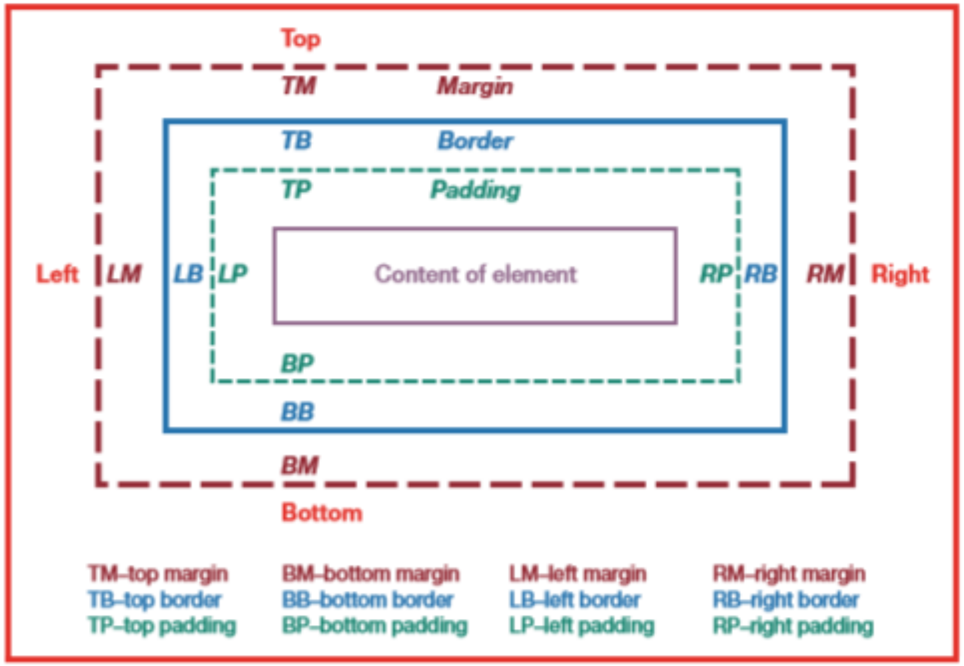
CSS Page Layouts

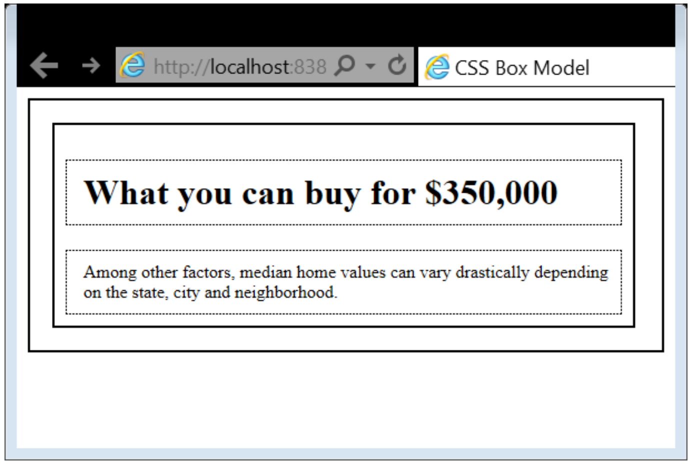
CSS Box Model



- The CSS box model lets you work with the boxes that a browser places around each block element and some inline element.
- Be default, the box for a block element is as big as the block element.
- You can use the height and width properties to specify the size of the content area for a block element explicitly.
- You can use other properties to control the margins, padding, and borders for a block element.
  - Total height = top margin + top border + top padding + height + bottom padding + bottom border + bottom margin
  - Total width = left margin + left border + left padding + width + right padding + right border + right margin

The box_model.html

```
<!DOCTYPE html>
<html>
    <head>
        <title>CSS Box Model</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1
        <style>
            body {
                border: 2px solid black;
                margin: 10px;
            }
            div {
                border: 2px solid black;
                width: 500px;
                margin: 20px;
                padding: 10px;
            }
            h1, p {
                border: 1px dashed black;
                padding: 10px;
            }
            h1 {
                margin: .5em 0, 0.25em; /* .5em top, 0 right and left, .25em bottom */
                padding-left: 15px;
            }
            p {
                margin: 0;
                padding-left: 15px;
            }
        </style>
    </head>
    <body>
        <div>
            <h1>What you can buy for $350,000</h1>
            <p>Among other factors, median home values can vary drastically depending
               on the state, city and neighborhood.</p>
        </div>
    </body>
</html>
```


http://localhost:838

CSS Box Model

What you can buy for $350,000

Among other factors, median home values can vary drastically depending on the state, city and neighborhood.

