XHTML

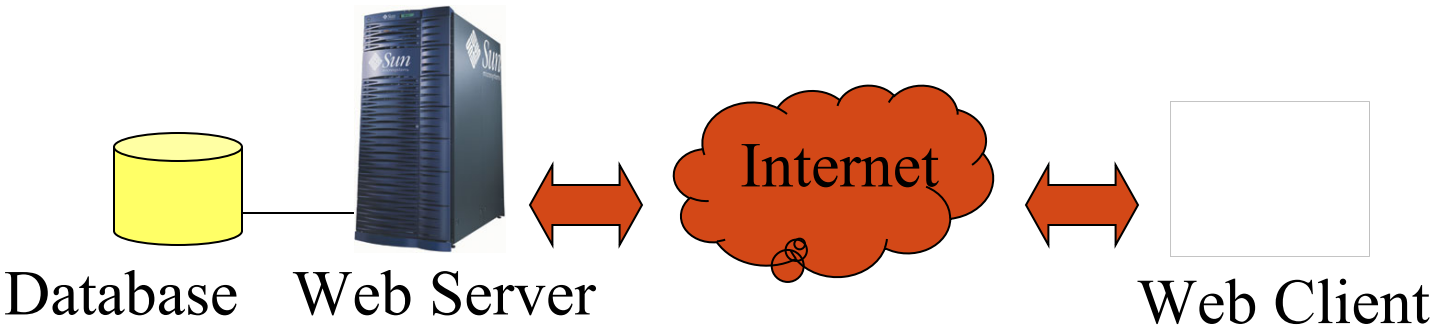
Ritu Devi

Web site development

- To develop a Web site, three steps:
  1. Obtain the appropriate equipment
     - Web Server – hardware and software
  2. Register the Web Server to an Internet Service Provider (ISP)
     - Obtain the IP address and DNS address
  3. Develop the contents
     - Internet Programming

Internet Programming

- Web service is a kind of client / server process
- Need interaction between client and server
- Programming for providing Web service can also be divided into
  - Client-side programming: to define the operation to be performed on the client's machine
  - Server-side programming: to define the operation to be performed on the server



Server-side Programming

Skills that are often required:

- CGI
- PHP
- ASP
- Perl
- Java Servlet, …

Client-side Programming

Skills that are often required:

- XHTML
- Javascript
- Java
- Dreamweaver
- Flash
- SMIL, XML …

What is XHTML?

- Unlike procedural programming languages, e.g. C, C++, XHTML is a markup language that specifies the format of document to be seen in browser
- XHTML has replaced the HTML as the primary means of describing the Web page content
- Become a World Wide Web Consortium (W3C) recommendation
  - W3C is an industry consortium
  - Seeks to promote standards for the evolution of the Web and interoperability between WWW products by producing specifications and reference software
- Compared with HTML, XHTML provides more robust, richer and extensible features

Features of XHTML

- Platform independent
  - The same piece of code can give the same display in Mac, Linux and Windows
- Text-based
  - Program is written with ASCII characters
  - Can be written using a text editor, such as notepad
- An XHTML file must have an extension of .html or .htm
- Information is generally enclosed inside paired tags
  - E.g. <html> ... </html>
  - There are many tags in XHTML. They specify different information required to display the Web page content

start tag

end tag (with a /)

Basic Structure of XHTML

```
<html>
    <!-- This is a comment  -->
    <head>
        <title>
        This is title, describing the content
        </title>
    </head>
    <body>
            This is body, main part of the page
    </body>
</html>
```

useful for validating the code to see if they meet the xhtml standard

```
<?xml version = "1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<!-- main.html -->
<!-- Our first Web page  -->

<html xmlns = "http://www.w3.org/1999/xhtml">
   <head>
      <title>Internet and WWW How to Program -
    Welcome
    </title>
   </head>

   <body>
      <p>Welcome to XHTML!</p>
   </body>
</html>
```

comment

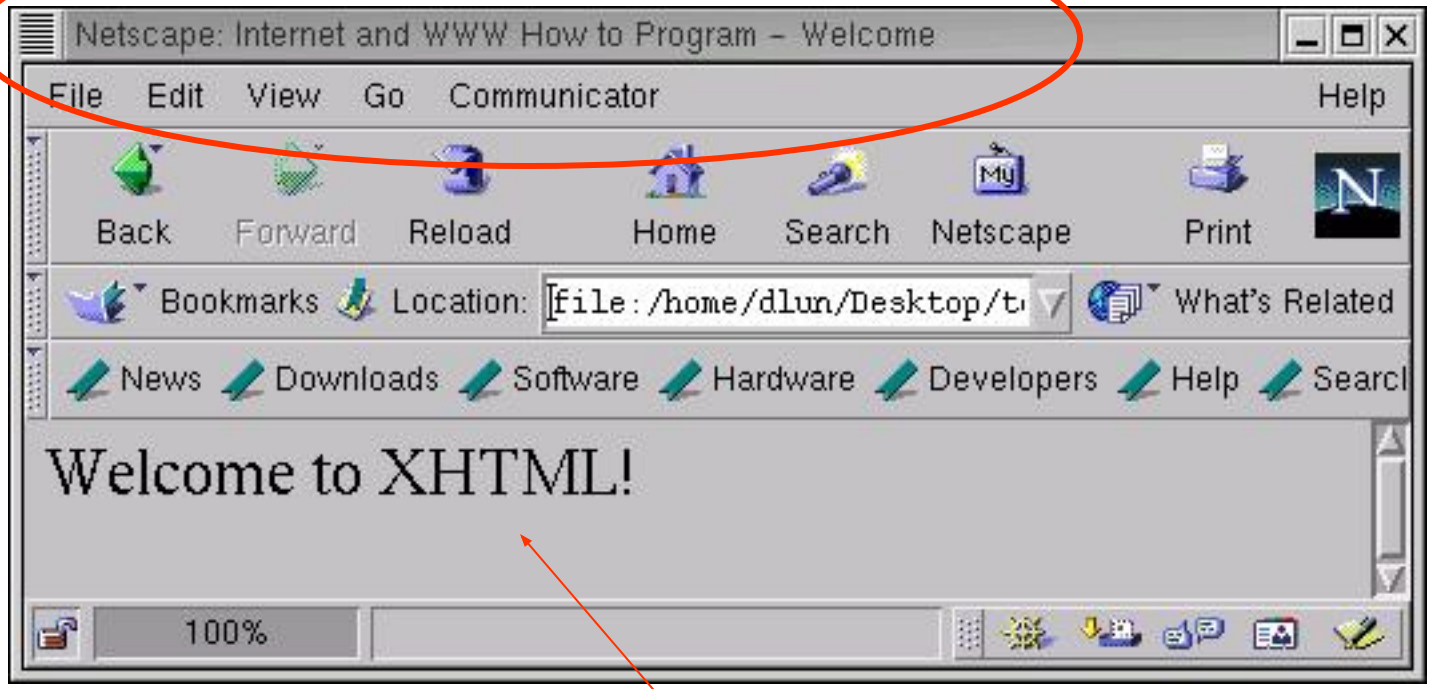
define the namespace of html

define the title of the web page

<p> - new paragraph

Example

See the title defined in head

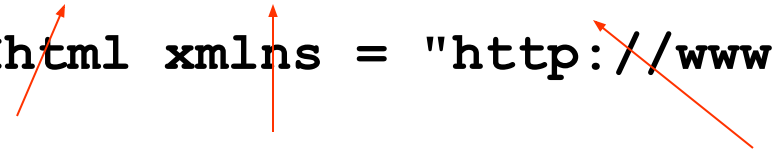


That's the content defined in body

- An XHTML document can be divided into 2 sections
- head section
  - contains information of how the page is formatted
  - e.g. <title> … </title> can be found in head section to indicate the title of the Web page when it is shown in browser
- body section
  - contains the actual page contents
  - e.g. Welcome to XHTML! shows a line of text “Welcome to XHTML!” on the new paragraph

