Computer Science Principles
Web Programming

Web-Content Programming with HTML

CHAPTER 8/9: TABLE AND FORMS

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Table

Table Structure
Structure

Example table
This is an example of a data table.

TH Disability Category	TH Participants	TH Ballots Completed	TH Ballots Incomplete/ Terminated	TH Results	
				TH Accuracy	TH Time to complete
TD d	TD 5	TD 1	TD 4	TD 4.5%, n=1	TD 199 sec, n=1
TD Vision	TD 5	TD 2	TD 3	TD 98.3% n=2 (97.7%, n=3)	TD 716 sec, n=3 (1934 sec, n=2)
TD terity	TD 5	TD 4	TD 1	TD 8.3%, n=4	TD 72.1 sec, n=4
TD bility	TD 3	TD 3	TD 0	TD 5.4%, n=3	TD 416 sec, n=3

Table Structure
Code Structure

Table Structure
DOM Model

Complete Table Code Structure

```
<TABLE>
        <CAPTION>CSS3 Browser Support*</CAPTION>

<THEAD>
        <TR>
                <TD>CSS Property</TD>
                <TD>Internet Explorer</TD>
                <TD>FireFox</TD>
                <TD> Chrome</TD>
                <TD>Safari</TD>
                <TD>Opera</TD>
        </TR>

<THEAD>

<TFOOT>
        <TD COLSPAN="6">*Latest browser versions</TD>
<TFOOT>

<TBODY>
        <TR>
                <TD class="LeftCol">Border Radius</TD>
                <TD>YES</TD>
                <TD>YES</TD>
                <TD>YES</TD>
                <TD>YES</TD>
                <TD>YES</TD>
        </TR>

        <TR>
                <TD class="LeftCol">Box Shadow</TD>
                <TD>YES</TD>
                <TD>YES</TD>
                <TD>YES</TD>
                <TD>YES</TD>
                <TD>YES</TD>
        </TR>

        <TR>
                <TD class="LeftCol">CSS Animations</TD>
                <TD>NO</TD>
                <TD>NO</TD>
                <TD>YES</TD>
                <TD>YES</TD>
                <TD>NO</TD>
        </TR>
<TBODY>

</TABLE>
```
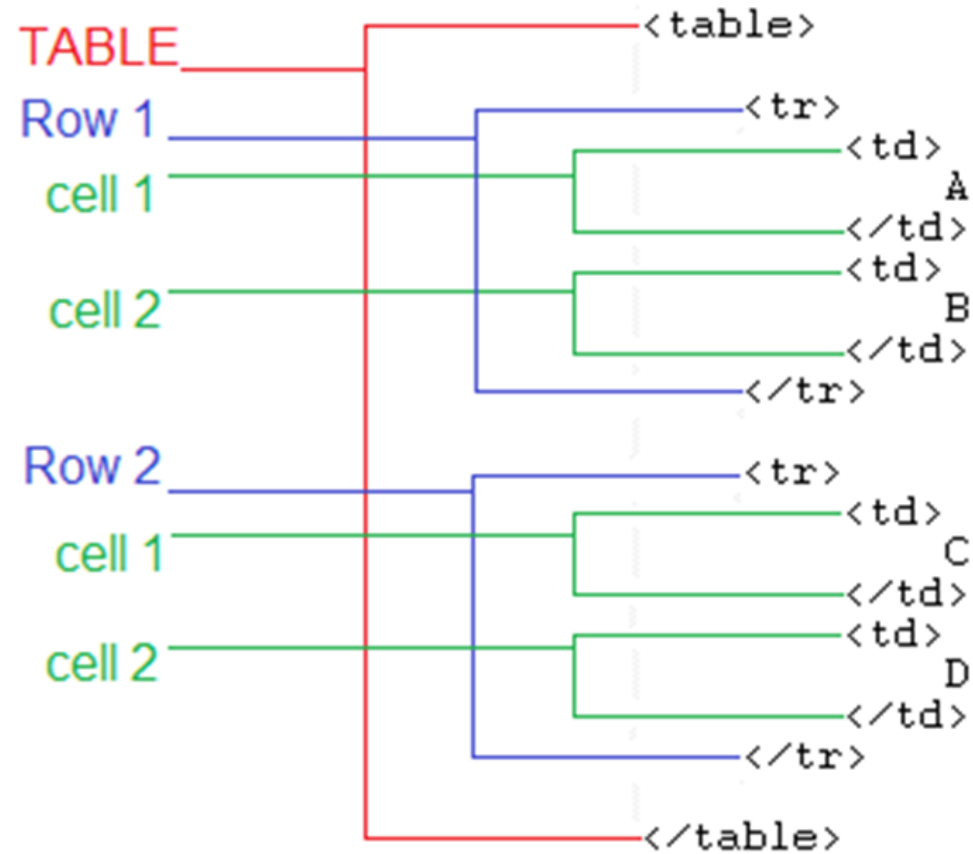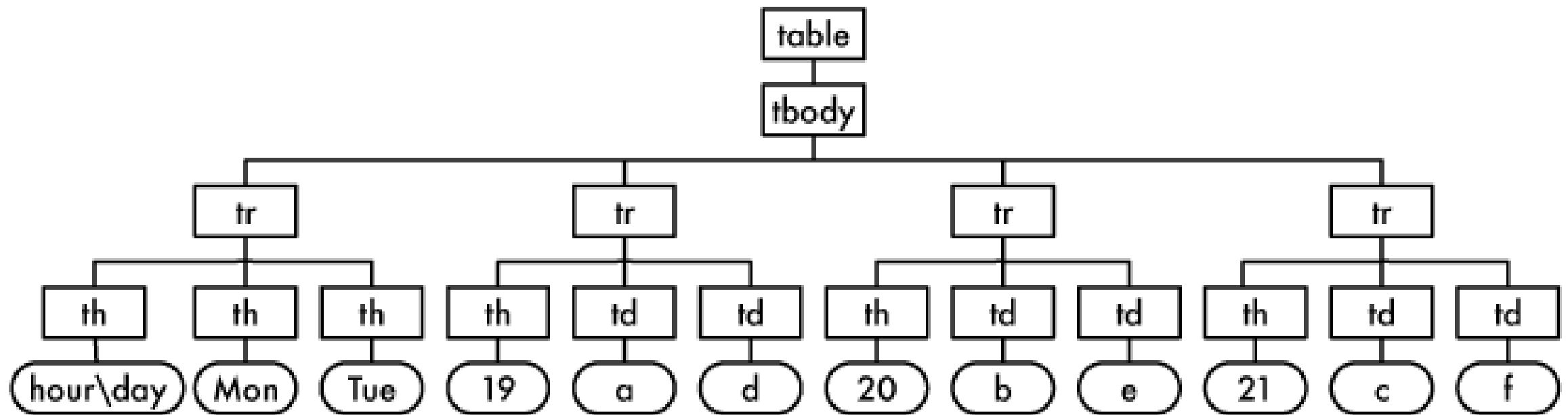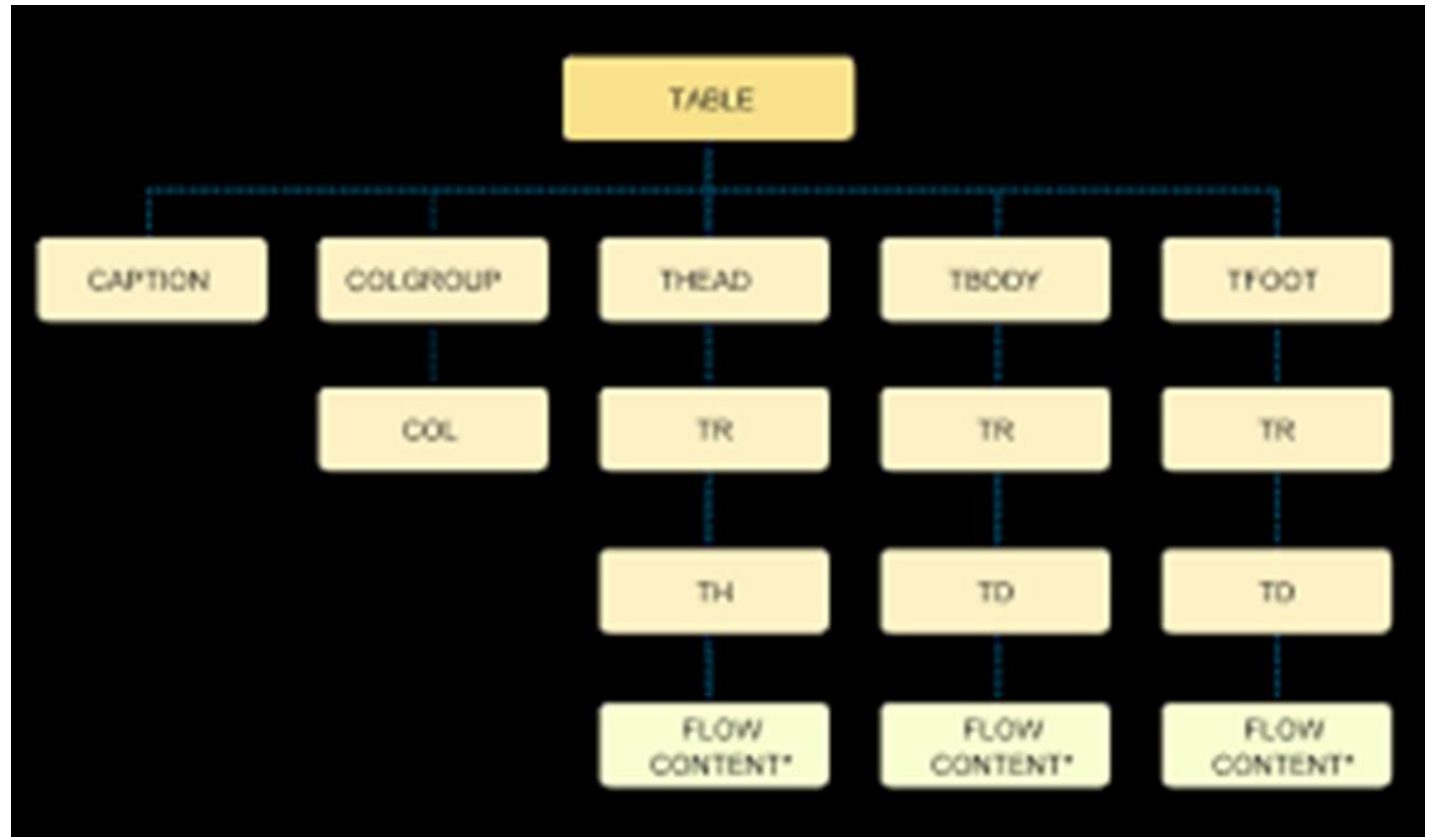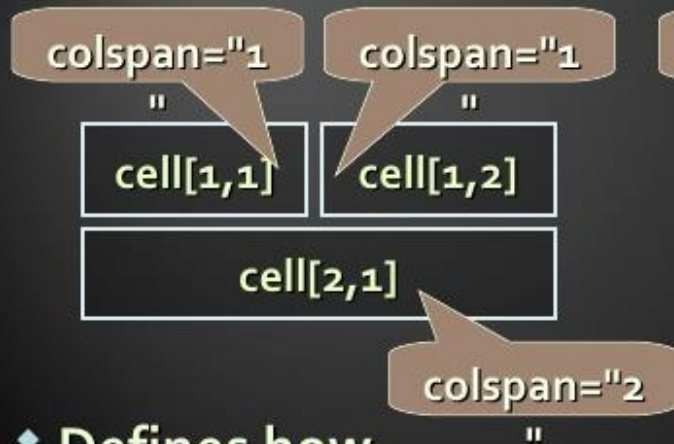
Practice

