Web Technologies

CSC210S3

Introduction to CSS

Overview

- History of HTML
- Introduce HTML5
- HTML5 tags
- Sample Website using HTML5
- Lab activity: Designing portfolio

Introduction

- Cascading Style Sheets (CSS) were established by the World Wide Web Consortium (W3C)
- The CSS specification allows for more control over the look, or style, of web pages or other XML
- Multiple styles can be applied to a particular document. The browser will interpret these styles

CSS Examples

- The *CSS Zen Garden* shows some of the most advanced uses of CSS:

  `http://www.csszengarden.com/`

- *CSS in the real world: ajc.com's 'News Break'*

  `http://www.holovaty.com/blog/archive/2002/09/28/2340`

- *Web Standards* Tech Briefing – with CSS:

  `http://techbriefings.stanford.edu/web_standards/example1.html`

- *Web Standards* Tech Briefing – without CSS :

  `http://techbriefings.stanford.edu/web_standards/example2.html`

CSS Rules

- Each rule consists of a *selector* and a *declaration*
- In the example below, **h2** is the selector, **color** is the property, and **darkblue** is the value
- In the webpage selectors are usually HTML tags

```
h2 {color: darkblue;}
```

Syntax:

selector { property: value; }

CSS Rules

- Include multiple styles
- Separating them by semicolons:

```
h2 {color: darkblue; font-style: italic;}
```

- Multiple selectors that have the same styles
- Separating them with commas:

```
h1, h2, h3 {color: darkblue; font-style:
italic;}
```

- Contextual selectors allow to specify that something will change, but only when it is used in conjunction with something else.

```
ul li strong {color: red;}
```

CSS Rules

- Elements being modified by contextual selectors need not appear immediately inside one another

```
<ul><li><strong> blah </strong></li></ul>
```

- Direct child selectors allow you to specify that something will change, but only those that are immediately inside of another element

```
h1 > strong {color: purple;}
```

- Adjacent selectors allow you to specify that something will change, but only when preceded by something else.

```
h2 + a {color: green;}
```

CSS Rules

- Elements being modified by adjacent selectors appear immediately after one another.

```
<h2>Visit Stanford!</h2>

<a href="http://www.stanford.edu">Click
here</a>.
This link would not: <h2>Visit Stanford!

<a href="http://www.stanford.edu">Click
here</a></h2>.
```

- Group selectors by attribute.

```
        h2[align="center"] { border: dotted;}
```

Where do you put the styles?

Style information can be located in three places:

- External to the pages in a site
- Internal to each page
- Inline with individual tags

Where do you put the styles?

Text that appears in the *basic.css* style sheet document:

```
h2 {font-family: Arial, sans-serif; font-
style: italic; color: green;}

p {font-family: Courier, monotype; font-
style: bold; color: red; }
```

Text that appears in the *print.css* style sheet document:

```
h2 {font-family: Book Antiqua, Times,
serif; font-style: italic; }

p {font-family: Courier, monotype; font-
style: bold; }
```

Where do you put the styles?

HTML document, using the <link> tag method

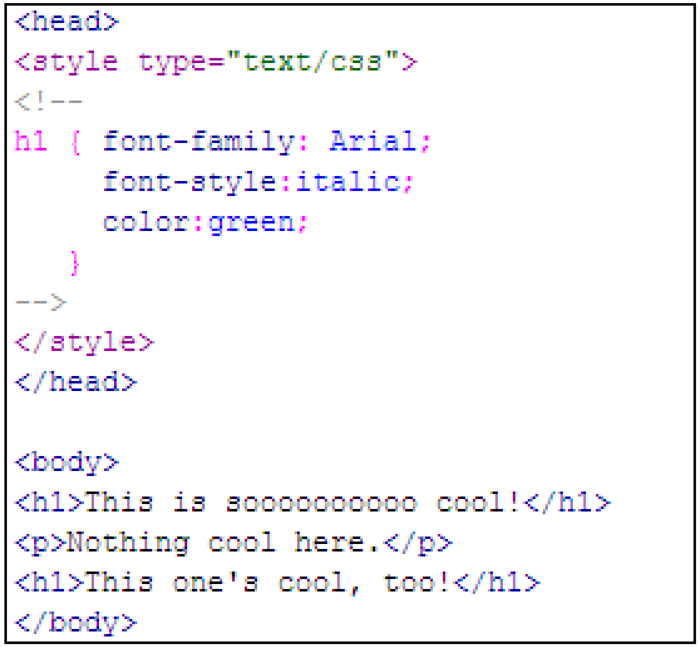
```
<head>

<link rel="stylesheet"
   type="text/css"
   href="basic.css"
   media="all" />

<link rel="stylesheet"
   type="text/css"
   href="print.css"
   media="print" />

</head>
```

HTML document, using the @import and @media method

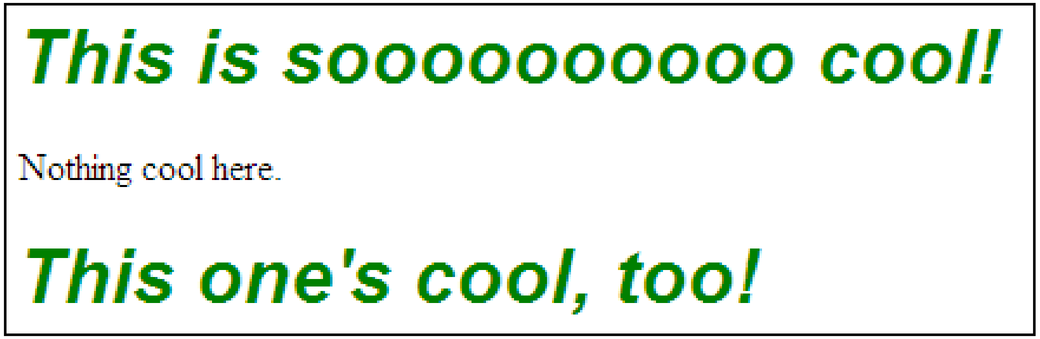
```
<head>

<style type="text/css">

<!--

@import url("basic.css")
   all;

@media url("print.css")
   print;

-->

</style>

</head>
```