Tags

- Tags: case sensitive
  - For XHTML, is different from <CENTER>
  - For HTML, it is case insensitive
- Browse will not display information within tag that does not understand
- Tags: no precise positioning
- Many start tags define attributes that provide additional information
- E.g. `<html xmlns = "http://www.w3.org/1999/xhtml">`

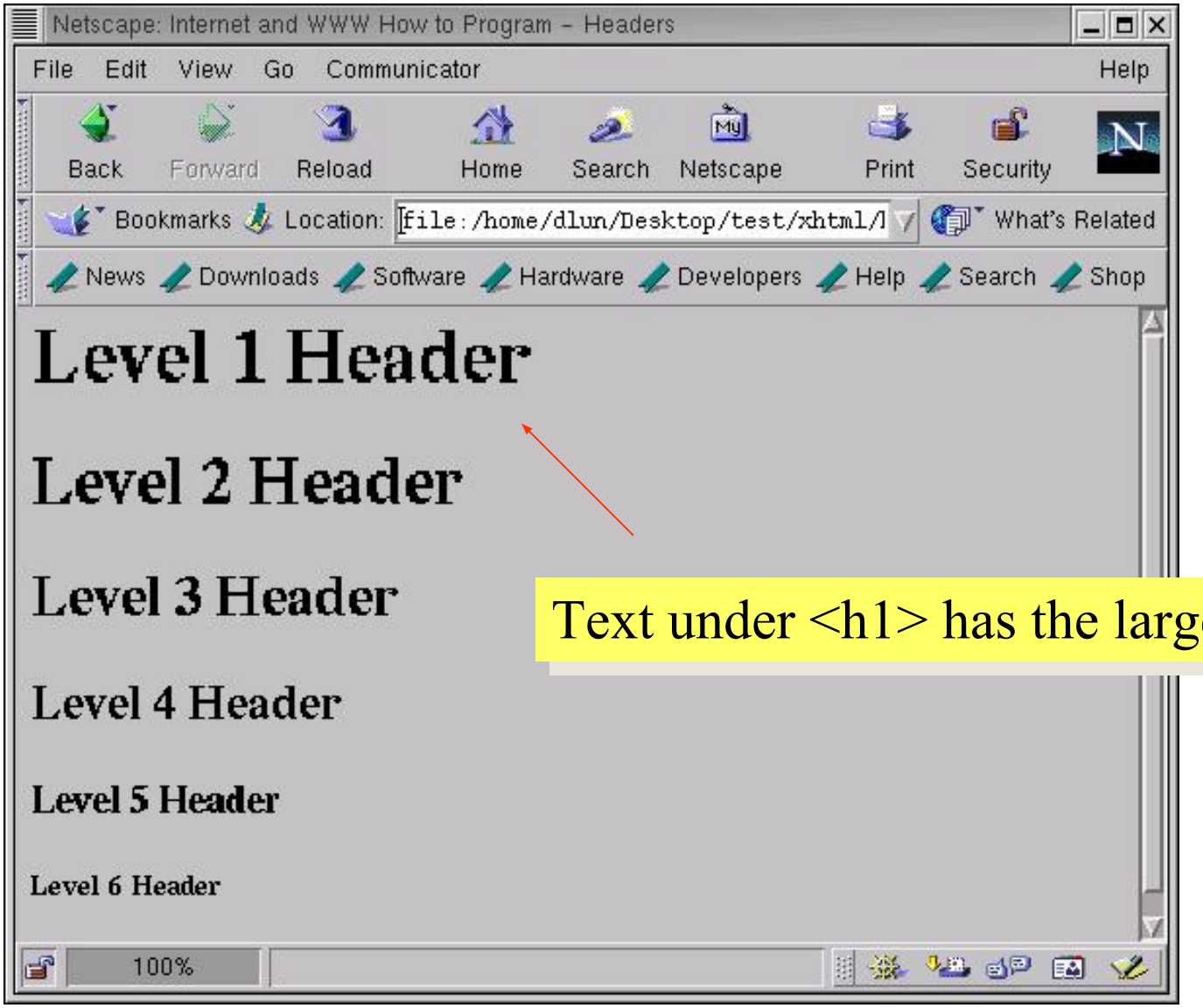


Common Tags – Headers

- Some text may be more important than the others
- XHTML provides six headers, called header elements, for specifying the relative importance of information
  - <h1> … </h1>, <h2> … </h2> to <h6> … </h6>
- It is assumed the text in <h1> is more important than that in <h2> and so on so forth
- By default, the size of the text that is more important is bigger

```
<html xmlns = "http://www.w3.org/1999/xhtml">
   <head>
      <title>Internet and WWW How to Program -
   Headers</title>
   </head>

   <body>

      <h1>Level 1 Header</h1>
      <h2>Level 2 header</h2>
      <h3>Level 3 header</h3>
      <h4>Level 4 header</h4>
      <h5>Level 5 header</h5>
      <h6>Level 6 header</h6>

   </body>
</html>
```

6 headers are all used to indicate the relative importance of text


Netscape: Internet and WWW How to Program – Headers
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security
Bookmarks Location: file:/home/dlun/Desktop/test/xhtml/1
What's Related
News Downloads Software Hardware Developers Help Search Shop
Level 1 Header
Level 2 Header
Level 3 Header
Level 4 Header
Level 5 Header
Level 6 Header
100%
Text under <h1> has the largest size

Meta Tag

- HTML interacts with the search engines through using meta tag

These words are compared with words in search requests

```
<head>
  <meta name="keywords" content="lecture notes, html, form, feedback">
  <meta name="description" content = "this web site describes …">
</head>
```

Description of a page seen on searching

Linking Webpage

- One of the most important XHTML features is the hyperlink
  - Link to another resources, such as web page, image, etc.
- Achieve by using the anchor tag <a>:
  - To a web page:

