

How to use CSS for page layout control

Extracted from Chapter 6 of
Murach's HTML5 and CSS3

- **Layout Control** is a critical issue in any website/pages design.
- Traditionally and conveniently (but not satisfactorily) done with <frameset> and <frame>
 - Supported by all browsers
 - **Discouraged now!**
 - Multiple pages made messy with “back” button
- Tables were also used to control positioning of elements
 - **Discouraged now also!**
- This lecture addresses modern ways of layout control using CSS styles, and new tags of HTML5

Objectives

Applied

1. Given an HTML document, create a CSS style sheet that uses floating to implement a fixed or liquid page layout in two- or three-column format with both header and footer.

Knowledge

1. Describe the use of floating for page layout.
2. Describe the use of the clear property in a CSS rule set.
3. Distinguish between fixed and liquid page layout.
4. Describe the use of the CSS3 feature for text columns.
5. Describe the use of absolute, relative, and fixed positioning.

Default “flowing” of doc/page elements

- Block element flow from the top to the bottom
- Inline elements flow from left to right side of their enclosing block elements

For layout control, this default flow need be manipulated by using the follow two style properties:

- **Float**: causes an element to float to *left* or *right*
- **Clear**: requires the left, right or both sides of a floated element clear – stop subsequent element flowing into these spaces.

The HTML for a web page with a sidebar

```
<body>
  <aside>
    <p>The luncheon starts 15 minutes after the
      lecture ends</p>
  </aside>
  <section>
    <p>Welcome to San Joaquin Valley Town Hall. We
      have some fascinating speakers for you this
      season!</p>
  </section>
  <footer>
    <p>Please call today at (559) 555-1212 to get
      your tickets!</p>
  </footer>
</body>
```

The CSS for the web page for floating the sidebar

```
body { width: 500px; }
section, aside, footer {
    margin: 0;
    padding: 0 20px; }
aside {
    margin: 0 20px 10px;
    width: 150px;
    float: right;
    border: 1px solid black; }
footer { clear: both; }
```

Note:

Margin: top right bottom left (if all)

