



UNIVERSITYof **HOUSTON**

DEPARTMENT OF COMPUTER SCIENCE

COSC 4351 Fall 2023

Software Engineering

M & W 4 to 5:30 PM

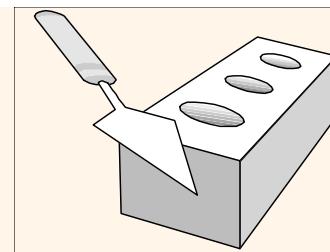
Prof. Victoria Hilford

PLEASE TURN your webcam ON

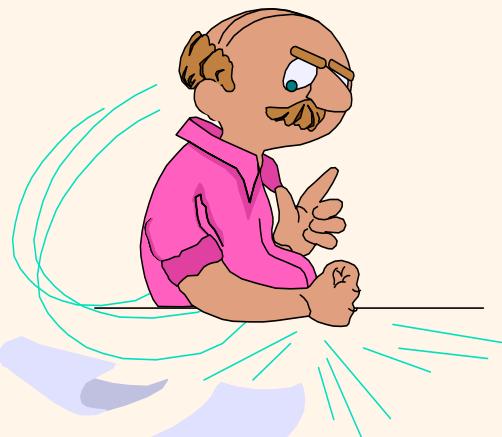
NO CHATTING during LECTURE

COSC 4351

4 to 5:30



PLEASE
LOG IN
CANVAS



Youyi [A-L]

Kevin [M-Z]

Please close all other windows.

08.23.2023 (W 4 to 5:30)		WEB TECHNOLOGIES	Start ZyBook: Sections 1-5		
	(2)				

08.28.2023 (M 4 to 5:30)	Review Tutorials 1 on WHAT tools (UML & ERD Modeling)	Lecture 2: SDLC	SDLC Papers Summary (1 Page)	CANVAS Assignment	
	(3)				

08.30.2023 (W 4 to 5:30)		Tutorials 1 on WHAT tools (UML & ERD Modeling)	UML Modeling	CANVAS Assignment	
	(4)				

09.06.2023 (W 4 to 5:30)		Lecture 3: Software Development Process			
	(5)				

09.11.2023 (M 4 to 5:30)		EXAM 1 REVIEW (CANVAS) (ZyBook)	Download ZyBook: Sections 1-5		
	(6)				

09.13.2023 (W 4 to 5:30)	Optional			Q & A Set 1 topics.	
	(7)				

09.18.2023 (M 4 to 5:30)			EXAM 1 (CANVAS) (ZyBook)		
	(8)				

Class 2

COSC 4351 Software engineering

08.23.2023
(W 4 to 5:30)

(2)

WEB
TECHNOLOGIES

Start ZyBook:

Sections 1-5

From 4:00 to 4:10 PM – 10 minutes.

08.23.2023 (W 4 to 5:30) (2)	 WEB TECHNOLOGIES	Start ZyBook: Sections 1-5		
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CLASS PARTICIPATION 20 points 20% of Total + :

PASSWORD: IN TEAMS

BEGIN Class 2 Participation

CLASS PARTICIPATION 20% Module | Not available until Aug 23 at 4:00pm | Due Aug 23 at 4:10pm | 60 pts

VH, publish.

From 4:10 to 5:05 PM – 55 minutes.

ZyBook – Web Programming

SET 1

Table of contents	
About this material	
1. Introduction to Web Programming	Hidden ▾
2. HTML	Hidden ▾
3. More HTML	Hidden ▾
4. Basic CSS	Hidden ▾
5. Advanced CSS	Hidden ▾
6. Basic JavaScript	New Content Hidden ▾
7. JavaScript in the Browser	Hidden ▾
8. Advanced JavaScript	New Content Hidden ▾
9. jQuery	Hidden ▾
10. Mobile Web Development	Hidden ▾
11. Node.js	New Content Hidden ▾
12. PHP	Hidden ▾
13. Advanced PHP	Hidden ▾
14. Relational Databases and SQL	Hidden ▾

SET 2

SET 3

SET 4

Sections 1 - 5

- 1. Introduction to Web Programming
- 2. HTML
- 3. More HTML
- 4. Basic CSS
- 5. Advanced CSS

08.23.2023
(W 4 to 5:30)



Start ZyBook:

Sections 1-5

(2)

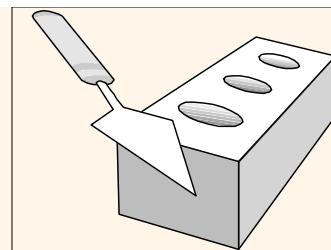
Line wrap □

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5     <meta http-equiv="X-UA-Compatible" content="IE=edge">
6     <meta http-equiv="X-UA-Compatible" content="IE=11">
```

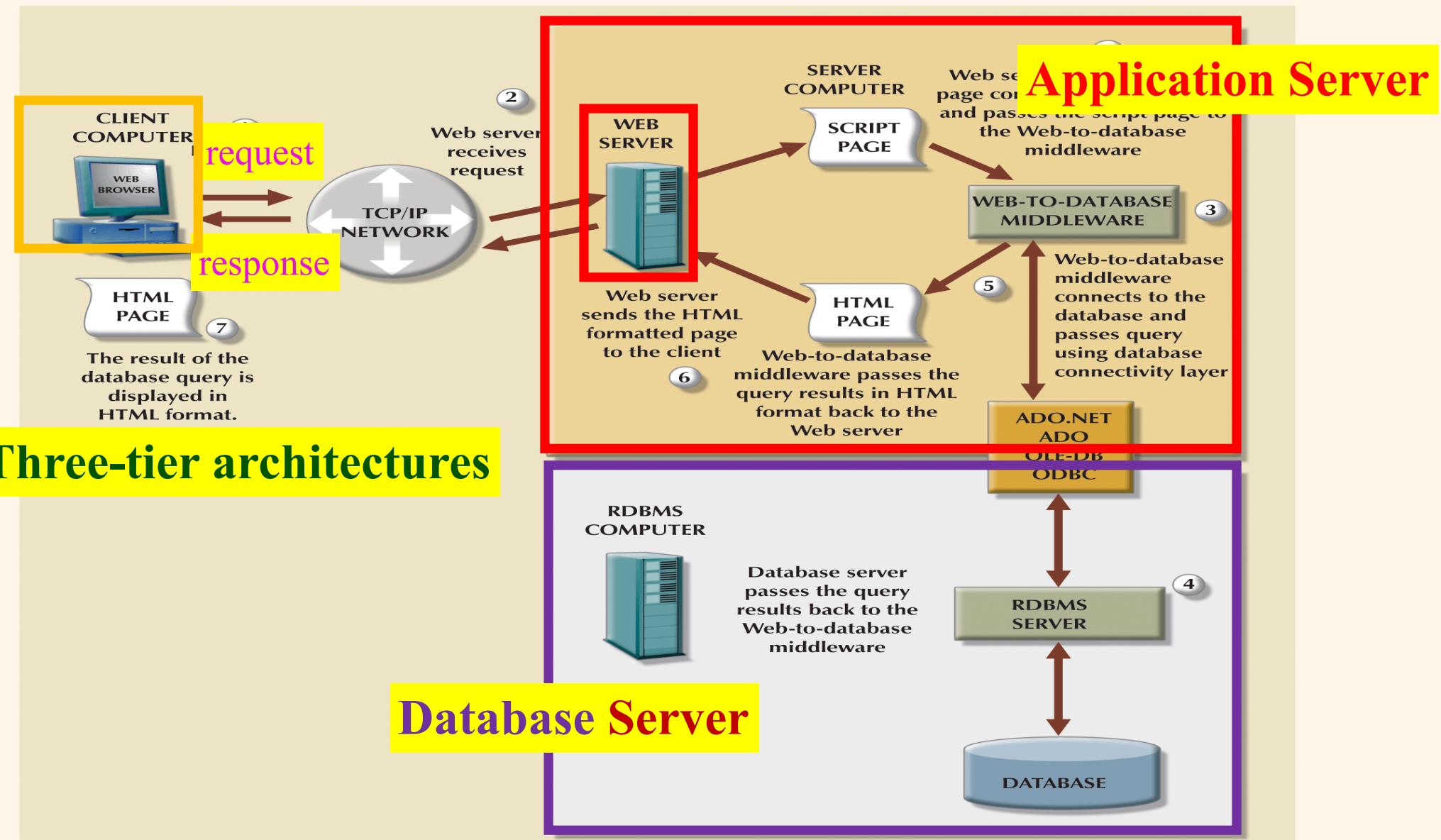
The governor of Missouri still doesn't know how websites work

In October 2021 reporter Josh Renaud reported that the Department of Elementary and Secondary Education website source code had exposed the social security numbers of over 100,000 school teachers, administrators, and counselors. He published the story only after he'd reported the problem to the state and the vulnerability had been resolved.

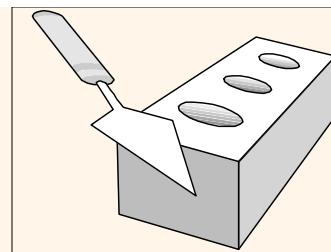
```
49 <div class="logo">
50   
51 </div>
52 </header>
53
54 <div id="ember-basic-dropdown-wormhole"></div>
55
```



Web Application Development

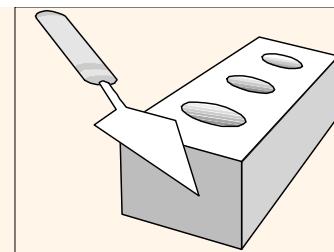


Overview



- ❖ Internet Concepts
- ❖ Web data formats
 - HTML, XML, DTDs
- ❖ Introduction to three-tier architectures
- ❖ The presentation layer
 - HTML forms; HTTP Get and POST, URL encoding;
Javascript; Stylesheets; XSLT

Uniform Resource Identifiers



Uniform naming schema to identify *resources on the Internet*

A **resource** can be anything:

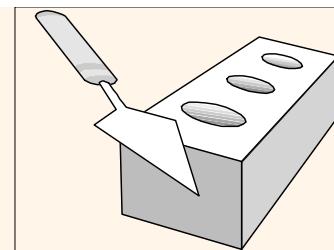
- index.html
- mysong.mp3
- picture.jpg

Example **URIs**:

<http://www.cs.wisc.edu/~dbbook/index.html>

<mailto:webmaster@bookstore.com>

HyperText Transfer Protocol



What is a communication protocol?

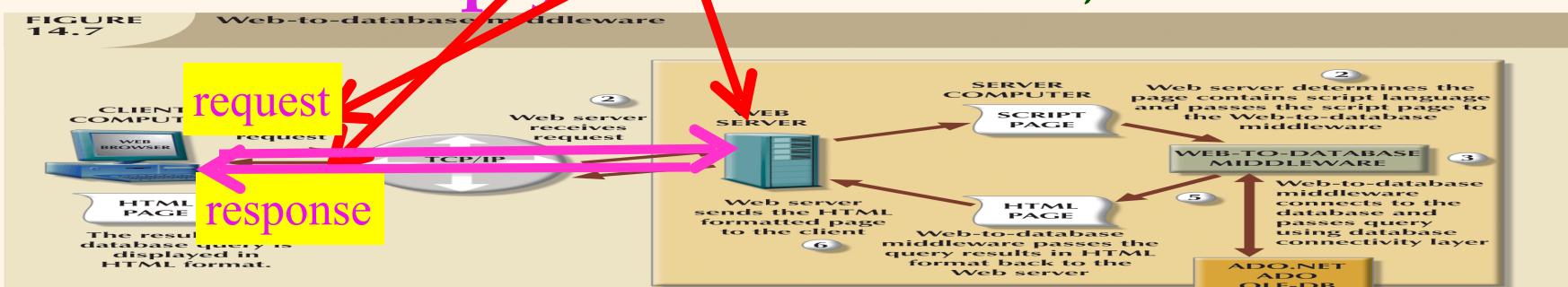
- Set of **standards** that defines the structure of **messages**
- Examples: TCP, IP, **HTTP**, **HTTPS**

What happens if you click on www.cs.wisc.edu/~dbbook/index.html?

Client (web browser) sends HTTP **request** to Web Server

Web Server receives **request** and **replies**

Client receives **reply** from Web Server; makes new **requests**



HTTP

Client request to Web Server:

GET ~ /index.html HTTP/1.1

User-agent: Mozilla/4.0

Accept: text/html, image/gif, image/jpeg



Figure 1.3.1: HTTP request with no message body.

Request for URL: https://en.wikipedia.org/wiki/World_Wide_Web

```
GET /wiki/World_Wide_Web HTTP/1.1
Host: en.wikipedia.org
User-Agent: Mozilla/5.0 Chrome/48.0.2564
```

Request type: GET
Path: /wiki/World_Wide_Web
HTTP version: HTTP/1.1
Status line: [GET /wiki/World_Wide_Web HTTP/1.1]
Header fields: Host: en.wikipedia.org
User-Agent: Mozilla/5.0 Chrome/48.0.2564
Domain name: en.wikipedia.org
Browser identifier: Mozilla/5.0 Chrome/48.0.2564

Web Server replies response to Client:

HTTP/1.1 200 OK

Date: Wed, 26 Feb 2014 16:00:00 GMT

Server: Apache/1.3.0 (Linux)

Last-Modified: Wed, 04 Oct 2006 16:30:24 GMT

Content-Length: 1024

Content-Type: text/html

```
<HTML>
<HEAD></HEAD>
<BODY>
<h1>Barns and Nobble Internet Bookstore</h1>
Our inventory:
<h3>Science</h3>
<b>The Character of Physical Law</b>
...
</HTML>
```

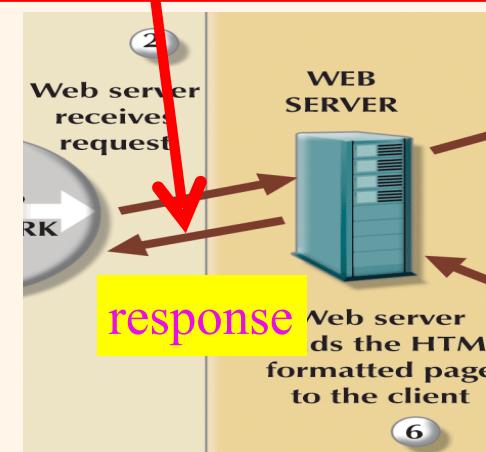


Figure 1.3.2: HTTP response with HTML in message body.

Response for URL: https://en.wikipedia.org/wiki/World_Wide_Web

```
HTTP/1.1 200 OK
Content-Length: 56579
Content-Type: text/html
Date: Fri, 12 Feb 2016 21:09:32 GMT
Last-Modified: Thu, 11 Feb 2016 18:49:40 GMT
Server: nginx/1.9.4

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8" />
<title>World Wide Web - Wikipedia, the free encyclopedia</title>
...

```

HTTP version: HTTP/1.1 200 OK # of bytes in message body
Status line: Status code & phrase
Header fields: Content-Length: 56579 Media type of message body
Content-Type: text/html Date of response
Date: Fri, 12 Feb 2016 21:09:32 GMT Last-Modified: Thu, 11 Feb 2016 18:49:40 GMT Date/time resource was last modified
Server: nginx/1.9.4 Web server software identifier
Message body: <!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8" />
<title>World Wide Web - Wikipedia, the free encyclopedia</title>
...
HTML to be displayed

HTTP

Figure 1.3.1: HTTP request with no message body.

Request for URL: https://en.wikipedia.org/wiki/World_Wide_Web