Do Ex 8.1!

Exercise 8.1	
Album	**Year**
Rubber Soul	1965
Rovolver	1966
Sgt. Pepper's	1967
The White Album	1968
Abbey Road	1969
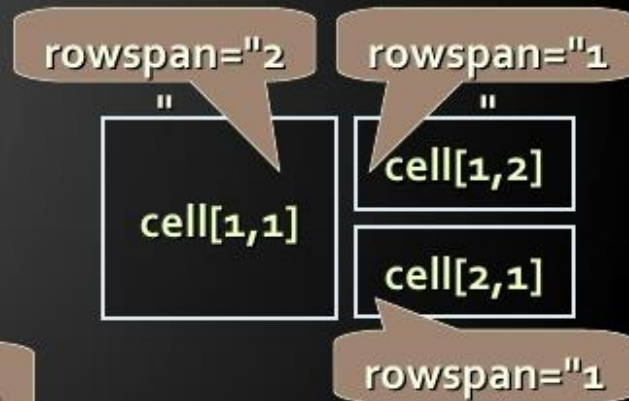
Column span and
Row span
colspan="number"
rowspan="number"
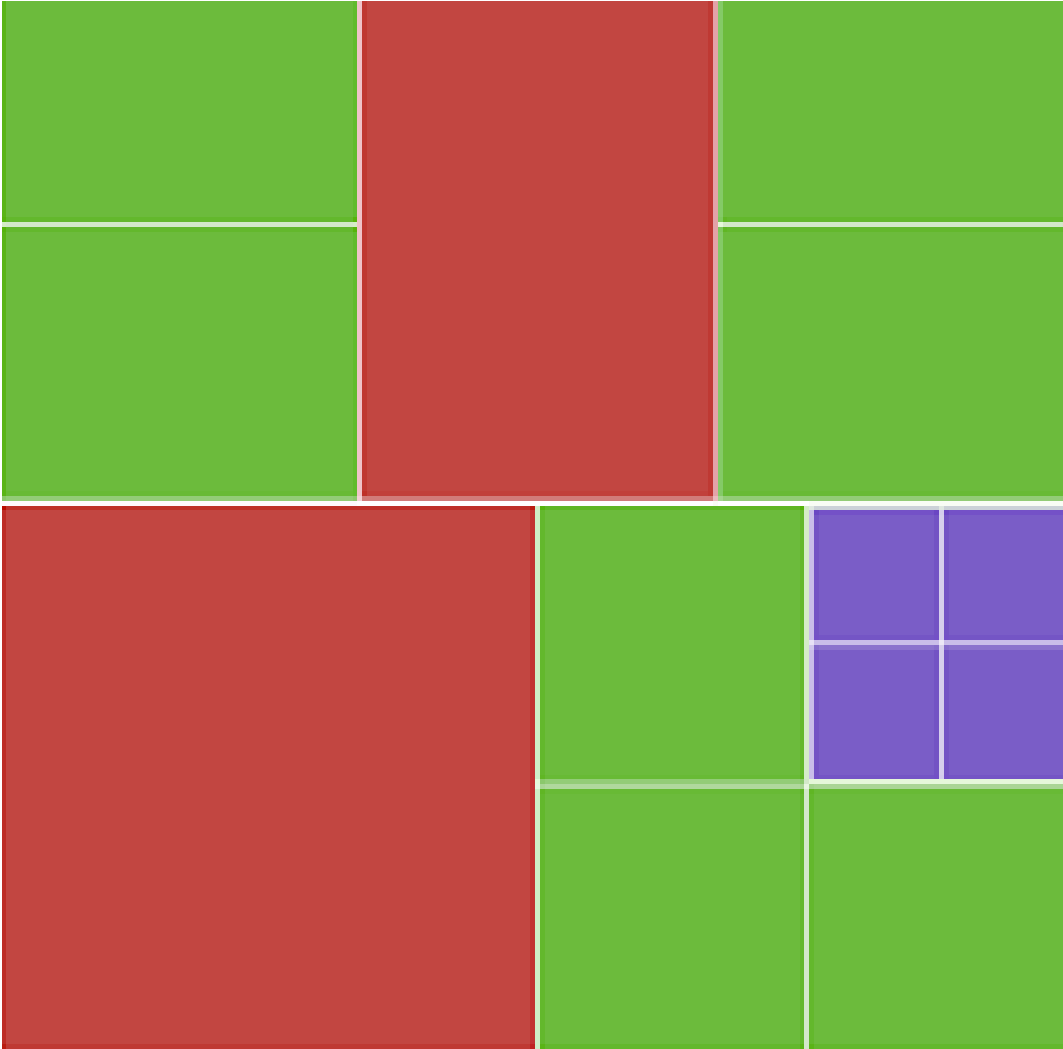
Use the Minimum Box(Purple) to Define Table Span Unit

