

CS 416

Web Programming

HTML Basics

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Homework

- Homework 0 due next Wednesday 9/6
 - Submit a **picture of your face** to Blackboard and your **GitHub id**, if you have a **preferred name** i.e. Chris rather than Christopher make a note of it in the comments.

Expectations

- Knowing HTML isn't a prerequisite for this class so over the next 2-3 classes you will get a crash course in it
- The goal isn't to teach you what you need to make a “cool” looking web page. The goal is to teach you just the basics needed to give you the tools you need to make a “cool” **web application**

Web pages

Web page - text document that contains:

- Formatting information in a language called HTML (HyperText Markup Language)
- Links to other web pages and files

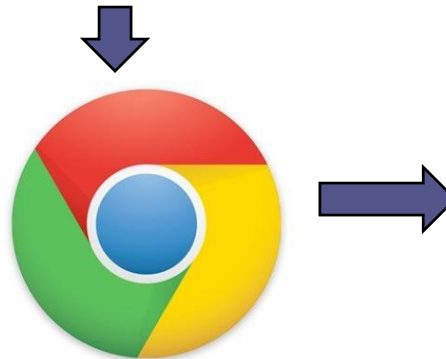
Web browser takes marked up text (Web page), interprets its content, and displays the page

View web page (cont.)

```
1 <html>
2 <head>
3   <title> Sample Web Page </title>
4 </head>
5 <body>
6   <div style="text-align:center">
7     <h2>Calvin's Page </h2>
8     
9   </div>
10  <p> Hello welcome to my page! <br />
11    If you would like to learn more click here
12    <a href="personal.html">here</a>
13  </body>
14 </html>
```

Text document with
formatting info

Browser
interprets
HTML and
displays page



Web server

- Internet-enabled computer that stores Web pages and provides access to the pages/files
- when you request a Web page, the browser sends a **request** over the Internet to the appropriate server
- the server locates the specified content and **responds** by sending it back to your computer

What is HTML

- Language for describing web pages
- It is not a programming language it is a **markup language**
- A markup language is a set of **markup tags**
- Markup tags are used to describe the content of the page and how it is to be displayed

HTML Markup Tags

- HTML markup tags are generally referred to as just HTML tags
- HTML tags are keywords surrounded by angle brackets **<html>**
- HTML tags normally come in pairs like **** and ****
- The first tag in a pair is called the **start tag** and the second tag the **end tag** or **opening** and **closing tags**

Simple example



```
<html>
<body>
    <h1>My first heading</h1>
    <p>My first paragraph</p>
</body>
</html>
```

- Text between `<html>` and `</html>` describes the web page
- Text between `<body>` and `</body>` describes the visible content of the page
- Text between `<h1>` and `</h1>` is displayed as a heading
- Text between `<p>` and `</p>` is displayed as a paragraph

Entering a Heading

- Heading tag is created by using the `<h1>` `</h1>` tags
- There are multiple levels of headings tags `<h2>``</h2>`, `<h3>``</h3>`, ...
- Heading tags create an outline of the page specifying sections of content similar to an outline you'd create for a paper