```
GET /wiki/World_Wide_Web HTTP/1.1
Host: en.wikipedia.org
User-Agent: Mozilla/5.0 Chrome/48.0.2564
```

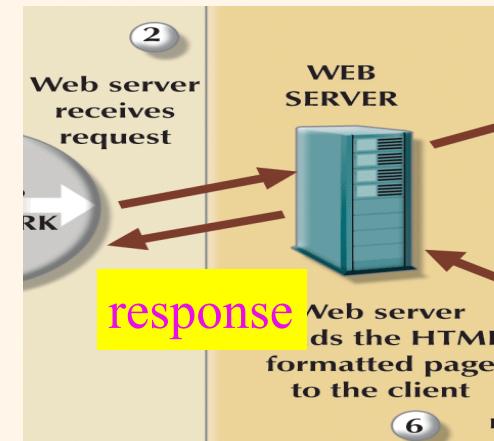
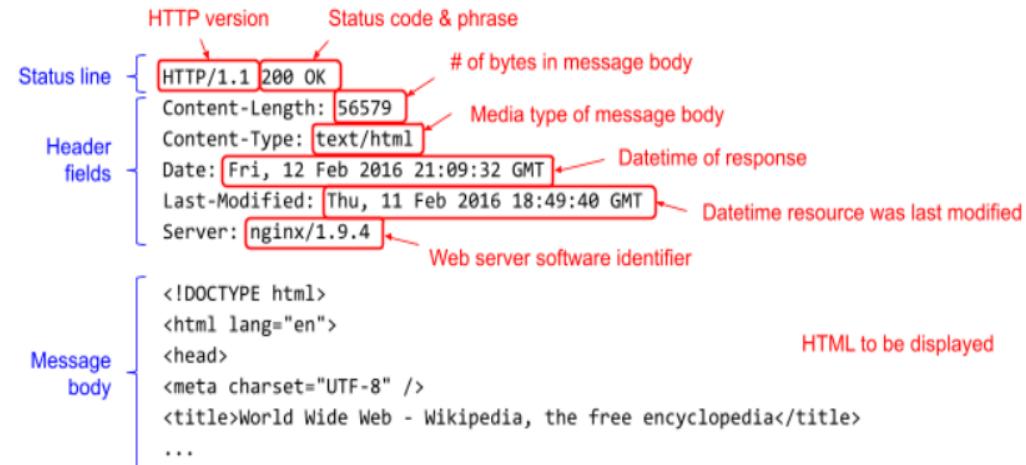


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Content-Length: 56579
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Date: Fri, 12 Feb 2016 21:09:32 GMT
Last-Modified: Thu, 11 Feb 2016 18:49:40 GMT
Server: nginx/1.9.4
```

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8" />
<title>World Wide Web - Wikipedia, the free encyclopedia</title>
...
```



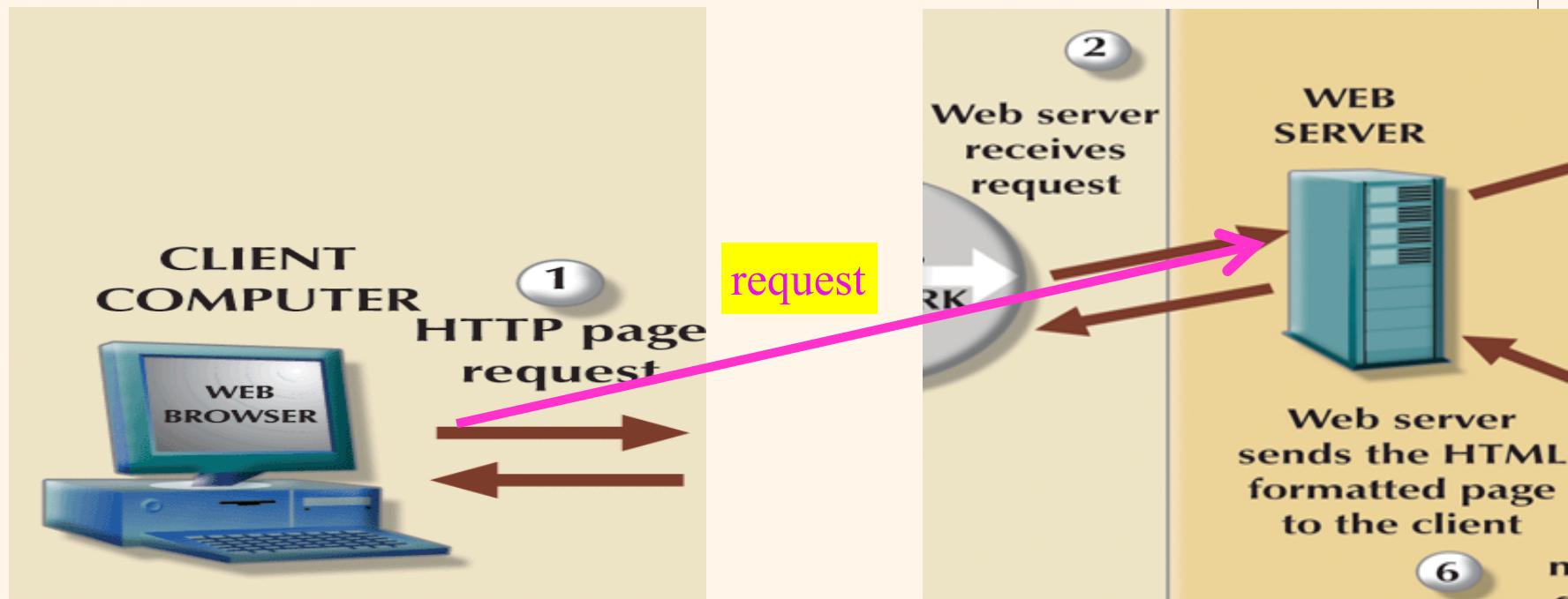


Table 1.3.1: Common HTTP request methods.

Request method	Meaning
GET	Request a representation of the specified resource.
HEAD	Request a response identical to GET but without the response body.
POST	Request the web server to accept the message body enclosed in the request as a new resource.
PUT	Request the web server to accept the message body enclosed in the request as a modification of an existing resource.
DELETE	Request the web server to delete the existing resource.

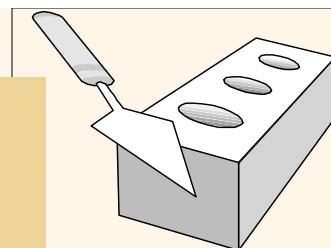
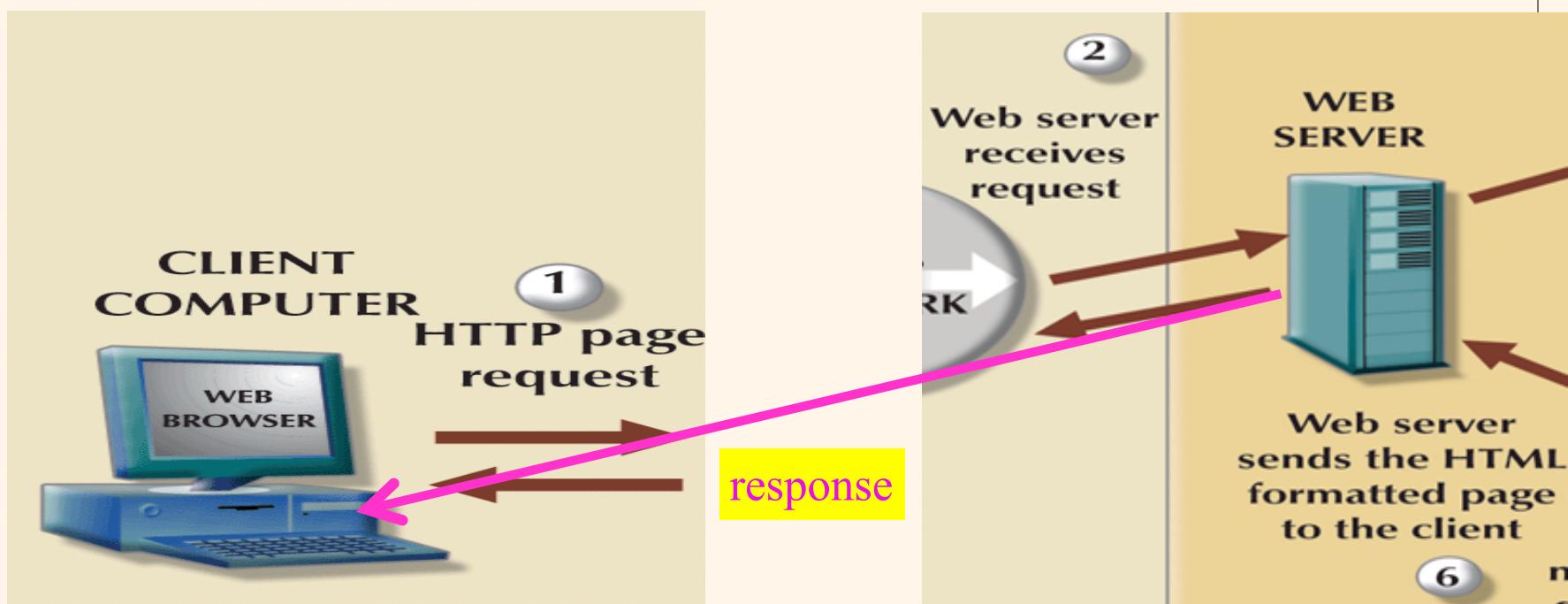
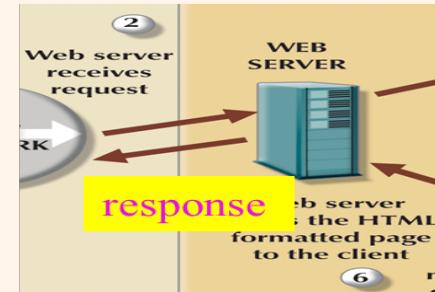
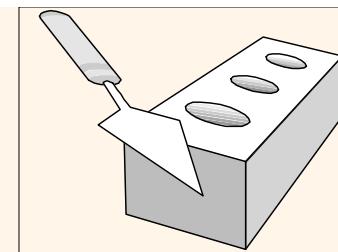


Table 1.3.2: Common HTTP response status codes.

Status code	Status phrase	Meaning
200	OK	Standard response for a successful request.
301	Moved Permanently	The resource should always be requested at a different URL.
302	Found	The resource should temporarily be requested at a different URL.
304	Not Modified	The resource has not been modified since the last time the resource was requested.
403	Forbidden	The web browser does not have permission to access the resource.
404	Not Found	The resource could not be located.
500	Internal Server Error	Something unexpected happened on the web server.

Some Remarks About **HTTP**



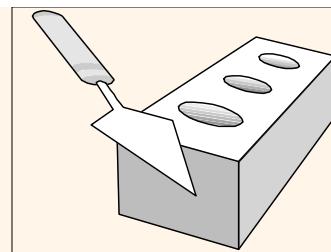
HTTP is stateless

- No “sessions”
- Every **message** is completely self-contained
- No previous interaction is “**remembered**” by the protocol
- Tradeoff between **ease of implementation** and **ease of Application development**: Other functionality has to be built on top

Implications for Applications:

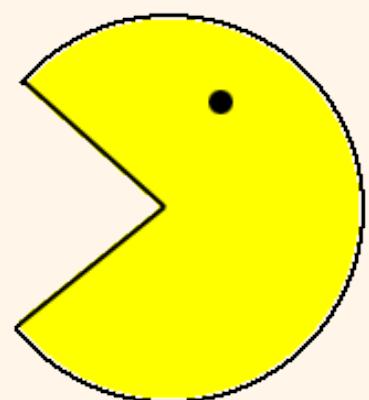
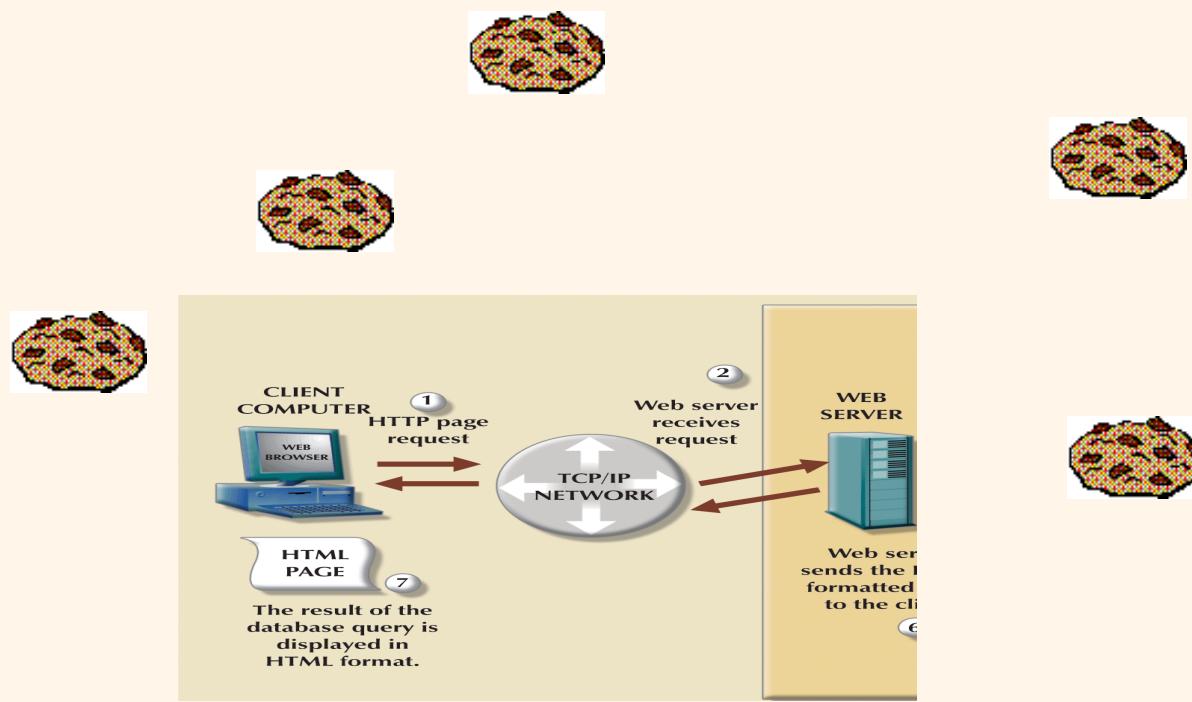
- Any state information (**shopping carts, user login-information**) need to be encoded in every **HTTP request and response!**
- Popular methods on how to maintain state:
 - Cookies

Creating A Cookie

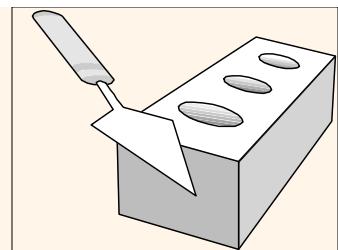


```
Cookie myCookie = new Cookie("username", "jeffd");  
  
response.addCookie(myCookie);
```

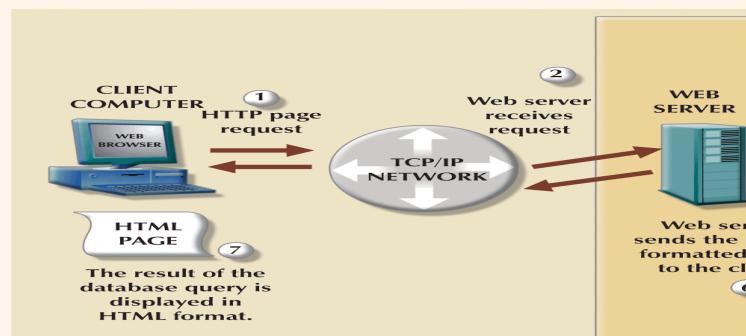
- ❖ You can create a cookie at any time



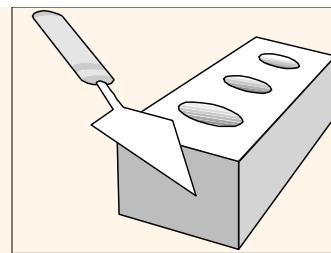
Accessing A Cookie