Caption Definition

Caption is the Description of the Table

thead and tfoot

ヘッダ	ヘッダ	ヘッダ
本体A		
データセル	データセル	データセル
データセル	データセル	データセル
本体B		
データセル	データセル	データセル
データセル	データセル	データセル
フッタ	フッタ	フッタ

<thead> ヘッダグループ

<th>

<tbody> 本体グループ

<tfoot> フッタグループ

<colgroup>

This row in thead section not in tbody.

縦列のグループ化(colgroup)

グループA	グループB		グループC	
データ	データ	データ	データ	データ
データ	データ	データ	データ	データ
データ	データ	データ	データ	データ

All of the <td> should be done like normally.
colgroup is useful for column coloring in CSS

<colgroup>

```
<table>
<caption>グループ化</caption>
<colgroup span="1" id="groupA"></colgroup>
<colgroup span="2" id="groupB"></colgroup>
<colgroup span="2" id="groupC"></colgroup>
<thead>
  <tr>
    <th>グループA</th><th colspan="2">グループB</th><th colspan="2">グループC</th>
  </tr>
</thead>
<tbody>
  ～中略～
</tbody>
</table>
```

<colgroup>

Do Ex8.2/3/4

Exercise 8.3

apples		pears
bananas	Orange	
lychees		pineapple

Exercise 8.2

7:00pm	7:30pm	8:00pm
The Sunday Night Movie		
Perry Mason	Candid Camera	What's My Line
Bonanza	The Wackiest Ship in the Army	
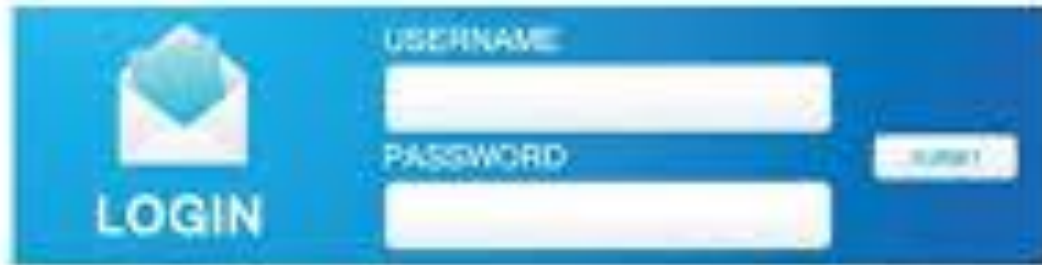
Ex 8.4	A common header for two subheads		Header 3
	Header 1	Header 2	
Thing A	data A1	data A3	data A3
Thing B	data B1	data B2	data B3
Thing C	data C1	data C2	data C3

