

Chapter 3 – Introduction to HyperText Markup Language 4 (HTML 4)

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3.1 Introduction

- *HTML*
 - HyperText Markup Language
 - Not a procedural programming language like C, Fortran, Cobol or Pascal
 - *Markup language*
 - Identify elements of a page so that a browser can render that page on your computer screen
- Presentation of a document vs. structure



3.2 Markup Languages

- Markup language
 - Used to format text and information
- HTML
 - Marked up with *elements*, delineated by *tags*
 - *Tags*: keywords contained in pairs of angle brackets
- HTML tags
 - Not case sensitive
 - Good practice to keep all the letters in one case
- Forgetting to close tags is a syntax error



3.3 Editing HTML

- *HTML files or documents*
 - Written in *source-code form* using text editor
 - Notepad: **Start-Programs-Accessories**
 - HTML-Kit: <http://www.chami.com/html-kit>
- HTML files
 - **.htm** or **.html** extensions
 - Name your files to describe their functionality
 - File name of your home page should be **index.html**
- Errors in HTML
 - Usually not fatal



3.4 Common Tags

- Always include the `<HTML>...</HTML>` tags
- Comments placed inside `<!--...--!>` tags
- HTML documents
 - **HEAD** section
 - Info about the document
 - Info in header not generally rendered in display window
 - **TITLE** element names your Web page
 - **BODY** section
 - Page content
 - Includes text, images, links, forms, etc.
 - Elements include backgrounds, link colors and font faces
 - **P** element forms a paragraph, blank line before and after



```
1 <HTML>
2
3 <!-- Fig. 3.1: main.html -->
4 <!-- Our first Web page -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Welcome</TITLE>
8 </HEAD>
9
10 <BODY>
11
12 <P>Welcome to Our Web Site!</P>
13
14 </BODY>
15 </HTML>
```



Outline

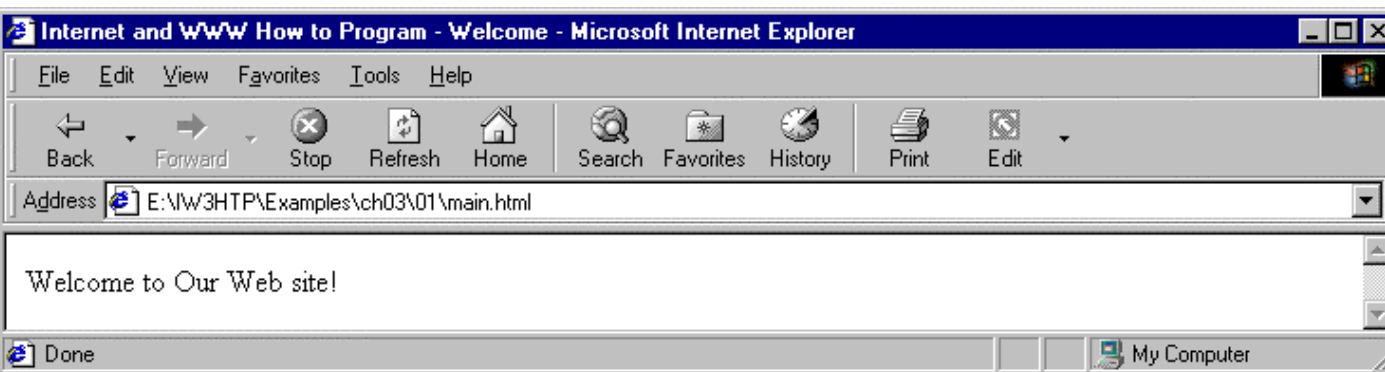


1. HEAD section

1.1 TITLE element

2. BODY section

2.1 P element



3.5 Headers

- Headers
 - Simple form of text formatting
 - Vary text size based on the header's "level"
 - Actual size of text of header element is selected by browser
 - Can vary significantly between browsers
- **CENTER** element
 - Centers material horizontally
 - Most elements are left adjusted by default