Border: width style color

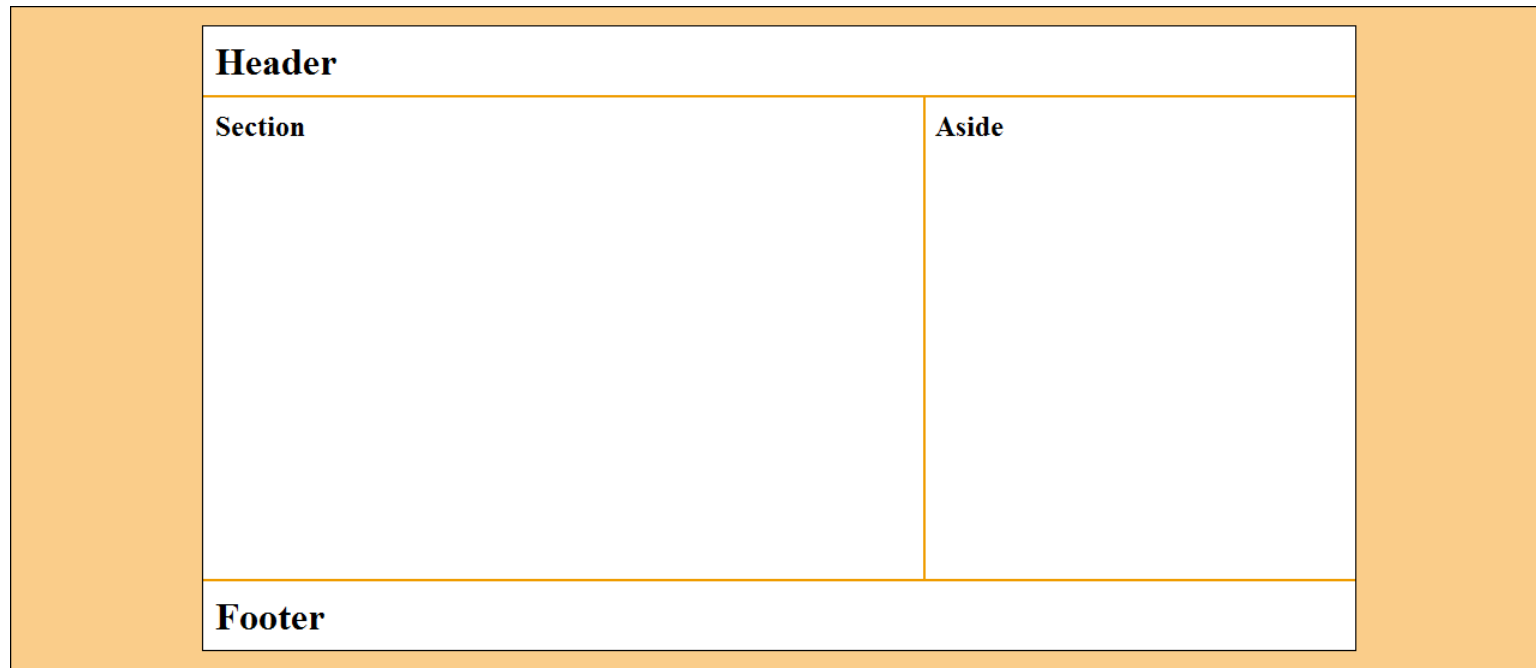
The web page in a browser

Welcome to San Joaquin Valley Town
Hall. We have some fascinating speakers
for you this season!

The luncheon starts 15
minutes after the lecture
ends

Please call today at (559) 555-1212 to get your tickets!

A 2-column web page with fixed-width columns



The HTML for the page

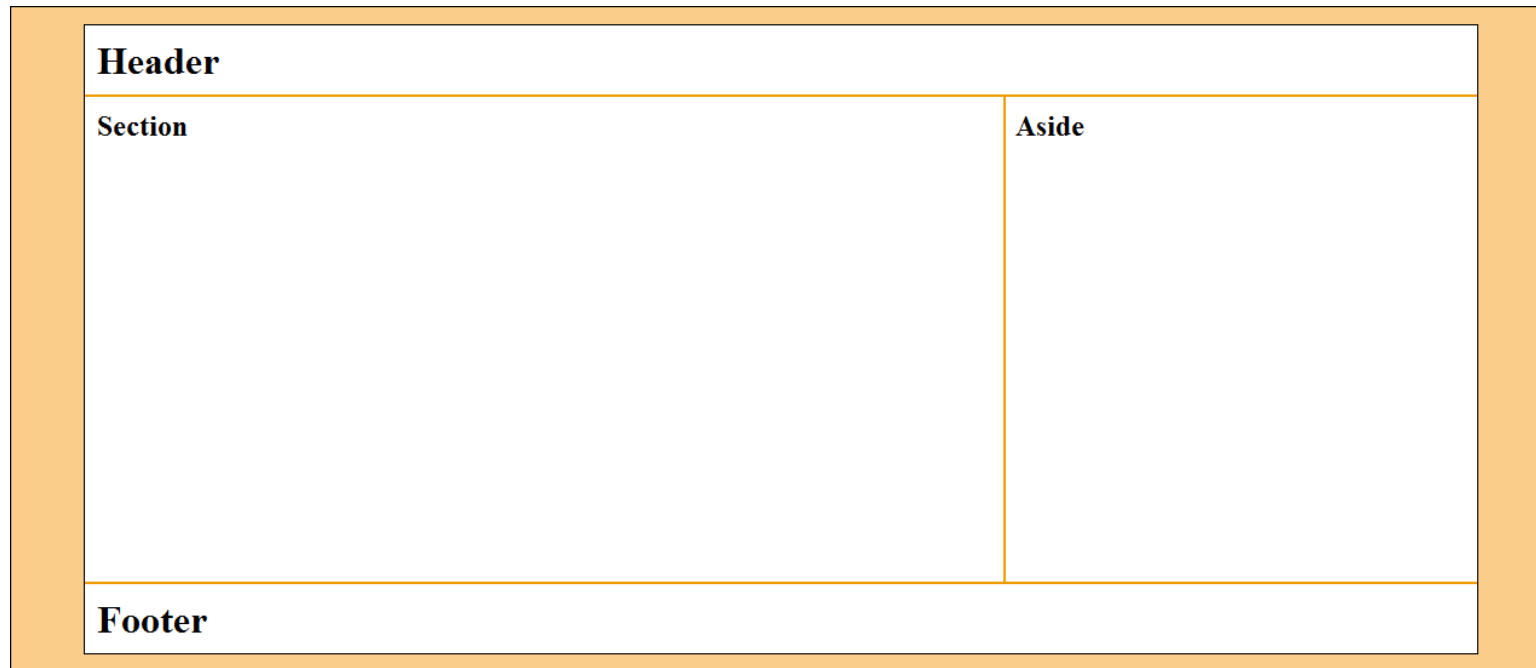
```
<body>  
  <header><h1>Header</h1></header>  
  <section><h1>Section</h1></section>  
  <aside><h1>Aside</h1></aside>  
  <footer><h1>Footer</h1></footer>  
</body>
```