Style Location: Internal

- Style information can also be included in the <head> section of an individual web page.



```
<head>
<style type="text/css">
<!--
h1 { font-family: Arial;
     font-style:italic;
     color:green;
   }
-->
</style>
</head>

<body>
<h1>This is soooooooooo cool!</h1>
<p>Nothing cool here.</p>
<h1>This one's cool, too!</h1>
</body>
```



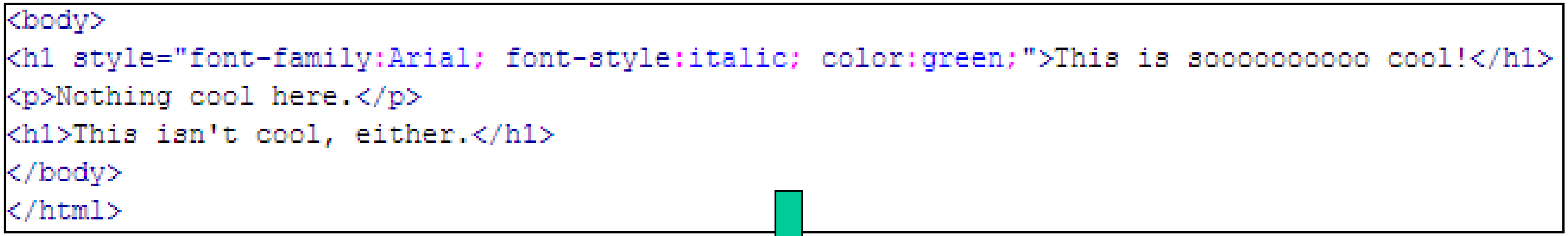
This is soooooooooo cool!

Nothing cool here.

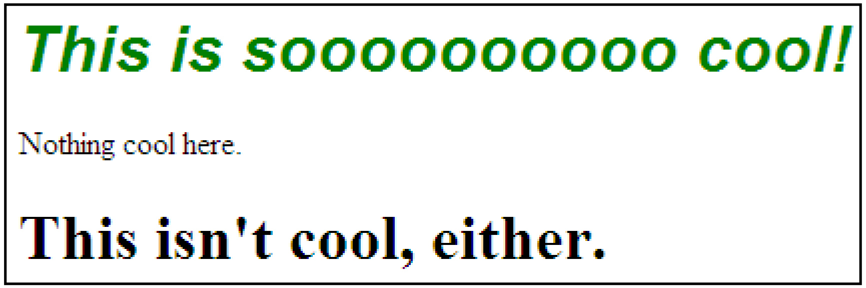
This one's cool, too!

Style Location: Inline

- The style effects only that tag and no others in the document.



```
<body>
<h1 style="font-family:Arial; font-style:italic; color:green;">This is soooooooooo cool!</h1>
<p>Nothing cool here.</p>
<h1>This isn't cool, either.</h1>
</body>
</html>
```



This is soooooooooo cool!

Nothing cool here.

This isn't cool, either.

Hierarchy of Style

- External Style Sheets affect the entire site.
- Internal styles affect only their own pages and override external styles.
- Inline styles affect only their own tags and override both internal and external styles.

!important

- Last rule listed in the cascade will take precedence over previous rules.

-
  ```
  body{font-family: Times;
          font-family: Verdana;}
  ```
- However, by entering `!important` in a rule, that rule will take precedence, regardless of its location.

-
  ```
  body   {font-family: Times !important;
  font-family: Verdana;}
  ```

Classes and IDs

- Classes can be applied to any HTML element, or can be created for specific elements.

- Style for elements with a particular class attribute, declare a rule using a dot (.) followed by the class name.

```
.shade { background: yellow;}
```

Classes and IDs

- Can only be used with one instance of an element within a document.
- Defining an ID-based selector, use a number/pound/hash sign (#) followed by the style name

```
#intro {font-size: 2em;}
```

- Only apply for the heading 1 tags with the id intro (<h1 id="intro">)

```
h1#intro {color: green;}
```

Classes and IDs

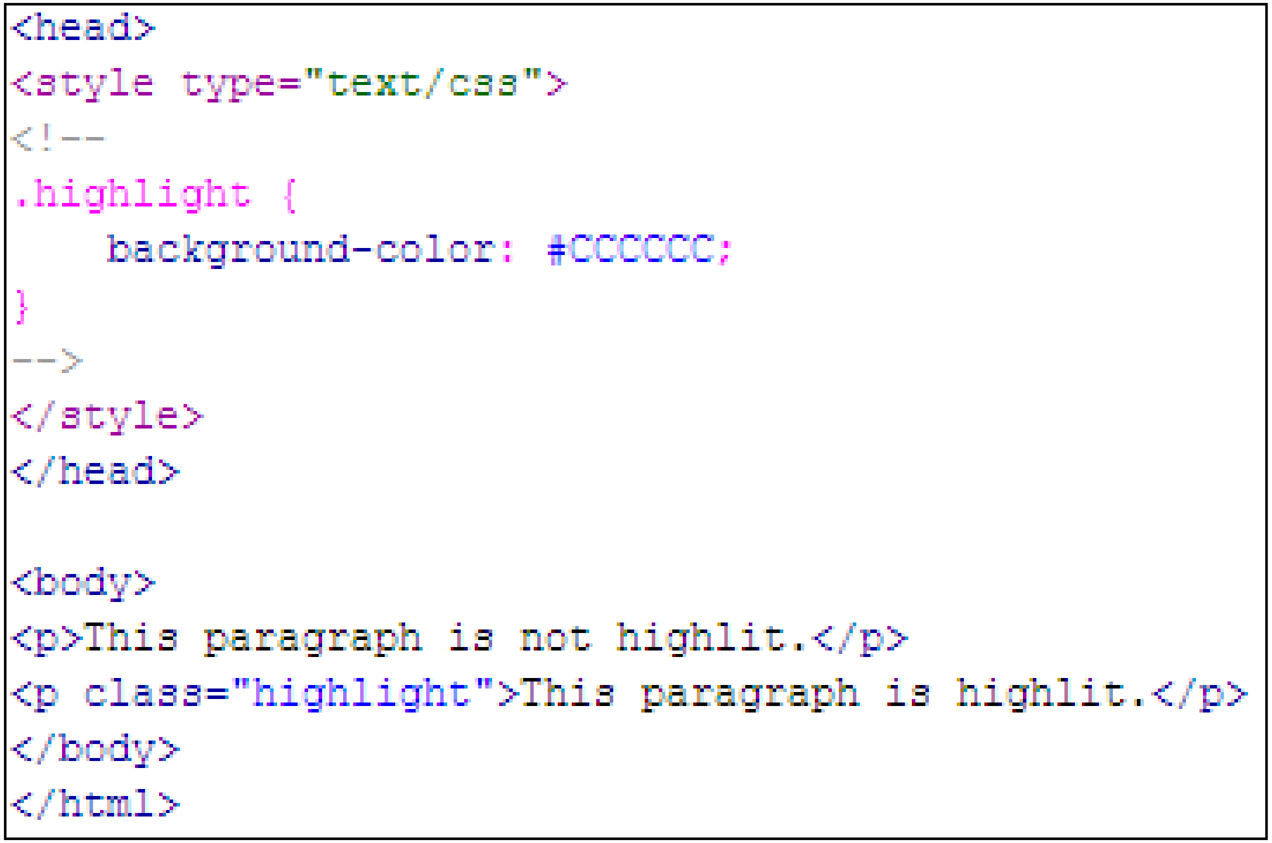
- Can only be used with one instance of an element within a document.
- Defining an ID-based selector, use a number/pound/hash sign (#) followed by the style name

```
#intro {font-size: 2em;}
```