Outline

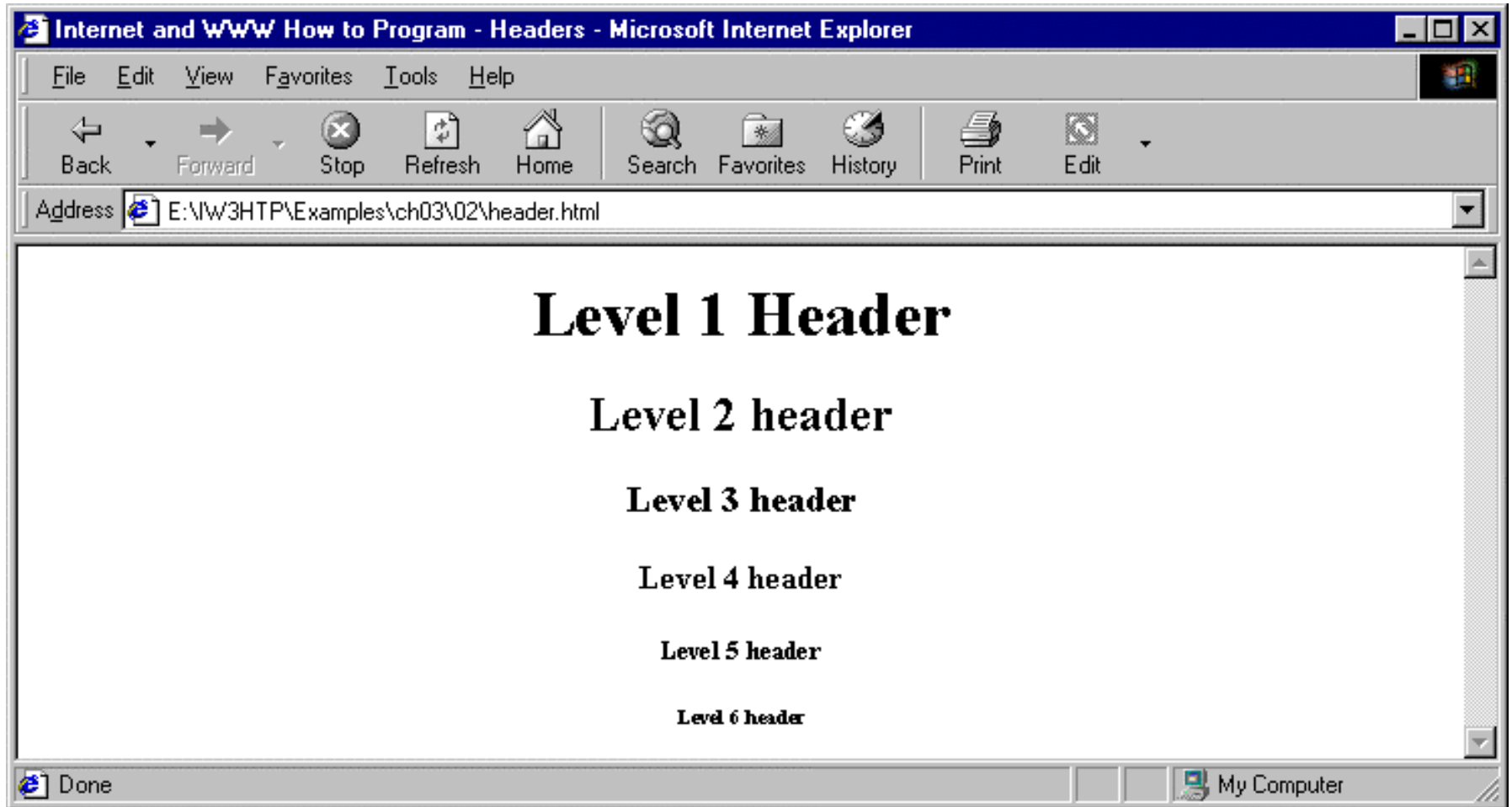


1. Varying header sizes

1.1 Level 1 is the largest, level 6 is the smallest

```
1 <HTML>
2
3 <!-- Fig. 3.2: header.html -->
4 <!-- HTML headers -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Headers</TITLE>
8 </HEAD>
9
10 <BODY>
11
12 <!-- Centers everything in the CENTER element -->
13 <CENTER>
14 <H1>Level 1 Header</H1> <!-- Level 1 header -->
15 <H2>Level 2 header</H2> <!-- Level 2 header -->
16 <H3>Level 3 header</H3> <!-- Level 3 header -->
17 <H4>Level 4 header</H4> <!-- Level 4 header -->
18 <H5>Level 5 header</H5> <!-- Level 5 header -->
19 <H6>Level 6 header</H6> <!-- Level 6 header -->
20 </CENTER>
21
22 </BODY>
23 </HTML>
```


Header elements H1 through H6



3.6 Text Styling

- Underline style
 - `<U>...</U>`
- Align elements with **ALIGN** attribute
 - **right**, **left** or **center**
- Close nested tags in the reverse order from which they were opened
- Emphasis (italics) style
 - `...`
- Strong (bold) style
 - `...`
- `` and `<I>` tags deprecated
 - Overstep boundary between content and presentation