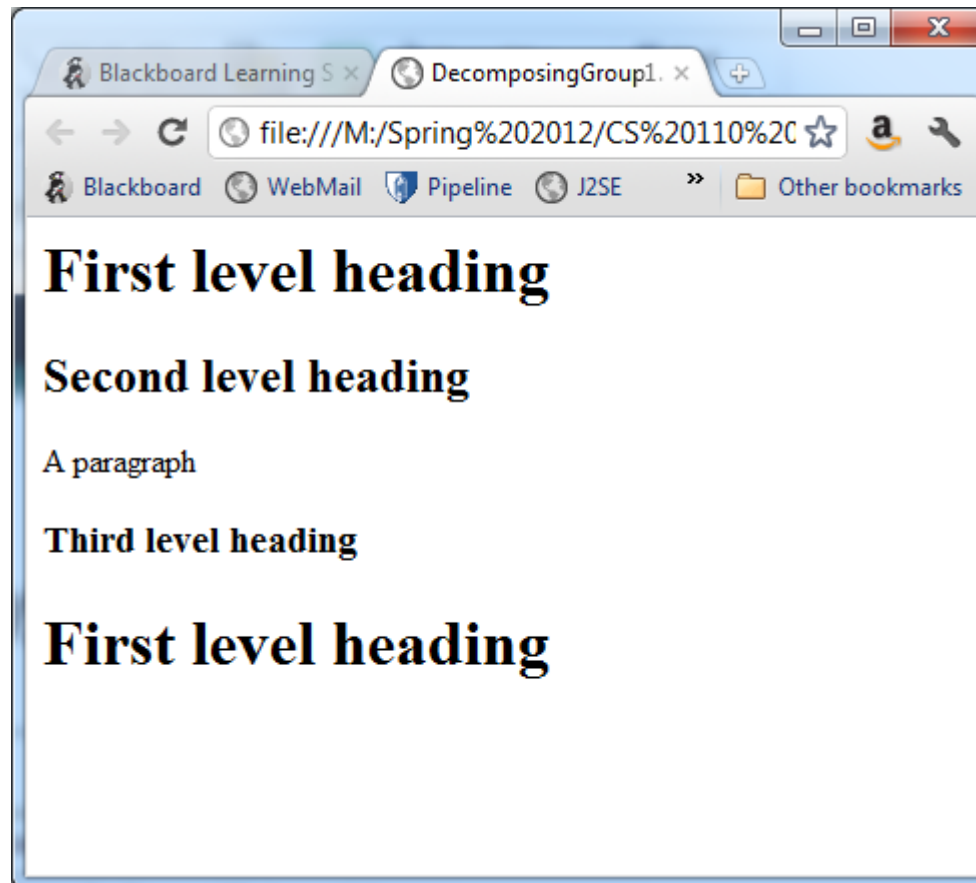
```
<h2>Some heading</h2>
```

Entering a Paragraph of Text

- The paragraph tag `<p>` `</p>` groups together a set of text content
- When there are multiple text lines paragraph tags are specified to tell the browser where to break up the text

```
<p> Here is some paragraph </p>
```

Decomposing web pages 1 as group



Decomposing web pages - HTML

```
<html>
```

```
<body>
```

```
<h1> First level heading </h1>
```

```
<h2> Second level heading </h2>
```

```
<p>A paragraph</p>
```

```
<h3> Third level heading </h3>
```

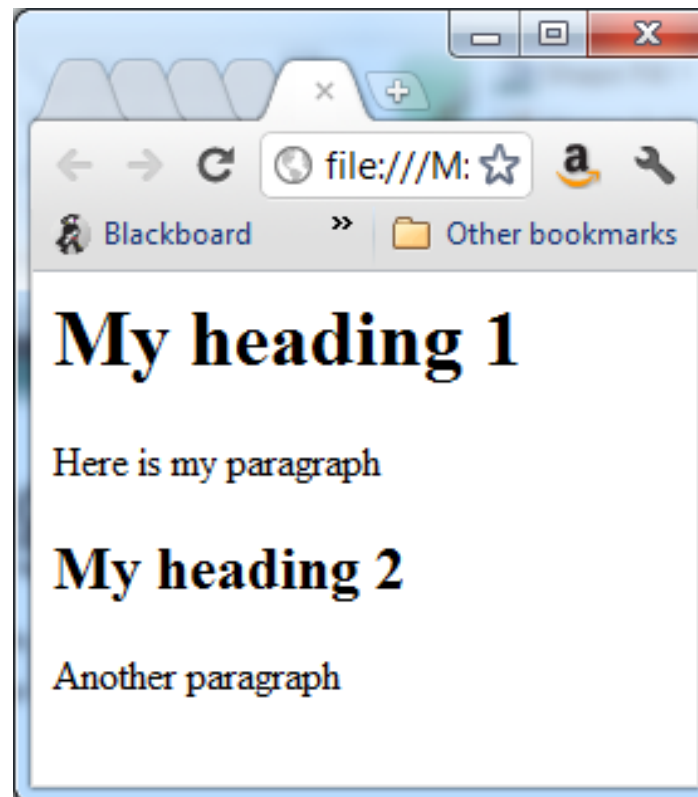
```
<h1> First level heading </h1>
```

```
</body>
```

```
</html>
```

Decomposing web pages - your turn

Create the HTML for the following web page



Solution Ex. 1

```
<html>
  <body>
    <h1>My heading 1</h1>
    <p>Here is my paragraph</p>
    <h2>My heading 2</h2>
    <p>Another paragraph</p>
  </body>
</html>
```

Creating an Unordered List

- Unordered list are bullet point lists
- You specify to create a list using

` `

- You specify the bullet point items **within** the unordered list using

` `

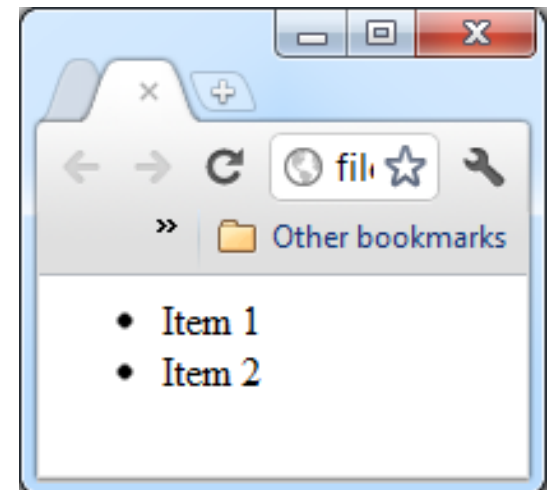
Ex.