Form

LECTURE 9

Web Form Design
Getting Inputs from Users

Web Input Form Request and Response

Javascript

Network-side scripting

ASP.NET RUBY PYTHON JSP PHP

Client-side scripting

Server-side scripting
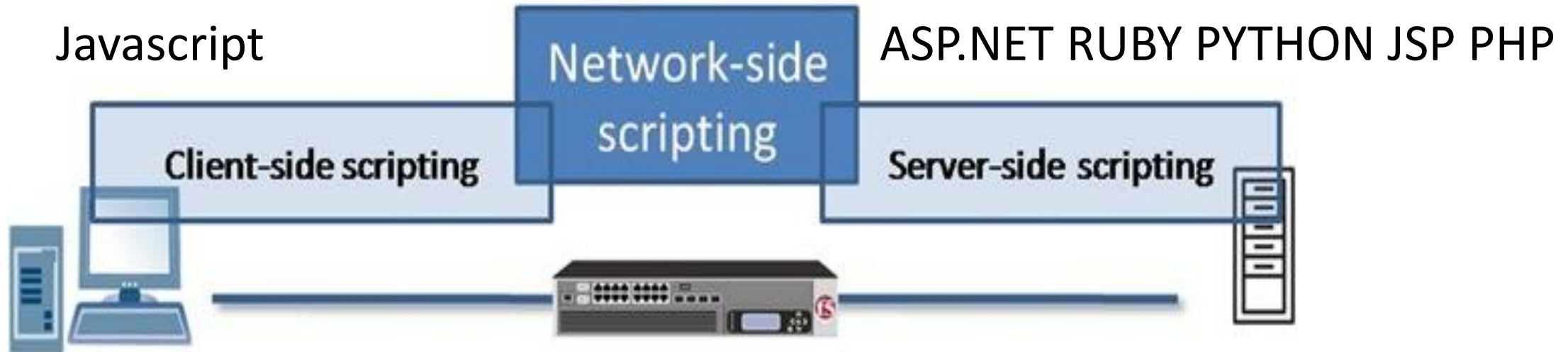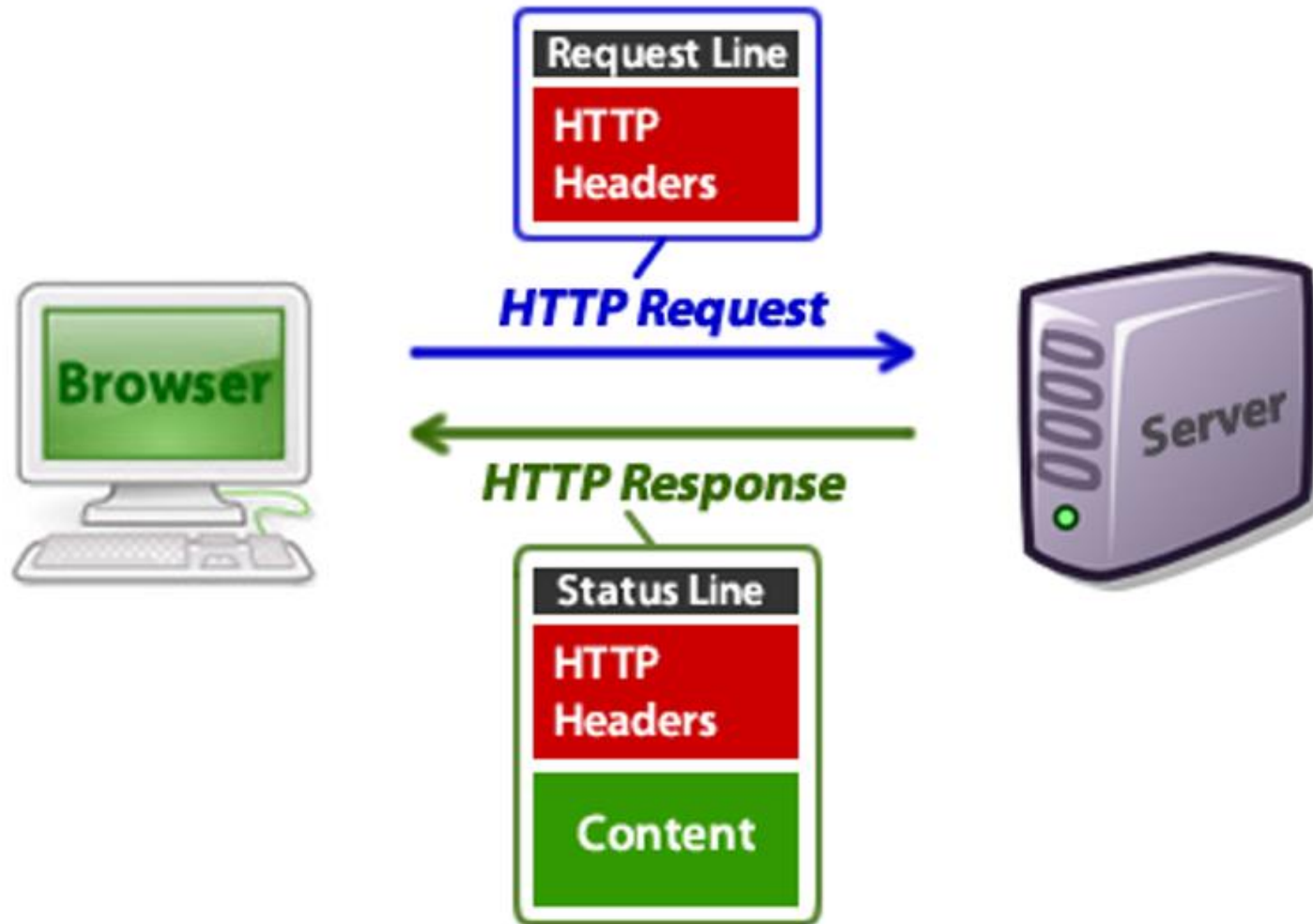
Web Input Form
Request and Response
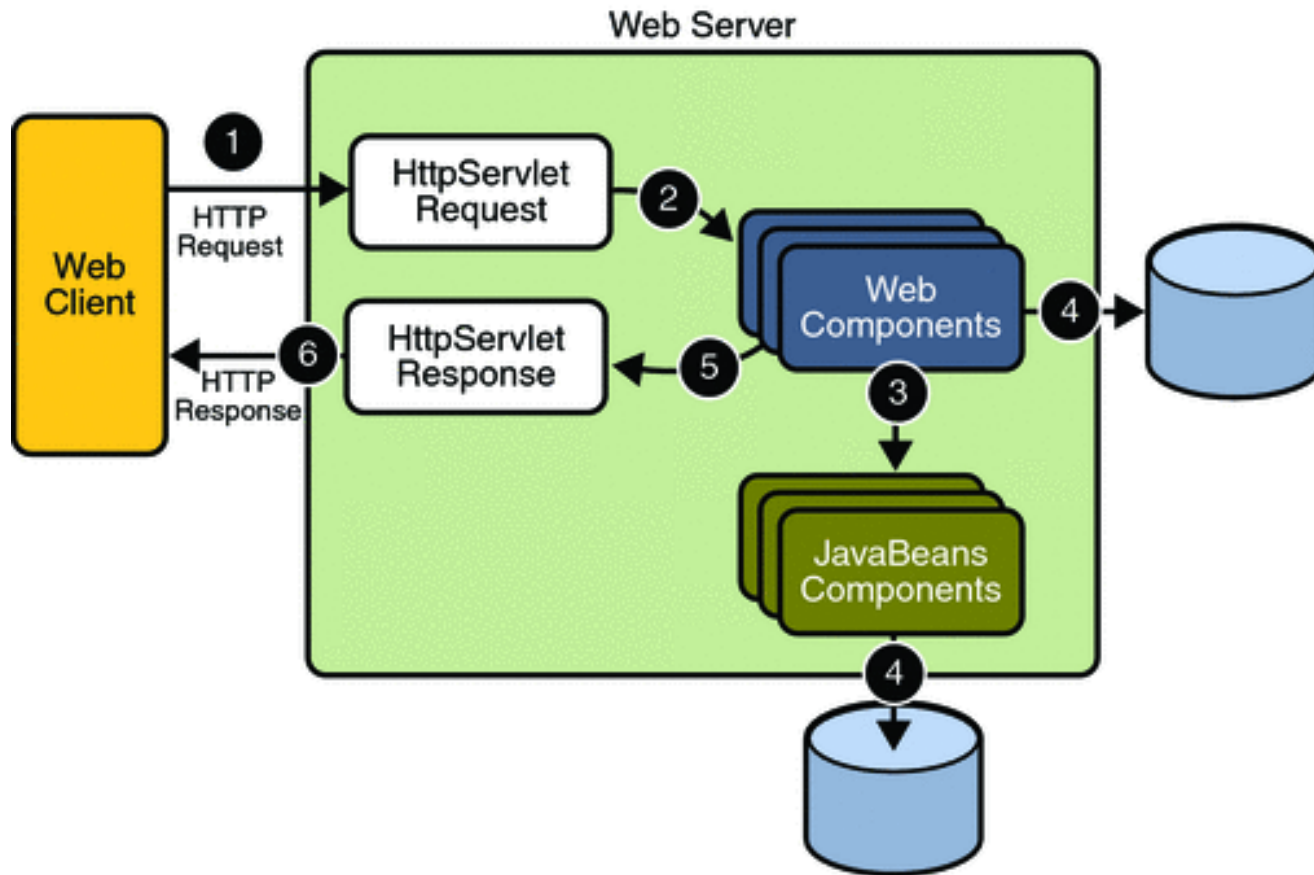
Web Input Form Request and Response

```
11  </head>
12  <body>
13    <h1>Demonstrating Forms</h1>
14    <form name="demo"
15          action="mailto:myClient@gmail.com"
16          method="get">
17
18        Your Name:
19        <input type="text"
20              name="txtFname"
21              size="20"
22              maxlength="25"
23              value="Sally" />
```