Outline



1. EM, STRONG, and U tags

1.1 Close nested tags in reverse order from which they were opened

2. Page rendered by browser

```
1 <HTML>
2
3 <!-- Fig. 3.3: main.html -->
4 <!-- Stylizing your text -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Welcome</TITLE>
8 </HEAD>
9
10 <BODY>
11 <H1 ALIGN = "center"><U>Welcome to Our Web Site!</U></H1>
12
13 <P>We have designed this site to teach
14 about the wonders of <EM>HTML</EM>. We have been using
15 <EM>HTML</EM> since <U>version<STRONG> 2.0</STRONG></U>,
16 and we enjoy the features that have been added recently. It
17 seems only a short time ago that we read our first <EM>HTML</EM>
18 book. Soon you will know about many of the great new features
19 of HTML 4.0.</P>
20
21 <H2 ALIGN = "center">Have Fun With the Site!</H2>
22
23 </BODY>
24 </HTML>
```

Stylizing text on Web pages



3.7 Linking

- Links inserted using the **A** (anchor) element
 - Requires **HREF** attribute
 - **HREF** specifies the URL you would like to link to
 - `...`
 - Can link to email addresses, using `...`
 - Note quotation mark placement





Outline

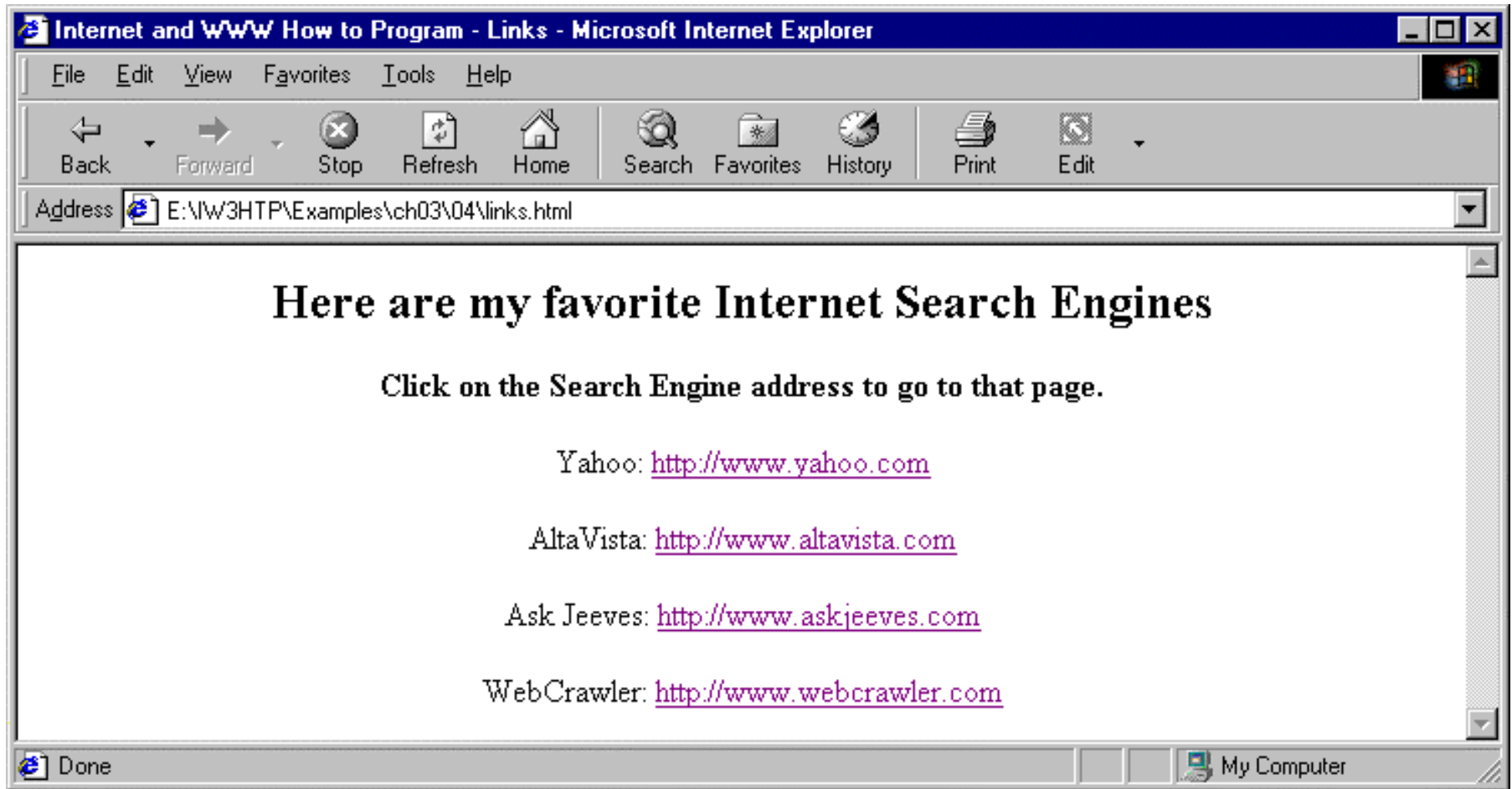


1. Anchor element

1.1 HREF attribute

```
1 <HTML>
2
3 <!-- Fig. 3.4: links.html      -->
4 <!-- Introduction to hyperlinks -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Links</TITLE>
8 </HEAD>
9
10 <BODY>
11
12 <CENTER>
13 <H2>Here are my favorite Internet Search Engines</H2>
14 <P><STRONG>Click on the Search Engine address to go to that
15 page.</STRONG></P>
16
17 <!-- Hyperlink form: <A HREF = "address"> -->
18 <P>Yahoo: <A HREF = "http://www.yahoo.com">
19 http://www.yahoo.com</A></P>
20
21 <P>AltaVista: <A HREF = "http://www.altavista.com">
22 http://www.altavista.com</A></P>
23