PolyU

anchor attribute

Value of the attribute:
The address of the Web page

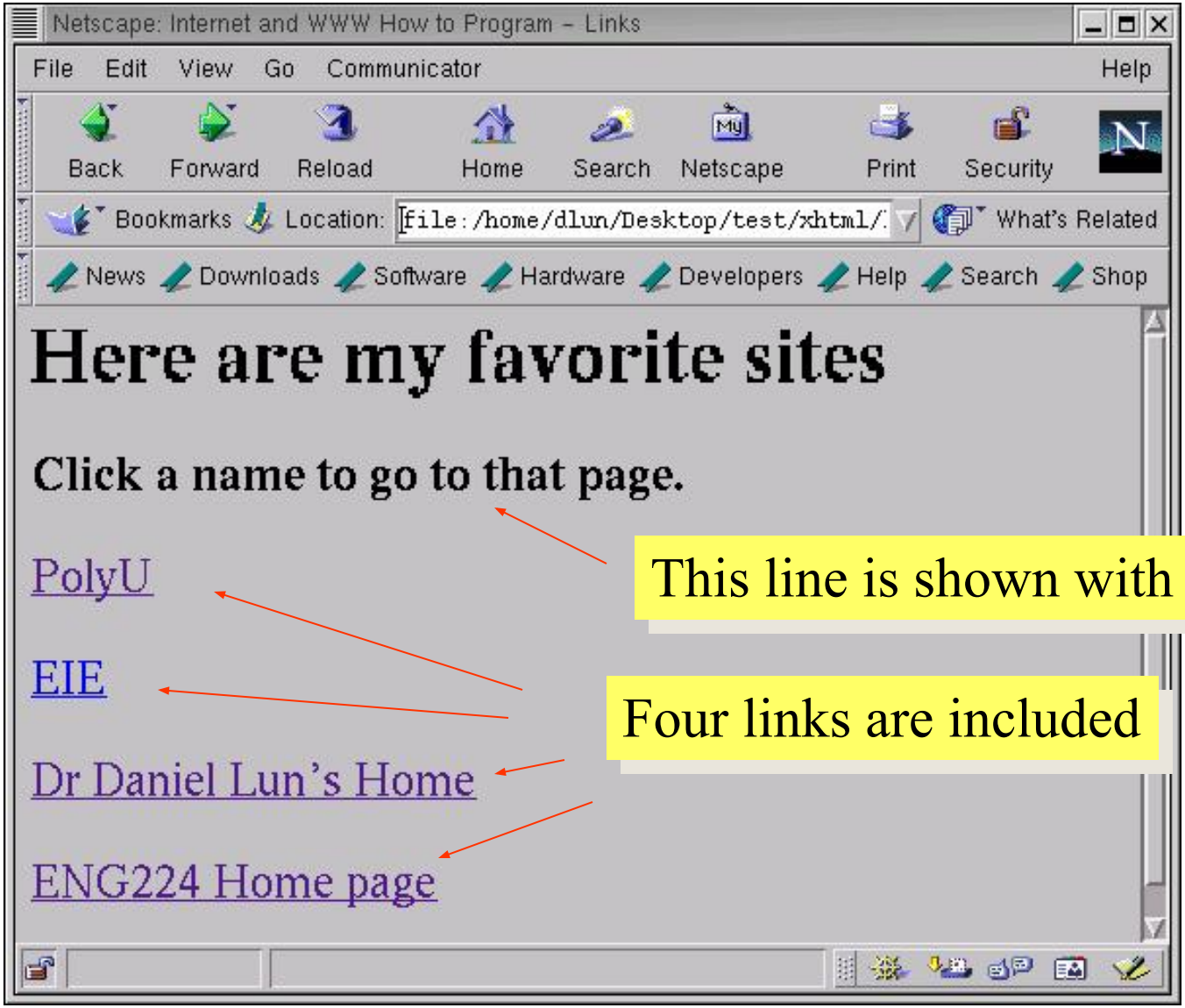
The name on the Web page that represents this link

```
<body>
  <h1>Here are my favorite
   sites</h1>

  <p><strong>Click a name to go to that page.
      </strong></p>

  <!-- Create four test hyperlinks -->

  <p><a href = "http://www.polyu.edu.hk">PolyU</a></p>
  <p><a href = "http://www.eie.polyu.edu.hk">EIE</a></p>
  <p><a href = "http://www.eie.polyu.edu.hk/~enpklun">
          Dr Daniel Lun's Home</a></p>
  <p><a href = "http://www.eie.polyu.edu.hk/
~enpklun/ENG224/ENG224.htm">ENG224 Home page</a></p>
</body>
```

strong tag lets the text to be displayed with bold font
Other similar tags include <u> underline and italic

Four links create

Don't introduce spaces between different parts of a URL address


Netscape: Internet and WWW How to Program - Links
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security
Bookmarks Location: file:/home/dlun/Desktop/test/xhtml/
What's Related
News Downloads Software Hardware Developers Help Search Shop
Here are my favorite sites
Click a name to go to that page.
PolyU
EIE
Dr Daniel Lun's Home
ENG224 Home page
This line is shown with a bold font
Four links are included

Linking Email Addresses

- To a mail address:

   Email me

- With a subject:

   Email me

- Multiple recipients:

   Email me

Linking Images

- Background Image can be defined as an attribute of the body tag:

  <body background="image.gif">

- To show an Image inside a page:

  <img src="image.gif" border="0" height="256"
  width="256" alt="text description of the image"/>

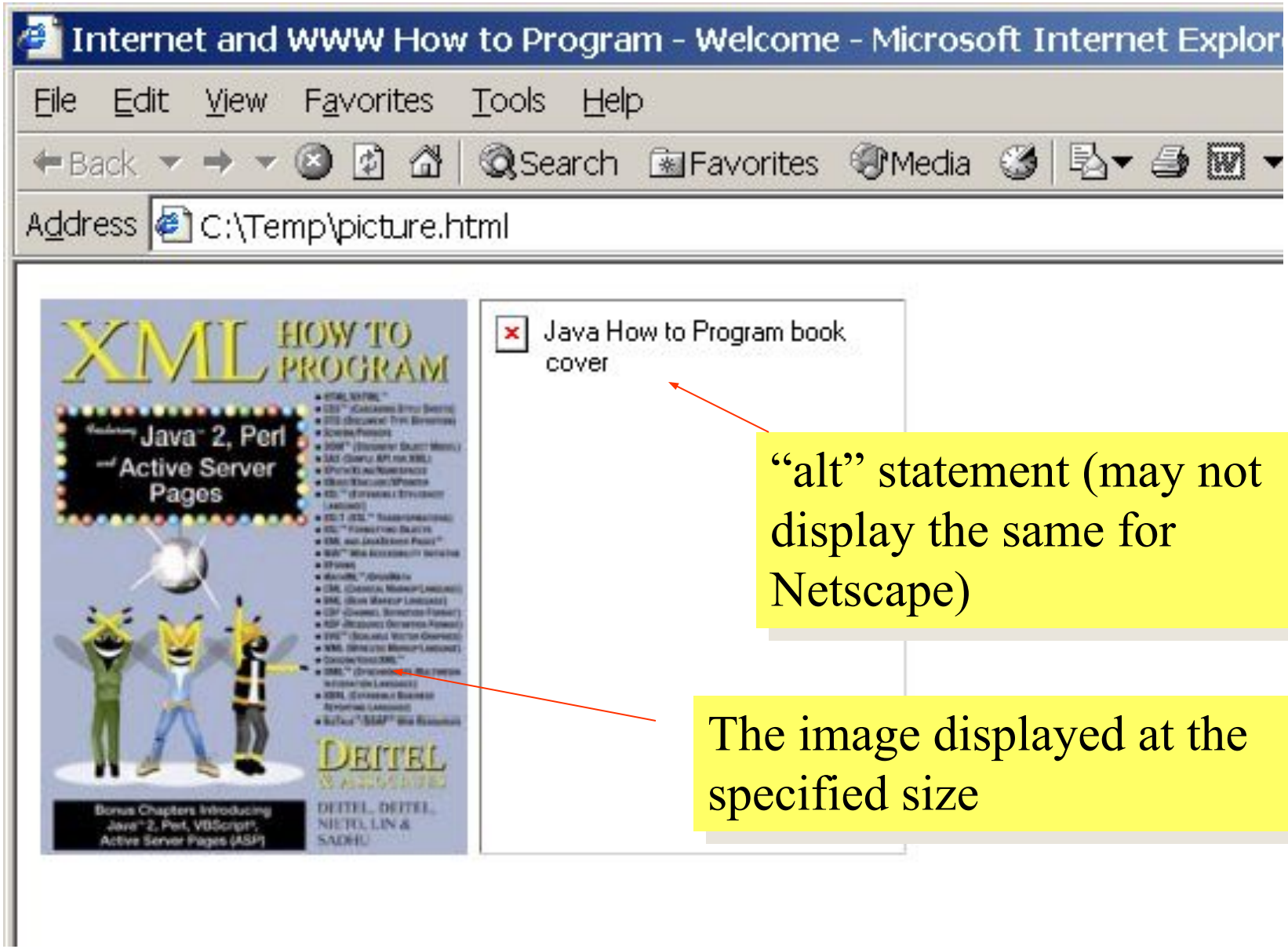
- We can create an image hyperlink

Will scale to this size to display

```
<body>

      <p><img src = "xmlhtp.jpg"
      height = "238" width = "183"
            alt = "XML How to Program book cover"/>
         <img src = "jhtp.jpg"
      height = "238" width = "183"
            alt = "Java How to Program book cover"/>
      </p>
</body>
```

empty element:
do not markup text

jhtp.jpg in fact cannot be found.
With the alt attribute, the statement is displayed if the image is not found