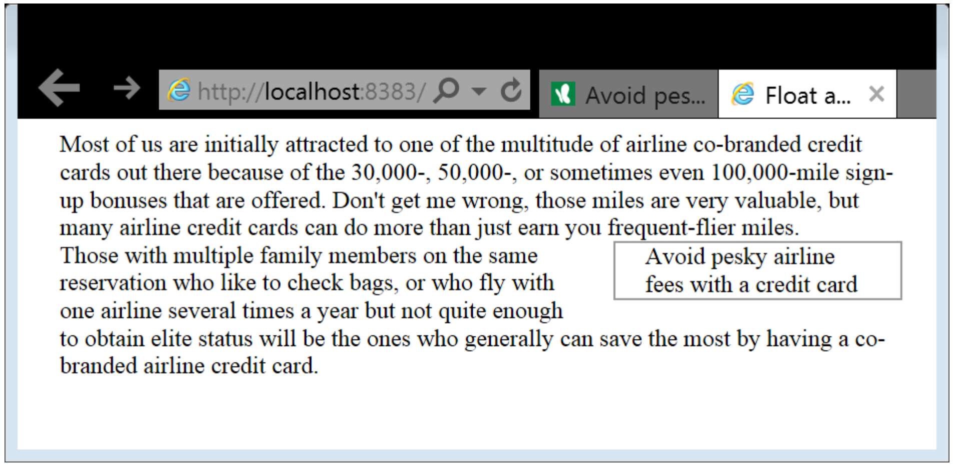
The float and clear element

- When you float an element to the right or left, the content that follows flows around it.
- When you use the float property for an element, you also need to set its width.
- To stop the floating before an element, use the clear property.
- The following example, if clear property for the footer isn‘t set, its content will flow into the space beside the floated element.

Property	Description
float	*A keyboard that determines how an element is fixed. Possible values are left, right, and none (the default)*
clear	*Determines whether an element is cleared from flowing into the space left by a floated element. Possible values are left, right, both, and none (the default(*

Examples of float and clear elements

```
<html>
    <head>
        <title>Float and Clear Elements</title>
        <style>
            body { width: 600px; }
            #main, #sidebar, #footer {
                margin: 0;
                padding: 0px 20px;
            }
            #sidebar {
                margin: 0 20px 10px;
                width: 150px;
                float: right;
                border: 1px solid #999;
            }
            #footer { clear: both; }
        </style>
    </head>
    <body>
        <div id="main">Most of us are initially
attracted to one of the multitude of airline co-
branded credit cards out there because of the
30,000-, 50,000-, or sometimes even 100,000-mile
sign-up bonuses that are offered. Don't get me
wrong, those miles are very valuable, but many
airline credit cards can do more than just earn you
frequent-flier miles.</div>
        <div id="sidebar">Avoid pesky airline fees with
a credit card</div>
        <div id="footer">Those with multiple family
members on the same reservation who like to check
bags, or who fly with one airline several times a
year but not quite enough to obtain elite status will
be the ones who generally can save the most by
having a co-branded airline credit card.</div>
    </body>
</html>
```

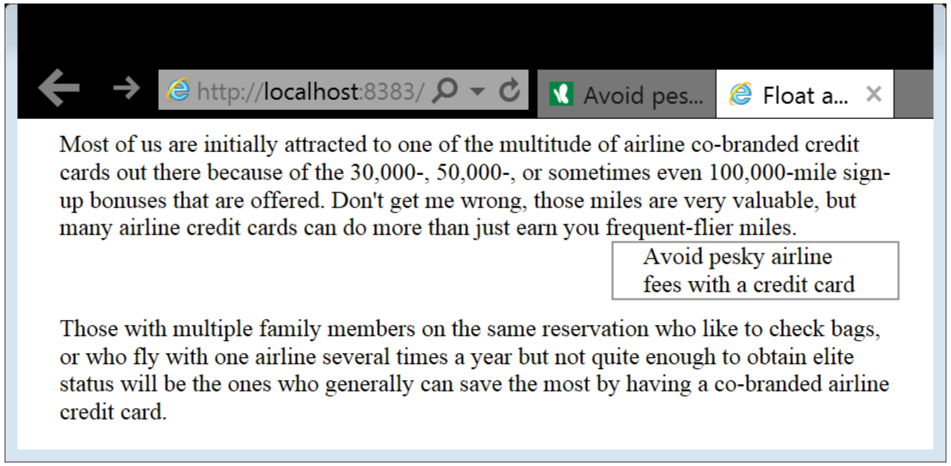


Most of us are initially attracted to one of the multitude of airline co-branded credit cards out there because of the 30,000-, 50,000-, or sometimes even 100,000-mile sign-up bonuses that are offered. Don't get me wrong, those miles are very valuable, but many airline credit cards can do more than just earn you frequent-flier miles.

Avoid pesky airline fees with a credit card

Those with multiple family members on the same reservation who like to check bags, or who fly with one airline several times a year but not quite enough to obtain elite status will be the ones who generally can save the most by having a co-branded airline credit card.