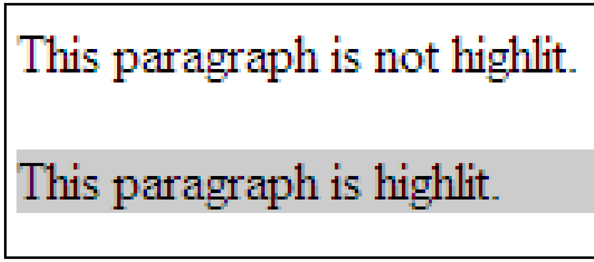
- Only apply for the heading 1 tags with the id intro (<h1 id="intro">)

```
h1#intro {color: green;}
```

Class: Example



```
<head>
<style type="text/css">
<!--
.highlight {
    background-color: #CCCCCC;
}
-->
</style>
</head>

<body>
<p>This paragraph is not highlit.</p>
<p class="highlight">This paragraph is highlit.</p>
</body>
</html>
```



This paragraph is not highlit.

This paragraph is highlit.

Inline vs. Block Display (HTML)

- Force a block display, use the declaration

```
display: block;
```

- Force an inline display, use the declaration

```
display: inline;
```

- Force a list, use the declaration

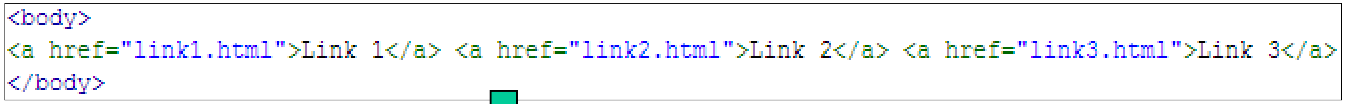
```
display: list-item;
```

- Hide elements matching the selector, use the declaration

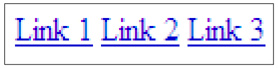
```
display: none;
```

Example – display: block;

- Normally, <a> tags display inline.

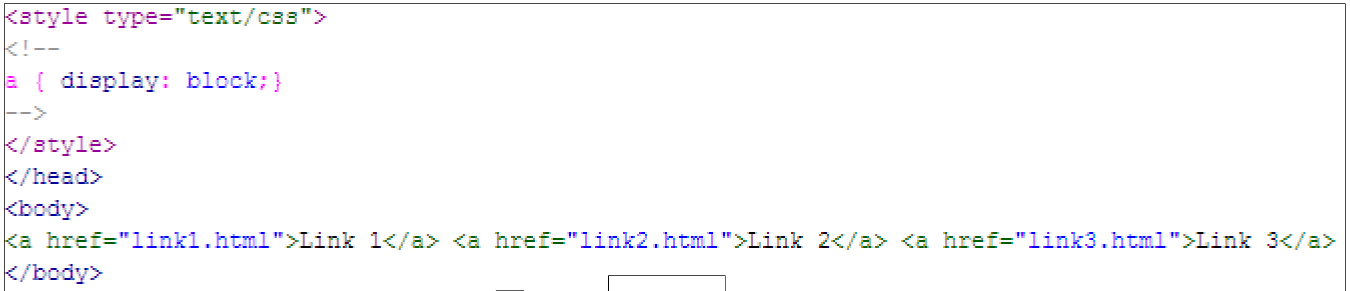


```
<body>
<a href="link1.html">Link 1</a> <a href="link2.html">Link 2</a> <a href="link3.html">Link 3</a>
</body>
```

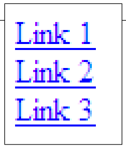


Link 1 Link 2 Link 3

- Add the style `a {display: block;}`, will display as a vertical navigation menu:



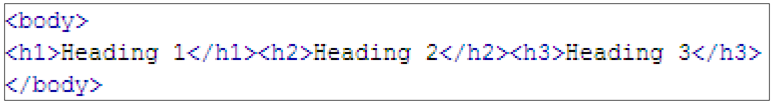
```
<style type="text/css">
<!--
a { display: block;}
-->
</style>
</head>
<body>
<a href="link1.html">Link 1</a> <a href="link2.html">Link 2</a> <a href="link3.html">Link 3</a>
</body>
```



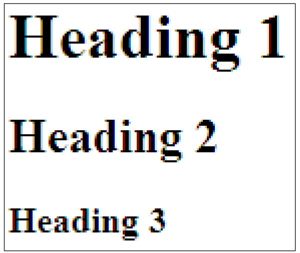
Link 1
Link 2
Link 3

Example – display: inline;

- Normally, the heading tags display in block format:



```
<body>
<h1>Heading 1</h1><h2>Heading 2</h2><h3>Heading 3</h3>
</body>
```