Internet and WWW How to Program - Welcome - Microsoft Internet Explor
File Edit View Favorites Tools Help
Back Search Favorites Media
Address C:\Temp\picture.html
XML HOW TO PROGRAM
Java 2, Perl and Active Server Pages
DEITEL
Java How to Program book cover
"alt" statement (may not display the same for Netscape)
The image displayed at the specified size

Color

- 2 ways to specify:
  - Use hexadecimal numbers
  - RGB format: FF: strongest, 00 weakest
    - **#FF0000**
    - **#00FF00**
    - **#0000FF**
  - Use color names
    - **Black, White, Red, Cyan, Green, Purple, Magenta, Blue, Yellow, OrangeRed, SpringGreen, BlueViolet, Gold, DarkGoldenrod, Burlywood, …**

Color

- Background color:
  - <body bgcolor="#00FF00"> … </body>
  - <body bgcolor ="green"> … </body>
- Text color, links, visited links and activated links:
  - <body bgcolor ="white" text="black" link="purple" vlink="blue" alink="yellow">
- Font color:
  - …

Formatting Text

- The format of displayed text can be changed by using …
- Attributes:
  - Color:
  - Size:
    - Relative: +1, +2, -3, …
    - Absolute: 10, 12, …
  - Face:
    - Font used
    - Arial, Verdana, Helvetica, Times, …
    - Multiple fonts:
    - <font face="Arial, Helvetica, sans-serif">

```
<body bgcolor = "#ffff00">
      <p><font face="courier" color="green" size="24">
         This is a test.</font>
      <hr />
      <font face="times" color="red" >
         This is a test.</font>
      </p>
      <p>
      <font face="arial" color="red" size="+1">
         This is a test.</font>
      <br />
      nt face="times" color="#ff00ff" size="+2">
         This is a test.</font>
      </p>
      <p align = center><font face="courier" size="+3">
         This is a test.</font>
      </p>
</body>
```

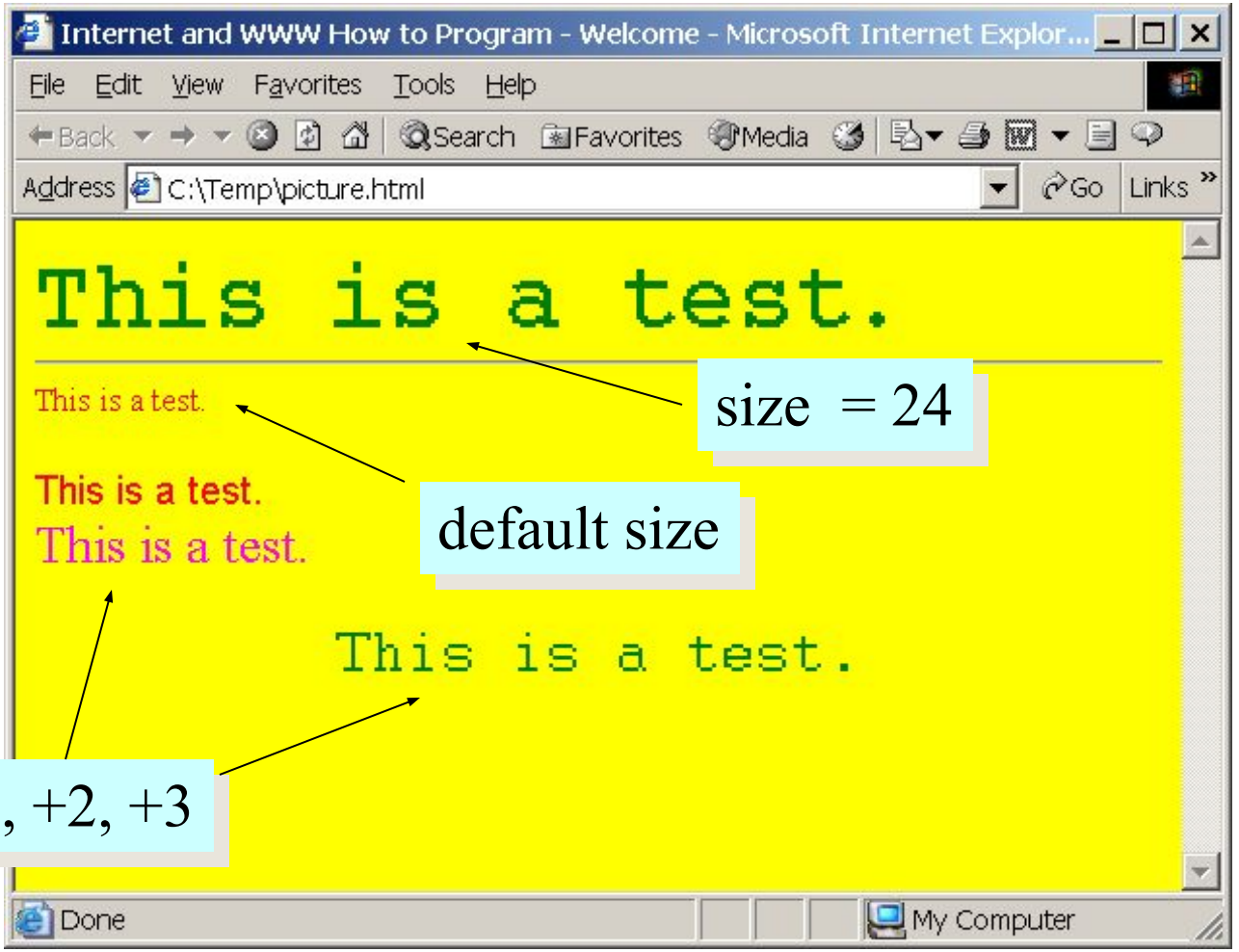
background color is yellow

horizontal ruler

the backslash is only to improve readability

See the difference between <p> and

the text is placed at the center


Internet and WWW How to Program - Welcome - Microsoft Internet Explor...
File Edit View Favorites Tools Help
Back Search Favorites Media
Address C:\Temp\picture.html
Go Links
This is a test.
This is a test.
This is a test.
This is a test.
This is a test.
size = 24
default size
size = +1, +2, +3
Done
My Computer

Lists

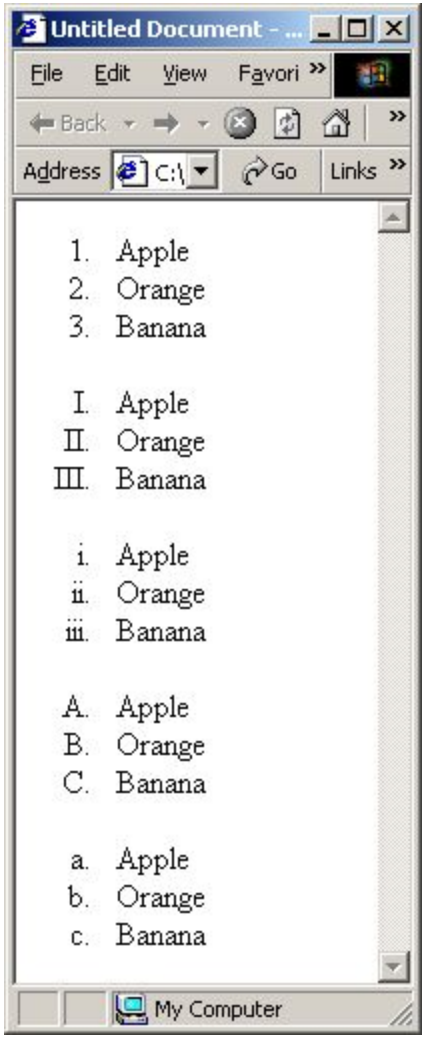
- Unordered list
  - a list that does not order its items by letter or number
  - … creates a list where each item begins with a bullet
  - List items: <li> …
  - For example

```
<ul>
        <li>Apple</li>
      <li>Orange</li>
      <li>Banana</li>
</ul>
```