Without Clear Both



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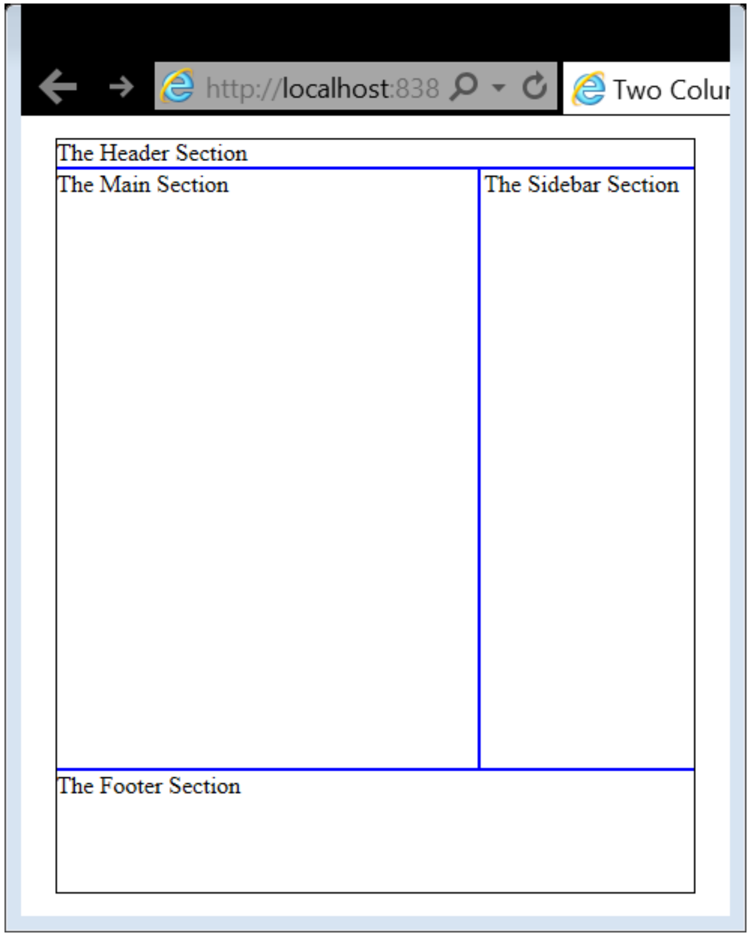
The Liquid Layouts

- The benefits of using liquid column sizes is that the size of the page is adjusted to the resolution of the browser.
- The drawback is that changing the size of the columns may affect the typography or the appearance of the page.

The 2-column Page with liquid widths for both columns

```
<html>
    <head>
        <title>Two Column Page</title>
        <style>
            #header {
                border-bottom: 2px solid #0000ff;
            }
            body {
                width: 90%;
                background-color: white;
                margin: 15px auto;
                border: 1px solid black;
            }
            #main {
                width: 66%;
                height: 400px;
                border-right: 2px solid #0000ff;
                float: left;
            }
            #sidebar {
                width: 33%;
                float: right;
            }
            #footer {
                clear: both;
                border-top: 2px solid #0000ff;
            }
        </style>
    </head>
    <body>
        <div id="header">The Header Section</div>
        <div id="main">The Main Section</div>
        <div id="sidebar">The Sidebar Section</div>
        <div id="footer">The Footer Section</div>
    </body>
</html>
```



The Header Section

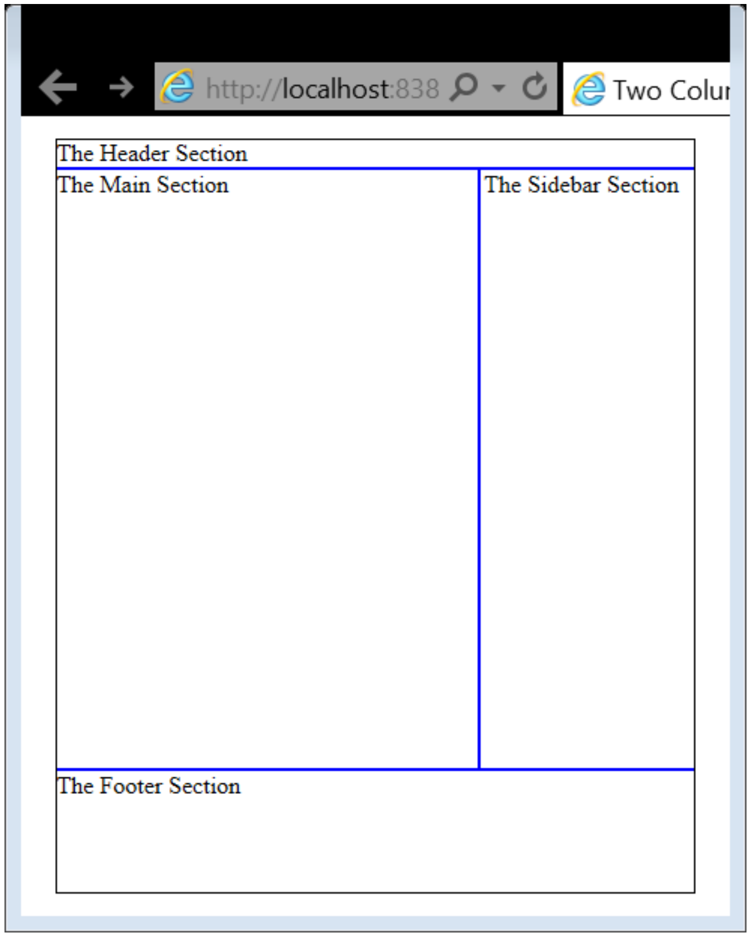
The Main Section

The Sidebar Section

The Footer Section

The 2-column Page when the sidebar is fixed and the main section is liquid.

```
<html>
    <head>
        <title>Two Column Page</title>
        <style>
            #header {
                border-bottom: 2px solid #0000ff;
            }
            body {
                width: 90%;
                background-color: white;
                margin: 15px auto;
                border: 1px solid black;
            }
            #main {
                width: 66%;
                height: 400px;
                border-right: 2px solid #0000ff;
                float: left;
            }
            #sidebar {
                width: 230px;
                float: right;
            }
            #footer {
                clear: both;
                border-top: 2px solid #0000ff;
            }
        </style>
    </head>
    <body>
        <div id="header">The Header Section</div>
        <div id="main">The Main Section</div>
        <div id="sidebar">The Sidebar Section</div>
        <div id="footer">The Footer Section</div>
    </body>
</html>
```



