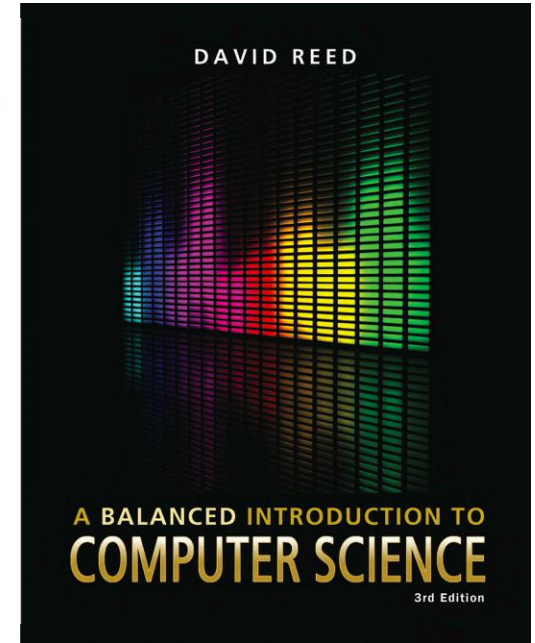


# A Balanced Introduction to Computer Science



HTML and Web Pages

# Quick Internet Overview

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The Internet is a vast, international network of computers

- computers around the world can communicate and share resources
- the U.S. government sponsored the first long-distance computer network in 1969
- starting with only 4 computers, the network would eventually evolve into today's Internet

# Quick WWW Overview

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The World Wide Web is a collection of software that spans the Internet and enables the interlinking of documents and resources

- the basic idea for the Web was proposed by Tim Berners-Lee in 1989
- the system interlinked documents (including multimedia elements such as images and sound clips) over the Internet
- through the use of well-defined *rules/protocols*, documents could be shared across networks on various types of computers

# Internet $\neq$ World Wide Web

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## THINK:

Internet is *hardware*

- consists of computers around the world and the communications links that connect them

World Wide Web is *software*

- consists of Web pages, images, sound files, etc., and the software that stores and retrieves these files

# Internet $\neq$ World Wide Web

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the Internet could exist without the Web

- and did, in fact, for many years (applications included email and news groups)

the Web couldn't exist without the Internet

- the Internet is the hardware that stores and executes the Web software

# Viewing a Web Page

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## *Web page*

- a text document
- contains additional formatting information
- uses a language called HTML (Hyper Text Markup Language)

## *Web browser*

- a program
- accesses the Web page
- interprets the content of Web page
- displays the Web page

# Viewing a Web Page



```
1 <!doctype html>
2 <!-- demo6.html -->
3
4 <html>
5   <head>
6     <title> Demo of Images </title>
7   </head>
8
9   <body>
10    <div style="text-align:center">
11      
12      <p> This is me in the picture. </p>
13    </div>
14  </body>
15 </html>
16
17
18
19
```

A Web page is a text document that contains HTML formatting.



A Web browser is a program that interprets the HTML and displays the page.

# Web Server

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## *Web server*

- an Internet-enabled computer
- stores Web pages
- executes software for providing access to the pages

## **when you request a Web page –**

- the browser sends a request over the Internet to the appropriate server
- the server locates the specified page and sends it back to your computer



# Web Addresses



## *Web addresses*

- each page is assigned a *Uniform Resource Locator (URL)*
- URL's are commonly referred to as *Web addresses*
- the different parts of the Web address provide information for locating the page

`http://balance3e.com/index.html`

Signifies that the page is to be accessed using the standard means of retrieving Web pages, the HyperText Transfer Protocol (HTTP)

Specifies the name of the Web server that stores the page

Specifies the name of the page. Usually, Web pages end with either `.html` or `.htm`, although other extensions are allowed

# Viewing Local Web Pages

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a Web browser can be used to view pages stored on the same computer

- can go through the File menu to select the local page, or
- can enter the File location in the address box (without the http prefix)

this feature is handy when developing Web pages

- can create a Web page and view it in the browser before uploading to a server

# Viewing Local Web Pages



**Note: the Web address (URL) does not begin with http://**

**This means that the file is stored locally on the user's computer – here, at the desktop of my computer**



# HTML - Hyper Text Mark-up Language

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## *Hypertext –*

It refers to the way in which Web pages (HTML documents) are linked together.