```
Cookie[] cookies = request.getCookies();  
String theUser;  
for(int i=0; i < cookies.length; i++)  
{  
    Cookie cookie = cookies[i];  
    if(cookie.getName().equals("username"))  
        theUser = cookie.getValue();  
}  
// at this point theUser == "username"  
  
// Cookies need to be accessed BEFORE you set your response header  
  
response.setContentType("text/html");  
PrintWriter out = response.getWriter();
```



Overview



- ❖ Internet Concepts
- ❖ Web **data** formats
 - HTML, XML, DTDs
- ❖ Introduction to three-tier architectures
- ❖ The presentation layer
 - HTML forms; HTTP Get and POST, URL encoding;
Javascript; Stylesheets; XSLT

Web Application Development

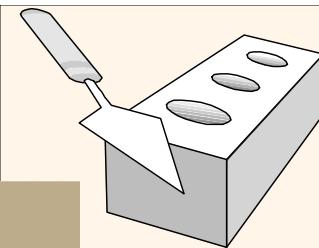
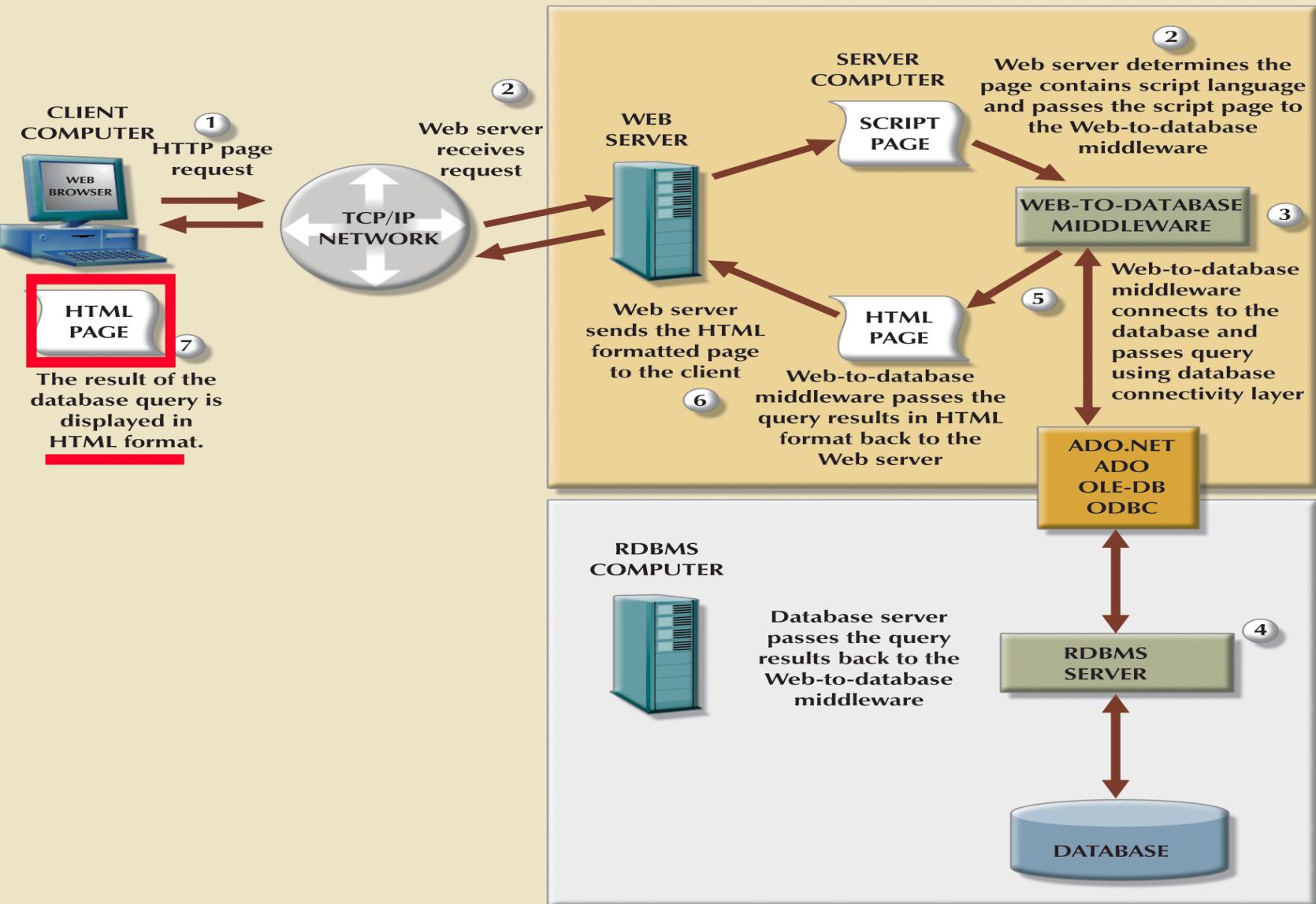
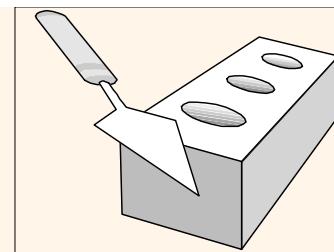


FIGURE 14.7 Web-to-database middleware

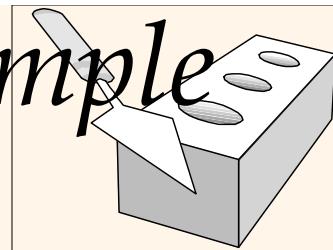


Web Data Formats



- ❖ **HTML (HyperText Markup Language)**
 - The **Presentation - View (V)** Language for the Internet
- ❖ **CSS (Cascading Style Sheet)**
 - Different ways of **displaying** the same **HTML** document
- ❖ **XML (Extensible Markup Language)**
 - A self-describing, hierachal **data model (M)**
 - **DTD (Document Type Definition)**
 - Standardizing schemas for **XML**
- ❖ **XSL (EXtensible Stylesheet Language)**
 - Language for expressing different ways of **displaying** the same **XML** document

HTML: An Example



```
<HTML>
<HEAD></HEAD>
<BODY>
<h1>Barns and Nobble Internet Bookstore</h1>
Our inventory:

<h3>Science</h3>
<b>The Character of Physical Law </b>
<UL>
    <LI>Author: Richard Feynman</LI>
    <LI>Published 1980</LI>
    <LI>Hardcover</LI>
</UL>
<h3>Fiction</h3>
<b>Waiting for the Mahatma</b>
<UL>
    <LI>Author: R.K. Narayan</LI>
    <LI>Published 1981</LI>
</UL>
<b>The English Teacher</b>
<UL>
    <LI>Author: R.K. Narayan</LI>
    <LI>Published 1980</LI>
    <LI>Paperback</LI>
</UL>
</BODY>
</HTML>
```

HTML: Sample Commands

- ❖ <HTML>:
- ❖ : unordered list
- ❖ : list entry
- ❖ <h1>: largest heading
- ❖ <h2>: second-level heading, <h3>, <h4> analogous
- ❖ Title: Bold

HTML and tags

HTML, CSS, and JavaScript are used together to create a web page.

- HTML defines the structure and content of a web page.
- CSS specifies the layout and visible appearance.
- JavaScript describes the dynamic behaviors and actions of a web page.

As an analogy, humans have similar components: structure (bones, organs, central nervous system), identifying attributes (eye color, hair style, height), and behaviors (brushing teeth, slam dunking a basketball).

HTML (HyperText Markup Language) is a textual language for creating web pages. HTML files are usually saved with a .html or .htm file extension. Ex: index.html. An HTML file starts with an indication of the document type, then a head part with the page title and other page information, and finally a body part with the actual page content. The HTML file may also contain CSS and JavaScript code.

Table 1.5.1: Common HTML tags.

Tags	Purpose	Example HTML
h1, h2, h3	Headers. h1 is largest.	<h2>Puppies are cute</h2>
p	Paragraph	<p>Humans seem designed to see puppies as cute.</p>
em, strong	Emphasis, strong emphasis	<p>"When in doubt, tell the truth" -Mark Twain.</p>
img	Image	 Note: src is the image's URL source.
a	Link	Click Here

TA time (Kevin) – 3 minutes

(CA 1.5.1 – Step 1 – Introduction to HTML)

CHALLENGE ACTIVITY

1.5.1: Introduction to HTML.

482744.26550.qx3zqy7

Start

Before the paragraph, add an h2 header that reads "Introduction" and then an h3 header that reads "Section 2".

SHOW EXPECTED

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="UTF-8">
5     <title>My first html program with headers</title>
6   </head>
7   <body>
8
9     <!-- Your solution goes here -->
10
11    <p>You can find some useful information in this section</p>
12
13 </html>
```

Expected webpage

Introduction

Section 2

You can find some useful information in this section

OK

1

42:36

Take control Pop out Chat People Raise View Rooms Apps More Camera Mic Share Leave

Participants

Invite someone or dial a number

Share invite

In this meeting (79) Mute all

Hilford, Victoria Organizer

Adesiyun, Monboluwarin E

Agha, Imaan

Ahmed, Sami

Akter, Sanzida

Alegbe, Joshua A

Batac, Joshua C

Blakborn, Martijn J

Bonkoungou, Elie D

Brieden, William A

Catchings, Alexander H

Cho, Coby M

The screenshot shows a Microsoft Teams video conference with 79 participants. In the foreground, a challenge activity from zyBooks is displayed. The activity title is "1.5.1: Introduction to HTML". It asks the user to add an h1 header for "Conclusion" and an h3 header for "Section 1" to a provided HTML template. The code editor shows the following HTML:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <title>My first html program with headers</title>
  </head>
  <body>
    </>-- Your solution goes here -->
    <h1>Conclusion</h1>
    <h3>Section 1</h3>
    <p>This is a section</p>
  </body>
</html>
```

The challenge has 5 steps, step 1 is selected. Below the editor, there are "Check" and "Next" buttons. The "Check" button is highlighted with a green checkmark. The feedback section shows:

- ✓ Testing that <h1> is the first tag in <body>
- Yours: h1
- ✓ Testing the number of <h1> tags
- Yours: 1

At the bottom, it says "Testing the number of </h1> closing tags".

Figure 1.5.1: An HTML file and the rendered web page.

```
<!DOCTYPE html>
<html lang="en">
<meta charset="UTF-8">
<title>For sale: 2012 Ducati Streetfighter</title>
<body>
  
  <h1>2012 Ducati Streetfighter 848 - $9000</h1>
  <p>2012 Ducati Streetfighter 848, Low Miles, Lots of Upgrades. Full service history.  
Call or text 555-4400.</p>
  <p>year: <strong>2012</strong></p>
  <p>make and model: <strong>Ducati Streetfighter 848</strong></p>
  <p>condition: <strong>excellent</strong></p>
  <p>engine: <strong>848</strong></p>
  <p>odometer: <strong>9500</strong></p>
  <p>paint color: <strong>yellow</strong></p>
</body>
</html>
```



2012 Ducati Streetfighter 848 - \$9000

2012 Ducati Streetfighter 848, Low Miles, Lots of Upgrades. Full service history. Call or text 555-4400.

year: 2012

make and model: **Ducati Streetfighter 848**

condition: **excellent**

engine: **848**

odometer: **9500**

paint color: **yellow**

TA time (Kevin) – 3 minutes

(CA 2.2.1 – Step 2 – Basic HTML tags)

CHALLENGE
ACTIVITY

2.2.1: Basic HTML tags.

482744.26550.qx3zqy7

[Jump to level 1](#)

Put each sentence in a separate paragraph. Wrap the paragraphs in a <section> tag. SHOW EXPECTED

```
1
2 <p>Jack saw the dog. A cat ran about. A bucket spilt. Thus, we went on.</p>
3
```

Expected webpage

Jack saw the dog.

A cat ran about.

A bucket spilt.

Thus, we went on.

Please indent

OK

2

01:08:33



You must read *One Flew Over the Cuckoo's Nest*, one of the best selling books of all time.

Valid
 Invalid

[Feedback?](#)

CHALLENGE ACTIVITY 2.2.1: Basic HTML tags.

4827921822304/q?easy?

Jump to level 1

Put each sentence in a separate paragraph. Wrap the paragraphs in a <section> tag. SHOW EXPECTED

```
1 <section>
2   <p>Jack saw the dog.</p>
3   <p>A mouse got lost in space.</p>
4   <p>A bridge stood.</p>
5   <p>Thus, we went on.</p>
6 </section>
```

1 2 3 4

[Check](#) [Next](#)

✓
✓ Testing number of <section> tag names
Yours 1

✓
✓ Testing number of <p> tags in the <section> tag
Yours 4

Participants

Invite someone or dial a number

[Share invite](#)

▶ Waiting in lobby (1)

▼ In this meeting (81)

Mute all

Hilford, Victoria
Organizer

Adesyun, Monboluwarin E

Agha, Imaan

Ahmed, Sami

Akter, Sanzida

Alegbe, Joshua A

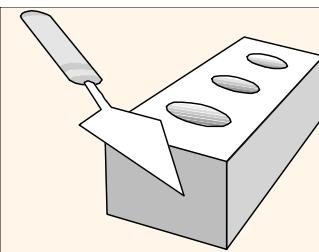
Batac, Joshua C

Blakborn, Martijn J

Bonkoungou, Elie D

Brieden, William A

Catchings, Alexander H



```
<!DOCTYPE html>  
<html>  
<body>
```

```
<h1>The strong element</h1>
```

```
<p>This text is normal.</p>
```

```
<p><strong>This text is important!</strong></p>
```

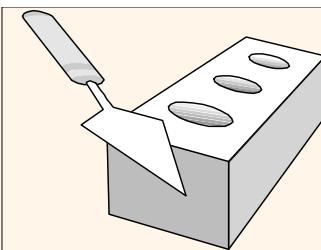
The strong element

This text is normal.

This text is important!

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

XML: An Example



```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
```

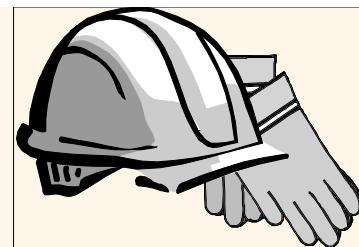
```
<BOOKLIST>
```