The Header Section

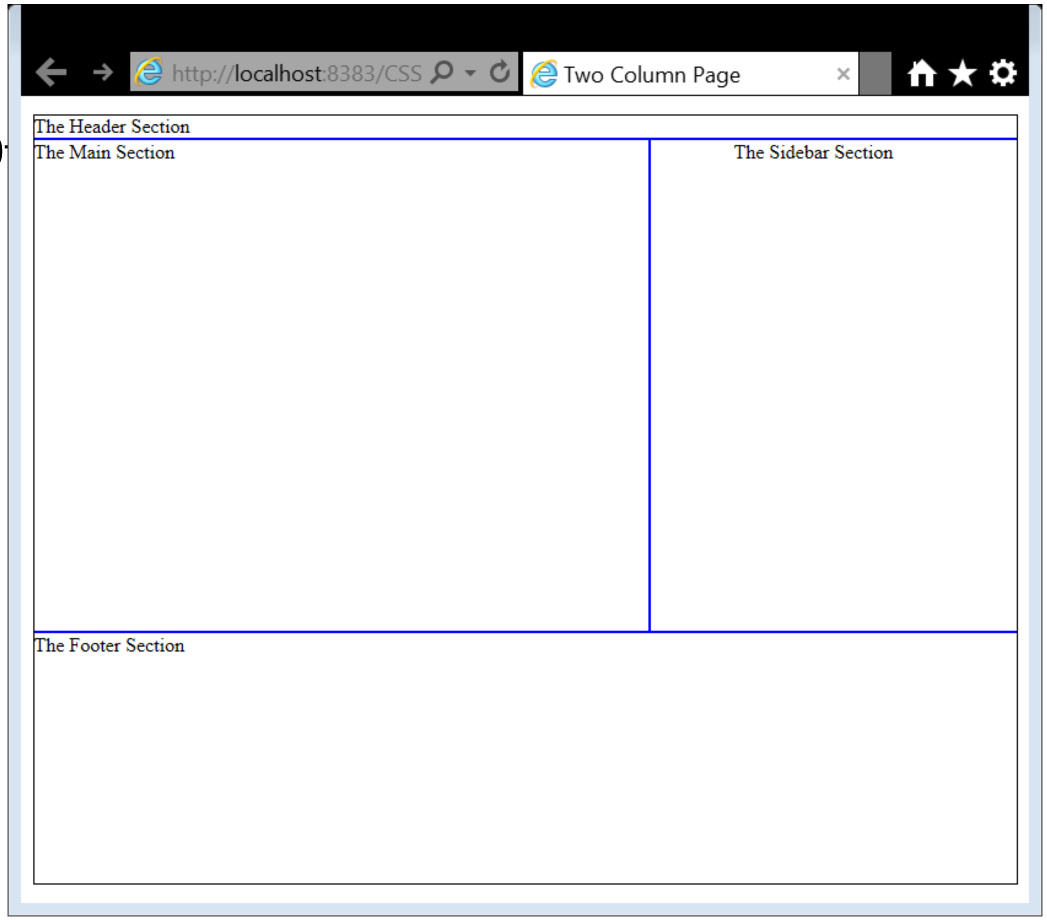
The Main Section

The Sidebar Section

The Footer Section

The 2-column when both columns are fixed-width

```
<html>
    <head>
        <title>Two Column Page</title>
        <style>
            #header {
                border-bottom: 2px solid #0000
            }
            body {
                width: 800px;
                background-color: white;
                margin: 15px auto;
                border: 1px solid black;
            }
            #main {
                width: 500px;
                height: 400px;
                border-right: 2px solid #0000ff;
                float: left;
            }
            #sidebar {
                width: 230px;
                float: right;
            }
            #footer {
                clear: both;
                border-top: 2px solid #0000ff;
            }
        </style>
    </head>
    <body>
        <div id="header">The Header Section</div>
        <div id="main">The Main Section</div>
        <div id="sidebar">The Sidebar Section</div>
        <div id="footer">The Footer Section</div>
    </body>
</html>
```