The CSS for the page

```
* { margin: 0; padding: 0; }
body {
    width: 962px;
    background-color: white;
    margin: 15px auto;
    border: 1px solid black; }
h1 { padding: 10px; }

header { border-bottom: 2px solid #ef9c00; }
section {
    height: 400px;
    width: 600px;
    float: left;
    border-right: 2px solid #ef9c00;
    float: left; }
aside {
    width: 360px;
    float: right; }
footer {
    clear: both;
    border-top: 2px solid #ef9c00; }
```

A 2-column web page with liquid widths



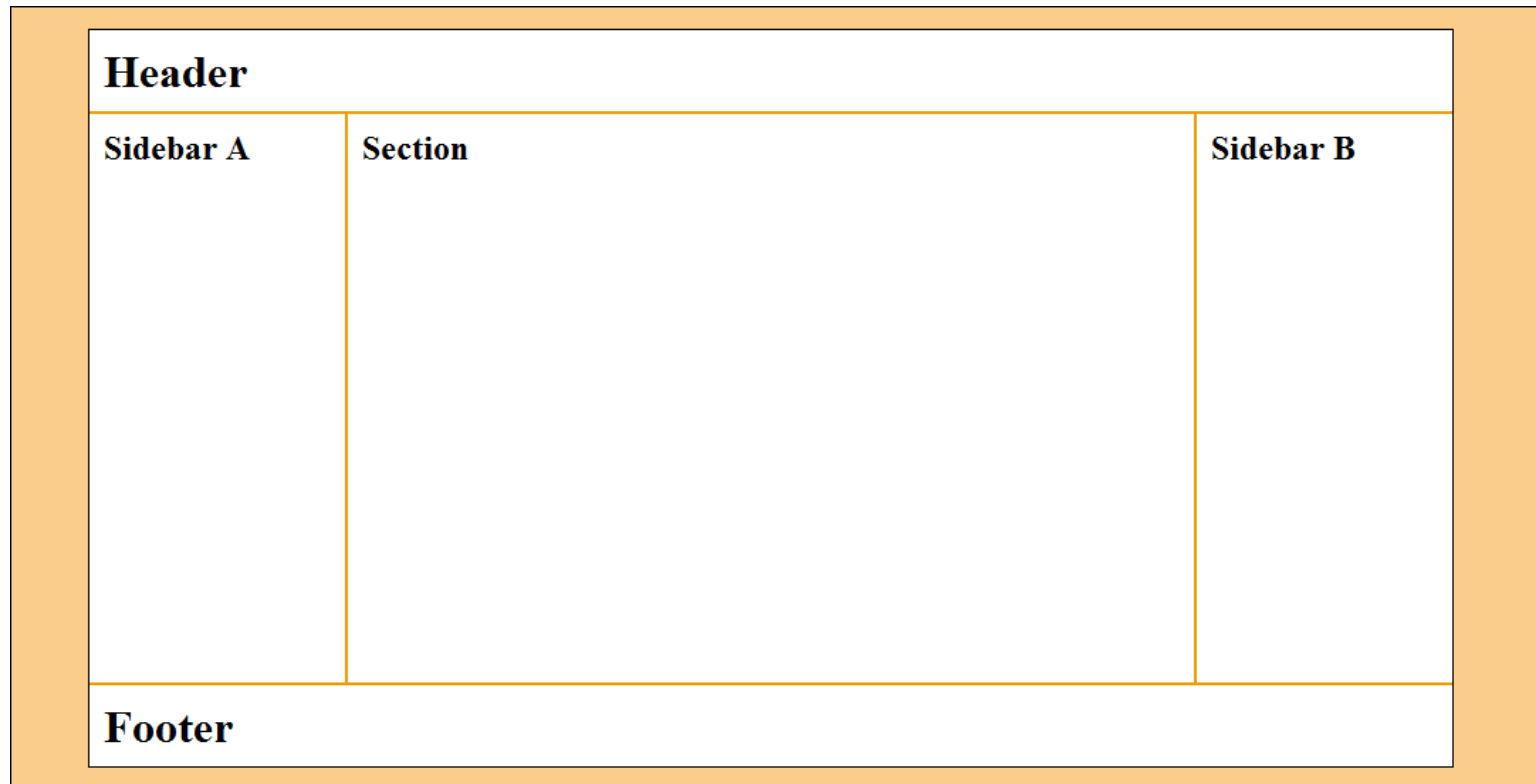
The CSS when both columns are liquid

```
body {  
    width: 90%;  
    background-color: white;  
    margin: 15px auto; border:  
    1px solid black; }  
section {  
    width: 66%;  
    height: 400px;  
    border-right: 2px solid #ef9c00;  
    float: left; }  
aside {  
    width: 33%;  
    float: right; }
```