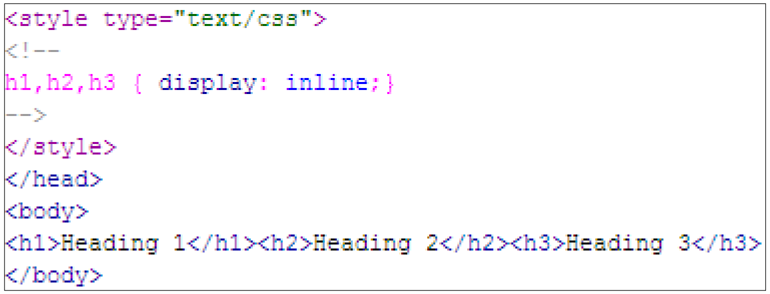


Heading 1

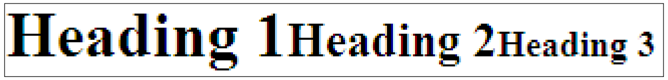
Heading 2

Heading 3

- But, to have them display inline, add the style **h1,h2,h3 {display: inline;}:**



```
<style type="text/css">
<!--
h1,h2,h3 { display: inline;}
-->
</style>
</head>
<body>
<h1>Heading 1</h1><h2>Heading 2</h2><h3>Heading 3</h3>
</body>
```



Heading 1Heading 2Heading 3

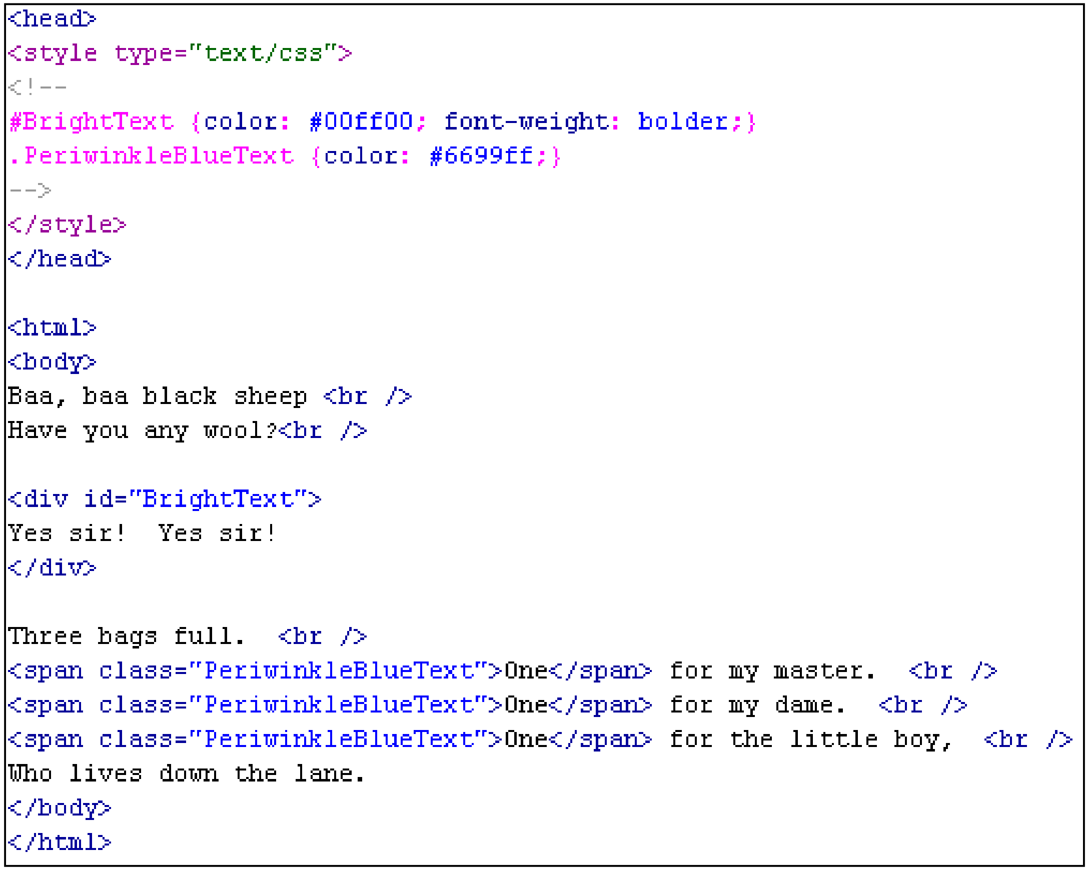
Span and Div

- The `<span>` tag is an inline element that simply holds text without doing anything special to it.

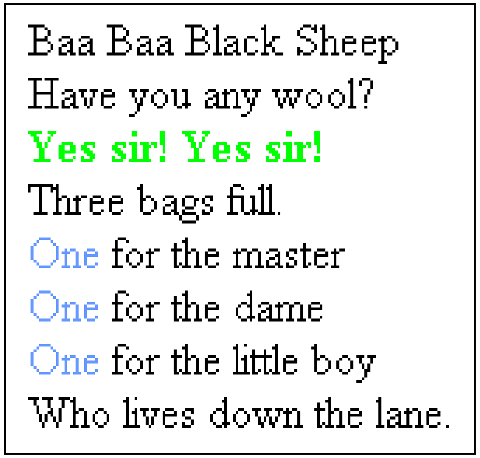
- The `<div>` tag is a block element and causes the text it encloses to start on a new line.

Example using SPAN, DIV, Class, and ID

- Here’s an example of a web page using a class, an id, and the span and div tags:



```
<head>
<style type="text/css">
<!--
#BrightText {color: #00ff00; font-weight: bolder;}
.PeriwinkleBlueText {color: #6699ff;}
-->
</style>
</head>

<html>
<body>
Baa, baa black sheep <br />
Have you any wool?<br />

<div id="BrightText">
Yes sir!  Yes sir!
</div>

Three bags full.  <br />
<span class="PeriwinkleBlueText">One</span> for my master.  <br />
<span class="PeriwinkleBlueText">One</span> for my dame.  <br />
<span class="PeriwinkleBlueText">One</span> for the little boy,  <br />
Who lives down the lane.
</body>
</html>
```