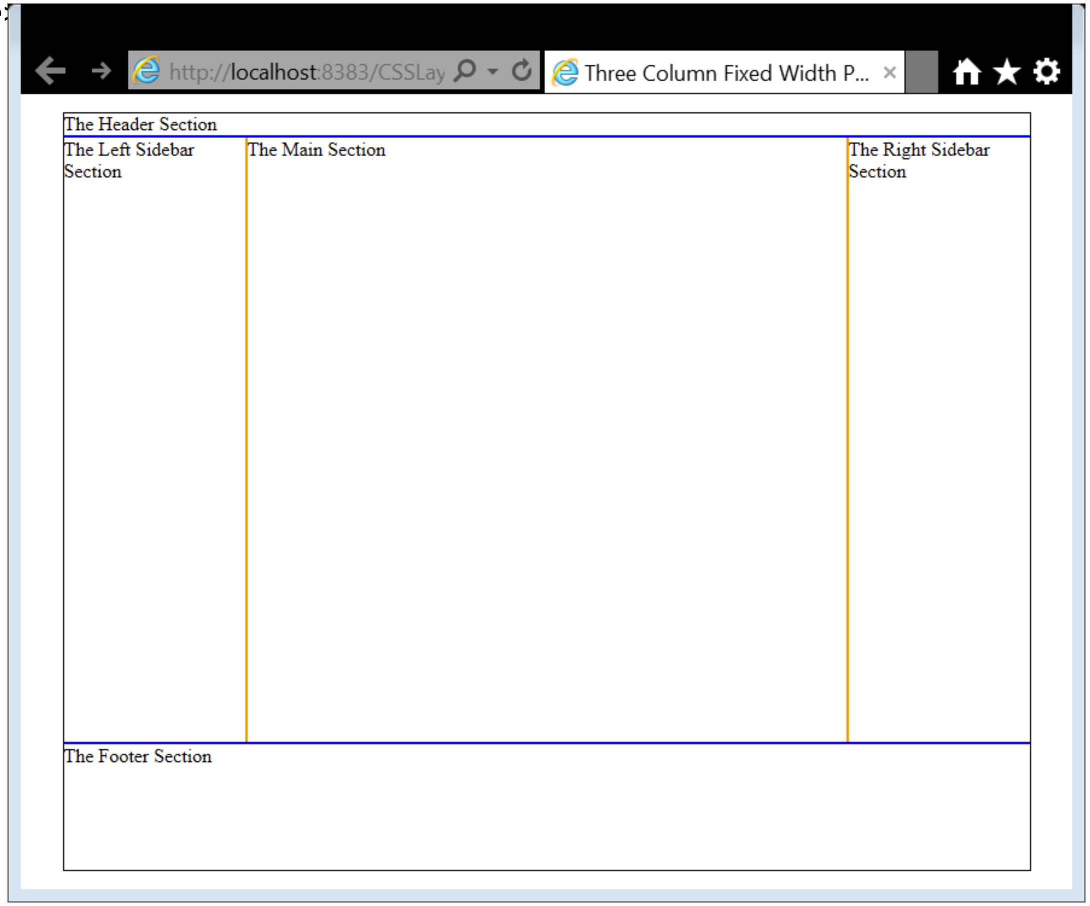
The Header Section
The Main Section
The Sidebar Section
The Footer Section

Using floating in a 3-column, fixed-width layout

- The first sidebar is floated to the left; and the second siderbar is floated to the right.
- You actually can get the same result by floating both sidebars and the main section to the left.

A 3-column page with fixed-width columns

```
<html>
    <head>
        <title>Three Column Fixed Width Page</title
        <style>
            #header {
                border-bottom: 2px solid #0000ff;
            }
            body {
                width: 800px;
                background-color: white;
                margin: 15px auto;
                border: 1px solid black;
            }
            #sidebarLeft {
                width: 150px;
                min-height: 500px;
                float: left;
                border-right: 2px solid #ef9c00;
            }
            #main {
                width: 450px;
                min-height: 500px;
                float: left;
            }
            #sidebarRight {
                width: 150px;
                min-height: 500px;
                float: right;
                border-left: 2px solid #ef9c00;
            }
            #footer {
                clear: both;
                border-top: 2px solid #0000ff;
            }
        </style>
    </head>
    <body>
        <div id="header">The Header Section</div>
        <div id="sidebarLeft">The Left Sidebar Section</div>
        <div id="main">The Main Section</div>
        <div id="sidebarRight">The Right Sidebar Section</div>
        <div id="footer">The Footer Section</div>
    </body>
</html>
```