Thus the link available on a webpage are called Hypertext.

# HTML - Hyper Text Mark-up Language

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## *Mark-up Language –*

A mark-up language is a computer language that uses tags to define elements within a document.

In its simplest form, a tag is a word or symbol surrounded by brackets (<>)

# HTML - Hyper Text Mark-up Language

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## *HTML* -

It simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.

- HTML specifies formatting within a page using tags
- HTML is widely used to create webpages. Browsers read these tags to display the output to the user.
- It is interpreted by browsers and hence we don't need to compile it.
- Use your favourite text editor to create HTML pages. No need to use special software.

# HTML - Hyper Text Mark-up Language

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## *HTML Versions -*

- Created by Berners-Lee in 1991.
- "HTML 2.0" - the first standard HTML specification published in 1995.
- Major version of HTML - HTML 4.01, published in late 1999.
- Currently we are having HTML-5 version which is an extension to HTML 4.01, and this version was published in 2012.

# HTML Tags

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Required tags in a Web page:

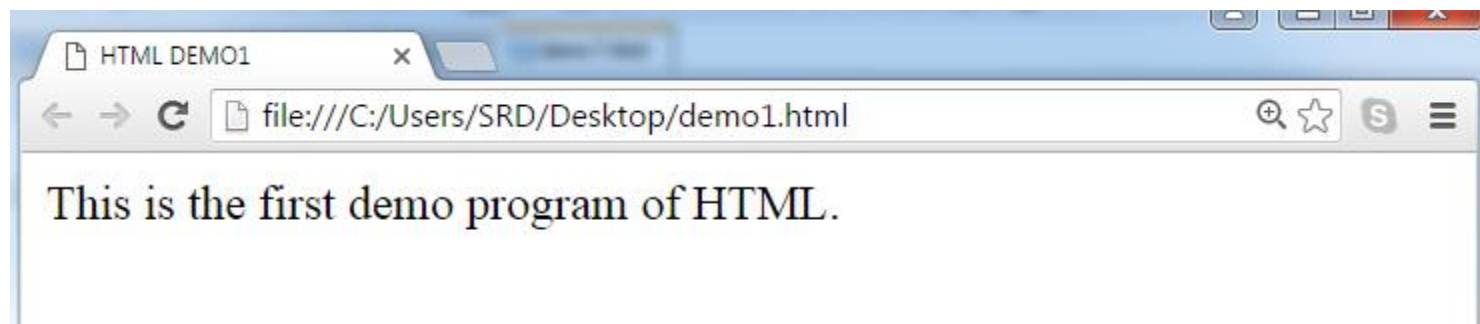
- `<html>` and `</html>` enclose the entire HTML document
- `<head>` and `</head>` enclose the HEAD section
  - contains information that the browser uses to control the look of the page
  - the HEAD can contain a title for the browser window, enclosed between `<title>` and `</title>`
- `<body>` and `</body>` enclose the BODY section
  - contains the text that will appear in the page



# HTML Tags (cont.)



```
1  <!doctype html>
2  <!--      demo1.html      -->
3  <!--      This is a simple webpage      -->
4
5  <html>
6  <head>
7      <title> HTML DEMO1 </title>
8  </head>
9
10 <body>
11     This is the first demo program of HTML.
12 </body>
13
14 </html>
```



# HTML Elements

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Tags and the text they enclose form an *HTML element*

```
<title> Title of the Page </title>
```

is a TITLE element

```
<head>
```

```
  <title> Title of the Page </title>
```

```
</head>
```

is a HEAD element (which contains a nested TITLE element)

# HTML Elements (cont.)

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Most HTML elements have opening and closing tags, but not all

`<!-- demo1.html -->` is a COMMENT element

- a comment is ignored by the browser (it does not appear in the rendered page)
- comments are used by the page developer to document page features

# Attributes

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These provide additional information about an element.

Attributes are always specified in the start tag.

Attributes come in name/value pairs like:

name="value"

Ex. Language attribute

```
<html lang="en-US">
```