```
  <BOOK genre="Science" format="Hardcover">
    <AUTHOR>
      <FIRSTNAME>Richard</FIRSTNAME><LASTNAME>Feynman</LASTNAME>
    </AUTHOR>
    <TITLE>The Character of Physical Law</TITLE>
    <PUBLISHED>1980</PUBLISHED>
  </BOOK>
```

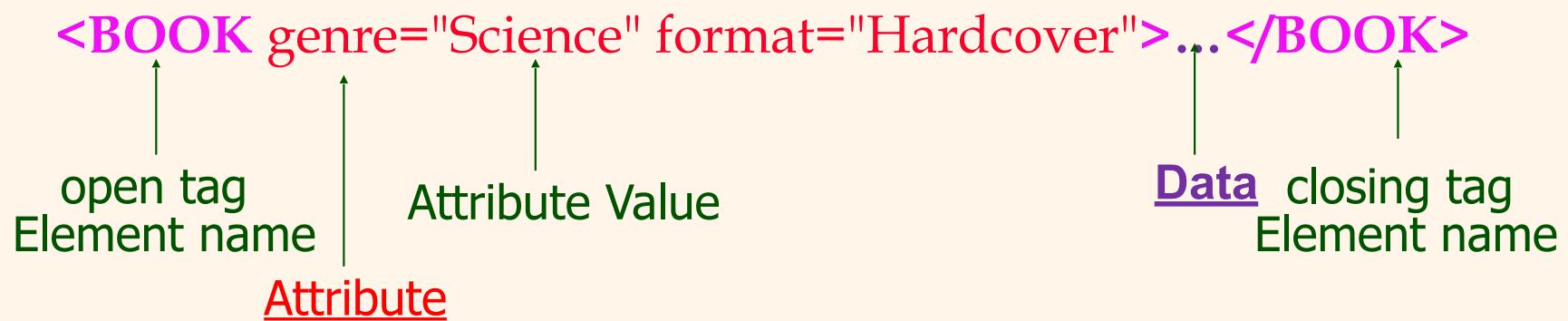
```
  <BOOK genre="Fiction">
    <AUTHOR>
      <FIRSTNAME>R.K.</FIRSTNAME><LASTNAME>Narayan</LASTNAME>
    </AUTHOR>
    <TITLE>Waiting for the Mahatma</TITLE>
    <PUBLISHED>1981</PUBLISHED>
  </BOOK>
```

```
  <BOOK genre="Fiction">
    <AUTHOR>
      <FIRSTNAME>R.K.</FIRSTNAME><LASTNAME>Narayan</LASTNAME>
    </AUTHOR>
    <TITLE>The English Teacher</TITLE>
    <PUBLISHED>1980</PUBLISHED>
  </BOOK>
</BOOKLIST>
```

XML – Structure



- ❖ XML: Confluence of SGML and HTML
- ❖ XML looks like HTML
- ❖ XML is a hierarchy of user-defined tags called Elements with Attributes and Data
- ❖ Data is described by Elements, Elements are described by Attributes



How many Elements?

1

How many Attributes?

2

33

DTD – Document Type Definition



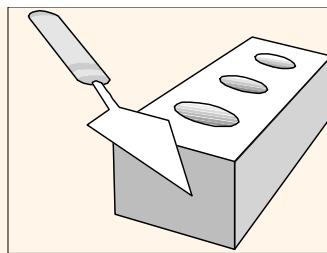
- ❖ A DTD is a Schema (type) for XML data
 - ❖ (type variable) (int x)
- ❖ XML protocols and Languages can be standardized with DTD files
- ❖ A DTD says what Elements and Attributes are required or optional
 - Defines the formal structure of the Language



DTD

```
<!DOCTYPE BOOKLIST [  
  <!ELEMENT BOOKLIST (BOOK)*>  
    <!ELEMENT BOOK (AUTHOR,TITLE,PUBLISHED?)>  
      <!ELEMENT AUTHOR (FIRSTNAME,LASTNAME)>  
        <!ELEMENT FIRSTNAME (#PCDATA)>  
        <!ELEMENT LASTNAME (#PCDATA)>  
      <!ELEMENT TITLE (#PCDATA)>  
      <!ELEMENT PUBLISHED (#PCDATA)>  
    <!ATTLIST BOOK GENRE (Science|Fiction) #REQUIRED>  
    <!ATTLIST BOOK FORMAT (Paperback|Hardcover) "Paperback">  
>
```

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>  
<BOOKLIST>  
  <BOOK genre="Science" format="Hardcover">  
    <AUTHOR>  
      <FIRSTNAME>Richard</FIRSTNAME><LASTNAME>Feynman</LASTNAME>  
    </AUTHOR>  
    <TITLE>The Character of Physical Law</TITLE>  
    <PUBLISHED>1980</PUBLISHED>  
</BOOK>
```



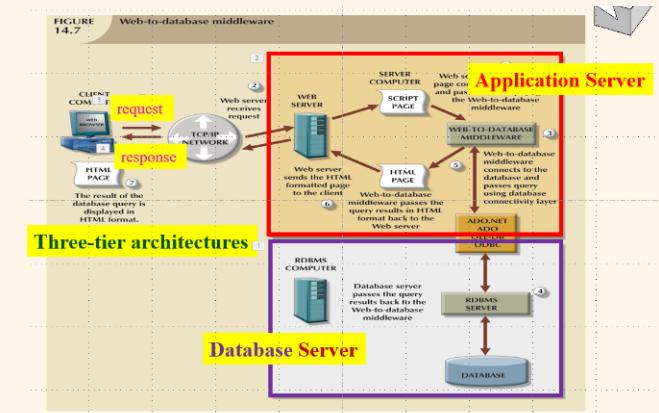
Overview

- ❖ Internet Concepts
- ❖ Web data formats
 - HTML, XML, DTDs
- ❖ Introduction to three-tier architectures
- ❖ The presentation layer
 - HTML forms; HTTP Get and POST, URL encoding;
Javascript; Stylesheets; XSLT

Components of Data-Intensive Systems

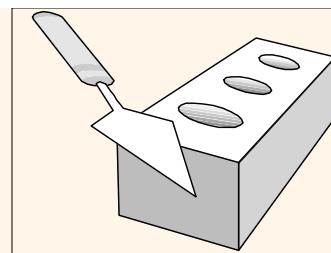
Three separate types of functionality:

- ❖ **Data management (Model)**
- ❖ **Presentation (View)**
- ❖ **Application logic (Controller)**



- ❖ The **system architecture** determines whether these three components reside on a single system (**tier**) or are distributed across several **tiers**

The *Three-Tier* Architecture (MVC)



Presentation tier

(V)

Client Program (Web Browser)

Middle tier

(C)

Application Server

Data management tier

(M)

Database Server

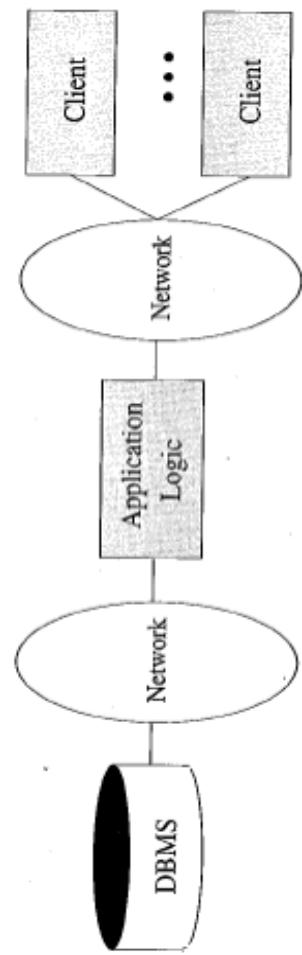


Figure 7.8 A Standard Three-Tier Architecture

The Three Layers (MVC)

Presentation tier (V)

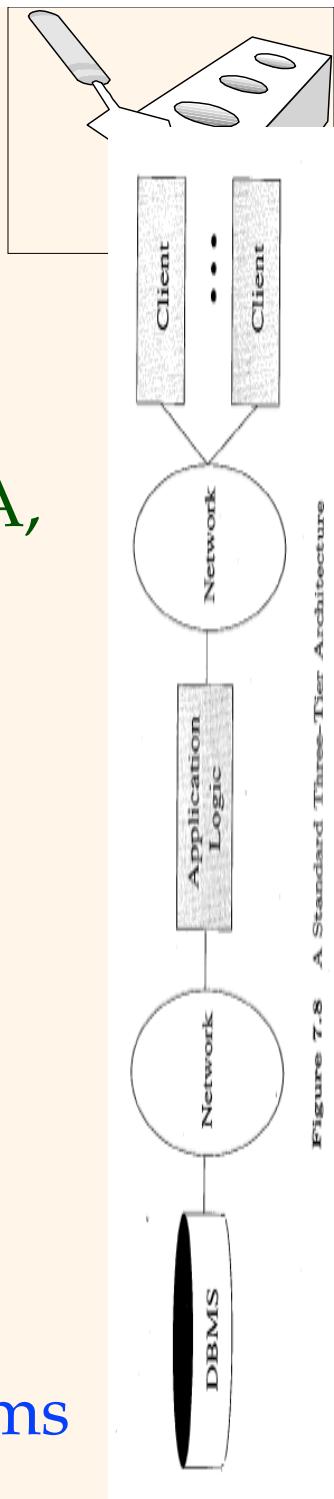
- Primary interface to the User
- Needs to adapt to different display devices (PC, PDA, cell phone, voice access?)

Middle tier (C)

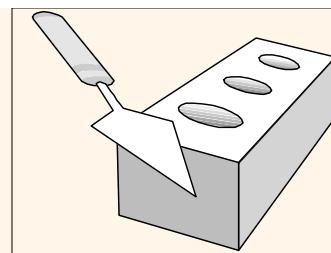
- Implements **business logic** (implements complex actions, maintains state between different steps of a workflow)
- Accesses different data management systems

Data management tier (M)

- One or more standard **Database Management Systems**



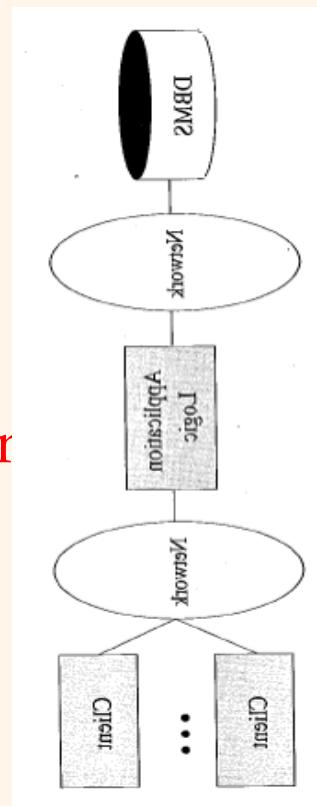
Example 1: Airline Reservations



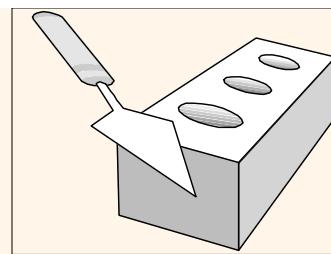
Build a **system for making** Airline Reservations

What is done in the different tiers?

- **Database System (M)**
 - Airline info, available Seats, Customer info, etc.
- **Client Program (V)**
 - Log in different **Users**, display forms (**Input Forms**) and **human readable output (Output Reports)**
- **Application Server (C)**
 - Logic to make reservations, cancel reservations, add new airlines, etc.



Example 2: Course Enrollment



Build a system using which Students can enroll in courses

- **Database System (M)**

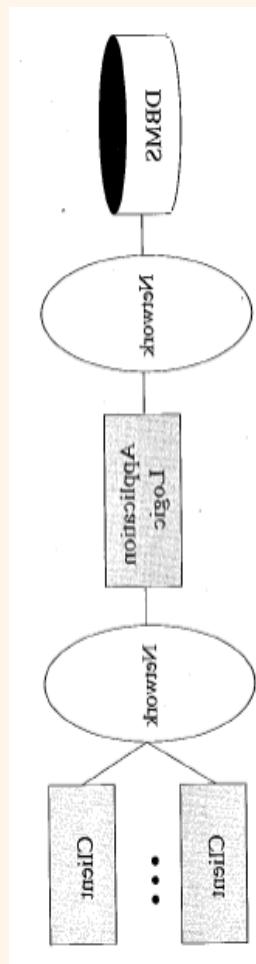
- Student info, Course info, Instructor info, Course availability, Pre-requisites, etc.

- **Client Program (V)**

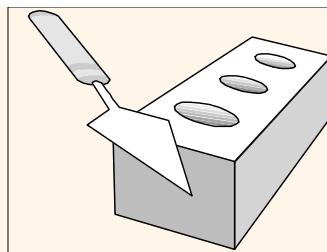
- Log in different Users (students, staff, faculty), display forms (Input Forms) and human-readable output (Output Reports)

- **Application Server (C)**

- Logic to add a course, drop a course, create a new course, etc.



3-tier Technologies (MVC)



*HTML
XML
Javascript
CSS
XSLT
Cookies*

Client Program
(Web Browser)

Application Server
(Tomcat, Apache, IIS)

Database Server
(DB2)

*JSP
Servlets
CGI
ASP.NET
PHP*

*XML
Stored Procedures*

Figure 7.8 A Standard Three-Tier Architecture

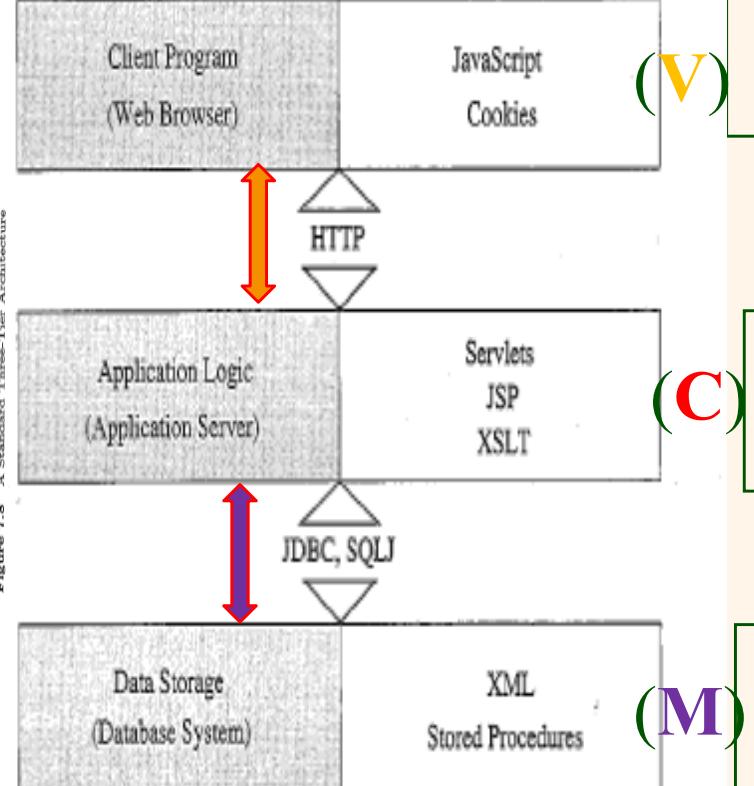
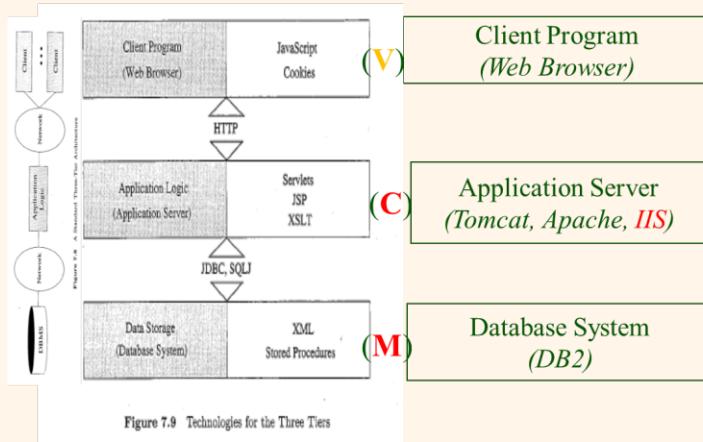


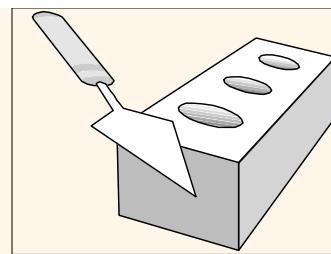
Figure 7.9 Technologies for the Three Tiers