Lists

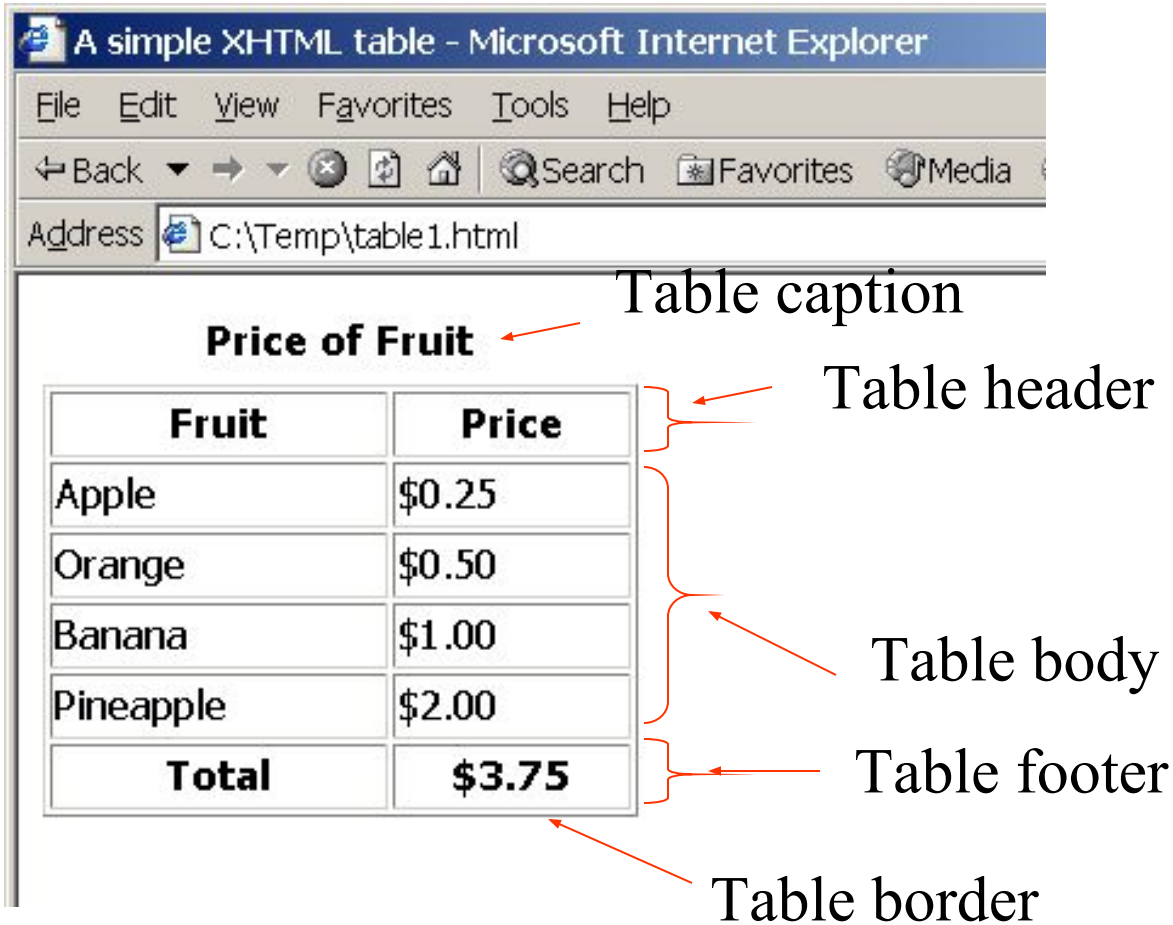
- Ordered list
  - List that order their items by letter or number
  - <ol type="style"> …

    When style equals to
    - 1: decimal, 1, 2, 3, …
    - I: uppercase Roman, I, II, III, …
    - i: lowercase Roman, i, ii, iii, …
    - A: uppercase Latin, A, B, C, …
    - a: lowercase Latin, a, b, c, …
  - List items: <li> …



Table

- Organize data into rows and columns



- <table attribute="value"> … </table>
- Attribute examples:
  - border="1" ⇒ the larger the number, the thicker is the border. "0" means no border
  - align="center" ⇒ the table is aligned at the center of the browser
  - width="60%" ⇒ to set the table width to 60% of the browser's width
- Caption of the table: <caption> … </caption>
- Insert a table row: <tr> … </tr>
- The head, body and foot sections are defined by
  <thead> … </thead>
  <tbody> … </tbody>
  <tfoot> … </tfoot>

```
<table border = "1" width = "40%" align = left
   summary = "This table provides information about
              the price of fruit">

   <caption><strong>Price of Fruit</strong></caption>

   <thead>
      <tr>     <!-- <tr> inserts a table row -->
          <th>Fruit</th> <!-- insert a heading cell -->
          <th>Price</th>
      </tr>
   </thead>

   <tbody>
      <tr>
          <td>Apple</td> <!-- insert a data cell -->
          <td>$0.25</td>
      </tr>
```

The use of th tag defines the content of header or footer cells

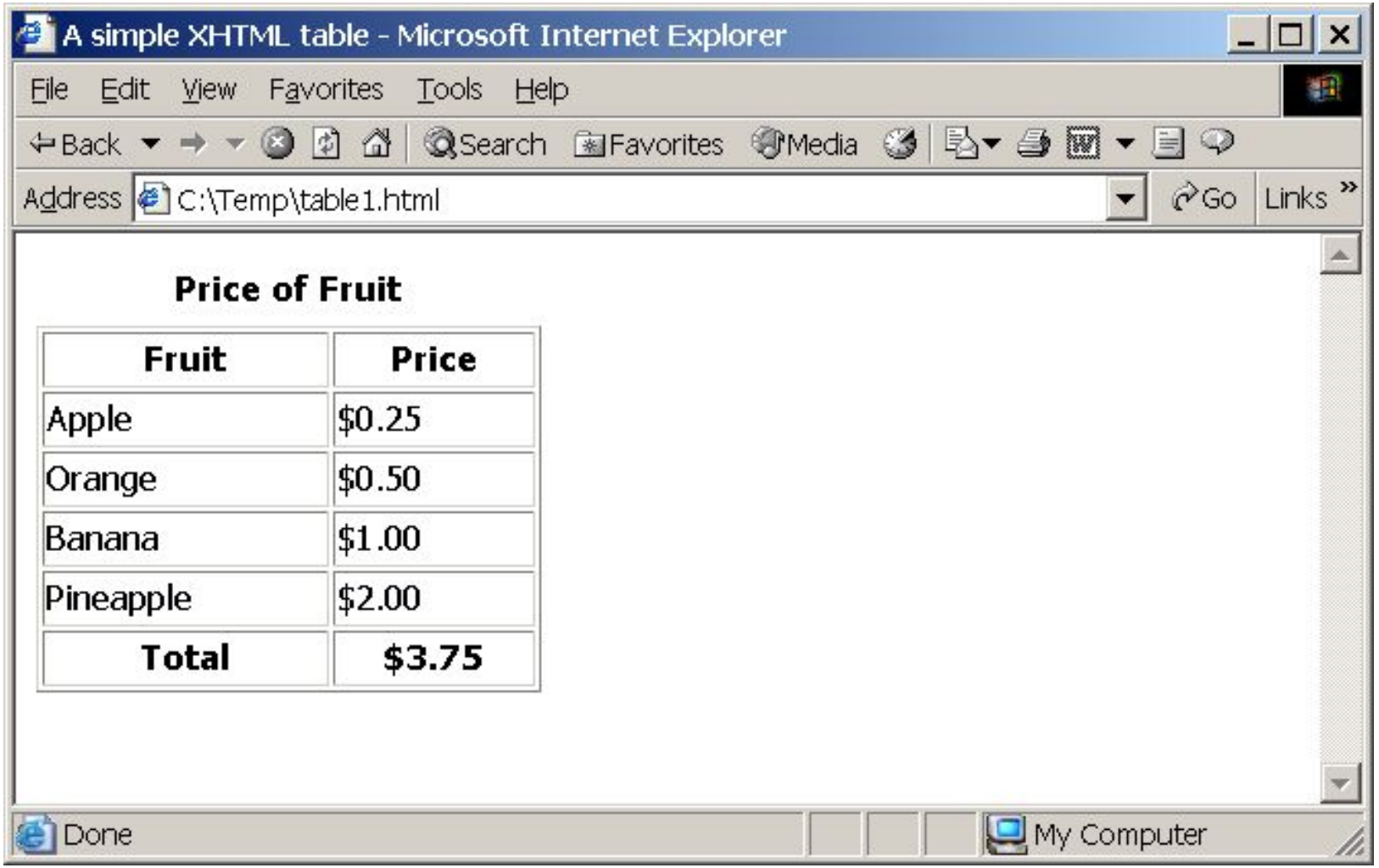
The tr tag insert a new row

```
        <tr>
            <td>Orange</td>
            <td>$0.50</td>
        </tr>
        <tr>
            <td>Banana</td>
            <td>$1.00</td>
        </tr>
        <tr>
            <td>Pineapple</td>
            <td>$2.00</td>
        </tr>
    </tbody>
```