The CSS for a fixed aside and liquid section

```
body {  
    width: 90%;  
    background-color: white;  
    margin: 15px auto; border:  
    1px solid black; }  
section {  
    float: left; }  
aside {  
    height: 400px;  
    width:  
    360px;  
    border-left: 2px solid  
    #ef9c00;  
    float: }  
    right;
```

A 3-column web page with fixed-width columns



The HTML for the page

```
<body>  
  <header><h1>Header</h1></header>  
  <aside id="sidebarA"><h1>Sidebar A</h1></aside>  
  <section><h1>Section</h1></section>  
  <aside id="sidebarB"><h1>Sidebar B</h1></aside>  
  <footer><h1>Footer</h1></footer>  
</body>
```

The critical CSS for the page

```
body {  
    width: 964px;  
    background-color: white;  
    margin: 15px auto; border:  
    1px solid black; }  
#sidebarA {  
    width: 180px;  
    height: 400px;  
    float: left;  
    border-right: 2px solid #ef9c00; }  
section {  
    width: 600px;  
    float: left; }  
#sidebarB {  
    width: 180px;  
    height: 400px;  
    float: right;  
    border-left: 2px solid #ef9c00; }
```


A sidebar floated to the right of a section



The HTML for the web page

```
<head>
    .
    <link rel="stylesheet" href="styles/main.css">
</head>
<body>
    <header>
        
        <hgroup>
            <h1>San Joaquin Valley Town Hall</h1>
            <h2>Bringing cutting-edge speakers to the
                valley</h2>
        </hgroup>
    </header>
```

The HTML for the web page (cont.)

```
<aside>
  <h1>Lecture notes</h1>
  <h2>Event change for November 16</h2>
  <p>SJV Town Hall is pleased to announce the addition
    of award-winning author Andrew Ross Sorkin. The
    appearance of previously scheduled speaker, Greg
    Mortenson, has been postponed.</p>
  <h2>Lecture day, time, and location</h2>
  <p>All one-hour lectures are on Wednesday beginning
    at 10:30 a.m. at William Saroyan Theatre, 700 M
    Street, Fresno, CA.</p>
</aside>
```

The HTML for the web page (cont.)

```
<section>
  <h1>2011-2012 guest speakers</h1>
  <nav>
    <ul>
      <li>October 19, 2011: <a class="date_passed"
        href="speakers/toobin.html">
          Jeffrey Toobin</a></li>
      .
      .
      <li>February 15, 2012:
        <a href="sampson.html">
          Scott Sampson</a></li>
      <li>March 21, 2012:
        <a href="speakers/eire.html">
          Carlos Eire</a></li>
      <li>April 18, 2012:
        <a href="speakers/tynan.html">
          Ronan Tynan</a></li>
    </ul>
  </nav>
```

The HTML for the web page (cont.)

```
<h2>Looking for a unique gift?</h2>
<p>Town Hall has the answer. For only $100, you can
    get a book of tickets for all of the remaining
    speakers. And the bargain includes a second book
    of tickets for a companion.</p>
<p>Or, for $50, you can give yourself the gift of
    our speakers, and still get an extra ticket for a
    companion, but for just one of the events.</p>
<p>See you at the next show?</p>
<p id="contact_us"><em>Contact us by phone</em> at
    (559) 555-1212 for ticket information.</p>
</section>
<footer>
    <p>&copy; Copyright 2012 San Joaquin Valley Town
        Hall.</p>
</footer>
</body>
</html>
```