``

`Item 1`

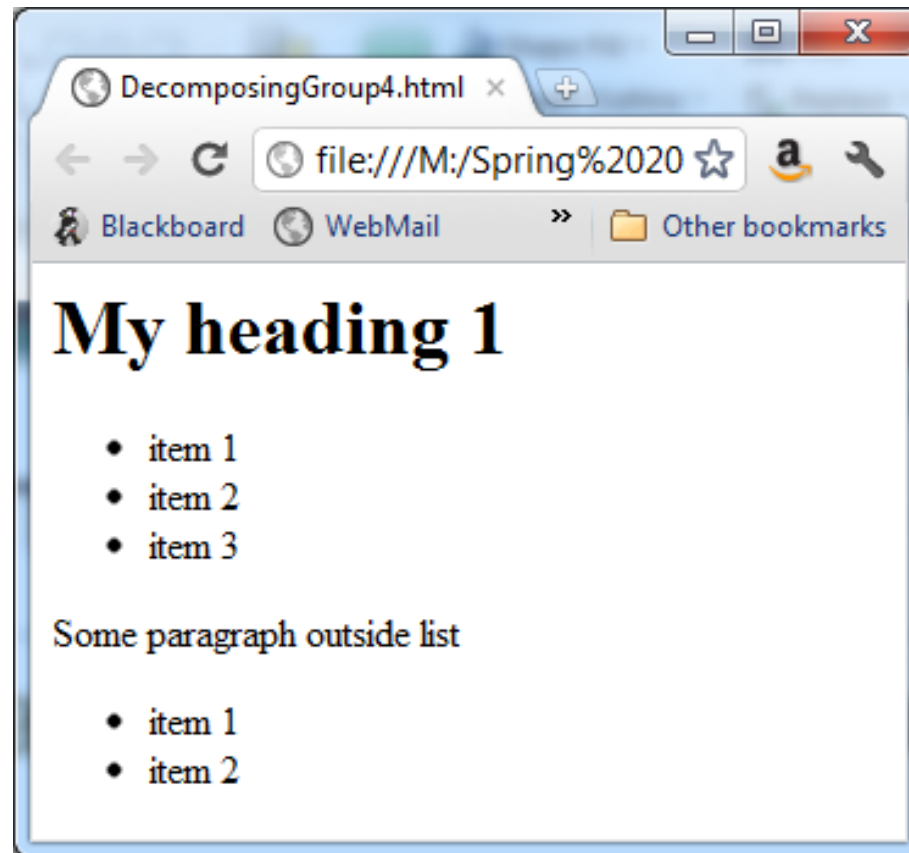
`Item 2`

``



Decomposing web pages as group

- Create the HTML for the following web page



Decomposing web pages HTML

```
<html>
<body>
  <h1>My heading 1</h1>
  <ul>
    <li>item 1</li>
    <li>item 2</li>
    <li>item 3</li>
  </ul>
  <p> Some paragraph outside list</p>
  <ul>
    <li>item 1</li>
    <li>item 2</li>
  </ul>
</body>
</html>
```

Creating an Ordered List

- Ordered list are sequential/numbered lists
- You specify like unordered list but using

` `

- You specify the items **within** the ordered list using

` `

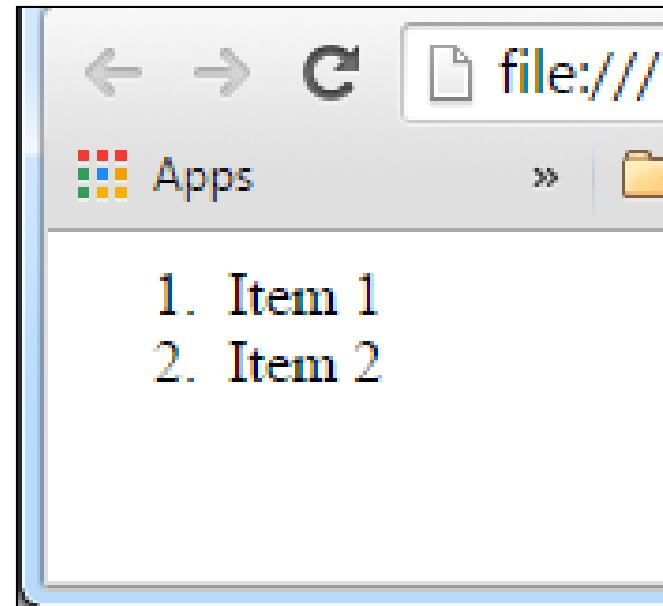
Ex.