Overview

- ❖ Internet Concepts
- ❖ Web data formats
 - HTML, XML, DTDs
- ❖ Introduction to three-tier architectures
- ❖ The Presentation layer
 - HTML forms (**Input Forms**) and human-readable output (**Output Reports**) ; HTTP Get and POST, URL encoding; Javascript; Stylesheets; XSLT



*HTML
Javascript
CSS
XSLT
Cookies*
*JSP
Servlets
CGI
ASP.NET
PHP*
*XML
Stored Procedures*



Web Application Development (MVC)

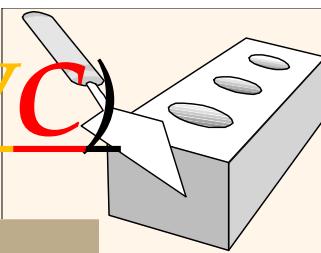
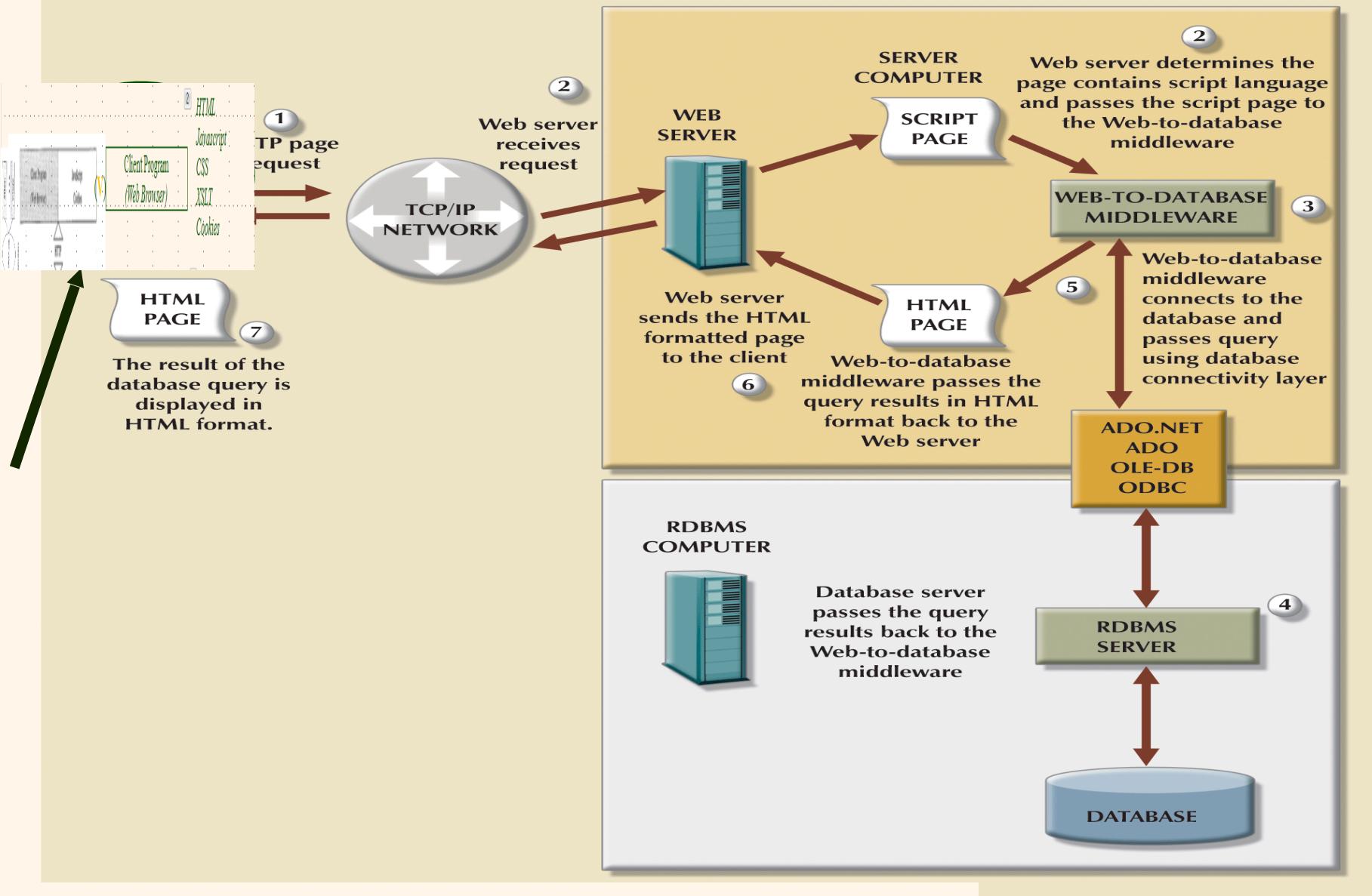
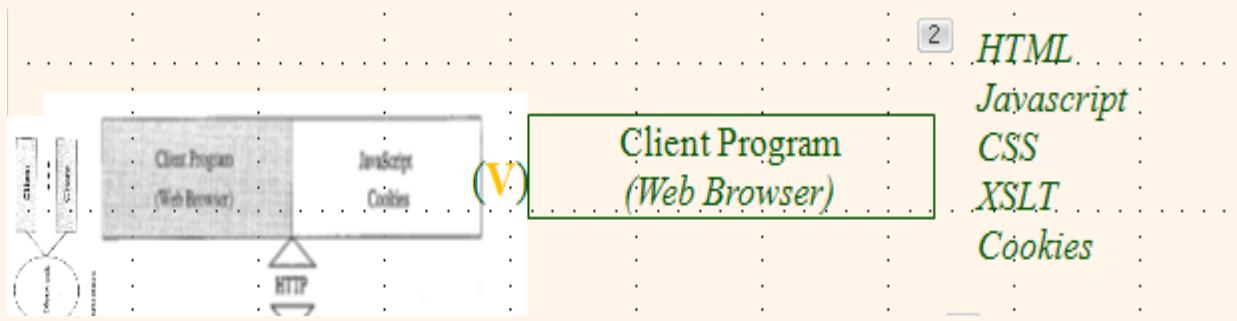
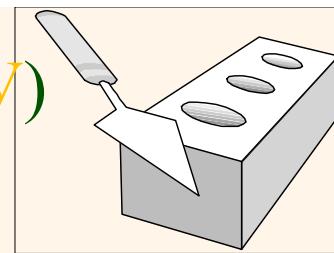


FIGURE
14.7

Web-to-database middleware



Overview of the Presentation Tier (V)



Recall: Functionality of the **Presentation** tier (V)

- Primary **interface** to the **User**
- Needs to adapt to different display devices (PC, PDA, cell phone, voice access?)
- Simple functionality, such as **field validity checking**

We will cover:

- **HTML Forms (Input Forms)** : How to pass **data** to the **middle tier**
- **JavaScript**: Simple functionality at the **Presentation** tier
- **Style sheets**: Separating **data** from formatting

Inside HTML Forms (Input Forms)



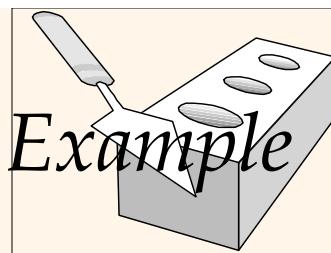
❖ input tag

■ Attributes:

- type: **text** (text input field), **password** (text input field where input is, **reset** (resets all input fields), **submit** (submit **Form** parameters))
- name: symbolic name, used to identify field value at the **middle tier** (C)
- value: default value

❖ Example form.

```
<form method="POST" action="TableOfContents.jsp">
  <input type="text" name="userid">
  <input type="password" name="password">
  <input type="submit" name="submit" value="Login" >
  <input type="reset" value="Clear" >
</form>
```



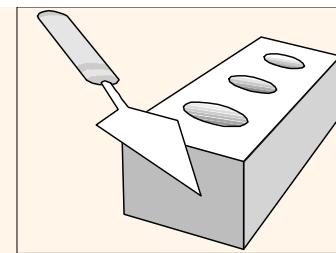
HTML Forms (Input Forms) : A Complete Example

```
<form method="POST" action="TableOfContents.jsp">  
  <table align = "center" border="0" width="300">  
    <tr>  
      <td>UserId</td>  
      <td><input type="text" name="userid" size="20"></td>  
    </tr>  
    <tr>  
      <td>Password</td>  
      <td><input type="password" name="password" size="20"></td>  
    </tr>  
    <tr>  
      <td align = "center"><input type="submit" name="submit" value="Login"></td>  
    </tr>  
  </table>  
</form>
```

The HTML `<tr>` element defines a row of cells in a table. The row's cells can then be established using a mix of `<td>` (data cell) and `<th>` (header cell) elements.

Place this in a **Form.html**
Open **Form.html** with a browser!

HTML Forms: A Complete Example



Blackboard Learning System file:///F:/COSC...TURES/Form.html +

Userid

Password

Done 48

JavaScript



Goal: Add functionality to the **Presentation** tier. (V)

Sample Applications:

- Detect browser type and load browser-specific page
- **Form validation**: Validate **Form** **input** fields
- **Browser control**: Open new windows, close existing windows (example: pop-up ads)

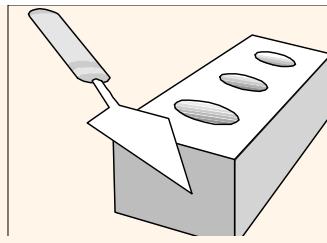
Usually embedded directly inside the **HTML** with the
<SCRIPT> ... **</SCRIPT>** tag.

<SCRIPT> tag has several **attributes**:

- **LANGUAGE**: specifies language of the script (such as javascript)
- **SRC**: external file with script code
- Example:

```
<SCRIPT LANGUAGE="JavaScript" SRC="validate.js">  
</SCRIPT>
```

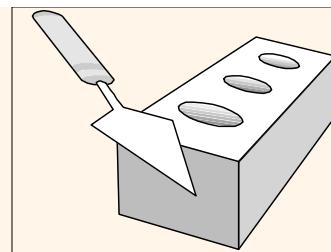
JavaScript



- ❖ If <SCRIPT> tag does not have a SRC attribute, then the **JavaScript** is directly in the **HTML** file.
- ❖ Example:

```
<SCRIPT LANGUAGE="JavaScript">
    <!-- alert("Welcome to our bookstore") //-->
</SCRIPT>
```
- ❖ Two different commenting styles
 - <!-- comment for **HTML**, since the following **JavaScript** code should be ignored by the **HTML** processor
 - // comment for **JavaScript** in order to end the **HTML** comment

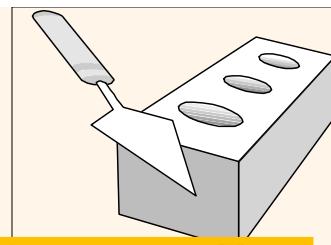
JavaScript



- **JavaScript is a complete scripting language**

- **Variables**
- **Assignments (=, +=, ...)**
- **Comparison operators (<,>,...), boolean operators (&&, || , !)**
- **Statements**
 - if (condition) {statements;} else {statements;}
 - for loops, do-while loops, and while-loops
- **Functions with return values**
 - Create functions using the **function** keyword
 - f(arg1, ..., argk) {statements;}

JavaScript: A Complete Example



```
<HTML>  
<HEAD>
```

```
<SCRIPT language="javascript">  
function testLoginEmpty(loginForm)  
{  
    if ((loginForm.userid.value == "") || (loginForm.password.value == ""))  
    {  
        alert('Please enter values for userid and password.');//  
        return false;  
    }  
    else  
        return true;  
}  
</SCRIPT>
```

```
</HEAD>
```

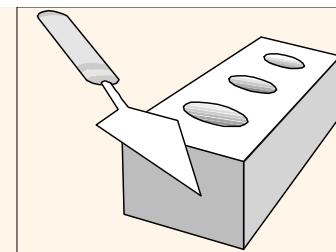
```
<BODY>
```

```
    <form method="POST" action="TableOfContents.jsp">  
        <input type="text" name="userid">  
        <input type="password" name="password">  
        <input type="button" name="submit" value="Login" onClick="testLoginEmpty(this.form)">  
        <input type="reset" value="Clear">  
    </form>
```

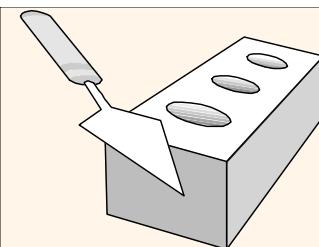
```
</BODY>  
</HTML>
```

Place this in a Form with JavaScript.html
Open it with a browser!

JavaScript: A Complete Example



A screenshot of a web browser window titled "Blackboard Learning System". The address bar shows the URL "file:///F:/COSC%...JavaScript.html". Below the address bar, there are two input fields and a "Login" button, which is highlighted with a red rectangle. To the right of the input fields is a "Clear" button. A red arrow points from the top of the slide down to the "Login" button. A modal dialog box titled "[JavaScript Application]" is displayed in the center. It contains a yellow warning icon with an exclamation mark and the text "Please enter values for userid and password." Below the message is an "OK" button. The bottom left corner of the slide has the word "Done".



```
1 <!DOCTYPE html>
2 <html lang="en">
3   <meta charset="UTF-8">
4   <script>
5     function updateRating(newRating) {
6       let star1 = document.getElementById("rating1");
7       let star2 = document.getElementById("rating2");
8       let star3 = document.getElementById("rating3");
9       let star4 = document.getElementById("rating4");
10      let star5 = document.getElementById("rating5");
11
12      if (newRating == 5) {
13        star5.style.color = "blue";
14        star4.style.color = "blue";
15        star3.style.color = "blue";
16        star2.style.color = "blue";
17        star1.style.color = "blue";
18      }
19      else if (newRating == 4) {
20        star5.style.color = "lightgray";
21        star4.style.color = "blue";
22        star3.style.color = "blue";
23        star2.style.color = "blue";
24        star1.style.color = "blue";
25      }
26    }
27  </script>
```

```
63   <p><strong>Update rating:</strong>
64     <button type="button" onclick="updateRating(4)">Rate 4</button>
65     <button type="button" onclick="updateRating(5)">Rate 5</button>
66   </p>
67
```

Kyoto Kaiseki Restaurant Review

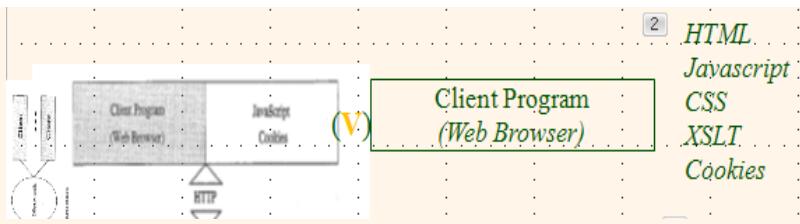
Rating: * * * * *

Update rating: [Rate 4](#) [Rate 5](#)

Favorite dish: Mixed sashimi

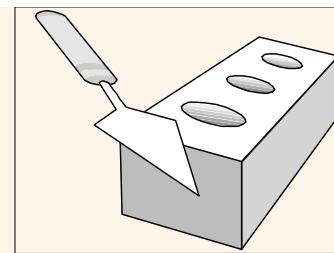


Stylesheets



- ❖ Idea: Separate **display** from **contents**, and adapt **display** to different **Presentation formats**
- ❖ Two aspects:
 - Document transformations to decide what parts of the document to display in what order
 - Document rendering to decide how each part of the document is displayed
- ❖ Why use **stylesheets**?
 - REUSE of the same document for different displays
 - Tailor display to User's preferences
 - REUSE of the same document in different contexts
- ❖ Two **Stylesheet languages**
 - Cascading Style Sheets (**CSS**): for **HTML** documents
 - EXtensible Style sheet Language (**XSL**): for **XML** documents