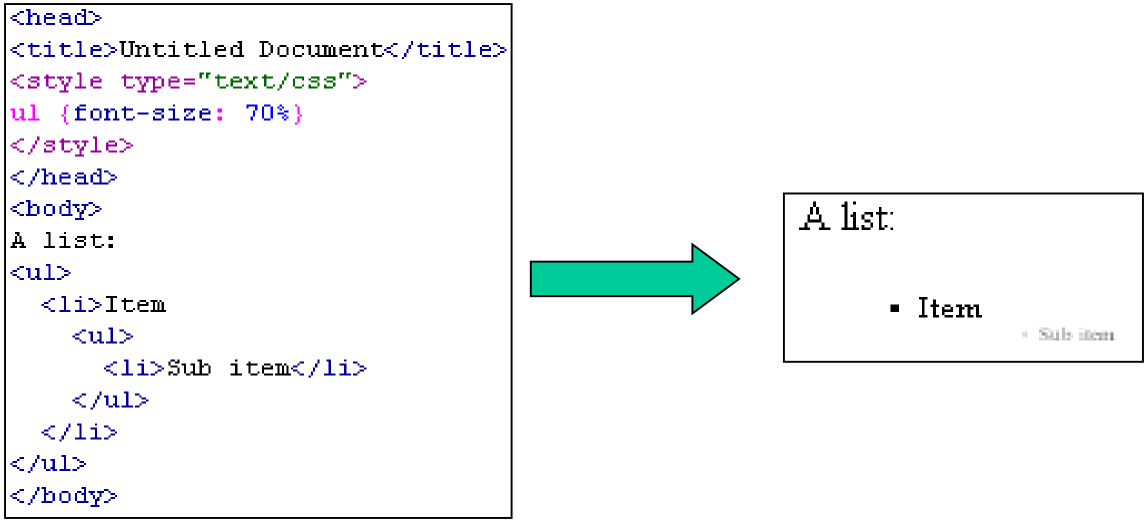
Baa Baa Black Sheep
Have you any wool?
Yes sir! Yes sir!
Three bags full.
One for the master
One for the dame
One for the little boy
Who lives down the lane.

Unit Measurements

- **Absolute values** are fixed, specific values

mm, cm, in, pt, pc, xx-small, x-small, small, medium, large, x-large, xx-large

- **Relative values** have no fixed, specific values, and are calculated in comparison to something else (usually the size of the default font or line size). em, ex, px, larger, smaller, num%



```
<head>
<title>Untitled Document</title>
<style type="text/css">
ul {font-size: 70%}
</style>
</head>
<body>
A list:
<ul>
  <li>Item
    <ul>
      <li>Sub item</li>
    </ul>
  </li>
</ul>
</body>
```

```
A list:

    ▪ Item
         ◦ Sub item
```

Font and Text Styling

```
font-family: Verdana, Arial, Helvetica,
    sans-serif
```

- Designed to be printed tend to look better in Serif fonts

  (Times, Georgia, Book Antiqua, etc.)

- Designed to be viewed onscreen tend to look better in Sans-serif fonts (Verdana, Arial, Helvetica, etc.)

- Apply a font to the entire web page,

```
body {font-family: Verdana;}
```

- Apply a font to a specific section of text

```
.neatstuff {font-family: Comic Sans MS;}

<span class="neatstuff">This is in Comic
Sans</span>
```

Modifying List Elements

By default, unordered lists (`<ul>`) appear as bullets and ordered lists (`<ol>`) appear as numbers in HTML.

```
ul { list-style: disc; }

ol { list-style: upper-roman;}

li { list-style:

url("blackball.gif");}

ul li { list-style-position: inside;}
```

The Box Model

- The browser draws an object on a page, it places it into an invisible rectangular space called a “bounding box.”

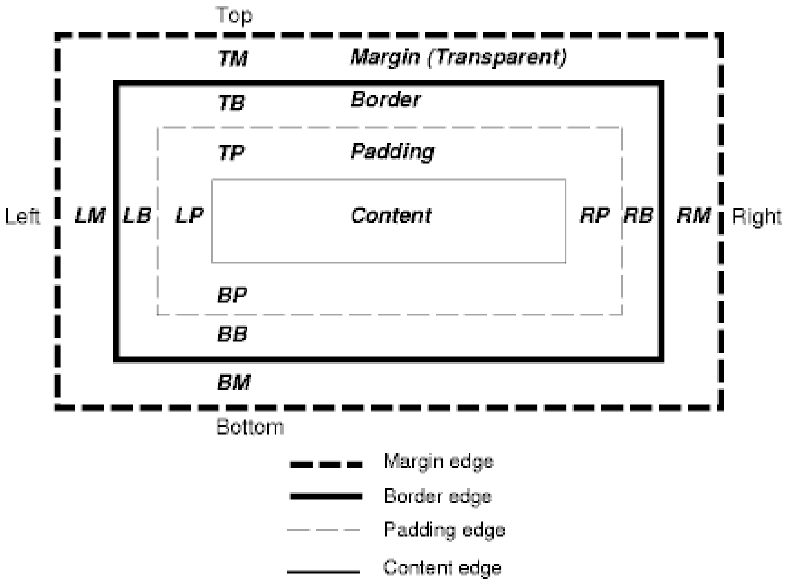
- In CSS1, the **width** property is defined as the distance between the left and right edges of the bounding box that surrounds the element's content.

- The **height** property is defined in CSS as the distance between the top and bottom edges of the bounding box.

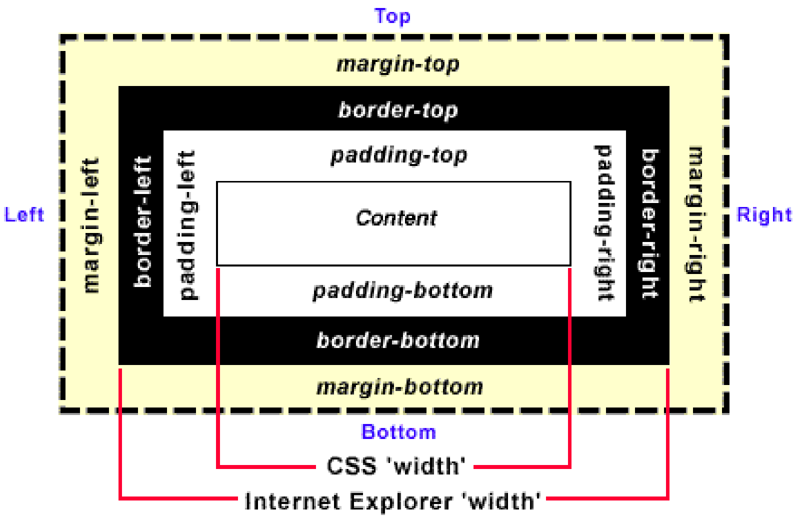
- In *Internet Explorer*, the **width** and **height** properties also include the **border** and **padding** belts that surround the element's bounding box.