24 <P>Ask Jeeves: <A HREF = "http://www.askjeeves.com">
25 http://www.askjeeves.com</A></P>
26
27 <P>WebCrawler: <A HREF = "http://www.webcrawler.com">
28 http://www.webcrawler.com</A></P>
29 </CENTER>
30
31 </BODY>
32 </HTML>
```

Linking to other Web pages



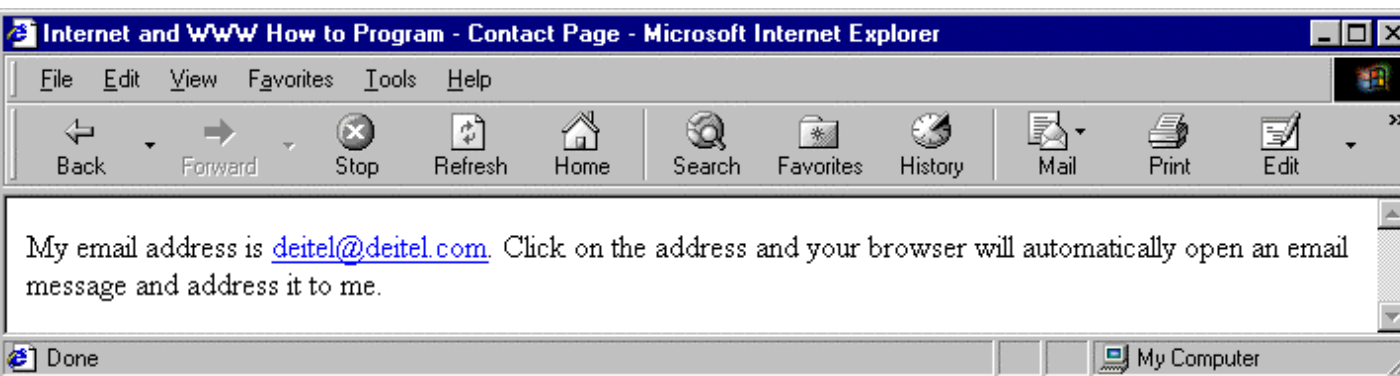


Outline



1. Anchor element
 - 1.1 mailto link
2. Page rendered by browser

```
1 <HTML>
2
3 <!-- Fig. 3.5: contact.html -->
4 <!-- Adding email hyperlinks -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Contact Page</TITLE>
8 </HEAD>
9
10 <BODY>
11
12 <!-- The correct form for hyperlinking to an email address -->
13 <!-- is <A HREF = "mailto:address"></A> -->
14 <P>My email address is <A HREF = "mailto:deitel@deitel.com">
15 deitel@deitel.com</A>. Click on the address and your browser
16 will open an email message and address it to me.
17 </P>
18
19 </BODY>
20 </HTML>
```



3.8 Images (II)

- Images as anchors
- Background color
 - Preset colors (**white**, **black**, **blue**, **red**, etc.)
 - *Hexadecimal* code
 - First two characters for amount of red
 - Second two characters for amount of green
 - Last two characters for amount of blue
 - **00** is the weakest a color can get
 - **FF** is the strongest a color can get
 - Ex. **black** = **#000000**



3.8 Images

- Image background
 - `<BODY BACKGROUND = "background">`
 - Image does not need to be large as browser *tiles* image across and down the screen
- Pixel
 - Stands for “picture element”
 - Each pixel represents one addressable dot of color on the screen
- Insert image into page
 - Use `` tag
 - Attributes:
 - `SRC` = “location”
 - `HEIGHT` (in pixels)
 - `WIDTH` (in pixels)
 - `BORDER` (black by default)
 - `ALT` (text description for browsers that have images turned off or cannot view images)