The use of td tag defines the content of body cells

```
<tfoot>
        <tr>
            <th>Total</th>
            <th>$3.75</th>
        </tr>
    </tfoot>
</table>
```

The use of th tag defines the content of header or footer cells


A simple XHTML table - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address C:\Temp\table1.html
Go Links
Price of Fruit
Fruit
Price
Apple
$0.25
Orange
$0.50
Banana
$1.00
Pineapple
$2.00
Total
$3.75
Done
My Computer

Col span and Row span

- colspan and rowspan allow merging columns/rows
  - <colspan="number">
    - data cell spans more than one column
  - <rowspan="number">
    - data cell spans more than one row

```
<table border="1" width="60%">
   <caption> Average Grades </caption>
   <tr>
     <th colspan="4"> Report </th>
  </tr>
   <tr>
     <th> </th> <th> 2000 </th> <th> 2001 </th>
     <th> 2002 </th>
  </tr>
  <tr>
     <td> Maths </td> <td> A </td> <td rowspan="2"
valign="center"> B </td> <td> C </td>
  </tr>
  <tr>
     <td> English </td> <td> C </td> <td> A </td>
  </tr>
</table>
```

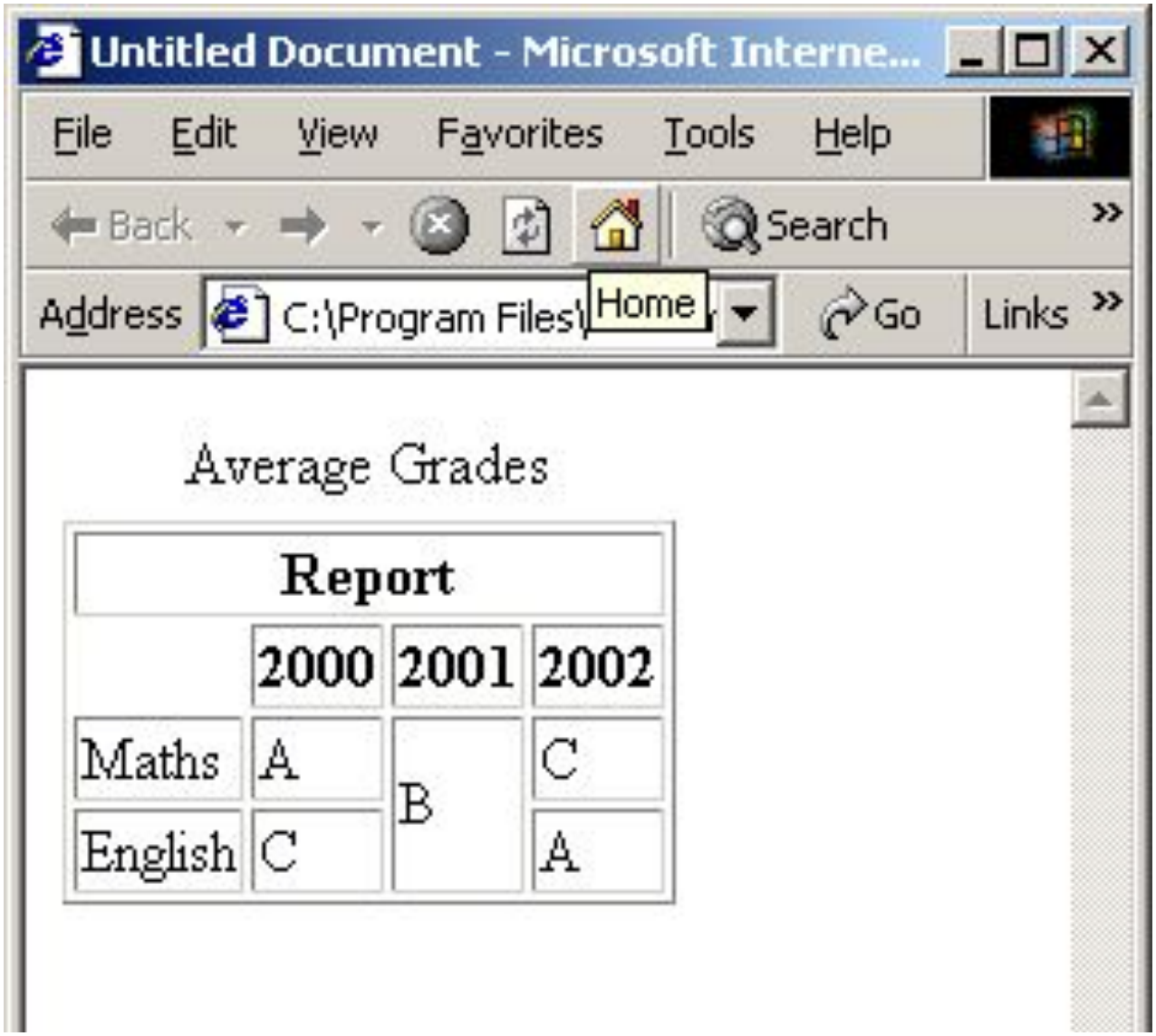
first row

2nd row

vertical alignment

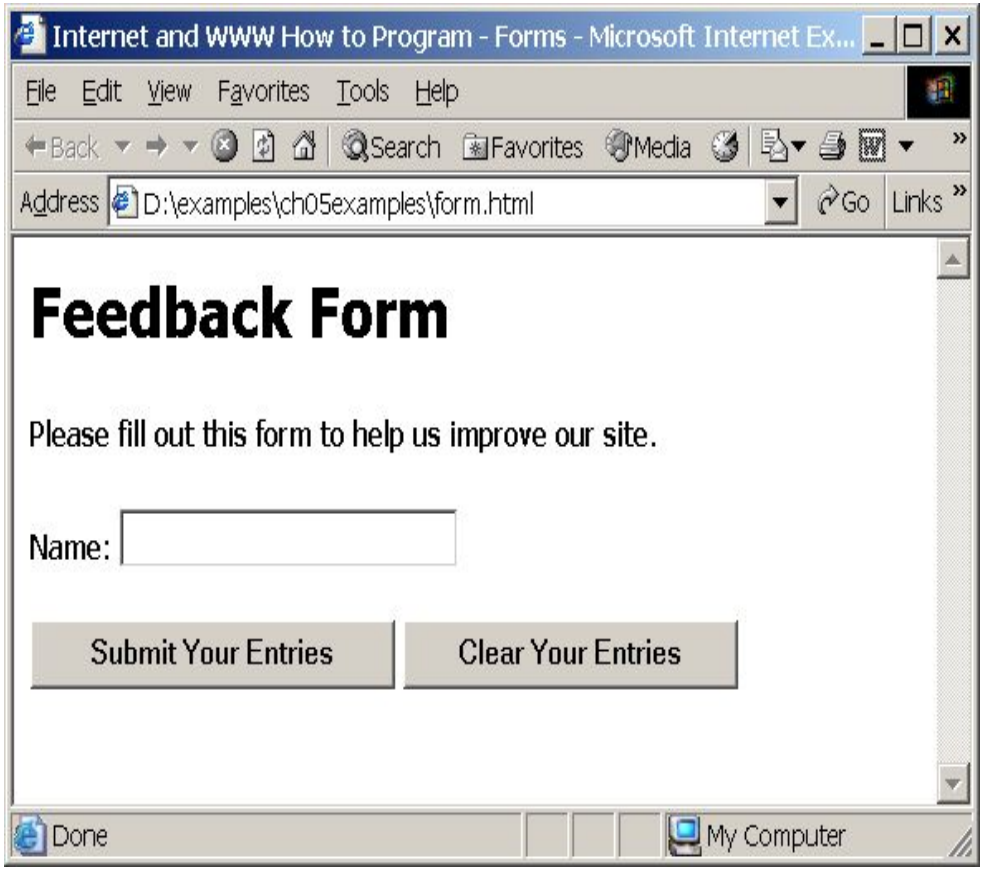
3rd row

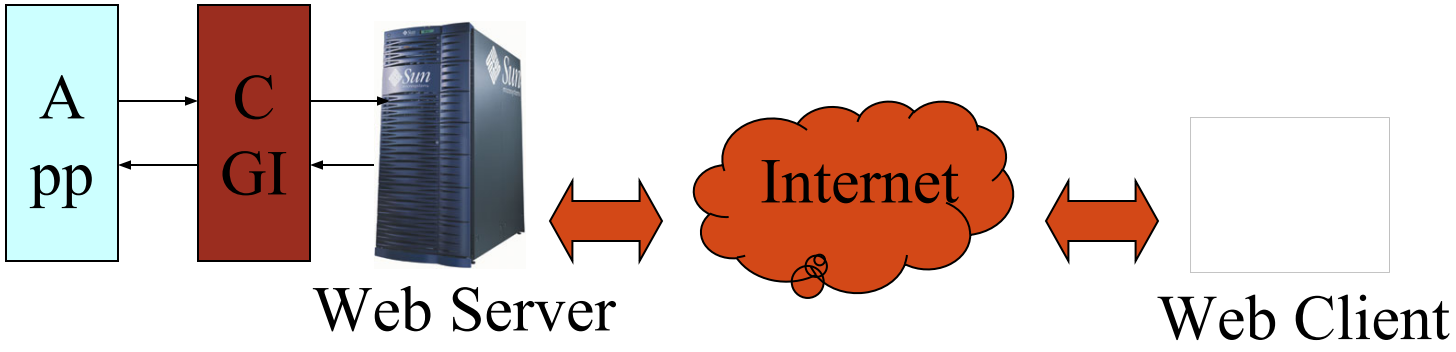
4th row


Untitled Document - Microsoft Interne...
File Edit View Favorites Tools Help
Back
Search
Address
C:\Program Files\
Home
Go
Links
Average Grades
Report
2000 2001 2002
Maths A B C
English C A

Forms

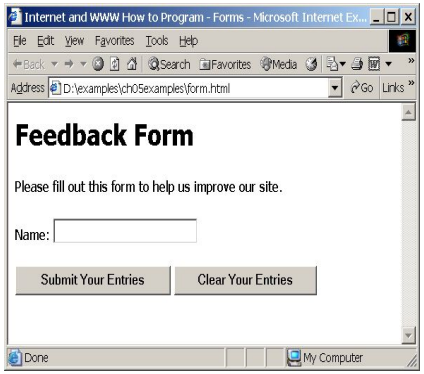