CSS: Cascading Style Sheets



- ❖ Defines how to display **HTML** documents
- ❖ Many **HTML** documents can refer to the same **CSS**
 - Can change format of a website by changing a single **Style Sheet**
 - Example:
`<LINK REL="style sheet" TYPE="text/css" HREF="books.css"/>`

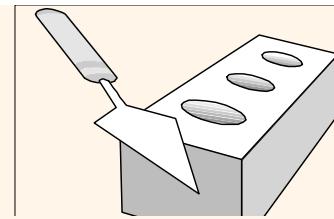
Each line in **CSS** consists of three parts:

selector {property: value}

- ❖ **selector:** Tag whose format is defined
- ❖ **property:** Tag's **Attribute** whose value is set
- ❖ **value:** value of the **Attribute**

```
<HTML>
  <HEAD></HEAD>
  <BODY>
    <h1>Barns and Nobble Internet Bookstore</h1>
    Our inventory:
    <h3>Science</h3>
    <b>The Character of Physical Law</b>
    <UL>
      <LI>Author: Richard Feynman</LI>
      <LI>Published 1980</LI>
      <LI>Hardcover</LI>
    </UL>
    <h3>Fiction</h3>
    <b>Waiting for the Mahatma</b>
    <UL>
      <LI>Author: R.K.Narayan</LI>
      <LI>Published 1981</LI>
    </UL>
    <b>The English Teacher</b>
    <UL>
      <LI>Author: R.K.Narayan</LI>
      <LI>Published 1980</LI>
      <LI>Paperback</LI>
    </UL>
  </BODY>
</HTML>
```

CSS: Cascading Style Sheets



Example Style Sheet:

```
body {background-color: yellow}
```

```
h1 {font-size: 36pt}
```

```
h3 {color: blue}
```

```
p {margin-left: 50px; color: red}
```

The first line has the same effect as:

```
<body background-color="yellow">
```

Each line in **CSS** consists of three parts:

- selector **{property: value}**
- ❖ **selector**: Tag whose format is defined
- ❖ **property**: Tag's **Attribute** whose value is set
- ❖ **value**: value of the **Attribute**

```
<HTML>
  <HEAD></HEAD>
  <BODY>
    <h1>Barns and Nobble Internet Bookstore</h1>
    Our inventory:
    <h3>Science</h3>
    <b>The Character of Physical Law</b>
    <UL>
      <LI>Author: Richard Feynman</LI>
      <LI>Published 1980</LI>
      <LI>Hardcover</LI>
    </UL>
    <h3>Fiction</h3>
    <b>Waiting for the Mahatma</b>
    <UL>
      <LI>Author: R.K.Narayan</LI>
      <LI>Published 1981</LI>
    </UL>
    <b>The English Teacher</b>
    <UL>
      <LI>Author: R.K.Narayan</LI>
      <LI>Published 1980</LI>
      <LI>Paperback</LI>
    </UL>
  </BODY>
</HTML>
```

Table 1.6.1: Common CSS properties.

Properties	Purpose	Example CSS
background-color	Element's background color	<pre>h1 { background-color: lightgray; }</pre>
font-family	Font used for the element's text.	<pre>p { font-family: arial; }</pre>
font-size	Font size used for the element's text.	<pre>p { font-size: 9pt; }</pre>
padding	Spacing between element's content and border.	<pre>strong { padding: 5px; }</pre>
margin	Spacing around element (outside element's border).	<pre>p { margin-left: 10px; }</pre> <p>Note: margin-top, margin-bottom, margin-left, and margin-right specify margin for individual sides.</p>

Figure 1.6.1: HTML code without and with CSS style rules.

```
<!DOCTYPE html>
<html lang="en">
  <meta charset="UTF-8">
  <title>For sale: 2012 Ducati Streetfighter</title>
  <body>
    <h1>Ducati Streetfighter - $9000</h1>
    <p>year: <strong>2012</strong></p>
    <p>make and model:<br/>
      <strong>Ducati Streetfighter 848</strong></p>
    <p>condition: <strong>excellent</strong></p>
    <p>odometer: <strong>9500</strong></p>
  </body>
</html>
```

```
<!DOCTYPE html>
<html lang="en">
  <meta charset="UTF-8">
  <style>
    h1 {
      color: green;
      background-color: lightgray;
    }
    p {
      font-family: arial;
      margin-left: 10px;
    }
    strong {
      background-color: lightgreen;
      padding: 5px;
    }
  </style>
  <title>For sale: 2012 Ducati Streetfighter</title>
  <body>
    <h1>Ducati Streetfighter - $9000</h1>
    <p>year: <strong>2012</strong></p>
    <p>make and model:<br/>
      <strong>Ducati Streetfighter 848</strong></p>
    <p>condition: <strong>excellent</strong></p>
    <p>odometer: <strong>9500</strong></p>
  </body>
</html>
```

Ducati Streetfighter - \$9000

year: 2012

make and model: Ducati Streetfighter 848

condition: excellent

odometer: 9500

Ducati Streetfighter - \$9000

year: 2012

make and model: Ducati Streetfighter 848

condition: excellent

odometer: 9500

TA time (Kevin) – 3 minutes

(CA 4.1.1 – Step 2 – Writing CSS rules)

CHALLENGE
ACTIVITY

4.1.1: Writing CSS rules.

482744.26550.qx3zqy7

[Jump to level 1](#)

Using a <style> tag, set the background-color to red for all <p> tags, the color to orange for all <h1> tags, and the color to silver for all tags. SHOW EXPECTED

```
1 <!-- Your solution goes here -->
2
3 <h1>Header content</h1>
4 <p>Paragraph content</p>
5 <ol>
6   <li>First item</li>
7   <li>Second item</li>
8   <li>Third item</li>
9 </ol>
```

Please indent

Expected webpage

Header content

Paragraph content

1. First item
2. Second item
3. Third item

OK

01:10:54

Take control Pop out Chat People Raise View Rooms Apps More Camera Mic Share Leave

KN
Nguyen, Kevin C View all

In this meeting (82) Mute all

Thomas, Maria L
Tran, Hiep
Tran, Son H
Tran, Vincent
Trinh, Hung Q
Truong, Thach C
Tu, Steven
Valle, Lupita
Velazquez, Veronica
Xu, Ziming
Yi
GY
MZ

learn.zybooks.com/zbook/UHCOSC4351Hiiford2Fall2023/chapter/4/section/1

zyBooks My library > COSC 4351: Fundamentals of Software Engineering home > 4.1: Using CSS in HTML

example.html:5

```
</p>
<p style="color: inherit">Good day</p>
</body>
</html>
```

hello.css:1

```
body {
    color: red;
}
```

CHALLENGE ACTIVITY 4.1.1: Writing CSS rules.

Jump to level 1

Using a <style> tag, set the color to red for all <p> tags, the color to orange for all <h1> tags, and the color to silver for all tags. SHOW EXPECTED

```
1 <!-- Your solution goes here -->
2 <style>
3   p{color:red;}
4   h1{color:orange;}
5   ol{color:silver;}
6 </style>
7 <h1>header content</h1>
8 <p>Paragraph content</p>
9 <ol>
10  <li>First item</li>
11  <li>Second item</li>
12  <li>Third item</li>
13 </ol>
```

1 2 3 4 5 6 7 8

Check Next

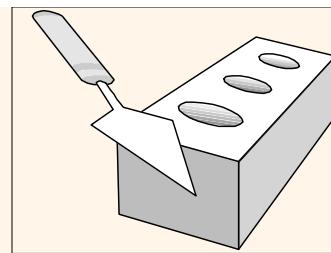
✓ Testing number of <h1> tags

Yours 1

AU Office Hours M & W 5 to 6 PM
Urtaza, Alvaro A started the meeting

Join

XSL



- ❖ Language for expressing **S**tyle **S**heets.
- ❖ It is, like **CSS**, a file that describes how to **display** an **XML** document **of a given type DTD**.
- ❖ It exceeds the capabilities of **CSS**.

On ZyBook work

1. Introduction to Web Programming

39%

1.1 Web history

46% ▼

1.2 IP addresses, domain names, and URLs

40% ▼

1.3 HTTP

40% ▼

1.4 Web trends

40% ▼

1.5 Introduction to HTML

36% ▼

1.6 Introduction to CSS

<STYLE> ... </STYLE>

36% ▼

1.7 Introduction to JavaScript

<SCRIPT LANGUAGE="JavaScript" SRC="validate.js"></SCRIPT>

33% ▼

2. HTML

10%

19%

20%

2.1 HTML document structure

29%

2.2 Basic HTML tags

23%

2.3 Comments

23%

2.4 Lists

23%

2.5 Tables

23%

2.6 Images

img	Image	<code></code>
Note: src is the image's URL source.		

21%

2.7 Links

a	Link	<code>Click Here</code>

19%

2.8 Special characters

17%

2.9 Example: Band web page

17%

2.10 LAB: News article (HTML)

13%

2.11 LAB: Hometown web page (HTML)

13%

2.12 LAB: Photo gallery table (HTML)

13%

2.13 LAB: Poem (HTML)

10%

10%

10%

10%

10%

3. More HTML

 1%  5%  5%

3.1 HTML containers

3.2 Forms **<FORM> ... </FORM>**

3.3 Common form widgets

3.4 Additional form widgets

3.5 Audio and video

3.6 <script> and <style>

3.7 HTML developer guidelines

3.8 Example: Restaurant Reviews

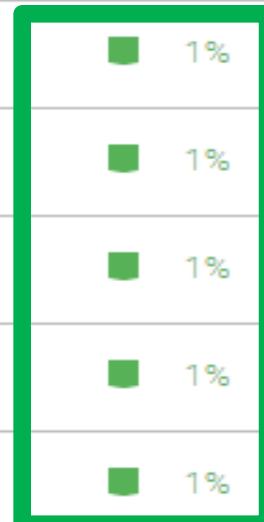
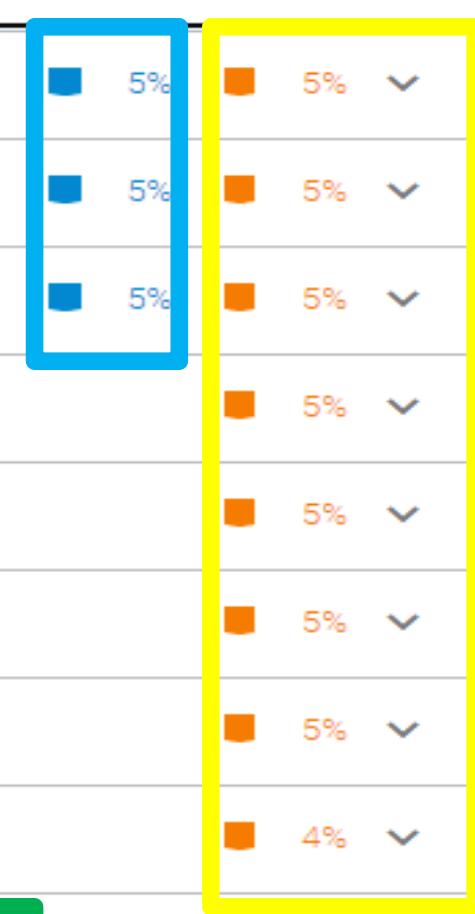
3.9 LAB: HTML practice

3.10 LAB: Fan web page (HTML)

3.11 LAB: Form for joining a social network (HTML)

3.12 LAB: Happy birthday message creator (HTML)

3.13 LAB: Starting lineup (HTML)



4. Basic CSS

<STYLE> ... </STYLE>

0%

0%

0%

0%

4.1 Using CSS in HTML

1%

1%

4.2 Basic selectors

0%

0%

4.3 Advanced selectors

0%

0%

4.4 Common properties

0%

0%

4.5 Font and text properties

0%

0%

4.6 Box model

0%

0%

4.7 Example: Styled band web page

0%

0%

4.8 LAB: News article (CSS)

0%

0%

4.9 LAB: Auto loan (CSS)

0%

0%

4.10 LAB: Sleep recommendation list (CSS)

0%

0%

4.11 LAB: Best-selling video games table (CSS)

0%

0%

4.12 LAB: Style the form with advanced selectors

0%

0%

5. Advanced CSS

<STYLE> ... </STYLE>

0%

0%

0%

 5.1 Positioning elements

0%

0%

 5.2 Special effects

0%

0%

 5.3 Animation

0%

0%

 5.4 Flexbox

0%

0%

 5.5 Grid layout

0%

0%

 5.6 Styling forms

0%

0%

 5.7 Sass

0%

 5.8 Example: Styled Restaurant Reviews

0%

 5.9 LAB: CSS practice

0%

0%

 5.10 LAB: Tic-tac-toe game with grid layout

0%

0%

 5.11 LAB: Position the playing cards

0%

0%

 5.12 LAB: Animating the answer

0%

0%



ZyLabs HOW TO html, css, javascript

1. Download the files provided in the ZyLab

The screenshot shows a web browser window with two tabs open: "Section 2.10 - COSC 4351: Fundamentals of Software Engineering home" and "Section 2.1 - COSC 4351: Fundamentals of Software Engineering home". The main content area displays a news article from "learn.zybooks.com" about rattlesnake bites. The article includes several bullet points and a list of social media links. Below the browser is a Microsoft WordPad window showing the start of an HTML file. The code includes the DOCTYPE declaration, opening HTML, head, and body tags, followed by a comment "<!-- Your code goes here -->". At the bottom left, there is a "LAB ACTIVITY" section with "Submission Instructions" and a "Download" button.</p>

So far this year, 74 rattlesnake bites to humans have been reported to the Arizona Poison and Drug Information Center. Based at the University of Arizona College of Pharmacy, the center serves the entire state of Arizona with the exception of Maricopa County, providing free and confidential poison and medication information to callers around the clock.

- Specialists answering the phones at the center regularly receive calls from Arizonans of all ages who don't realize they were bitten by a rattler. The poison center urges anyone who feels a mysterious sting, pinch or bite while outdoors to immediately call the center at 800-222-1222.
- "We will ask a few questions that will help you either identify possible snakebite or eliminate it," said Keith Boesen, director of the Arizona Poison and Drug Information Center. "With snakebite, the sooner the medical treatment, the better the outcome, so calling us right away can make a very big difference for the victims and the medical teams treating them."
- The center advises anyone who might come cross paths with rattlesnakes to be aware of these five things:

- An ordered list with the following item contents (in order):
 - Baby rattlesnakes range in length from 6 to 12 inches and are easily camouflaged by brush and grass.
 - Baby rattlesnakes are rattleless until they first shed their skins, so there will be no infamous "chica-chica" sound before they strike.
 - Despite their impish size, baby snakes have enough venom to be very dangerous if they bite a human.
 - Adult rattlesnakes do not always rattle an audible warning before or while they are biting.
 - It's a good idea to call the poison center if you notice an unidentified small cut or wound, even if you feel no pain. With the lack of telltale rattle warning, people can be bitten without knowing what has happened until they notice their symptoms and attribute them to a snakebite.
- <p> tag containing 3 <a> tags with content and href of:
 - Twitter and <https://twitter.com/>
 - Facebook and <https://www.facebook.com/>
 - LinkedIn and <https://www.linkedin.com/>

The ordered list must not be inside a <p> tag.