Form Attributes
action, method, name
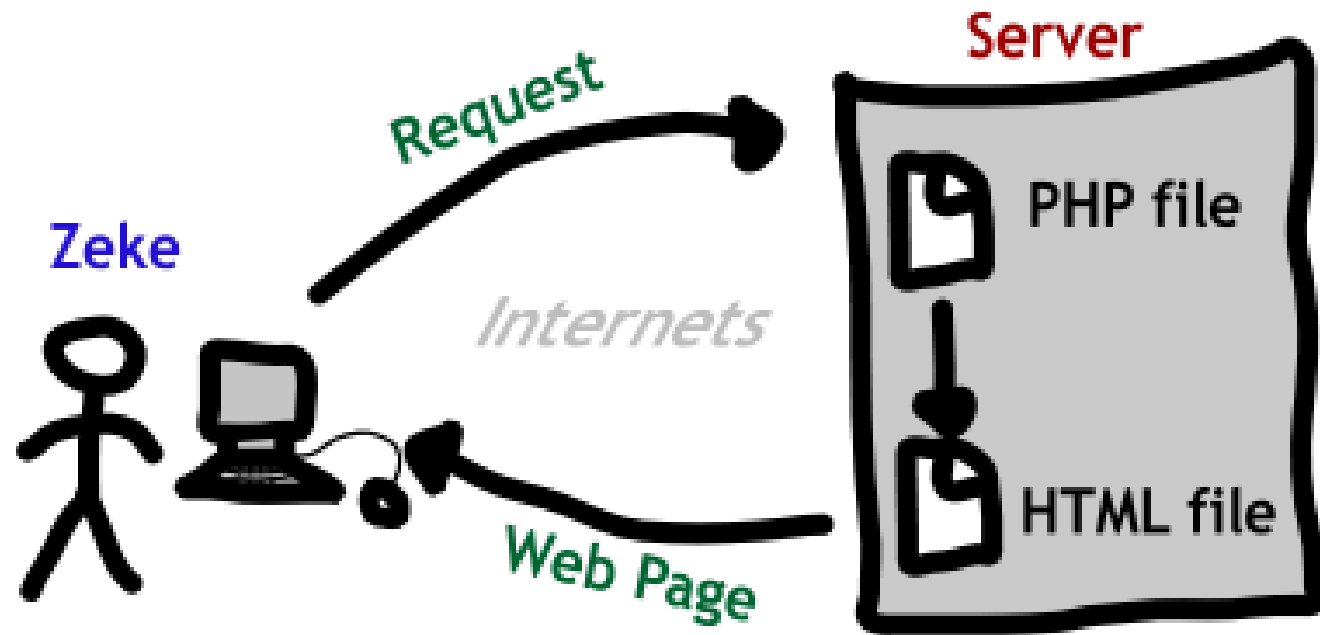
Form Action Attribute

What Program will Work on The Form Variables

Form Action Attribute
What Program will Work on The Form Variables

Server-side and Client-side Scripting

Client

CLIENT-SIDE / **SERVER-SIDE**

Browser running on your **local** computer/device

- **Browser** makes **HTTP requests** to fetch server contents
  - Server's HTTP response contains **HTML** that browser renders into a webpage
- Browser can run **JavaScript**, allowing for dynamic and interactive HTML pages

WordPress database

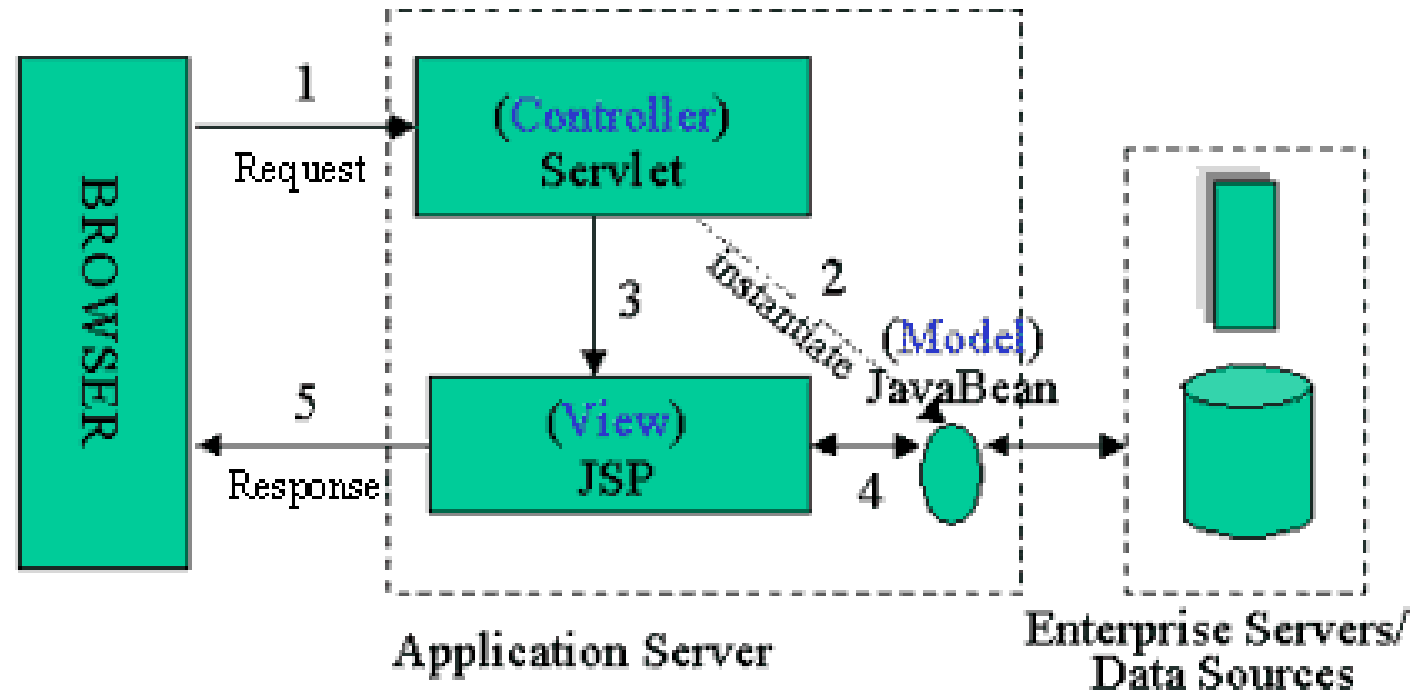Stores all WordPress posts, metadata, permalinks

- Typically on same server as WordPress file structure
- Responds to MySQL queries with database data, such as post contents

HTTP responses

MySQL query results

HTTP requests

MySQL queries

Server

Leased space on **remote** computer optimized for web hosting

- Stores **WordPress file structure**: hundreds of mostly **PHP** files governing how to respond to client requests
- Based on client request, retrieves **posts** from **database** using PHP and **MySQL**
- Uses PHP to process posts into pure HTML, which it sends back to client via HTTP