The Header Section

The Left Sidebar Section

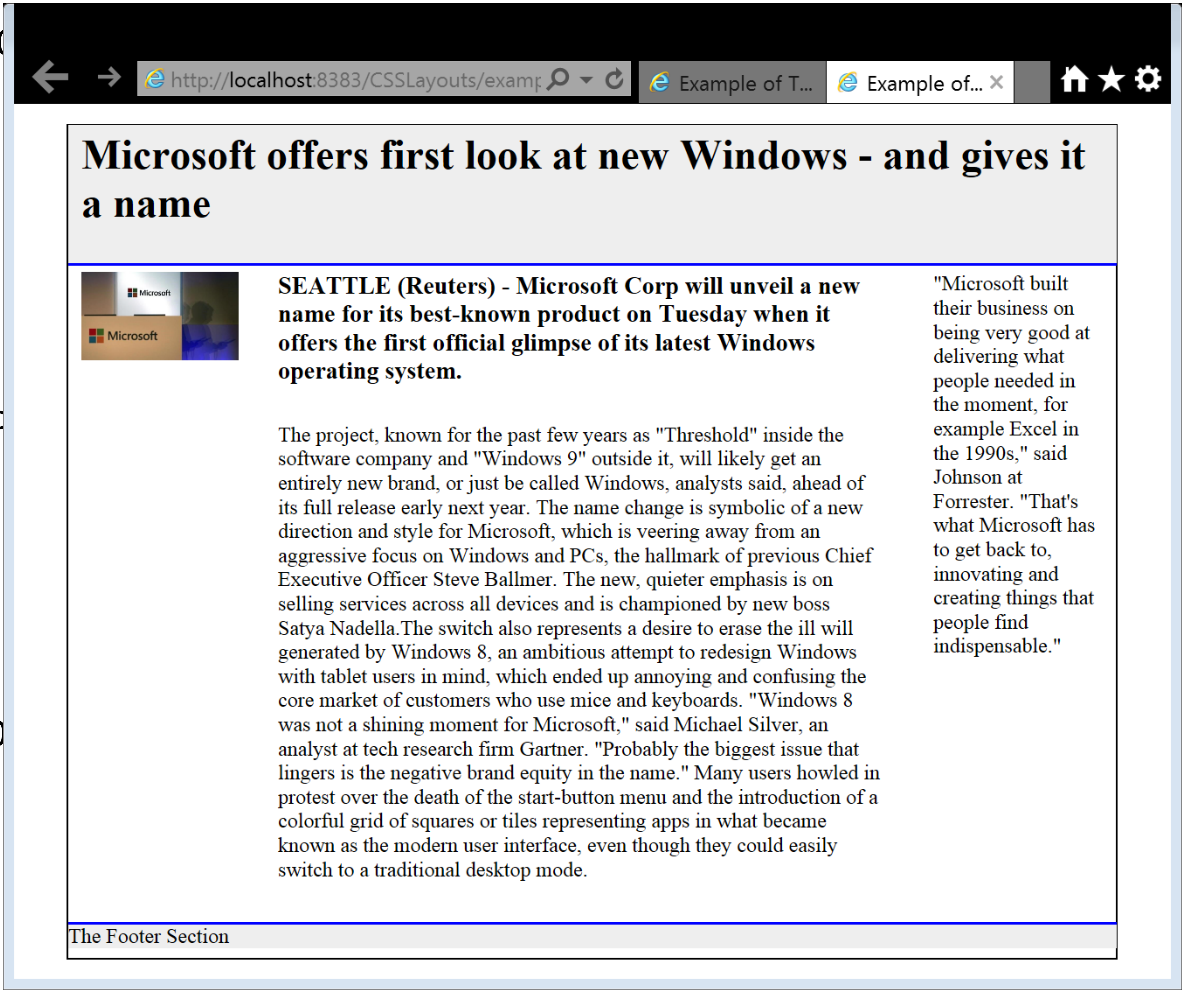
The Main Section

The Right Sidebar Section

The Footer Section

Example of using 3-column page with fixed-width columns

```
<html>
    <head>
        <title>Example of Three Column Fixed Width Page</title>
        <style>
            #header {
                border-bottom: 2px solid #000
                background-color: #eeeeee;
            }
            body {
                width: 800px;
                background-color: white;
                margin: 15px auto;
                border: 1px solid black;
            }
            #sidebarLeft {
                width: 150px;
                min-height: 500px;
                float: left;
                //border-right: 2px solid #ef9c
            }
            #main {
                width: 480px;
                min-height: 500px;
                float: left;
            }
            #sidebarRight {
                width: 150px;
                min-height: 500px;
                float: right;
                //border-left: 2px solid #ef9c0
            }
            #footer {
                clear: both;
                border-top: 2px solid #0000ff;
                background-color: #eeeeee;
            }
            h1, h2, p, img {
                padding: 5px;
                margin-top: 0px;
                margin-left: 5px;
                margin-right: 5px;
            }
        </style>
    </head>
```



Microsoft offers first look at new Windows - and gives it a name

SEATTLE (Reuters) - Microsoft Corp will unveil a new name for its best-known product on Tuesday when it offers the first official glimpse of its latest Windows operating system.

The project, known for the past few years as "Threshold" inside the software company and "Windows 9" outside it, will likely get an entirely new brand, or just be called Windows, analysts said, ahead of its full release early next year. The name change is symbolic of a new direction and style for Microsoft, which is veering away from an aggressive focus on Windows and PCs, the hallmark of previous Chief Executive Officer Steve Ballmer. The new, quieter emphasis is on selling services across all devices and is championed by new boss Satya Nadella.The switch also represents a desire to erase the ill will generated by Windows 8, an ambitious attempt to redesign Windows with tablet users in mind, which ended up annoying and confusing the core market of customers who use mice and keyboards. "Windows 8 was not a shining moment for Microsoft," said Michael Silver, an analyst at tech research firm Gartner. "Probably the biggest issue that lingers is the negative brand equity in the name." Many users howled in protest over the death of the start-button menu and the introduction of a colorful grid of squares or tiles representing apps in what became known as the modern user interface, even though they could easily switch to a traditional desktop mode.