- When browsing web sites, users often need to provide information such as email address, search keywords, etc
- Forms allows user to input information





www.abc.com/form.htm

1



2

3

www.abc.com
method = post or get
action = program name
(script) in server to
receive the data
Name = ???
and others

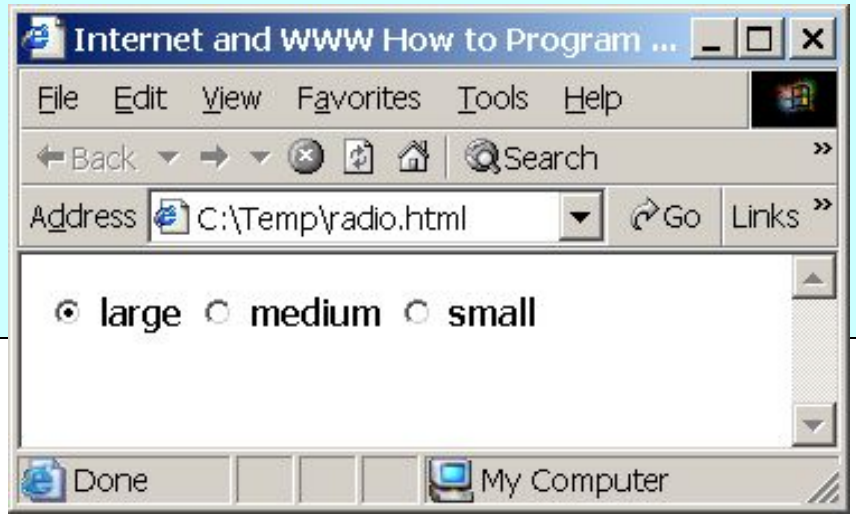
- A form element is inserted into a web page by the <form> tag
- <form method = “value1” action = “value2”> … </form>
- Attributes:
  - method = “post” or “get”
    - Indicates the way the Web server will organize and send you the form output
    - post: causes changes to server data, e.g., update a database
    - get: does not cause any changes in server-side data, e.g., make a database request
  - action = “”
    - Path to script, e.g., CGI

use post method

script that will be called to execute in the server

```
<form method = "post" action = "/cgi-bin/formmail">
   <input type="radio" name="size" value="large"
      checked="checked"/> large
   <input type="radio" name="size" value="medium"/>
  medium
   <input type="radio" name="size" value="small"/>
   small
</form>
```

Only the radio button of large is checked



Forms

- Elements inside a form are introduced by the <input> tag
- <input>
  - type="hidden" name="variable name"
    value="value that sends to the server"
  - type ="text" name="" value ="" size="25"
  - type ="submit" value =""
  - type ="reset" value =""
  - type ="checkbox" value ="" name=""