Outline



- 1.1 Background image
- 1.2 IMG element
- 1.3 IMG attributes

2. Page rendered by browser

```
1 <HTML>
2
3 <!-- Fig. 3.6: picture.html -->
4 <!-- Adding images with HTML -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Welcome</TITLE>
8 </HEAD>
9
10 <BODY BACKGROUND = "background.gif">
11
12 <CENTER>
13 <!-- Format for entering images: <IMG SRC = "name"> -->
14 <IMG SRC = "deitel.gif" BORDER = "1" HEIGHT = "144"
15     WIDTH = "200" ALT = "Harvey and Paul Deitel">
16 </CENTER>
17
18 </BODY>
19 </HTML>
```





Outline



1. Images as anchors

1.1 Format for value for SRC attribute

2. BR element

```
1 <HTML>
2
3 <!-- Fig. 3.7: navigationbar.html -->
4 <!-- Using images as link anchors -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Nav Bar</TITLE>
8 </HEAD>
9
10 <BODY BGCOLOR = "#CDCDCD">
11 <CENTER>
12
13 <A HREF = "main.html">
14 <IMG SRC = "buttons/about.jpg" WIDTH = "65" HEIGHT = "50"
15     BORDER = "0" ALT = "Main Page"></A><BR>
16
17 <A HREF = "links.html">
18 <IMG SRC = "buttons/links.jpg" WIDTH = "65" HEIGHT = "50"
19     BORDER = "0" ALT = "Links Page"></A><BR>
20
21 <A HREF = "list.html">
22 <IMG SRC = "buttons/list.jpg" WIDTH = "65" HEIGHT = "50"
23     BORDER = "0" ALT = "List Example Page"></A><BR>
24
25 <A HREF = "contact.html">
26 <IMG SRC = "buttons/contact.jpg" WIDTH = "65" HEIGHT = "50"
27     BORDER = "0" ALT = "Contact Page"></A><BR>
28
29 <A HREF = "header.html">
30 <IMG SRC = "buttons/header.jpg" WIDTH = "65" HEIGHT = "50"
```

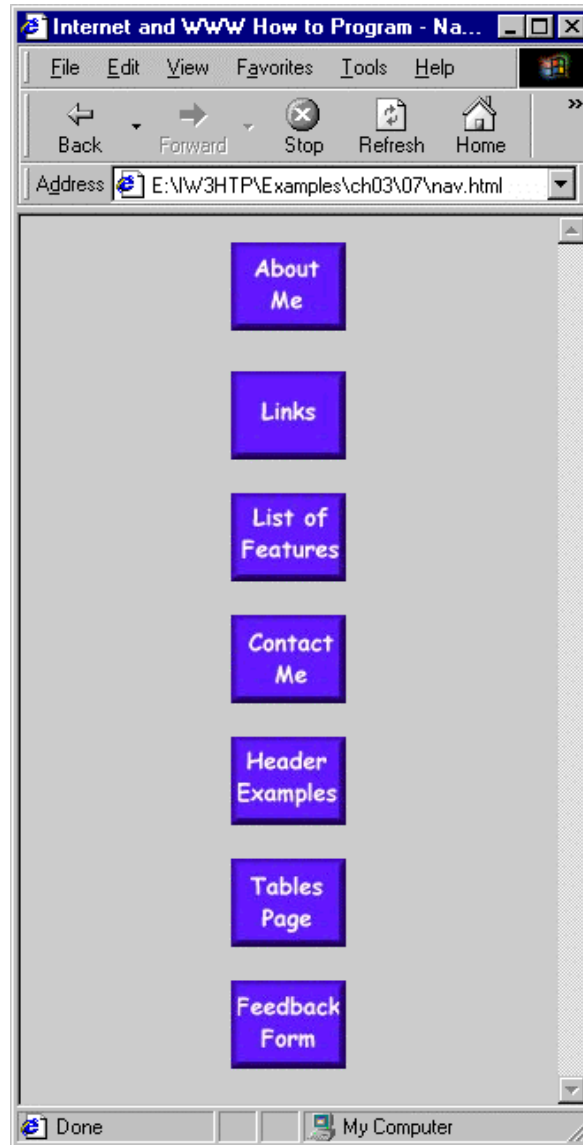
```
31     BORDER = "0" ALT = "Header Page"></A><BR>
32
33 <A HREF = "table.html">
34 <IMG SRC = "buttons/table.jpg" WIDTH = "65" HEIGHT = "50"
35     BORDER = "0" ALT = "Table Page"></A><BR>
36
37 <A HREF = "form.html">
38 <IMG SRC = "buttons/form.jpg" WIDTH = "65" HEIGHT = "50"
39     BORDER = "0" ALT = "Feedback Form"></A><BR>
40 </CENTER>
41
42 </BODY>
43 </HTML>
```