``

`Item 1`

`Item 2`

``

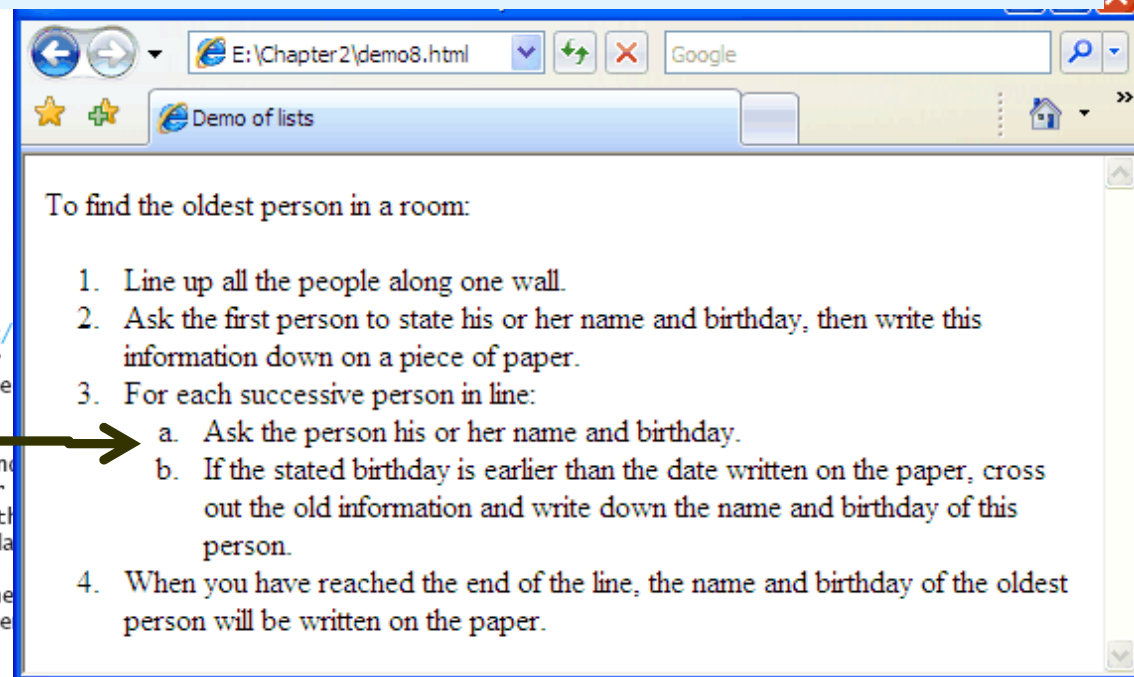


Lists (cont.)

a **style** attribute can be used to format the list elements

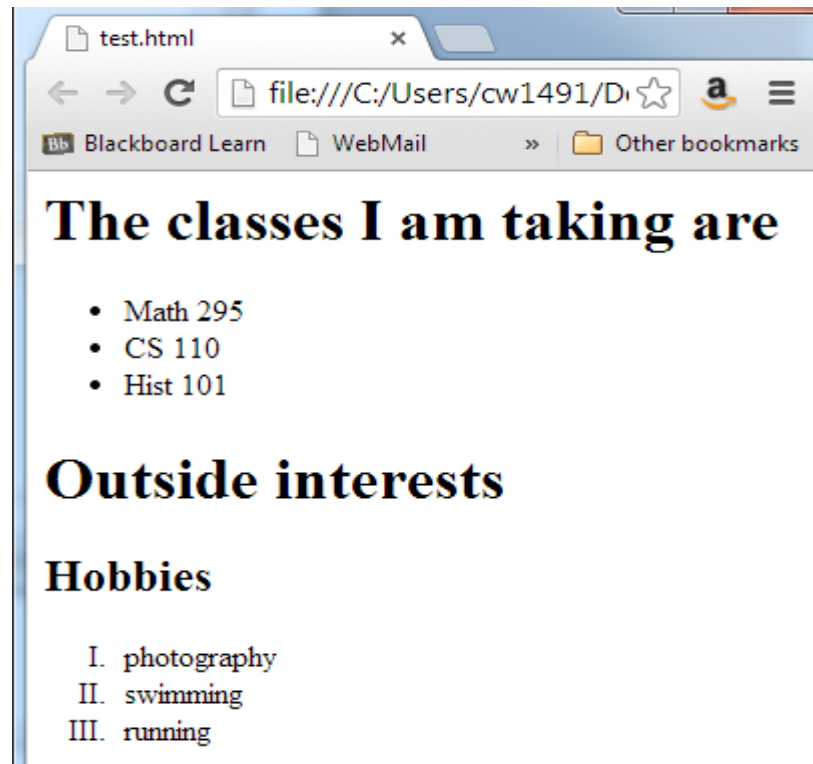
<code><ul style="list-style-type:square"></code>	→ Items preceded by squares.
<code><ol style="list-style-type:lower-alpha"></code>	→ Items preceded by lowercase letters (a, b, c, d, ...).
<code><ol style="list-style-type:upper-alpha"></code>	→ Items preceded by uppercase letters (A, B, C, D, ...).
<code><ol style="list-style-type:lower-roman"></code>	→ Items preceded by lowercase roman letters (i, ii, iii, iv, ...).
<code><ol style="list-style-type:upper-roman"></code>	→ Items preceded by uppercase roman letters (I, II, III, ...).

```
2. <!-- demo8.html Dave Reed -->
3. <!-- This page demos formatted lists. -->
4. <!-- ===== -->
5.
6. <head>
7.   <title> Demo of lists </title>
8. </head>
9.
10. <body>
11.   <p>To find the oldest person in a room:</p>
12.
13.   <ol>
14.     <li>Line up all the people along one wall. </li>
15.     <li>Ask the first person to state his or her name and birthday, then write this information down on a piece of paper. </li>
16.     <li>For each successive person in line:
17.       <ol style="list-style-type:lower-alpha">
18.         <li>Ask the person his or her name and birthday. </li>
19.         <li>If the stated birthday is earlier than the date written on the paper, cross out the old information and write down the name and birthday of this person. </li>
20.       </ol> </li>
21.     <li>When you have reached the end of the line, the name and birthday of the oldest person will be written on the paper. </li>
22.   </ol>
23. </body>
24. </html>
```