LAB ACTIVITY | 2.10.1: LAB: News article (HTML)

Submission Instructions

Downloadable files

index.html , UniversityLogo.png , and SnakeBite.jpg

Download

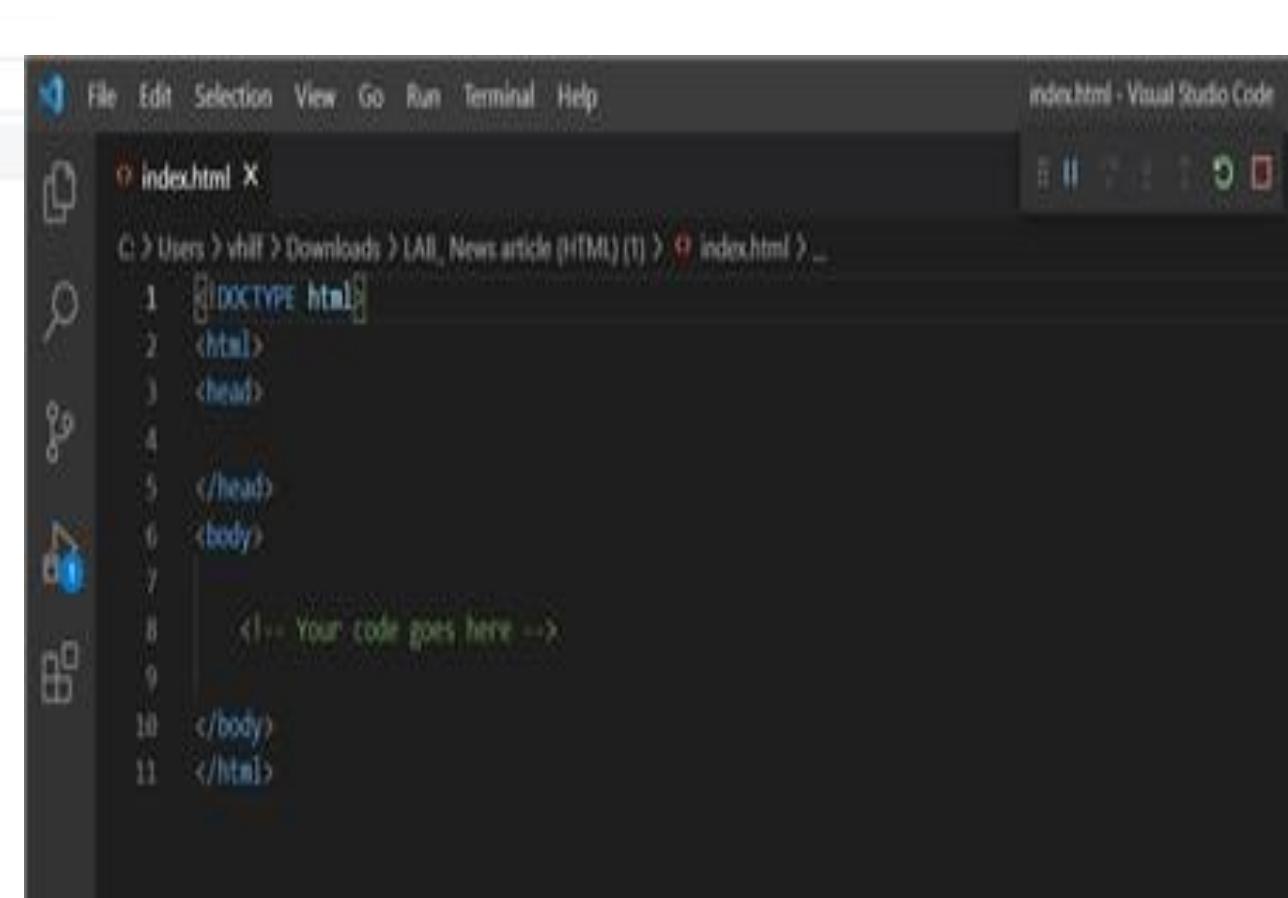
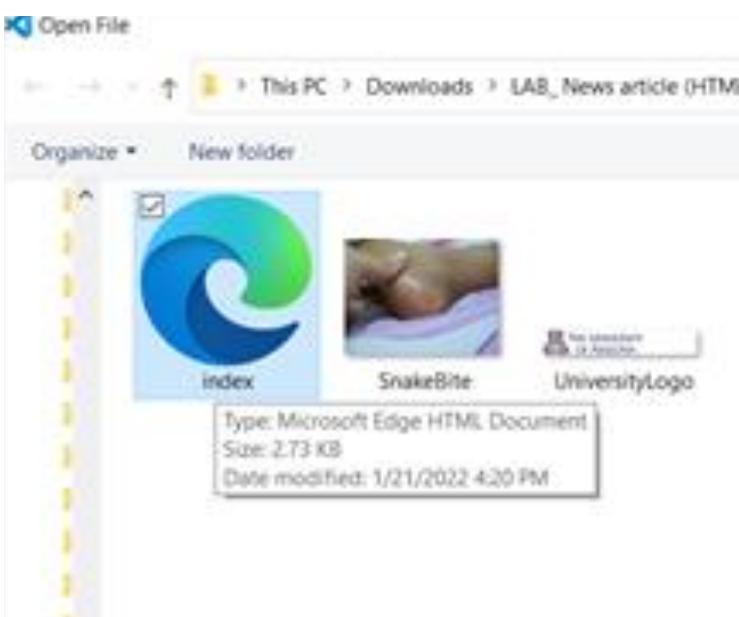
```
<!DOCTYPE html>
<html>
<head>
```

<!-- Your code goes here -->

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

ZyLabs HOW TO html, css, javascript

2. Locally you can use an IDE to complete the html, css, javascript. I downloaded Visual Studio Code



```
<!DOCTYPE html>
<html>
<head>
</head>
<body>
<!-- Your code goes here -->
</body>
</html>
```

ZyLabs HOW TO html, css, javascript

3. Make the changes according to the Instructions (html;
css; javascript)...

Then Run to see the webpage

The screenshot shows a code editor on the left and a web browser on the right. The code editor displays the HTML file 'index.html' with the following content:

```
<!DOCTYPE html>
<html>
<head>
<title>5 Things to Know About Rattlesnakes and Their Babies</title>
</head>
<body>

<h1>5 Things to Know About Rattlesnakes and Their Babies</h1>
<p>UA College of Pharmacy | Aug. 6, 2014</p>
<p>Arguably, snake season is year-round in Arizona, a state known for its<br/><br/>So far this year, 74 rattlesnake bites to humans have been reported to<br/>specialists answering the phones at the center regularly receive calls<br/>"We will ask a few questions that will help you either identify possible<br/>The center advises anyone who might come cross paths with rattlesnakes<br/><ol>
<li>Baby rattlesnakes range in length from 6 to 12 inches and are easily<br/><li>Baby rattlesnakes are rattleless until they first shed their skins<br/><li>Despite their impish size, baby snakes have enough venom to be very dangerous<br/><li>Adult rattlesnakes do not always rattle an audible warning before striking<br/><li>It's a good idea to call the poison center if you notice an uniden<br/></ol>
<p>Share: <a href="https://twitter.com/">Twitter</a> <a href="https://www.facebook.com/">Facebook</a></p>
</body>
</html>
```

The browser window on the right shows the rendered page titled '5 Things to Know About Rattlesnakes and Their Babies'. It features the University of Arizona logo and the text '5 Things to Know About Rattlesnakes and Their Babies' with a date of 'Aug. 6, 2014'. Below this is a paragraph about snake season in Arizona and a photo of a snake bite on a child's arm. Further down, there is a list of five things to know about rattlesnakes, a sharing section, and a note from the center.

ZyLabs HOW TO html, css,

javascript

4. When done, upload the file(s) in ZyBook then Submit for Grading

The screenshot shows a web browser window with three tabs open:

- zy Section 1.7 - COSC 4351: Fundan
- zy Section 2.10 - COSC 4351: Fundan
- zy view-source:https://learn.zybook

The address bar shows the URL: learn.zybooks.com/zybook/UHCOSC4351Hilford1Spring2021/chapter/2/section/10

The page content is for a "LAB ACTIVITY" titled "2.10.1: LAB: News article (HTML)". It displays the following information:

- Submission Instructions**
- Downloadable files**: index.html, UniversityLogo.png, and SnakeBite.jpg. A "Download" button is available.
- Upload your files below by dragging and dropping into the area or choosing a file on your hard drive.**
- A file upload area for "index.html" with options to "Drag file here" or "Choose on hard drive".
- Submit for grading** button.
- Coding trail of your work** and **What is this?** link.
- History of your effort** message: "History of your effort will appear here once you begin working on this zyLab."

3. More HTML

 1%  5%  5%



- 3.1 HTML containers  5%  5% 
- 3.2 Forms  5%  5% 
- 3.3 Common form widgets  5%  5% 
- 3.4 Additional form widgets  5% 
- 3.5 Audio and video  5% 
- 3.6 <script> and <style>  5% 
- 3.7 HTML developer guidelines  5% 
- 3.8 Example: Restaurant Reviews  4% 
- 3.9 LAB: HTML practice  1% 
- 3.10 LAB: Fan web page (HTML)  1% 
- 3.11 LAB: Form for joining a social network (HTML)  1% 
- 3.12 LAB: Happy birthday message creator (HTML)  1% 
- 3.13 LAB: Starting lineup (HTML)  1% 

3.10 LAB: Fan webpage (HTML)

Visible to students

Create a webpage about one of your favorite musicians, similar to the example below.

Depeche Mode Fan Webpage

Depeche Mode is an English electronic band that formed in 1980. The bad members are currently Dave Gahan, Martin Gore, and Andy Fletcher.

Visit the [official website](#) or a [Wikipedia article](#) about the band.

Fan web page by Anonymous

Use the following HTML containers:

- <header> with <h1> tags that contain the musician's name
- <main> with 2 paragraphs:
 - 1st paragraph gives some background information
 - 2nd paragraph links to at least one website about the musician
- <footer> that lists who created the webpage

```
<body>
  <header>
    <h1> Depeche Mode Fan Webpage </h1>
  </header>
</body>
```

Depeche Mode is an English electronic band that formed in 1980. The bad members are currently Dave Gahan, Martin Gore, and Andy Fletcher.

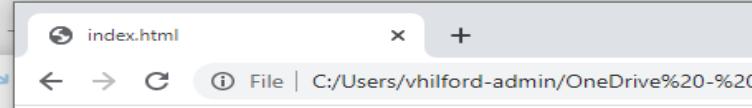
Visit the [official website](#) or a [Wikipedia article](#) about the band.

Fan web page by Anonymous

Use the following HTML containers:

- <header> with <h1> tags that contain the musician's name

```
Edit Selection View Go Run Terminal Help index.html
index.html x
C: > Users > vhilford-admin > OneDrive - University Of Houston > -
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <!-- Use the following HTML containers:
5
6  <header> with <h1> tags that contain the musician's name
7  <main> with 2 paragraphs:
8  1st paragraph gives some background information
9  2nd paragraph links to at least one website about the musician
10 <footer> that lists who created the webpage -->
11   <body>
12     <header>
13       <h1>Depeche Mode Fan Webpage</h1>
14     </header>
15
16   </body>
17
18 </html>
```



Depeche Mode Fan Webpage

Depeche Mode is an English electronic band that formed in 1980. The bad members are currently Dave Gahan, Martin Gore, and Andy Fletcher.

Visit the [official website](#) or a [Wikipedia article](#) about the band.

Fan web page by Anonymous

Use the following HTML containers:

- <header> with <h1> tags that contain the musician's name
- <main> with 2 paragraphs:
 - 1st paragraph gives some background information
 - 2nd paragraph links to at least one website about the musician

<footer> <footer> that lists who created the webpage </footer>

The screenshot shows a code editor on the left and a browser preview on the right. The code editor displays the following HTML code:

```
index.html
<!DOCTYPE html>
<html lang="en">
<!-- Use the following HTML containers:
<header> with <h1> tags that contain the musician's name
<main> with 2 paragraphs:
  1st paragraph gives some background information
  2nd paragraph links to at least one website about the musician
<footer> that lists who created the webpage -->
<body>
  <header>
    <h1>Depeche Mode Fan Webpage</h1>
  </header>

  </body>
<footer>
  Fan web page by Anonymous
</footer>
</html>
```

The browser preview shows the rendered HTML with the title "Depeche Mode Fan Webpage" and the footer "Fan web page by Anonymous".

<main>

```
<p> Depeche Mode is an English electronic band that formed in 1980. The bad members are  
</p> currently Dave Gahan, Martin Gore, and Andy Fletcher.  
<p> Visit the official website or a Wikipedia article about the band. </p>
```

</main> Fan web page by Anonymous

Use the following HTML containers:

- <header> with <h1> tags that contain the musician's name
- <main> with 2 paragraphs:
 - 1st paragraph gives some background information
 - 2nd paragraph links to at least one website about the musician

The screenshot shows the Visual Studio Code interface with two panes. The left pane displays the source code for `index.html`, and the right pane shows a browser window displaying the resulting web page.

Visual Studio Code Left Pane (index.html):

```
index.html - Visual Studio Code
COSC 4351 SPRING 2020

<!DOCTYPE html>
<html lang="en">
  <!-- Use the following HTML containers: -->
  <header> with <h1> tags that contain the musician's name
  <main> with 2 paragraphs:
    1st paragraph gives some background information
    2nd paragraph links to at least one website about the musician
  <footer> that lists who created the webpage  -->
  <body>
    <header>
      <h1>Depeche Mode Fan Webpage</h1>
    </header>

    </body>
<main>
  <p>
    Depeche Mode is an English electronic band that formed in 1980.
    The bad members are currently Dave Gahan, Martin Gore,
    and Andy Fletcher.
  </p>
  <p>
    Visit the <a href="http://www.depechemode.com/">official website</a> or a
    <a href="https://en.wikipedia.org/wiki/Depeche_Mode">Wikipedia article</a>
    about the band.
  </p>
</main>
<footer>
  Fan web page by Anonymous
</footer>
</html>
```

Browser Preview (index.html):

Depeche Mode Fan Webpage

Depeche Mode is an English electronic band that formed in 1980. The bad members are currently Dave Gahan, Martin Gore, and Andy Fletcher.

Visit the [official website](#) or a [Wikipedia article](#) about the band.

Fan web page by Anonymous

Submit for gradingCoding trail of your work [What is this?](#)1/21 **s10**

Latest submission - 8:25 PM CST on 01/21/23

Submission passed all tests ✓ Total score: 10 / 10

 Only show failing tests[Download this submission](#)

1:Unit test ▾

1 / 1

Test for <header>

- ✓ <header> tag exists in <body>

2:Unit test ▾

2 / 2

Test header's <h1> tag

- ✓ <h1> tag exists in <header>
- ✓ <h1> contains text

3:Unit test ▾

1 / 1

Test for <main> tag

- ✓ <main> tag exists in <body>

4:Unit test ▾

2 / 2

Test main's first <p>

- ✓ <p> tag exists in <main>
- ✓ <p> tag contains text

5:Unit test ▾

2 / 2

Test main's second <p>

- ✓ Second <p> tag exists in <main>
- ✓ Second <p> tag contains at least 1 <a> tag
- ✓ <a> tag has href attribute

6:Unit test ▾

2 / 2

Test for <footer>

- ✓ <footer> tag exists in <body>
- ✓ <footer> contains text

4. Basic CSS

 0%  0%  0%

- 4.1 Using CSS in HTML  1%  1%
- 4.2 Basic selectors  0%  0%
- 4.3 Advanced selectors  0%  0%
- 4.4 Common properties  0%  0%
- 4.5 Font and text properties  0%  0%
- 4.6 Box model  0%  0%
- 4.7 Example: Styled band web page  0%
- 4.8 LAB: News article (CSS)  0%
- 4.9 LAB: Auto loan (CSS)  0%
- 4.10 LAB: Sleep recommendation list (CSS)  0%
- 4.11 LAB: Best-selling video games table (CSS)  0%
- 4.12 LAB: Style the form with advanced selectors  0%

4.10 LAB: Sleep recommendation list (CSS)

Visible to students



Clone



Modify the given HTML file to look like the webpage below.