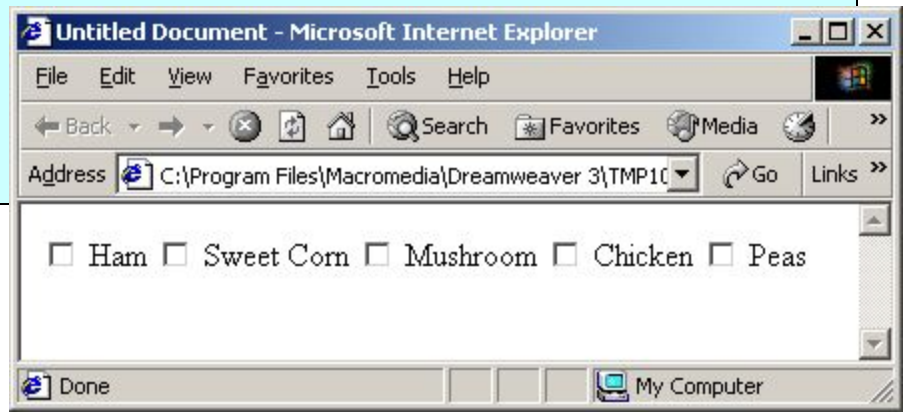
Form example 1

Thing that sends back to server

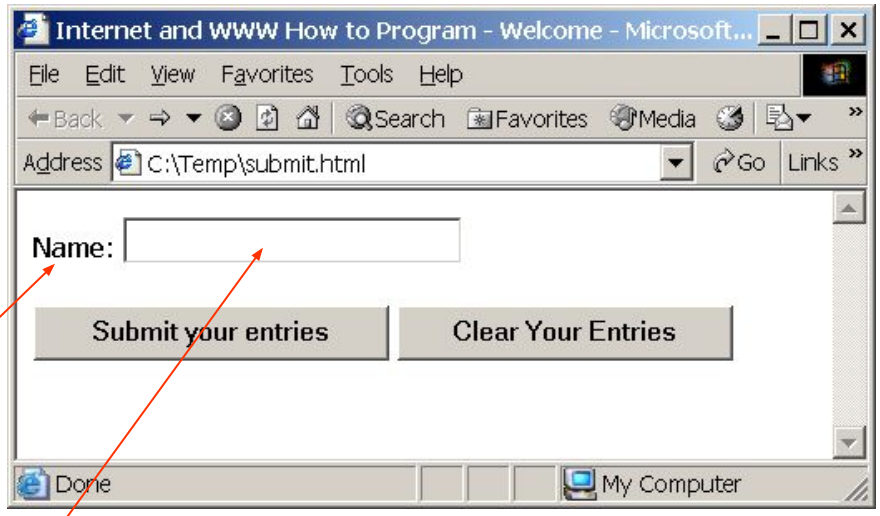
```
<input type="checkbox" name="things"
  value="ham"/> Ham
<input type="checkbox" name="things"
  value="sweetcorn"/> Sweet Corn
<input type="checkbox" name="things"
  value="mushroom"/> Mushroom
<input type="checkbox" name="things"
  value="chicken"/> Chicken
<input type="checkbox" name="things"
  value="peas"/> Peas
```

Indicate all 5 checkboxes belong to the same group

The words show on screen



Form example 2



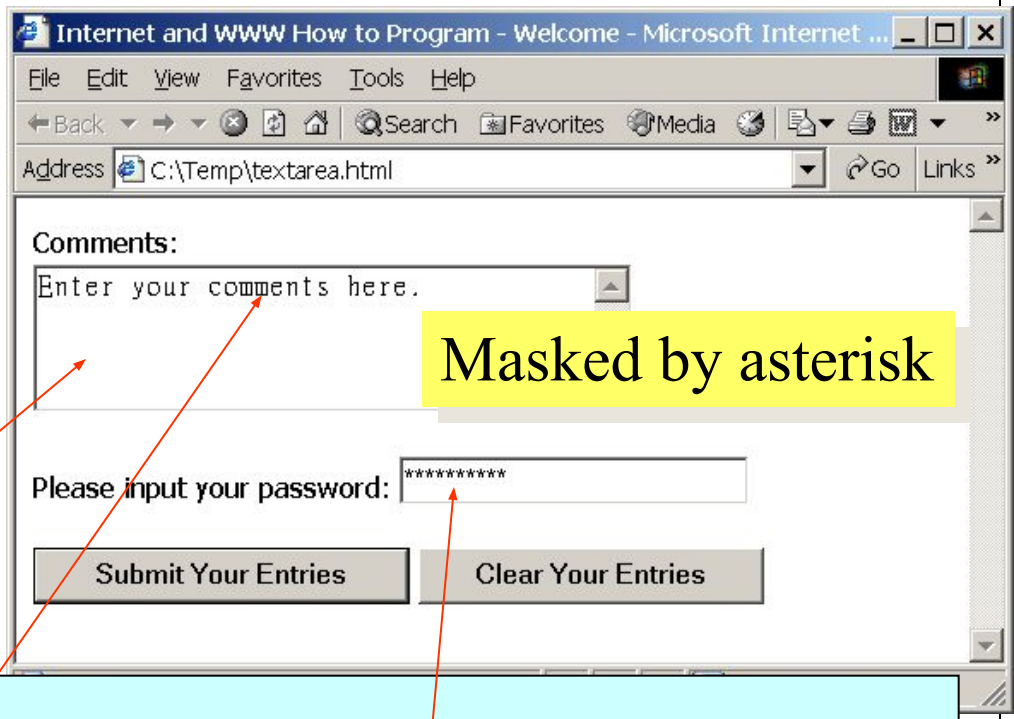
Data that would send to server but do not display on screen

```
<input type="hidden" name="title" value="Feedback" />

<p><label>Name:
   <input type= "text" name= "name" size="25"
maxlength="30"/>
   </label>
</p>
<input type= "submit" value="Submit your entries"/>
<input type= "reset" value="Clear Your Entries"/>
```

send the input the textbox to server

clear the content of textbox

Form example 3

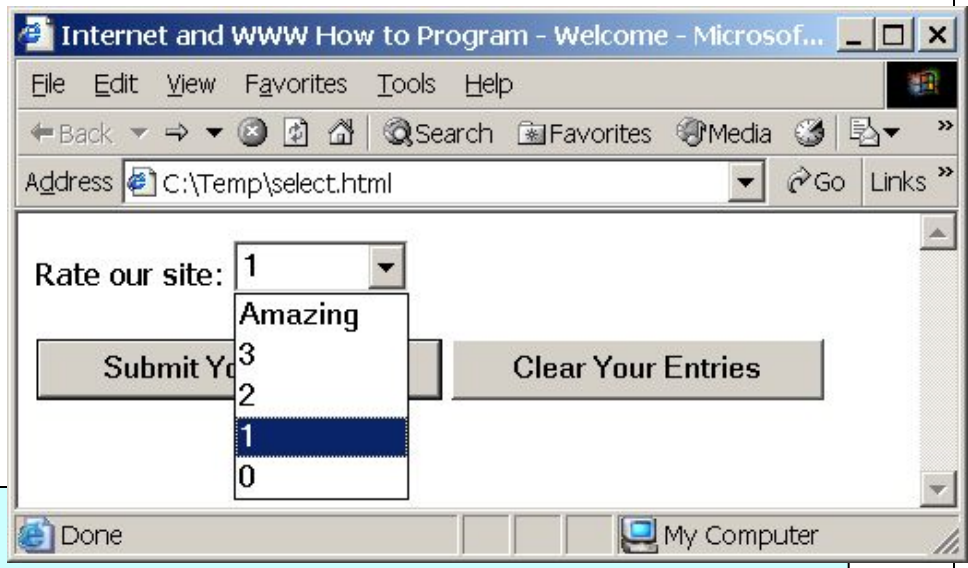


Space is counted here

Masked by asterisk

```
<p><label>Comments:<br />
   <textarea name= "comments" rows="4" cols="36">
Enter your comments here.
   </textarea> </label></p>
<p><label>Please input your password:
   <input name= "secret" type="password" size="25"/>
</label></p>
<input type= "submit" value="Submit Your Entries"/>
<input type= "reset" value="Clear Your Entries"/>
```

Form example 4



The "selected" value here mean Amazing is selected default value

```
<p><label>Rate our site:
<select name= "rating">
   <option value="Amazing"
      selected="selected">Amazing</option>
   <option value="3">3</option>
   <option value="2">2</option>
   <option value="1">1</option>
   <option value="0">0</option>
</select></p>
<input type= "submit" value="Submit Your Entries"/>
<input type= "reset" value="Clear Your Entries"/>
```

Change to default value when reset