Outline

3. Page rendered by browser

Using images as link anchors



3.9 Formatting Text With

- **FONT** element
 - Add color and formatting to text
 - **FONT** attributes:
 - **COLOR**
 - Preset or hex color code
 - Value in quotation marks
 - Note: you can set font color for whole document using **TEXT** attribute in **BODY** element



3.9 Formatting Text With (II)

- **SIZE**

- To make text larger, set **SIZE** = "+x"
- To make text smaller, set **SIZE** = "-x"
- x is the number of font point sizes

- **FACE**

- Font of the text you are formatting
- Be careful to use common fonts like Times, Arial, Courier and Helvetica
- Browser will display default if unable to display specified font

- Example

```
<FONT COLOR = "red" SIZE = "+1" FACE =  
"Arial">...</FONT>
```





Outline

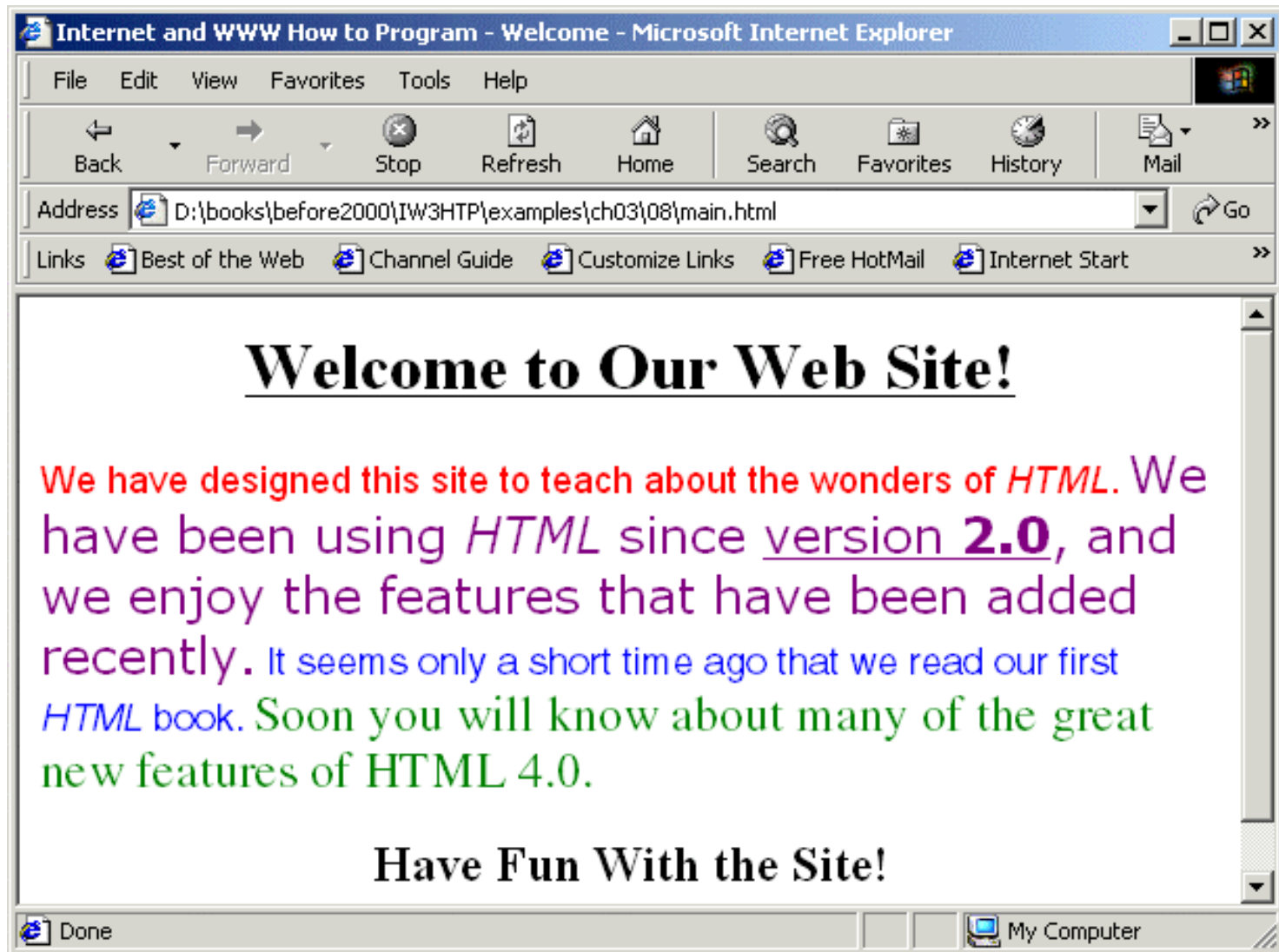


1. FONT tag

1.1 FONT attributes

```
1<HTML>
2
3<!-- Fig. 3.8: main.html -->
4<!-- Formatting text size and color -->
5
6<HEAD>
7<TITLE>Internet and WWW How to Program - Welcome</TITLE>
8</HEAD>
9
10<BODY>
11
12<H1 ALIGN = "center"><U>Welcome to Our Web Site!</U></H1>
13
14<!-- Font tags change the formatting of text they enclose -->
15<P><FONT COLOR = "red" SIZE = "+1" FACE = "Arial">We have
16designed this site to teach about the wonders of
17<EM>HTML</EM>.</FONT>
18
19<FONT COLOR = "purple" SIZE = "+2" FACE = "Verdana">We have been
20using <EM>HTML</EM> since <U>version<STRONG> 2.0</STRONG></U>,
21and we enjoy the features that have been added recently.</FONT>
22
23<FONT COLOR = "blue" SIZE = "+1" FACE = "Helvetica">It
24seems only a short time ago that we read our first <EM>HTML</EM>
25book.</FONT>
26
27<FONT COLOR = "green" SIZE = "+2" FACE = "Times">Soon you will
28know about many of the great new feature of HTML 4.0.</FONT></P>
29
30<H2 ALIGN = "center">Have Fun With the Site!</H2></P>
31
32</BODY>
33</HTML>
```

Using the FONT element to format text



3.10 Special Characters, Horizontal Rules and More Line Breaks

- Special characters
 - Inserted in code form
 - Format always **&code;**
 - Ex. **&**
 - Insert an ampersand
 - Codes often abbreviated forms of the character
 - Codes can be in hex form
 - Ex. **&** to insert an ampersand
- Strikethrough with **DEL** element
- Superscript: **SUP** element
- Subscript: **SUB** element