The CSS for the web page

```
section, aside, h1, h2, p, ul {
    margin: 0;
    padding: 0; }
section, aside {
    margin-top: 1.5em;
    margin-bottom: 1em; }

/* the changes to the body element */
body {
    width: 962px;
    /* no border radius or box shadow */
}

/* the changes to the header styles */
header h1 {
    color: #ef9c00;
    text-shadow: 2px 3px 0 black;
    margin-left: 120px;
    margin-bottom: .25em; }
```

The CSS for the page (cont.)

```
header h2 {  
    color: green;  
    font-style: italic;  
    margin-left: 120px;  
}  
header img { float: left; }  
/* the styles for the section */  
section {  
    width: 580px;  
    border-right: 2px solid #ef9c00;  
    padding-right: 20px;  
    float: right; }  
section h1 { margin-bottom: .35em; }  
section h2 { margin-bottom: .35em; }  
#contact_us { margin-top: 1em; }  
a.date_passed { color: gray; }
```

The CSS for the web page (cont.)

```
/* the styles for the sidebar */
aside {
    width: 340px;
    float: right;
    padding-left: 20px; }
aside h1 {
    font-size: 125%;
    padding-bottom: .5em; }
aside h2 {
    font-size: 100%;
    color: green;
    padding-bottom: .5em; }
aside p {
    margin-bottom: .5em; }

/* the additions and changes to the footer styles */
footer {
    clear: both;
    margin-top: 1em;
    border-top: 2px solid #ef9c00; }
```


A sidebar floated to the right of an article



The HTML changes for the page

```
<head>
    .
    <link rel="stylesheet" href="styles/speaker.css">
</head>
<aside>
    <h1>2011-2012 guest speakers</h1>
    <nav>
        <ul>
            <li>October 19, 2011: <a class="date_passed"
                href="speakers/toobin.html">
                    Jeffrey Toobin</a></li>
            .
            .
            <li>April 18, 2012:
                <a href="speakers/tynan.html">
                    Ronan Tynan</a></li>
        </ul>
        <p><a href="index.html">Return to Home page</a></p>
    </nav>
</aside>
```

The HTML changes for the page (cont.)

```
<article>
  <h1>Fossil Threads in the Web of Life</h1>
  
  <p>What's 75 million years old and brand spanking new?
    ...
  ...</p>
  <p>Scott Sampson is a Canadian-born paleontologist who
    ...
  ...</p>
  <p>Following graduation in 1993, Sampson spent a year
    ...
  ...</p>
  <p>In addition to his museum and laboratory-based
    ...
  ...</p>
</article>
```

The CSS changes for the page

```
article, aside, h1, h2, p, ul {  
    margin: 0;  
    padding: 0; }  
article, aside {  
    margin-top: 1.5em;  
    margin-bottom: 1em; }  
  
/* the styles for the article */  
article {  
    width: 580px;  
    border-right: 2px solid #ef9c00;  
    padding-right: 20px;  
    float: right; }  
article h1 {  
    margin-bottom: .35em; }  
article img {  
    float: left;  
    margin: 0 1.5em 1em 0; }
```

The CSS3 properties for creating text columns

- column-count
- column-gap
- column-rule (for border)
- column-span

CSS for 3 columns with default-sized gaps

```
article {  
    -moz-column-count: 3;  
    -webkit-column-count: 3;  
    column-count: 3; }
```

Note: Firefox requires the `–moz-` prefix, Chrome and Safari require the `–webkit-` prefix.

CSS for 3 columns with 25px gaps and 2px rules

```
article {  
    -moz-column-count: 3;  
    -webkit-column-count: 3;  
    column-count: 3;  
    -moz-column-gap: 25px;  
    -webkit-column-gap: 25px;  
    column-count-gap: 25px;  
    -moz-column-rule: 2px solid black;  
    -webkit-column-rule: 2px solid black;  
    column-rule: 2px solid black; }
```

3 columns with 25px gaps and 2px rules

Fossil Threads in the Web of Life

What's 75 million years old and brand spanking new? A teenage Utahceratops! Come to the Saroyan, armed with your best dinosaur roar, when Scott Sampson, Research Curator at the Utah Museum of Natural