The Box Model: IE vs. CSS

CSS Standard



Internet Explorer



Pseudo-elements and Pseudo-classes

- In the standard HTML, there is no way to automatically change the look and feel of the first letter or line of a paragraph. The pseudo-element `:first-letter` can specify a style that affects it:

```
p:first-letter{ font-size: 200%; color:red;}
```

- In standard HTML there is no mechanism to deal with mouse movements. pseudo-class `:hover` can be used to change the style of a link.

```
a:hover{color: #ff0000; text-decoration:
none;)
```

- Change the style of links, use the pseudo-class `:link`
  To change the style of visited links, use the pseudo-class `:visited`

```
a:link {color: #00f; font-weight: bold;)
a:visited {color: purple; border: groove;}
```

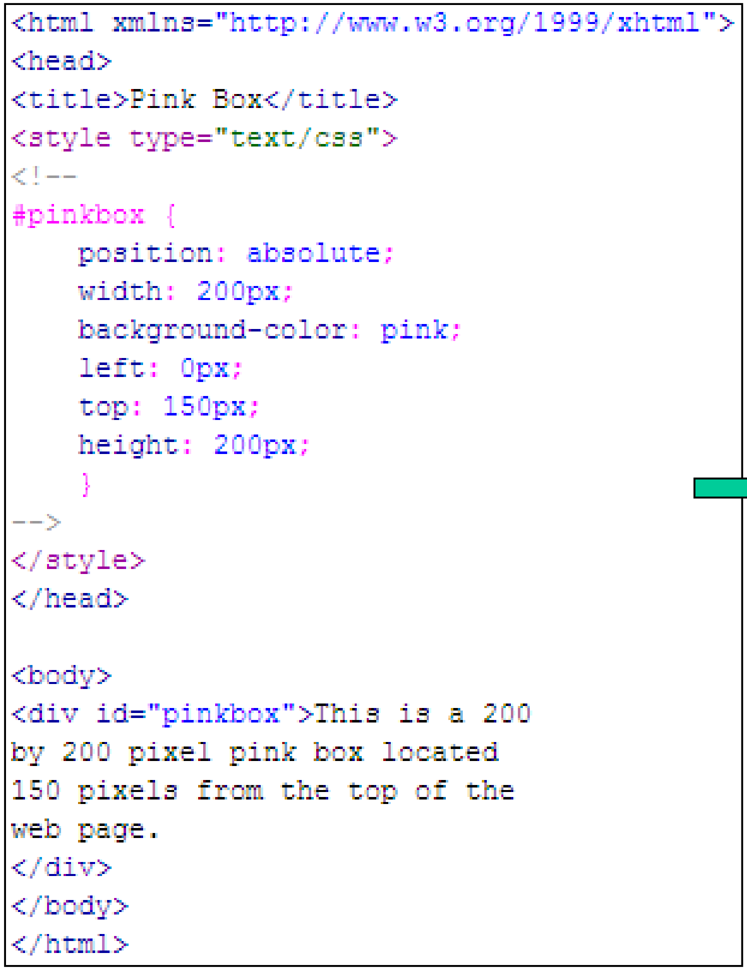
Positioning

- CSS, can place elements exactly on a page using a technique called “positioning.” Positioning is determined by an X axis and Y axis.
- There are several ways to specify position in CSS: *absolute*, *relative*, *fixed*, *inherit*, and *static*.

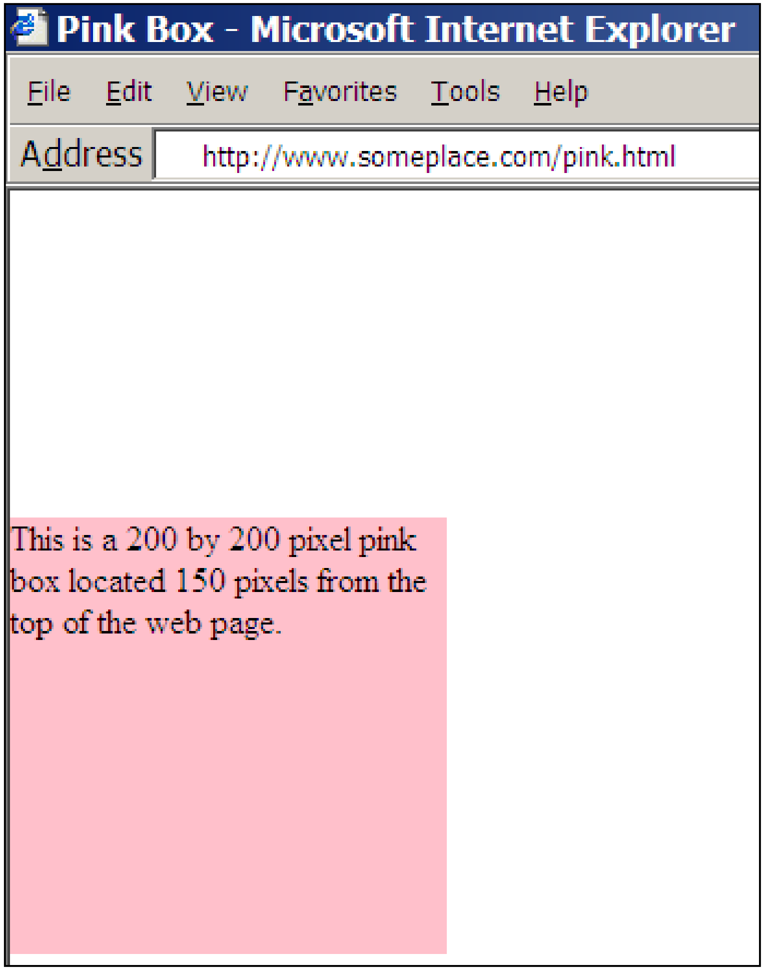
Absolute, Relative, Fixed, Inherit, and Static Positioning