POST Method

GET Method

www.websequencediagrams.com

HTTP Methods

- **GET** ┈┈┈┈┈⟶ Request for a web page or an object from server
- **PUT** ┈┈┈┈┈⟶ For sending a document to the server
- **POST** ┈┈┈┈┈⟶ For sending data or information about client to the server
- **DELETE** ┈┈┈┈┈⟶ Request to Delete an object on the server
- **HEAD** ┈┈┈┈┈⟶ Request for information about a web page or a document
- **TRACE** ┈┈┈┈┈⟶ Used to trace the proxies and tunnels in the path from client to server
- **OPTION** ┈┈┈┈┈⟶ Used to determine server's capabilities

The OWASP Foundation
http://www.owasp.org

GET vs POST HTTP Request

| GET request	POST request
GET /search.jsp?name=blah&type=1 HTTP/1.0 User-Agent: Mozilla/4.0 Host: www.mywebsite.com Cookie: SESSIONID=2KDSU72H9GSA289 \<CRLF\>	**POST** /search.jsp HTTP/1.0 User-Agent: Mozilla/4.0 Host: www.mywebsite.com Content-Length: 16 Cookie: SESSIONID=2KDSU72H9GSA289 \<CRLF\> name=blah&type=1 \<CRLF\>

No URI for POST

protocol   hostname   directory filename   query parameters

http://www.mywebsite.com/apparel/skirt.php?sku=123&lang=en&sect=silk

domain name   URI

PUT
GET
POST
DELETE
R
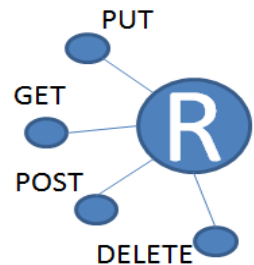
Input Elements

Basic Form Elements
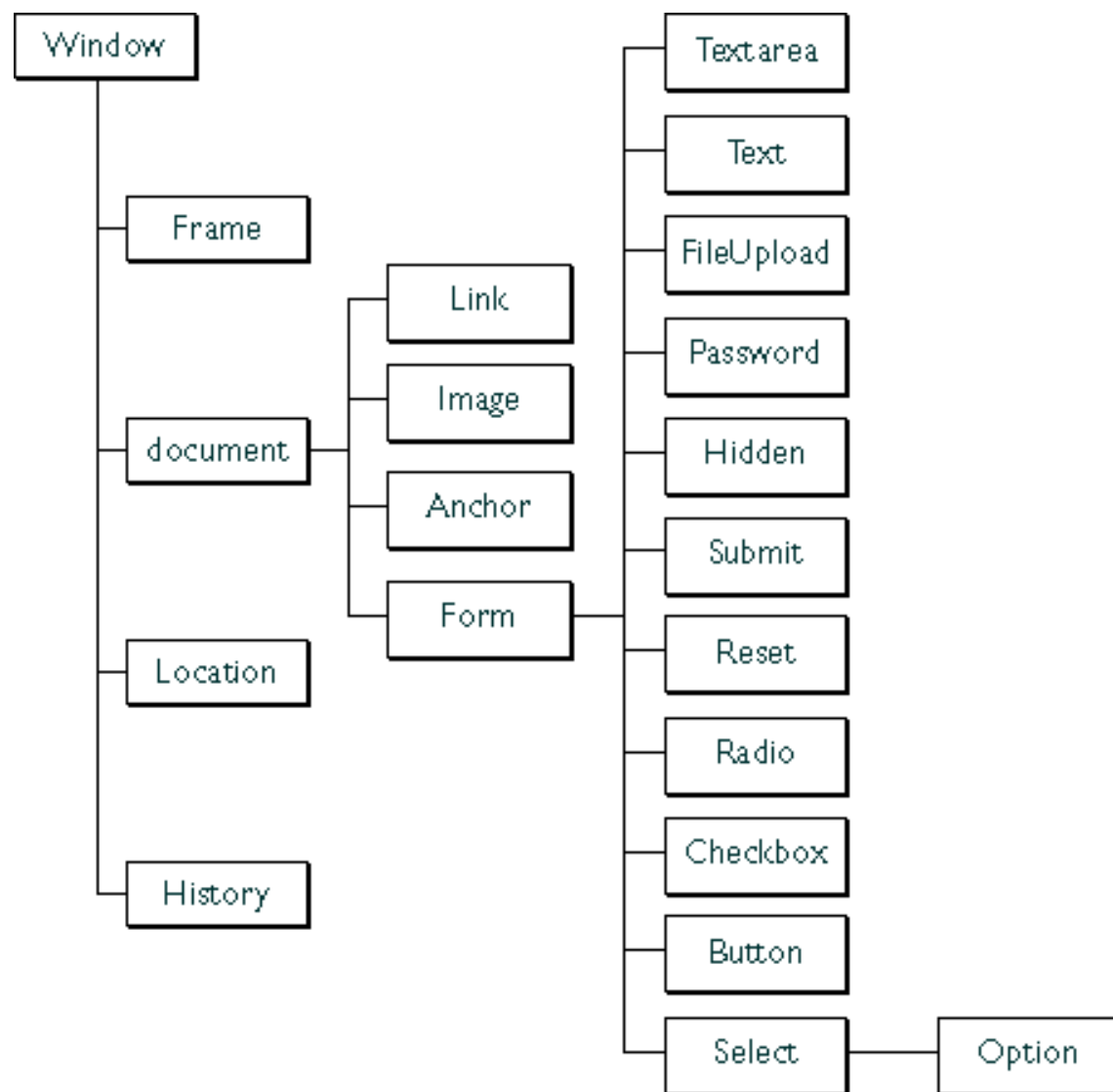
DOM Model for Forms

Name Attribute for an Input Element

<textarea id="t1" name="comment" rows="4" cols="5" placeholder="Leave us a comment."></textarea>

- id="t1", where t1 is the id for this textarea when it is accessed in DOM model by CSS or javacript to perform style setting or behavioral coding

- name="comment", declared the variable name for the text area. This means when people input some text data in the text area of the page. The string will assigned to a variable named comment:

comment=This%20is%20the%20best%20band%20ever%21

%20 is the space, %21 is !

The Input Elements shown in Textbook

- Text Entry Controls
- Specialized text entry controls
- Submit and reset buttons
- Radio and checkbox buttons
- Pull-down and scrolling menus
- File selection and upload control
- Hidden controls
- Date and times (HTML5)
- Numerical controls (HTML5)
- Color picker control (HTML5)

Text Entry Controls
single line text entry

City Your Hometown

- `<li><label>City <input type="text" name="city" id="form-city" value="Your Hometown" maxlength="50"></label></li>`

- `<li></li>` specify a line item element

- `<label>City <input ….></label>` associates the label City with the input text box.

- name: The name attribute is required for indicating the variable name.

- value: The value attribute specifies default text that appears in the field when the form is loaded. When you reset a form, it returns to this value.

- maxlength: limit your text string length.

Text Entry Controls
Multiple lines text entry

- `<p><label>Official contest entry: <br>`

    `<em>Tell us why you love the band. Five winners will get backstage`

    `passes!</em><br>`

    `<textarea name="contest_entry" rows="5" cols="50">The band is totally`

    `awesome!</textarea></label></p>`

- title: title of the textarea, also used as a hint

- placeholder: a hint of what it is in the text field

- rows: row number for showing the text area

- cols: col number for showing the text area

- wrap: specifies whether the text should keep its line breaks when submitted.

    soft means do not keep it. Hard means to keep it.