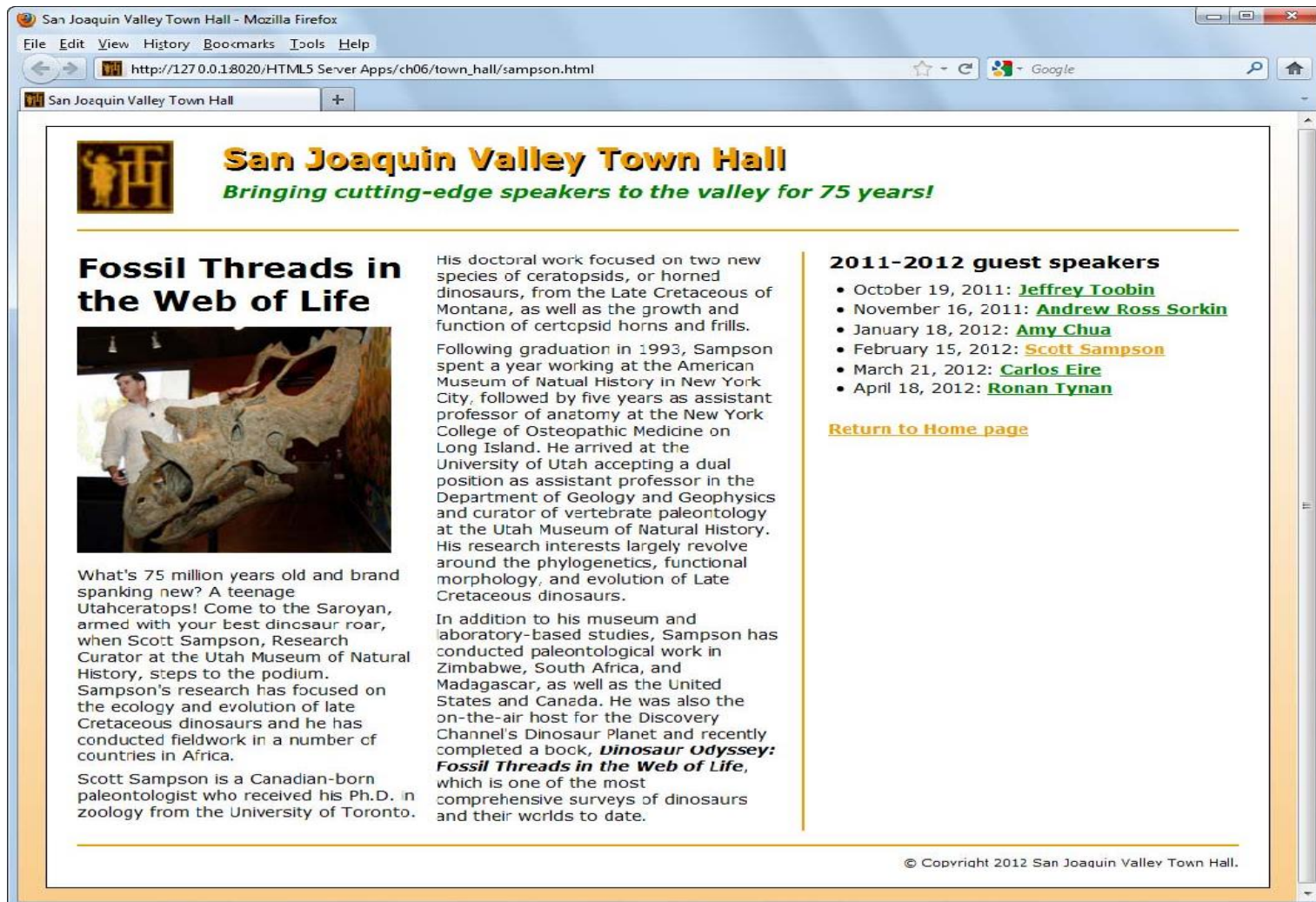
doctoral work focused on two new species of ceratopsids, or horned dinosaurs, from the Late Cretaceous of Montana, as well as the growth and function of ceratopsid horns and frills.

Following graduation in 1993, Sampson spent a year working at the American

History. His research interests largely revolve around the phylogenetics, functional morphology, and evolution of Late Cretaceous dinosaurs.