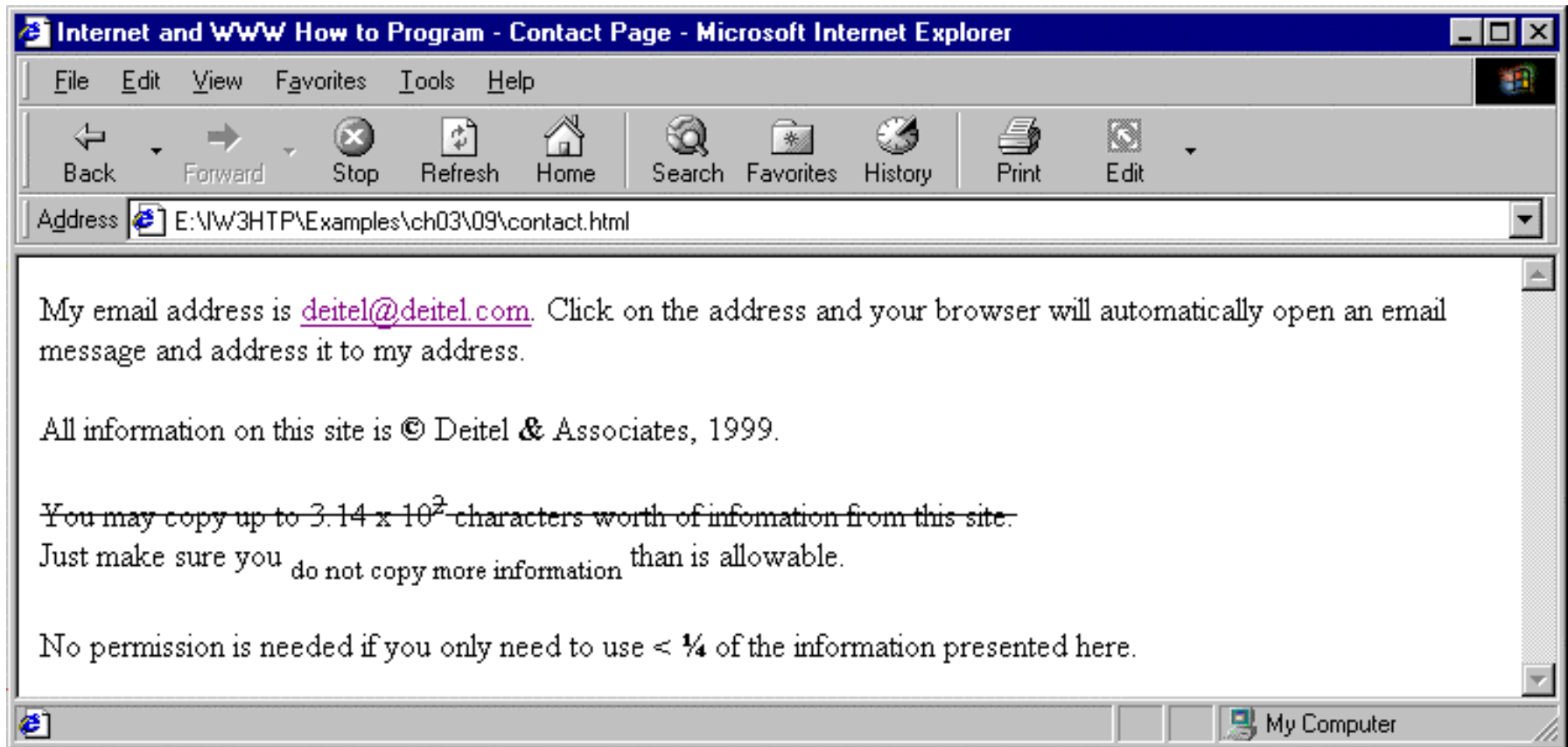
Outline



1. Special characters
2. Strikethrough
3. Superscript
4. Subscript

```
1 <HTML>
2
3 <!-- Fig. 3.9: contact.html -->
4 <!-- Inserting special characters -->
5
6 <HEAD>
7 <TITLE>Internet and WWW How to Program - Contact Page</TITLE>
8 </HEAD>
9
10 <BODY>
11
12 <!-- Special characters are entered using the form &code; -->
13 <P>My email address is <A HREF = "mailto:deitel@deitel.com">
14 deitel@deitel.com</A>. Click on the address and your browser
15 will automatically open an email message and address it to my
16 address.</P>
17
18 <P>All information on this site is <STRONG>&copy;</STRONG>
19 Deitel <STRONG>&amp;</STRONG> Associates, 1999.</P>
20
21 <!-- Text can be struck out with a set of <DEL>...</DEL> -->
22 <!-- tags, it can be set in subscript with <SUB>...</SUB>, -->
23 <!-- and it can be set into superscript with <SUP>...</SUP> -->
24 <DEL><P>You may copy up to 3.14 x 10<SUP>2</SUP> characters
25 worth of information from this site.</DEL><BR> Just make sure
26 you <SUB>do not copy more information</SUB> than is allowable.
27
28 <P>No permission is needed if you only need to use <STRONG>
29 &lt; &frac14;</STRONG> of the information presented here.</P>
30
31 </BODY>
32 </HTML>
```

Inserting special characters into HTML



3.10 Special Characters, Horizontal Rules and More Line Breaks (II)