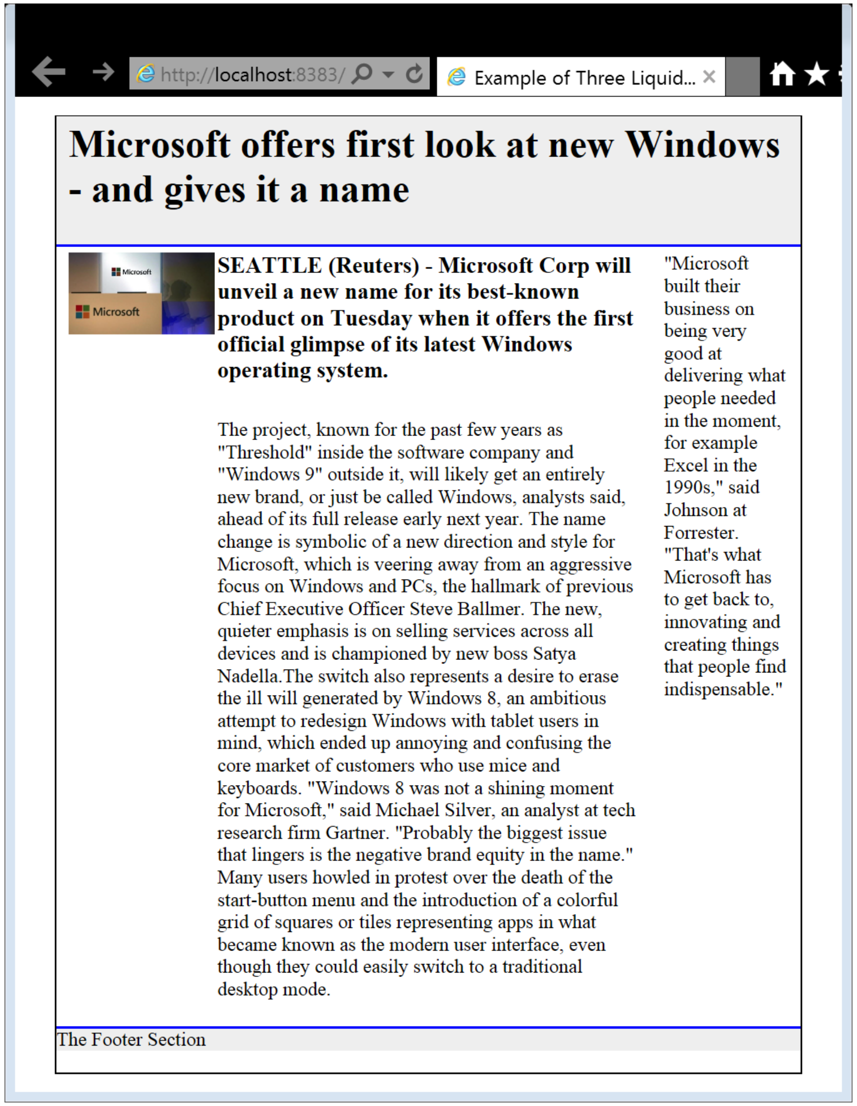
"Microsoft built their business on being very good at delivering what people needed in the moment, for example Excel in the 1990s," said Johnson at Forrester. "That's what Microsoft has to get back to, innovating and creating things that people find indispensable."

The Footer Section

Example of using 3-columns are liquid and @media to detect screen size

```
<html>
    <head>
        <title>Example of Three Liquid Columns</title>
        <style>
            #header {
                border-bottom: 2px solid #0000ff;
                background-color: #eeeeee;
            }
            body {
                width: 90%;
                background-color: white;
                margin: 15px auto;
                border: 1px solid black;
            }
            @media screen and (min-width: 481px) {
                #sidebarLeft {
                    width: 20%;
                    min-height: 500px;
                    float: left;
                }
                #main {
                    width: 60%;
                    min-height: 500px;
                    float: left;
                }
                #sidebarRight {
                    width: 20%;
                    min-height: 500px;
                    float: right;
                 }
            }

            #footer {
                clear: both;
                border-top: 2px solid #0000ff;
                background-color: #eeeeee;
            }
            h1, h3, p, img {
                padding: 5px;
                margin-top: 0px;
                margin-left: 5px;
                margin-right: 5px;
            }
        </style>
    </head>
```



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The Footer Section

Positioning Elements

- By default, static positioning is used to position block elements from top to bottom and inline elements from left to right.
- To change the positioning of an element, you can code the position property. In most cases, you also code one or more of the top, bottom, left, and right properties.
- However, when using absolute, relative or fixed positioning, the element can overlap other elements. Then you can use the z-index property to specify a value that determines the level at which the element is displayed.

Property	Description
position	*Determines how any an element is positioned. Four possible values: static, absolute, fixed, and relative.*
top, bottom, left, right	*For absolute or fixed positioning, a relative or absolute value that specifies the top, bottom, left or right position of an element's box*
z-index	*An integer that determines the stack level of an element whose position property is set to absolute, relative or fixed.*

Possible values for the position property

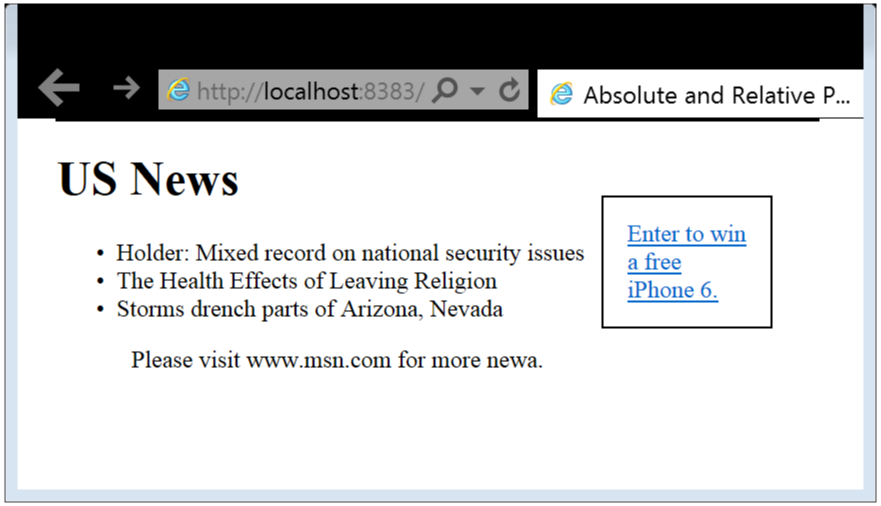
Value	Description
Static	*The element is placed in the normal flow. This is the default*
absolute	*The element is removed from the flow and is positioned relative to the closed containing block that is also positioned. The position is determined by the top, bottom, left, and right properties.*
fixed	*The element is positioned absolutely relative to the browser window. The position is determined by the top, bottom, left, and right properties*
relative	*The element is positioned relative to its position in the normal flow. The position is determined by the top, bottom, left, and right properties, they specify the element‘s offset from its normal position.*

Absolute positioning

- When you use absolute positioning, the elements on the positioned as if the element weren’t there. As a result, you may need to make room for the positioned element by setting the margins or padding for other elements.
- When you are use fixed positioning for an element, the positioning applies to the browser window and the element doesn’t move even when you scroll.