Decomposing web pages - your turn

- Create the HTML for the following web page

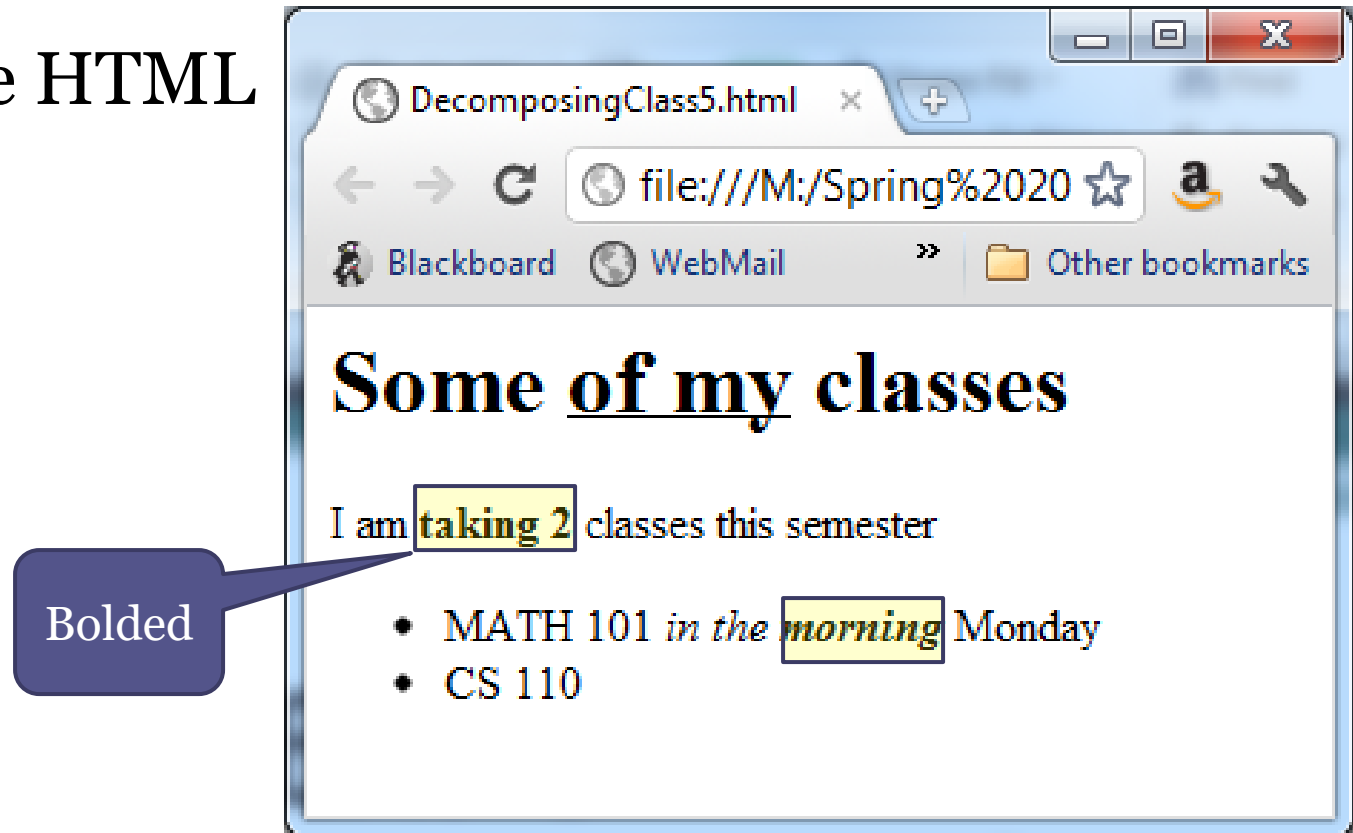


Changing appearance

- To emphasize sections of text, tags can be used to alter text appearance
 - `text` - makes text bold
 - `<u>text</u>` - makes text underline
 - `<i>text</i>` - makes text italics