- Horizontal rule
 - `<HR>` tag
 - Inserts a line break directly below it
 - **HR** attributes:
 - **WIDTH**
 - Adjusts the width of the rule
 - Either a number (in pixels) or a percentage
 - **SIZE**
 - Determines the height of the horizontal rule
 - In pixels
 - **ALIGN**
 - Either **left**, **right** or **center**
 - **NOSHADE**
 - Eliminates default shading effect and displays horizontal rule as a solid-color bar





Outline



1. Horizontal rules

1.1 HR attributes

```
1<HTML>
2
3<!-- Fig. 3.10: header.html -->
4<!-- Line breaks and horizontal rules -->
5
6<HEAD>
7<TITLE>Internet and WWW How to Program - Horizontal Rule</TITLE>
8</HEAD>
9
10<BODY>
11<!-- Horizontal rules as inserted using the format: -->
12<!-- <HR WIDTH = ".." SIZE = ".." ALIGN = ".."> -->
13<HR WIDTH = "25%" SIZE = 1>
14<HR WIDTH = "25%" SIZE = 2>
15<HR WIDTH = "25%" SIZE = 3>
16
17<P ALIGN = "left"><STRONG>Size:</STRONG>4
18<STRONG>Width:</STRONG>75%
19<HR WIDTH = "75%" SIZE = "4" ALIGN = "left">
20
21<P ALIGN = "right"><STRONG>Size:</STRONG>12
22<STRONG>Width:</STRONG>25%
23<HR WIDTH = "25%" SIZE = "12" ALIGN = "right">
24
25<P ALIGN = "center"><STRONG>Size:</STRONG>8
26<STRONG>Width:</STRONG>50%
27<STRONG><EM>No shade...</EM></STRONG>
28<HR NOSHADE WIDTH = "50%" SIZE = "8" ALIGN = "center">
29
30</BODY>
31</HTML>
```

Using horizontal rules