Example of using absolute and relative positioning

```
<!DOCTYPE html>
<html>
    <head>
        <title>Absolute and Relative Positioning</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <style>
            p {
                margin: 0;
            }
            body {
                width: 90%;
                margin: 0 25px 20px;
                border: 1px solid black;
                position: relative;
            }
            #sidebar {
                width: 80px;
                padding: 1em;
                border: 1px solid black;
                position: absolute;
                right: 30px;
                top: 50px;
            }
            #main {
                width: 80%;
                float: left;
            }
            .shiftLeft {
                position: relative;
                left: 50px;}
        </style>
    </head>
    <body>
        <div id="main">
            <h1>US News</h1>
            <ul>
                <li>Holder: Mixed record on national security issues</li>
                <li>The Health Effects of Leaving Religion</li>
                <li>Storms drench parts of Arizona, Nevada</li>
            </ul>
            <p class="shiftLeft">Please visit www.msn.com for more newa.</p>
        </div>
        <div id="sidebar">
            <p><a href="nowhere.html">Enter to win a free iPhone 6.</a></p>
        </div>
    </body>
</html>
```


http://localhost:8383/
Absolute and Relative P...

US News

- Holder: Mixed record on national security issues
- The Health Effects of Leaving Religion
- Storms drench parts of Arizona, Nevada

Please visit www.msn.com for more newa.

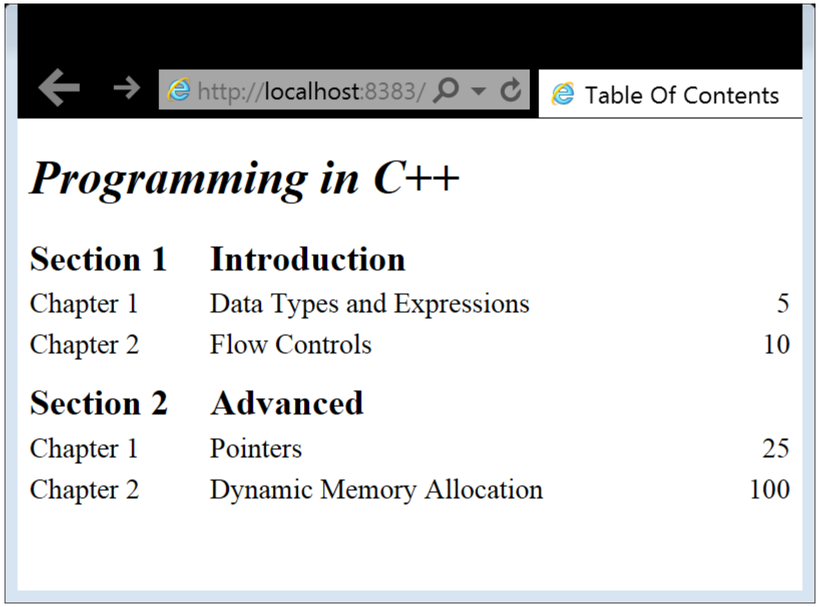
Enter to win a free iPhone 6.

Example of using absolute positioning for a table of contents

- To implement absolute positioning, span elements with class names are used to identify the text to be positioned at the left and the page numbers to be positioned at the right.
- The h2 and h3 elements use relative positioning, but no positions are specified. That way, the .title and .number elements that they contain can be positioned relative to the headings.

The tabe_of_contents.html

```
<!DOCTYPE html>
<html>
    <head>
        <title>Table Of Contents</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <style>
            div h2 {
                margin: .6em 0 0;
                position: relative;
            }
            div h3 {
                font-weight: normal;
                margin: .3em 0 0;
                position: relative;
            }
            .title {
                position: absolute;
                left: 120px;
            }
            .pageNum {
                position: absolute;
                right: 0;
            }
        </style>
    </head>
    <body>
        <div>
            <h1><i>Programming in C++</i></h1>
            <h2>Section 1<span class="title">Introduction</span></h2>
            <h3>Chapter 1<span class="title">Data Types and Expressions</span><span class="pageNum">5</span></h3>
            <h3>Chapter 2<span class="title">Flow Controls</span><span class="pageNum">10</span></h3>
            <h2>Section 2<span class="title">Advanced</span></h2>
            <h3>Chapter 1<span class="title">Pointers</span><span class="pageNum">25</span></h3>
            <h3>Chapter 2<span class="title">Dynamic Memory Allocation</span><span class="pageNum">100</span></h3>
        </div>
    </body>
</html>
```



Programming in C++

Section 1 **Introduction**

Chapter 1 Data Types and Expressions 5

Chapter 2 Flow Controls 10

Section 2 **Advanced**

Chapter 1 Pointers 25

Chapter 2 Dynamic Memory Allocation 100