- maxlength: sets a limit on the number of characters that can be typed into the field

Specialized Text Inputs

- `<input type="password">`
- `<input type="search">`
- `<input type="email">`
- `<input type="tel">`
- `<input type="url">`
- `<input type="number">`
- **`<input type="text"`**
  `list="ideselect"`
  `name="idesl">`
  `<datalist id="ideselect">`
  `<option value="Visual Studio">`
  `<option value="VIM">`

Datalist Example

Select your IDE: v
Visual Studio
VIM

```
<input type="text"
    list="ideselect"
    name="idesl">
<datalist id="ideselect">
<option value="Visual Studio">
<option value="VIM">
```

Phone Number: [Enter Phone Number here]

Keyboad when <input type="tel">

Keyboad when <input type="url">

Verizon 2:57 PM 79%

Phone Field:
Number Field:
URL Field:
Email Field:
Date Field:
Date/Time Field:

```
<input type="password">
<input type="search">
<input type="email">
<input type="tel">
<input type="url">
<input type="number">
```
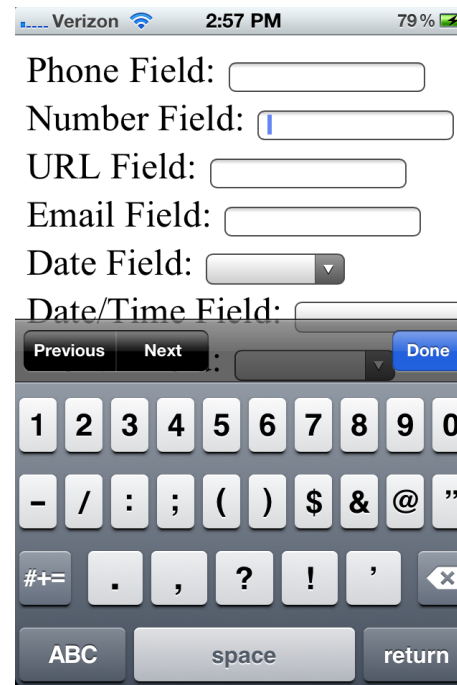
Keyboard when <input type="text">

Keyboard when <input type="email">

Buttons (Try Ex 9.1)

Submit, Reset, Radio and Checkbox, Image, Button, Button Element

<input type="submit">: submit the form to take action (client side or server side)

<input type="reset">: clean up the form

<input type="image">: use external image as the button face

<input type="button">

<input type="radio">

<input type="checkbox">

<button></button>: type some text or show some image on the button face

Radio Buttons
<input type="radio" name="variable" value="option_value">

Default Value

<p>How old are you?</p>

      <input type="radio" name="age" value="under24" checked> Under 24

      <input type="radio" name="age" value="25-34"> 25 to 34

      <input type="radio" name="age" value="35-44"> 35 to 44

      <input type="radio" name="age" value="over45"> 45+

Value candidates

Same variable

Checkbox Buttons (Try Ex 9.2)
<input type="checkbox" name="variable" value="option_value">

Default Value

<p>What type of music do you listen to??</p>

    <input type="checkbox" name="genre" value="punk" checked>Punk rock

    <input type="checkbox" name="genre" value="indie" checked>Indie rock

    <input type="checkbox" name="genre" value="hiphop">Hip hop

    <input type="checkbox" name="genre" value="rockabilly">Rockability

Value candidates

Same variable

Menu and Optional Selection

- Drop-down menus

- Scrolling menus

- Grouping menu options

- Text input datalist select (Option by user input, but Web-site provide options. See text input)

Drop-down menus

```
<p>What is your favorite 80s band
    <select name="EightiesFave">
        <option>The Cure</option>
        <option>Cocteau</option>
        <option>Tears for Fears</option>
        <option>Thompson Twins</option>
        <option value="EBTG">Everything But the Girl</option>
        <option>Depeche Mode</option>
        <option>The Smiths</option>
        <option>New Order</option>
    </select>
</p>
```

Scrolling Menus

<p>What 80s bands did you listen to?

    <select name="EightiesBands" size="6" multiple>

        <option>The Cure</option>

        <option>Cocteau</option>

        <option **selected**>Tears for Fears</option>

        <option **selected**>Thompson Twins</option>

        <option value="EBTG">Everything But the Girl</option>

        <option>Depeche Mode</option>

        <option>The Smiths</option>

        <option>New Order</option>

    </select>

    </p>

Grouping menu options (Do Ex. 9.3)
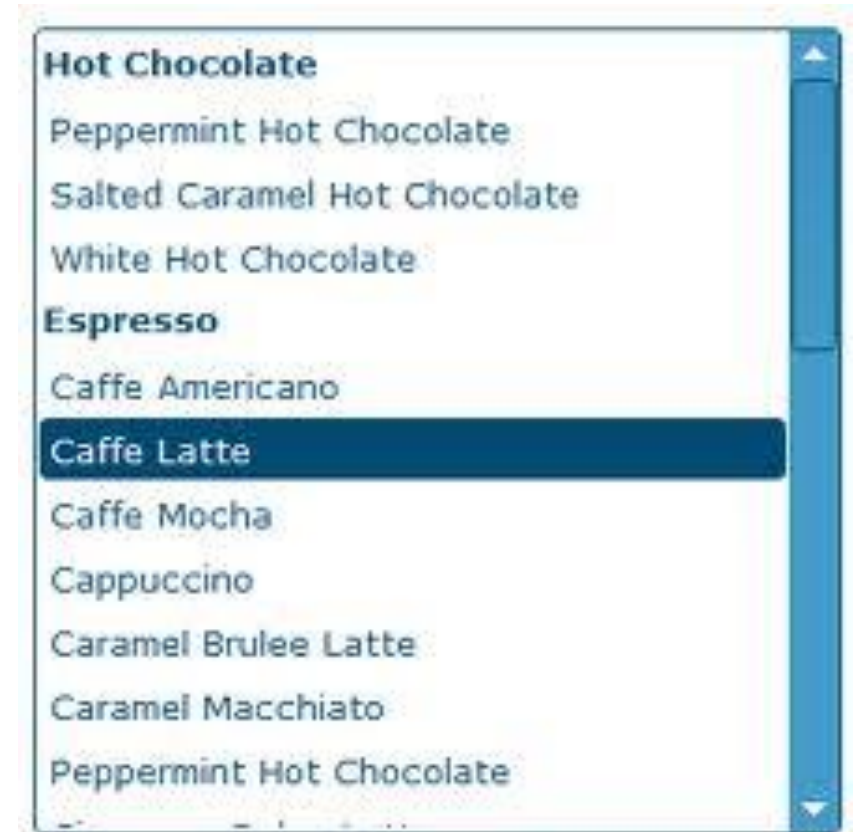
```
<select name="icecream" size="7" multiple>
    <optgroup label="traditional">
    <option>vanilla</option>
    <option>chocolate</option>
    </optgroup>
    <optgroup label="fancy">
    <option>Super praline</option>
    <option>Nut surprise</option>
    <option>Candy corn</option>
    </optgroup>
</select>
```

File Selection Control

```
<form action="/client.php" method="POST"
        enctype="multipart/form-data" >
   <label>
      Step 1: Select a file.
      <input type="file" name="uploadfile" size="28">
   </label>
</form>
```

Firefox Style

upload file

Step 1: Select a file.