- *Absolute positioning* defines the position of a given bounding box from the top and left side margins of the web page.
- *Relative positioning* defines the positioning in such a way that elements are offset from the previous element in the HTML code.
- *Fixed positioning* defines the position of a given box relative to the window and remains in its specified location even as the content scrolls underneath it.
- *Inherit positioning* explicitly sets the value to that of the parent (if the parent is *position:absolute*, the child will be *position:absolute*; if the parent is *position:fixed*, the child will be *position:fixed*).
- *Static positioning* is the default. It defines the position of a given box essentially as an unpositioned element

Absolute Positioning Example



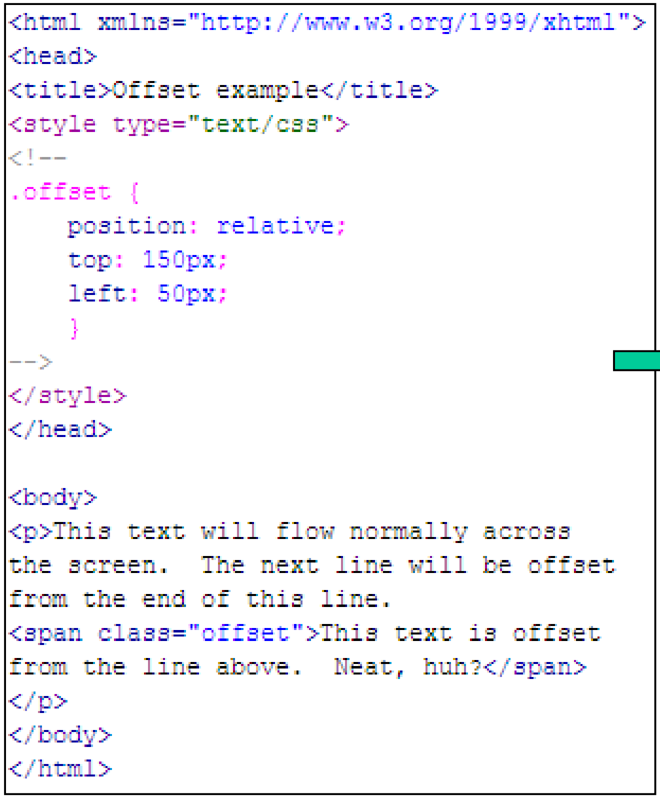
```
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Pink Box</title>
<style type="text/css">
<!--
#pinkbox {
    position: absolute;
    width: 200px;
    background-color: pink;
    left: 0px;
    top: 150px;
    height: 200px;
    }
-->
</style>
</head>

<body>
<div id="pinkbox">This is a 200
by 200 pixel pink box located
150 pixels from the top of the
web page.
</div>
</body>
</html>
```



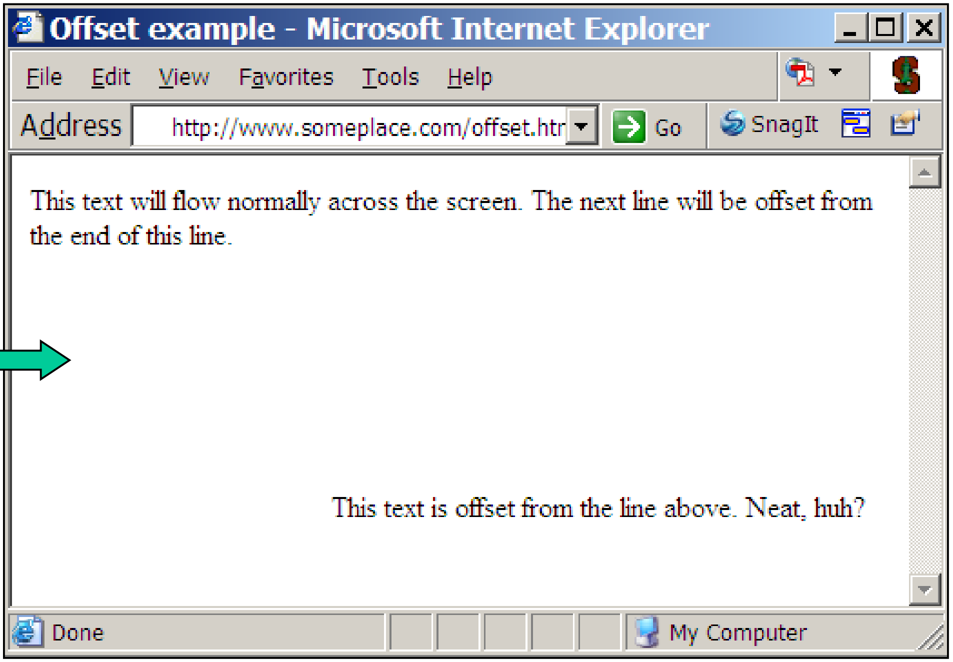
http://www.someplace.com/pink.html

This is a 200 by 200 pixel pink box located 150 pixels from the top of the web page.

Relative Positioning Example



```
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Offset example</title>
<style type="text/css">
<!--
.offset {
    position: relative;
    top: 150px;
    left: 50px;
    }
-->
</style>
</head>

<body>
<p>This text will flow normally across
the screen.  The next line will be offset
from the end of this line.
<span class="offset">This text is offset
from the line above.  Neat, huh?</span>
</p>
</body>
</html>
```



Offset example - Microsoft Internet Explorer
File
Edit
View
Favorites
Tools
Help
Address
http://www.someplace.com/offset.htr
Go
SnagIt
Done
My Computer

This text will flow normally across the screen. The next line will be offset from the end of this line.