Decomposing web pages - your turn

- Create the HTML



Solution Ex. 5

```
<html>
<body>
  <h1>Some <u>of my</u> classes</h1>
  <p>I am <b>taking 2</b> classes this semester</p>
  <ul>
    <li>MATH 101 <i>in the <b>morning</b></i> Monday</li>
    <li>CS 110</li>
  </ul>
</body>
</html>
```


Adding an image

- Image is specified by using the `` tag
- Unlike most tags the image tag does not have a separate closing tag it is **closed within itself**
``
- Some tags have **attributes** associated with them
- Attributes specify characteristics of the tag

 tag

- Image tag attributes

Attribute	Purpose
src	Specifies the source of the image. This can be a local file or a file anywhere on the net
alt	Text to display if an image fails to load
width	Specifies the width of the image
height	Specifies the height of the image

Specifying attributes

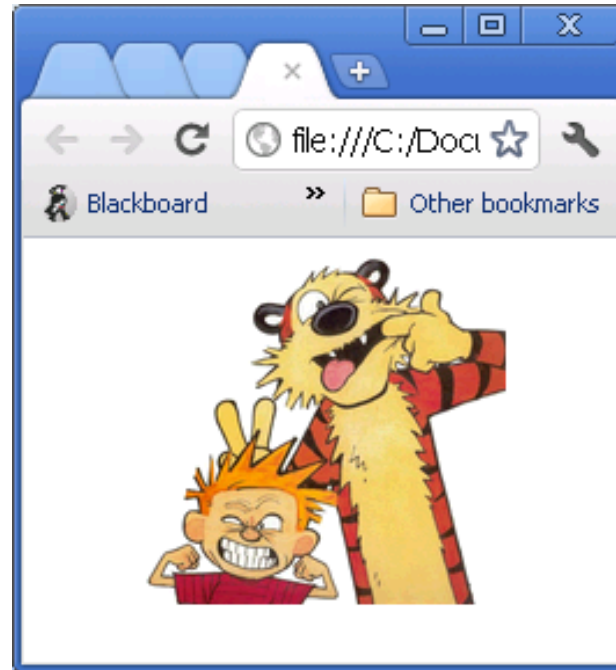
Attributes are specified inside the tag in the form:

attribute-name="value"

```

```

```
<html>
<body>
  
</body>
</html>
```



Style

- By using attributes the style of text can be changed

```
<h1 style="color:blue">My heading</h1>
```

```
<p style="font-style:italic">some text </p>
```

```
<h2 style="text-align:center">some text</h2>
```

```
<ul style="color:green;font-style:italic">
```

Combining elements

```
<html>
```

```
<body>
```

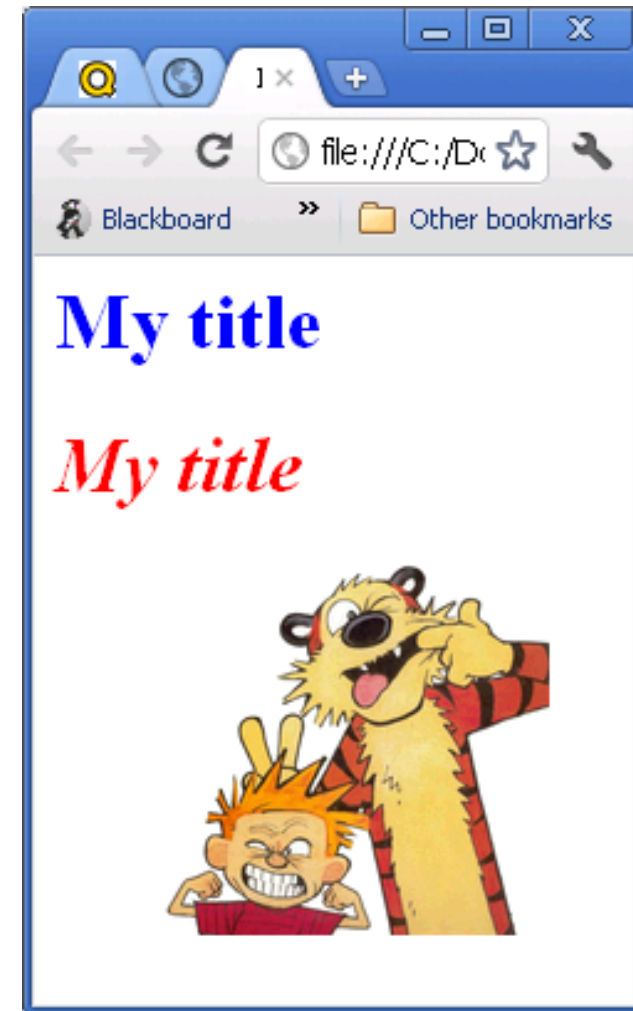
```
  <h1 style="color:blue">My title</h1>
```

```
  <h1 style="color:red;font-style:italic">My  
  title</h1>
```

```
  