In addition to his museum and laboratory-based studies, Sampson has conducted paleontological work in Zimbabwe, South

A web page with a two-column article



The CSS for creating the columns

```
article {  
    -moz-column-count: 2;  
    -webkit-column-count: 2;  
    column-count: 2;  
}
```

Properties for positioning elements

- position
- top, bottom, left, right
- z-index

Possible values for the position property

- static (the default case)
- absolute (within enclosing element)
- fixed (within browser window)
- relative (relative to its default position)

A web page with absolute positioning

Our speakers for 2011-2012

- October 19, 2011: [Jeffrey Toobin](#)
- November 16, 2011: [Andrew Ross Sorkin](#)
- January 18, 2012: [Amy Chua](#)

Please contact us for tickets.

[Enter to win
a free ticket!](#)

The HTML for the web page

```
<body>
  <section>
    <h1>Our speakers for 2011-2012</h1>
    <ul>
      <li>October 19, 2011:
        <a href="speakers/toobin.html">
          Jeffrey Toobin</a></li>
      <li>November 16, 2011:
        <a href="speakers/sorkin.html">
          Andrew Ross Sorkin</a></li>
      <li>January 18, 2012:
        <a href="speakers/chua.html">
          Amy Chua</a></li>
    </ul>
    <p>Please contact us for tickets.</p>
  </section>
  <aside>
    <p><a href="raffle.html">Enter to win a free
      ticket!</a></p>
  </aside>
</body>
```

The CSS for the page with absolute positioning

```
p { margin: 0; }
body {
    width: 500px;
    margin: 0 25px 20px;
    border: 1px solid black;
    position: relative; }
aside {
    width: 80px;
    padding: 1em;
    border: 1px solid black;
    position: absolute;
    right: 30px;
    top: 50px; }
```

A table of contents that uses absolute positioning

Murach's JavaScript and DOM Scripting

Section 1 Introduction to JavaScript programming

Chapter 1	Introduction to web development and JavaScript	3
Chapter 2	How to code a JavaScript application	43
Chapter 3	How to test and debug a JavaScript application	89
Chapter 4	A crash course in HTML	121
Chapter 5	A crash course in CSS	169

Section 2 JavaScript essentials

Chapter 6	How to get input and display output	223
-----------	-------------------------------------	-----