[   ] [Browse…]

Step 2: Click the button below.

[Upload file]

Chrome Style

Add Document ⊗

File Upload

[Choose File] No file chosen

[Upload] [Cancel]

eC Learning Channel

Hidden Controls

- When the webpage want to initiate a form processing action which does not require user's input, the hidden control can be used.

- Javascript script can generate a form format and then mark it as hidden and send to the server.

- <input type="hidden" name="success-link" value="http://www.example.com/littlechair_thankyou.html">

Data and Time Controls

New HTML5 Form Input Types

<input type="datetime-local>

<input type="time">

<input type="month">

<input type="date">

<input type="datetime">

<input type="week">

eC Learning Channel
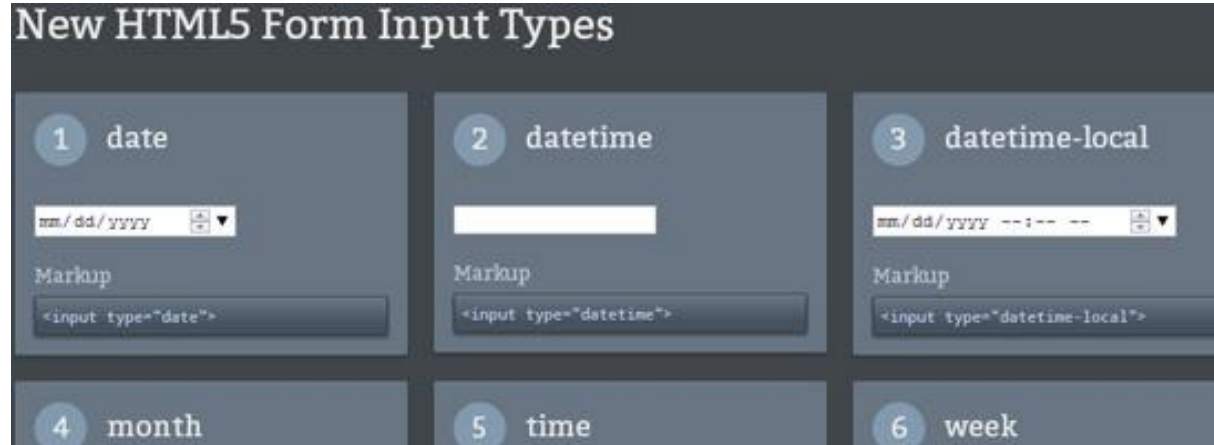
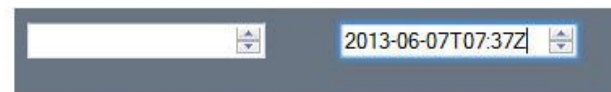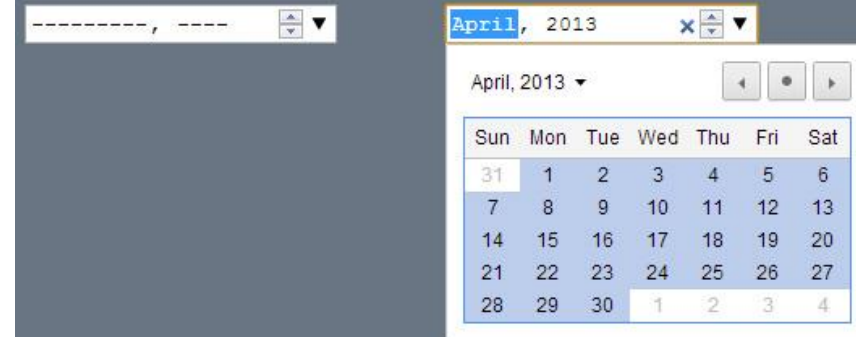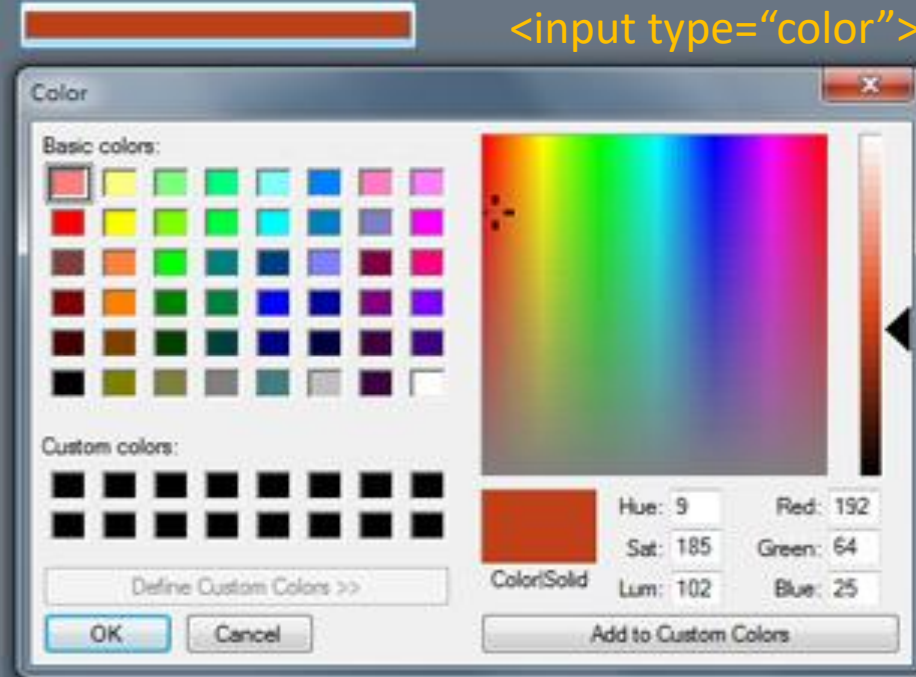# color, number, url, range, search, email, tel Input Types

<input type="url">

<input type="color">

<input type="number">

<input type="range">

<input type="email">

<input type="tel">

<input type="search">

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Accessibility Issues

label, fieldeset and legend

- It is essential to consider how users without the benefit of visual browsers will be able to understand and navigate through your web forms.

- The label, fieldset, and legend form elements improve accessibility by making the semantic connections between the components of a form clear. The resulting markup is not only more semantically rich, but also more elements available to act as "hooks" for style sheet rules.

fieldset and legend (Try Ex. 9.4)

Legend

Personal Data Form

Name [   ]

Address [   ]

Phone [   ]

```
<fieldset> <!-- omitted name and other details
                not related to form structure -->
<legend>Personal Data Form</legend>
<ul>
   <li><label>Name <input type="text"></label></li>
   <li><label>Address <input type="text"></label></li>
   <li><label>Phone <input <type="text">></label></li>
</ul>
</fieldset>
```

Personal Details

Address Details

City: [   ]
Zip Code: [   ]

Telephone Details

Home: [   ]
Cell: [   ]

Form Layout and Design

- Usable Forms

- Avoid unneccessary questions

- Consider impact of label placement.

- Choose input types carefully.

- Group related inputs

- Clarify primary and secondary actions.