.

Here is an example of these optional tags being used in an HTML document. Be sure to note the

order of the tags.

```
<table>
    <thead>
        <tr>
            <th>Item</th><th>Quantity</th><th>Price</th>
        </tr>
    </thead>
    <tfoot>
        <tr>
            <td colspan=2>Total</td><td>$50</td>
        </tr>
    </tfoot>
    <tbody>
        <tr>
            <td>Teddy Bear</td><td>2</td><td>$10</td>
        </tr>
        <tr>
            <td>Jigsaw Puzzle</td><td>1</td><td>$30</td>
        </tr>
    <tbody>
</table>
```

Alternating Table Colors in CSS

Large tables with a lot of information on a webpage can sometimes be difficult to read, even with borders. In these situations it is sometimes helpful to use CSS to alternate the colors on even and odd table rows and columns.[94] This is done using the CSS pseudo selector **nth-child**. Let's say that you are attempting to alternate table rows between the colors white and blue. Here is the correct way to write the code in CSS:

```
tr:nth-child(even) {
  background-color: white;
}
tr:nth-child(odd) {
  background-color: blue;
}
```

In this example, row 1 and every other row after will have a blue background, and row 2 and every other row after will have a white background. There are many other ways to use the **nth-child** command aside from even and odd, but it is best to use these simple commands while just starting out in CSS.

---

94   http://www.w3.org/Style/Examples/007/evenodd.en.html

Vocabulary

- caption
- colspan
- data
- dd
- definition
- definition list
- dl
- dt
- header
- li
- list
- list item
- ol
- ordered list
- row
- rowspan
- table
- td
- term
- th
- tr
- ul
- unordered list

Exercises

Word Search

```
h e i o r d a t a p t a w
r e d h r e e n d d i c c
u d a b a d r s p n o a o
n w d d i c e u t i d p l
o a l r e i a r o w e t s
r d r a r r r i e d f i p
d o s o s e u n r d i o a
e o t l w l i s a a n n n
r d h i n s i t p h i n t
e t d r t u p s a f t t a
d d e p i e o a t w i o b
r o r r i t m n n n o r l
n r a r m r h i e d n a e
```

caption, colspan, data, definition, header, item, list, ordered, row, rowspan, table, term, unordered

Problems