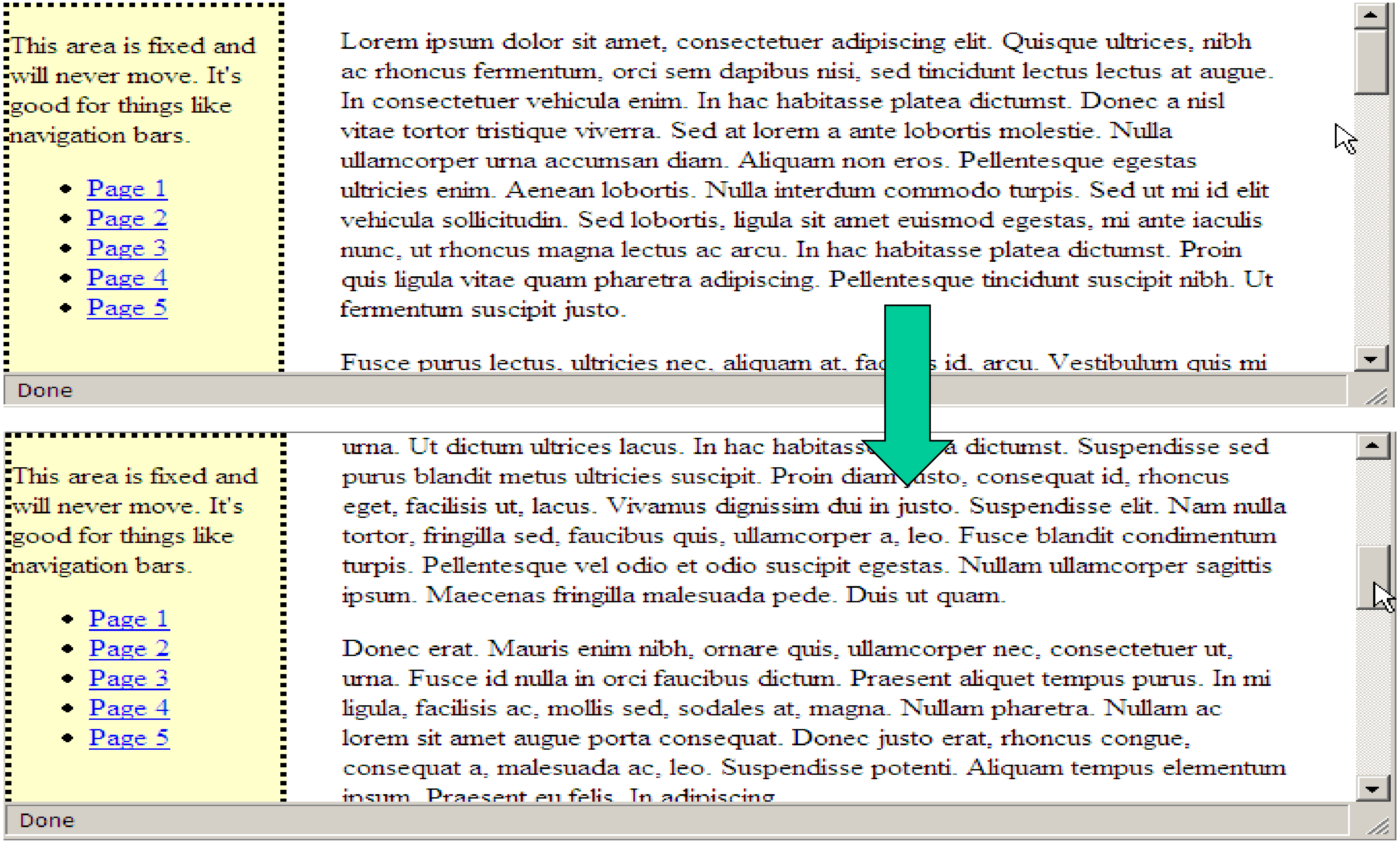
This text is offset from the line above. Neat, huh?

Fixed Positioning – code view

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
      Transitional//EN"
      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-
      transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html;
      charset=iso-8859-1" />
<title>Untitled Document</title>
<style type="text/css">
<!--
#links {
      position:fixed;
      border:dotted;
      border-color:#000000;
      width:20%;
      height:100%;
      z-index:1;
      left: 0px;
      top: 0px;
      background-color: #FFFFCC;
}
#main {
      position:absolute;
      left:25%;
      top:0px;
      width:70%;
      }
-->
</style>
</head>
<body>
```

```
<div id="main">
  <p>Lorem ipsum dolor sit amet, consectetuer adipiscing
      elit. Quisque ultrices,   nibh ac rhoncus fermentum,
      orci sem dapibus nisi, sed tincidunt lectus lectus at
      augue. In consectetuer vehicula enim. In hac habitasse
      platea dictumst. Donec a   nisl vitae tortor tristique
      viverra. Sed at lorem a ante lobortis molestie.
      Nulla ullamcorper urna accumsan diam. Aliquam non
      eros. Pellentesque egestas   ultricies enim. Aenean
      lobortis. Nulla interdum commodo turpis. Sed ut mi id
      elit vehicula sollicitudin. Sed lobortis, ligula sit
      amet euismod egestas, mi   ante iaculis nunc, ut
      rhoncus magna lectus ac arcu. In hac habitasse platea
      dictumst. Proin quis ligula vitae quam pharetra
      adipiscing. Pellentesque   tincidunt suscipit nibh. Ut
      fermentum suscipit justo. </p>
  <p>Fusce purus lectus, ultricies nec, aliquam at,
      facilisis id, arcu. Vestibulum   quis mi vel massa
      porta hendrerit. Nulla ullamcorper ligula nec lectus.
      Quisque   tempor, augue in molestie gravida, eros arcu
      luctus tortor, eu dignissim diam   urna sed urna. Ut
      dictum ultrices lacus. In hac habitasse platea
      dictumst.   Suspendisse sed purus blandit metus
      ultricies suscipit. Proin diam justo,   consequat id,
      rhoncus eget, facilisis ut, lacus. Vivamus dignissim
      dui in justo.   Suspendisse elit. Nam nulla tortor,
      fringilla sed, faucibus quis, ullamcorper a,   leo.
      Fusce blandit condimentum turpis. Pellentesque vel
      odio et odio suscipit   egestas. Nullam ullamcorper
      sagittis ipsum. Maecenas fringilla malesuada pede.
      Duis ut quam. </p>
</div>
<div id="links">
  <p>This area is fixed and will never move. It's good for
      things like navigation bars.</p>
  <ul>
    <li><a href="page1.html">Page 1</a></li>
    <li><a href="page2.html">Page 2</a></li>
    <li><a href="page3.html">Page 3</a></li>
    <li><a href="page4.html">Page 4</a></li>
    <li><a href="page5.html">Page 5</a></li>
  </ul>
</div></body></html>
```

Fixed Positioning – *Firefox* web browser



This area is fixed and will never move. It's good for things like navigation bars.

- Page 1
- Page 2
- Page 3
- Page 4
- Page 5

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ANY
QUESTIONS?