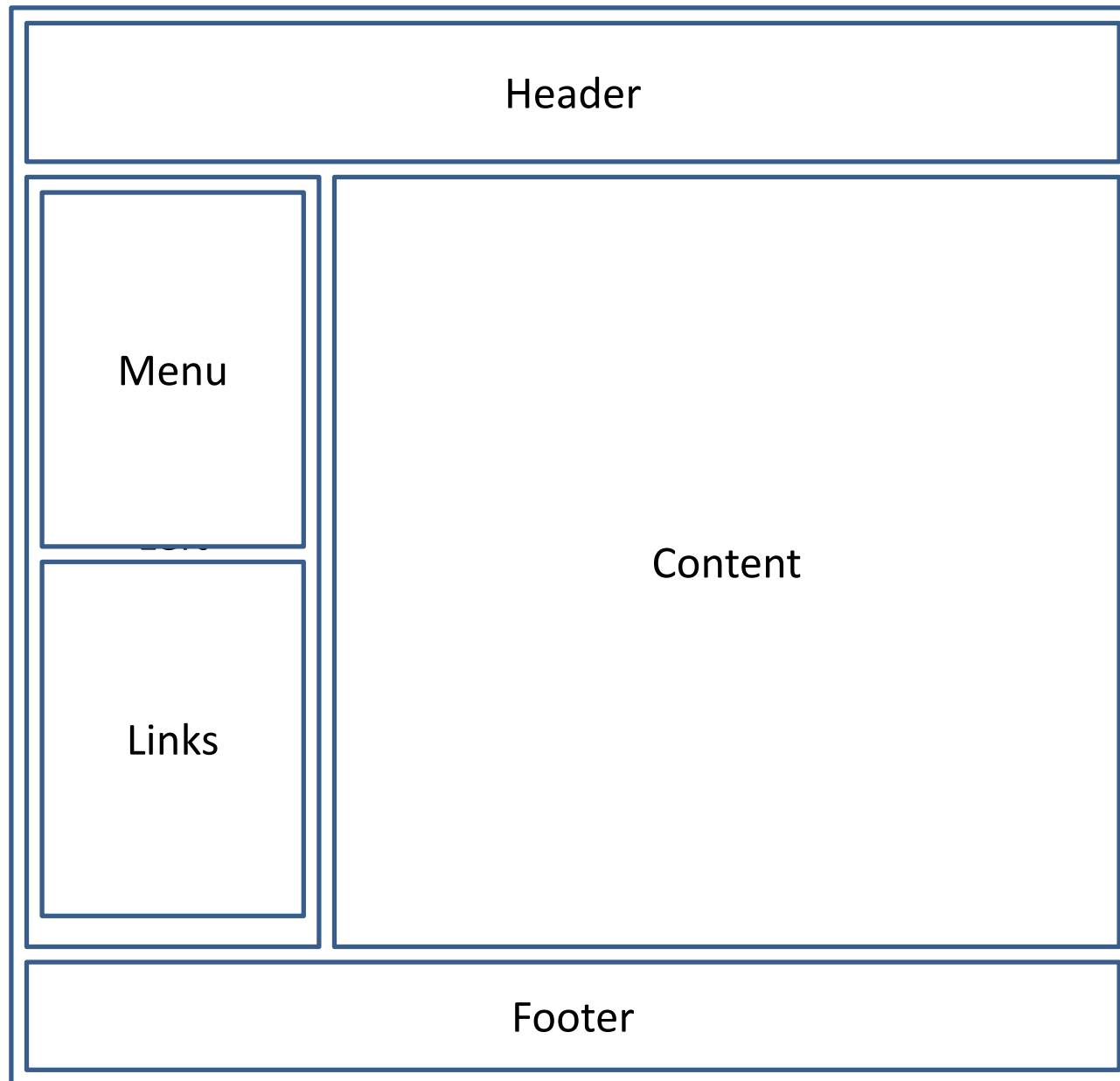
The HTML for the positioned elements

```
<section>
  <h1><i>Murach's JavaScript and DOM
    Scripting</i></h1>
  <h2>Section 1<span class="title">Introduction to
    JavaScript programming</span></h2>
  <h3>Chapter 1<span class="title">Introduction to web
    development and JavaScript</span><span
    class="number">3</span></h3>
  <h3>Chapter 2<span class="title">How to code a
    JavaScript application</span>
    <span class="number">43</span></h3>
  ...
  <h2>Section 2<span class="title">JavaScript
    essentials</span></h2>
  <h3>Chapter 6<span class="title">How to get input and
    display output</span>
    <span class="number">223</span></h3>
  ...
</section>
```


The CSS for the positioned elements

```
section h2 {  
    margin: .6em 0 0;  
    position: relative; }  
section h3 {  
    font-weight: normal;  
    margin: .3em 0 0;  
    position: relative; }  
.title {  
    position: absolute;  
    left: 90px; }  
.number {  
    position: absolute;  
    right: 0; }
```

Let's Create this Layout:



Layouts

```
Position: absolute;  
Left: 10;  
Right: 10;  
Top: 10;  
Bottom: 10;  
Float: left
```



Right
Left

Static
Relative
Absolute
Fixed

Layout (HTML)

```
<body>
<div id="wrapper">
  <div id="header">Header Section</div>
  <div id="sidebar">Left Section
    <div id="menu">Left Top Section</div>
    <div id="links">Left Bot Section</div>
  </div>
  <div id="content">Content Section</div>
  <div id="footer">Footer Section</div>
</div>
</body>
```

CSS

```
body {  
    margin: 0px;  
    padding: 0px;  
}  
#wrapper {  
    width: 900px;  
    margin: 20px;  
    margin-left: auto;  
    margin-right: auto;  
    box-shadow: 0 0 5px  
#888;  
}
```

```
#header {  
    background: red;  
    float: left;  
    width: 100%;  
    height: 100px;  
}  
#sidebar {  
    background: #f00;  
    float: left;  
    width: 150px;  
}
```

CSS

```
#menu {  
    background: yellow;  
    float: left;  
    width: 140px;  
    height: 200px;  
    margin: 5px;  
}  
#links {  
    background: yellow;  
    float: left;  
    width: 140px;  
    height: 200px;  
    margin: 5px;  
}
```

```
#content {  
    background: #fff;  
    float: left;  
    width: 600px;  
}  
#footer {  
    background: red;  
    clear: left;  
    height: 100px;  
}
```