Sleep Duration Recommendations

- School-aged children (6-13 years) — **9-11 hours**
- Teenagers (14-17 years) — **8-10 hours**
- Young adults (18-25 years) — **7-9 hours**
- Adults (26-64 years) — **7-9 hours**
- Older adults (65+ years) — **7-8 hours**

Source: [National Sleep Foundation's Sleep Duration Recommendations](#)

Add CSS rules to the embedded stylesheet so each element uses the following styles:

- `<body>` uses Arial, Helvetica, sans-serif font family, 18px font size, and #EDF4FB background color
- `<h1>` uses RGB (26, 69, 107) font color
- `` uses #296CA8 font color
- `` with "age" class uses an italic font style
- `` with "recommended" class has a yellow background color and underlined text

449702.26550.qx3zqy7

LAB
ACTIVITY

4.10.1: LAB: Sleep recommendation list (CSS)

Submission Instructions

Downloadable files

`recommend.html`

[Download](#)

Upload your files below by dragging and dropping into the area or choosing a file on your hard drive.

`recommend.html`

Drag file here

or

[Choose on hard drive.](#)

recommend.html X

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <title>Sleep Duration Recommendations</title>
5      <style>
6          /* Your solution goes here */
7      </style>
8  </head>
9  <body>
10     <h1>Sleep Duration Recommendations</h1>
11     <ul>
12         <li>School-aged children <span class="age">(6-13 years)</span> &mdash;
13             <span class="recommended">9-11 hours</span>
14         </li>
15         <li>Teenagers <span class="age">(14-17 years)</span> &mdash;
16             <span class="recommended">8-10 hours</span>
17         </li>
18         <li>Young adults <span class="age">(18-25 years)</span> &mdash;
19             <span class="recommended">7-9 hours</span>
20         </li>
21         <li>Adults <span class="age">(26-64 years)</span> &mdash;
22             <span class="recommended">7-9 hours</span>
23         </li>
24         <li>Older adults <span class="age">(65+ years)</span> &mdash;
25             <span class="recommended">7-8 hours</span>
26         </li>
27     </ul>
28     <p>
29         Source: <a href="https://www.sleepfoundation.org/press-release/national-sleep-f
30     </p>
31 </body>
32 </html>
```

COSC 4351 SPRING 2020

Sleep Duration Recommendation X +

< File | C:/Users/vhilford-admin/OneDrive%20-%20University%20Of%20Houston/-%20%20%20%

Sleep Duration Recommendations

- School-aged children (6-13 years) — 9-11 hours
- Teenagers (14-17 years) — 8-10 hours
- Young adults (18-25 years) — 7-9 hours
- Adults (26-64 years) — 7-9 hours
- Older adults (65+ years) — 7-8 hours

Source: [National Sleep Foundation's Sleep Duration Recommendations](https://www.sleepfoundation.org/press-release/national-sleep-f)

Add CSS rules to the embedded stylesheet so each element uses the following styles:

- <body> uses Arial, Helvetica, sans-serif font family, 18px font size, and #EDF4FB background color
- <h1> uses RGB (26, 69, 107) font color
- uses #296CA8 font color
- with "age" class uses an italic font style
- with "recommended" class has a yellow background color and underlined text

HTML Tag

[**< Previous**](#)[**Complete HTML Reference**](#)

Example

A element which is used to color a part of a text:

```
<p>My mother has <span style="color:blue">blue</span> eyes.</p>
```

```
<!DOCTYPE html>
<html>
<body>

<h1>The span element</h1>

<p>My mother has <span style="color:blue;font-weight:bold">blue</span>
eyes and my father has <span style="color:darkolivegreen;font-
weight:bold">dark green</span> eyes.</p>

</body>
</html>
```

The span element

My mother has blue eyes and my father has dark green eyes.

Add CSS rules to the embedded stylesheet so each element uses the following styles:

- <body> uses Arial, Helvetica, sans-serif font family, 18px font size, and #EDF4FB background color

Edit Selection View Go Run Terminal Help

recommend.html - Visual Studio Code



Sleep Duration Recommendation x +

← → C ⓘ File | C:/Users/vhilford-admin/OneDrive%20-%20University%20Of%20Houston/-%20%20%20%20%

; > vhilford-admin > OneDrive - University Of Houston > -

COSC 4351 SPRING 2023 1-23

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <title>Sleep Duration Recommendations</title>
5      <style>
6          /* Add CSS rules to the embedded stylesheet so each element uses the following
```

```
8      <body> uses Arial, Helvetica, sans-serif font family, 18px font size, and #EDF4FB
9      <h1> uses RGB (26, 69, 107) font color
10     <li> uses #296CA8 font color
11     <span> with "age" class uses an italic font style
12     <span> with "recommended" class has a yellow background color and underlined te
```

```
14    body {
15        font-family: Arial, Helvetica, sans-serif;
16        font-size: 18px;
17        background-color: #EDF4FB;
18    }
```

```
19  </style>
20 </head>
21 <body>
22     <h1>Sleep Duration Recommendations</h1>
23     <ul>
24         <li>School-aged children <span class="age">(6-13 years)</span> &mdash;
25             <span class="recommended">9-11 hours</span>
26         </li>
27         <li>Teenagers <span class="age">(14-17 years)</span> &mdash;
28             <span class="recommended">8-10 hours</span>
29         </li>
30         <li>Young adults <span class="age">(18-25 years)</span> &mdash;
31             <span class="recommended">7-9 hours</span>
32         </li>
```

Sleep Duration Recommendations

- School-aged children (6-13 years) — 9-11 hours
- Teenagers (14-17 years) — 8-10 hours
- Young adults (18-25 years) — 7-9 hours
- Adults (26-64 years) — 7-9 hours
- Older adults (65+ years) — 7-8 hours

Source: [National Sleep Foundation's Sleep Duration Recommendations](#)

Add CSS rules to the embedded stylesheet so each element uses the following styles:

- <body> uses Arial, Helvetica, sans-serif font family, 18px font size, and #EDF4FB background color
 - <h1> uses RGB (26, 69, 107) font color

Edit Selection View Go Run Terminal Help recommend.html - Visual Studio Code

C:\> Users > vhilford-admin > OneDrive - University Of Houston > - COSC 4351 SPRING 2024

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <title>Sleep Duration Recommendations</title>
5      <style>
6          /* Add CSS rules to the embedded stylesheet so each element uses the following
7
8          <body> uses Arial, Helvetica, sans-serif font family, 18px font size, and #EDF
9          <h1> uses RGB (26, 69, 107) font color
10         <li> uses #296CA8 font color
11         <span> with "age" class uses an italic font style
12         <span> with "recommended" class has a yellow background color and underlined te
13
14     body {
15         font-family: Arial, Helvetica, sans-serif;
16         font-size: 18px;
17         background-color: #rgb(237, 244, 251);
18     }
19     h1 {
20         color: #rgb(26, 69, 107);
21     }
22 </style>
23 </head>
24 <body>
25     <h1>Sleep Duration Recommendations</h1>
26     <ul>
27         <li>School-aged children <span class="age">(6-13 years)</span> &mdash;
28             <span class="recommended">9-11 hours</span>
29         </li>
30         <li>Teenagers <span class="age">(14-17 years)</span> &mdash;
31             <span class="recommended">8-10 hours</span>
32         </li>
```

Sleep Duration Recommendation X

- School-aged children (6-13 years) — 9-11 hours
 - Teenagers (14-17 years) — 8-10 hours
 - Young adults (18-25 years) — 7-9 hours
 - Adults (26-64 years) — 7-9 hours
 - Older adults (65+ years) — 7-8 hours

Source: National Sleep Foundation's Sleep Duration Recommendations

Add CSS rules to the embedded stylesheet so each element uses the following styles:

- `<body>` uses Arial, Helvetica, sans-serif font family, 18px font size, and #EDF4FB background color
- `<h1>` uses RGB (26, 69, 107) font color
- `` uses #296CA8 font color

Edit Selection View Go Run Terminal Help recommend.html - Visual Studio Code C: > Users > vhilford-admin > OneDrive - University Of Houston > - recommend.html + COSC 4351 SPRING 2020

```
recommend.html
22 li {
23     color: #296CA8;
24 }
25 
```

26 </style>

27 </head>

28 <body>

29 <h1>Sleep Duration Recommendations</h1>

30

31 School-aged children (6-13 years) —

32 9-11 hours

33

34 Teenagers (14-17 years) —

35 8-10 hours

36

37 Young adults (18-25 years) —

38 7-9 hours

39

40 Adults (26-64 years) —

41 7-9 hours

42

43 Older adults (65+ years) —

44 7-8 hours

45

46 <p>

47 Source: <a href="https://www.sleepfoundation.org/press-release/national-sleep-f

48 </p>

49 </body>

50 </html>

Sleep Duration Recommendations

- School-aged children (6-13 years) — 9-11 hours
- Teenagers (14-17 years) — 8-10 hours
- Young adults (18-25 years) — 7-9 hours
- Adults (26-64 years) — 7-9 hours
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Source: [National Sleep Foundation's Sleep Duration Recommendations](https://www.sleepfoundation.org/press-release/national-sleep-f)

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- `` uses #296CA8 font color
- `` with "age" class uses an italic font style

recommend.html - Visual Studio Code

C:\> Users > vhilford-admin > OneDrive - University Of Houston > -

```
25 .age {  
26     font-style: italic;  
27 }  
28 </style>  
29 </head>  
30 <body>  
31     <h1>Sleep Duration Recommendations</h1>  
32     <ul>  
33         <li>School-aged children <span class="age">(6-13 years)</span> &mdash;  
34             <span class="recommended">9-11 hours</span>  
35         </li>  
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41         </li>  
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43             <span class="recommended">7-9 hours</span>  
44         </li>  
45         <li>Older adults <span class="age">(65+ years)</span> &mdash;  
46             <span class="recommended">7-8 hours</span>  
47         </li>  
48     </ul>  
49     <p>  
50         Source: <a href="https://www.sleepfoundation.org/press-release/national">  
51     </p>  
52 </body>  
53 </html>
```

Sleep Duration Recommendation

COSC 4351

Sleep Duration Recommendations

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- `` with "recommended" class has a yellow background color and underlined text

recommend.html - Visual Studio Code

C: > Users > whilford-admin > OneDrive - University Of Houston > - COSC 4351

```
28     .recommended {  
29         background-color: yellow;  
30         text-decoration: underline;  
31     }  
32     </style>  
33 </head>  
34 <body>  
35     <h1>Sleep Duration Recommendations</h1>  
36     <ul>  
37         <li>School-aged children <span class="age">(6-13 years)</span> &mdash;  
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39         </li>  
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56 </body>  
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Sleep Duration Recommendation

Sleep Duration Recommendations

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Source: [National Sleep Foundation's Sleep Duration Recommendations](https://www.sleepfoundation.org/press-release/national)

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1 / 21 810

Latest submission - 8:55 PM CST on 01/21/23

Submission passed all tests ✓ Total score: 10 / 10

Only show failing tests

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1:Unit test ▾

2 / 2

Test body styles

- ✓ font-family of <body> tag
- ✓ font-size of <body> tag
- ✓ background-color of <body> tag

2:Unit test ▾

2 / 2

Test h1 style

- ✓ color of <h1> tag

3:Unit test ▾

2 / 2

Test li style

- ✓ color of tag 1 is #296CAB
- ✓ color of tag 2 is #296CAB
- ✓ color of tag 3 is #296CAB
- ✓ color of tag 4 is #296CAB
- ✓ color of tag 5 is #296CAB

4:Unit test ▾

2 / 2

Test span with "age" class

- ✓ font-style of tag 1 with class "age" is italic
- ✓ font-style of tag 2 with class "age" is italic
- ✓ font-style of tag 3 with class "age" is italic
- ✓ font-style of tag 4 with class "age" is italic
- ✓ font-style of tag 5 with class "age" is italic

5:Unit test ▾

2 / 2

Test span with "recommended" class

- ✓ background-color of tag 1 with class "recommended" is yellow
- ✓ text-decoration of tag 1 with class "recommended" is underline
- ✓ background-color of tag 2 with class "recommended" is yellow
- ✓ text-decoration of tag 2 with class "recommended" is underline
- ✓ background-color of tag 3 with class "recommended" is yellow
- ✓ text-decoration of tag 3 with class "recommended" is underline
- ✓ background-color of tag 4 with class "recommended" is yellow
- ✓ text-decoration of tag 4 with class "recommended" is underline
- ✓ background-color of tag 5 with class "recommended" is yellow
- ✓ text-decoration of tag 5 with class "recommended" is underline

ZyBook – Web Programming

Complete Sections 1 - 5

1. Introduction to Web Programming

2. HTML

3. More HTML

4. Basic CSS

5. Advanced CSS

HTML 5

09.11.2023
(M 4 to 5:30)

(6)

EXAM 1 REVIEW
(CANVAS)
(ZyBook)

Download
ZyBook:

Sections 1-5

Due September 11, 4:00 PM

Grade:

Web Programming 30%

08.28.2023 (M 4 to 5:30)	Review Tutorials 1 on WHAT tools (UML & ERD Modeling)	Lecture 2: SDLC	SDLC Papers Summary (1 Page) CANVAS Assignment
(3)			

CANVAS

08.28.2023
(M 4 to 5:30)

Review Tutorials 1 on
WHAT tools (UML &
ERD Modeling)

(3)

Lecture 2: SDLC

SDLC Papers
Summary
(1 Page)
CANVAS
Assignment

CLASSES

PAPERS on SDLC

Software Development Life Cycle SDLC 2015.pdf	Download	Checkmark	More
A Comparative Analysis of Software development life cycle Models 2015.pdf	Download	Checkmark	More
IBM application lifecycle management (ALM).pdf	Download	Checkmark	More

08.28.2023
(M 4 to 5:30)

Review Tutorials 1 ON
WHAT tools (UML &
ERD Modeling)

Lecture 2: SDLC

(3)

SDLC Papers
Summary
(1 Page)
CANVAS
Assignment

CLASS PARTICIPATION 20 points

20% of Total + :

One Page Summary of SDLC MODELS Papers

CLASS PARTICIPATION 20% Module | Available until Aug 28 at 4:00pm | Due Aug 28 at 4pm | 100 pts



One Page Summary of SDLC MODELS
Papers ↗

Published

Edit

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Please attach your electronic version.

Due August 28, 4:00 PM

Grade:

Class Participation 20%

From 5:05 to 5:15 PM – 10 minutes.

08.23.2023 (W 4 to 5:30) (2)	 WEB TECHNOLOGIES	 Start ZyBook: Sections 1-5		
--	--	--	--	--

CLASS PARTICIPATION 20 points 20% of Total + :

END Class 2 Participation **PASSWORD: IN TEAMS**

CLASS PARTICIPATION 20% Module | Not available until Aug 23 at 5:05pm | Due Aug 23 at 5:15pm | 60 pts

VH, publish.

END Class 2 Participation ↗

Last 10 minutes of the class.
You can leave meeting when you are done.
PPT will be posted in CANVAS under CLASSES.

VH Download Meeting Participants

At 5:15 PM.

End Class 2

VH, upload Class 2 to CANVAS.

**VH, Download Attendance Report
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8.23.2023 Attendance Report FINAL**