```

```
</body>
```

```
</html>
```



Span tag

- Style can be added to an entire tag such as a paragraph or header, but can also be used to format some portion of that content
- `` tag used with *style* attribute allows a portion of text to be formatted

Here is some **red** text

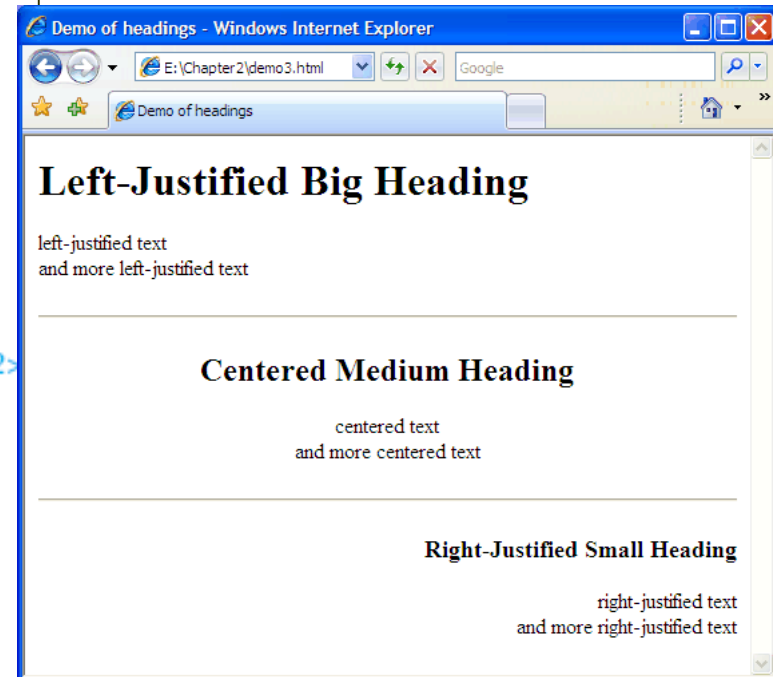
`<p>Here is some`

`red text </p>`

Alignment (cont.)

the DIV element groups multiple elements, so can be formatted together

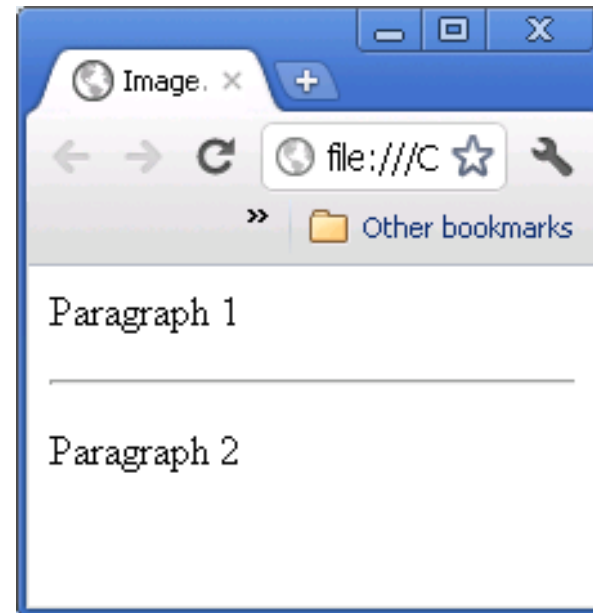
```
1. <html>
2.   <!-- demo3.html Dave Reed -->
3.   <!-- This page demos headings & alignment. -->
4.   <!-- ===== -->
5.
6.   <head>
7.     <title> Demo of headings </title>
8.   </head>
9.
10.  <body>
11.    <h1>Left-Justified Big Heading</h1>
12.    <p>
13.      left-justified text <br />
14.      and more left-justified text
15.    </p>
16.
17.    <hr />
18.    <h2 style="text-align:center">Centered Medium Heading</h2>
19.    <p style="text-align:center">
20.      centered text <br />
21.      and more centered text
22.    </p>
23.
24.    <hr />
25.    <div style="text-align:right">
26.      <h3>Right-Justified Small Heading</h3>
27.      <p>
28.        right-justified text <br />
29.        and more right-justified text
30.      </p>
31.    </div>
32.  </body>
33. </html>
```



Adding a horizontal rule

- A horizontal rule creates a line across the page
- Tag for creating the horizontal rule is `<hr>` and like the image tag it is closed within the tag itself `<hr/>`

```
<html>
<body>
  <p>Paragraph 1</p>
  <hr/>
  <p>Paragraph 2</p>
</body>
</html>
```



Decomposing pages as group



Decomposing



Header of pages

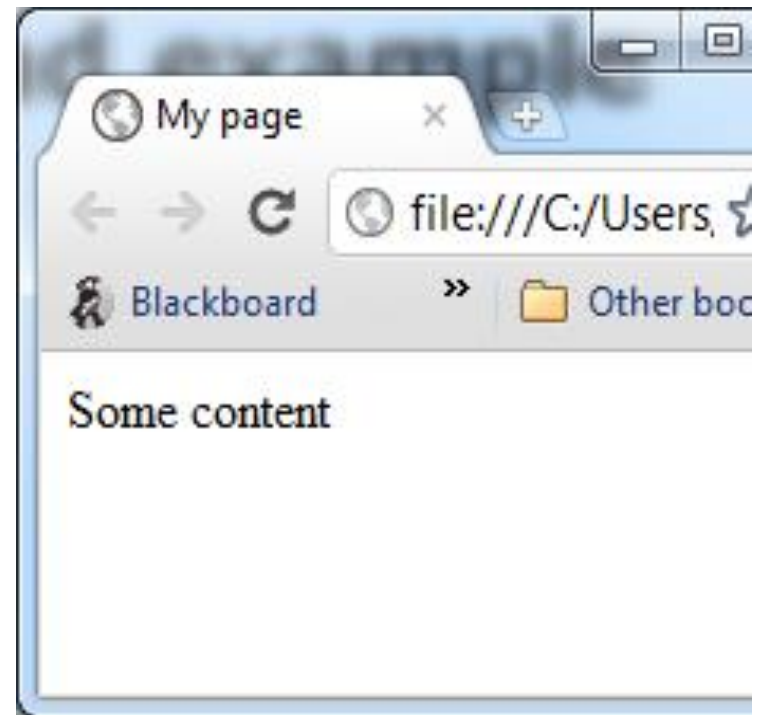
- So far we have been working with the content of the page or the elements within the `<body>` of the page
- The `<head>` of the document specifies information that is created/specified before the body
- For example the title that is displayed at the top of the browser

The <head>

- Within the HTML document the head is the first element that comes after the opening tag of `<html>`
- Within the head you can specify the title of the page using the `<title>` element
- It is also where you can specify Javascript for page which we will talk about later

Head example

```
<html>
<head>
  <title>My page</title>
</head>
<body>
Some content
</body>
</html>
```



Spacing in HTML

- HTML ignores multiple spaces and line returns in your HTML
- In order to create a new line in HTML you have to tell the browser to specifically break a line with the `
` (break) element
- To add additional spaces use * *;

<html>

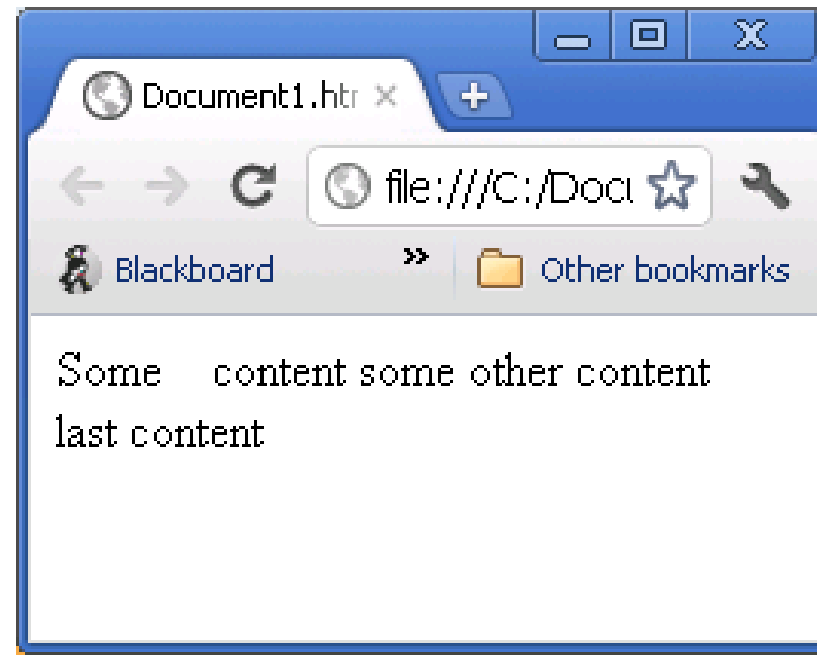
<body>

Some content

some other content

last content

<html>



Comments

- In addition to display elements you also are able to add **comments**
- Comments are descriptions of information related to the page to make your page easier to understand but are not shown to the user
- `<!--demo1.html Chad Williams -->` is a COMMENT element

Decomposing

