FUNDAMENTALS OF FULL STACK DEVELOPMENT

(COURSE 1/3 UNDER FULL-STACK DEVELOPMENT TRACK)

L-T-P-C: 2-1-1-4

UNIT – 1

- Introduction
- What is a web application? History
- What is a webserver
- Browser
- HTTP/HTML/CSS

LINKS

- Links are created using the **<a>** element (the “a” stands for anchor).
- A link has two main parts: the destination and the label.

- Types of Links
  - You can use the anchor element to create a wide range of links:
    - Links to external sites
    - Links to other pages
    - Links to other places within the current page
    - Etc.

Link to external site

```
<a href="http://www.centralpark.com">Central Park</a>
```

Link to resource on external site

```
<a href="http://www.centralpark.com/logo.gif">Central Park</a>
```

Link to another page on same site as this page

```
<a href="index.html">Home</a>
```

Link to another place on the same page

```
<a href="#top">Go to Top of Document</a>
```

Link to specific place on another page

```
<a href="productX.html#reviews">Reviews for product X</a>
```

Link to email

```
<a href="mailto://person@somewhere.com">Someone</a>
```

HTML Formatting Elements

- `<b>` - Bold text
- `<strong>` - Important text
- `<i>` - Italic text
- `<em>` - Emphasized text
- `<mark>` - Marked text
- `<small>` - Smaller text
- `<del>` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text

HTML Comment Tag

- You can add comments to your HTML source by using the following syntax:
- `<!-- Write your comments here -->`

```
<!-- This is a comment -->

<p>This is a paragraph.</p>

<!-- Remember to add more information here -->
```

- Comments can be used to hide content.

PRACTICE

1. Print the squares of the numbers 1 - 20. Each number should be on a separate line, next to it is the number 2 superscripted, an equal sign and the result. (Example: $10^2 = 100$)

$$1^2 = 1$$
$$2^2 = 4$$
$$3^2 = 9$$

2. Create some links to various search engines (Google, yahoo, Bing and etc)

Search the web with Google!

Search the web with Yahoo!

Search the web with Bing!

3. Display five different images. Skip two lines between each image. Each image should have a title.
4. Create a page with a link at the bottom of it that when clicked will jump all the way to the top of the page.

HTML COLORS

- HTML colors are specified with predefined color names, or with RGB values.
-

- Color Values
  - rgb(255, 99, 71)
  - #ff6347
  -

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
<p style="background-color:Tomato;">Lorem ipsum...</p>
```

```
<h1 style="color:Tomato;">Hello World</h1>
<p style="color:DodgerBlue;">Lorem ipsum...</p>
<p style="color:MediumSeaGreen;">Ut wisi enim...</p>
```

```
<h1 style="border:2px solid Tomato;">Hello World</h1>
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>
<h1 style="border:2px solid Violet;">Hello World</h1>
```

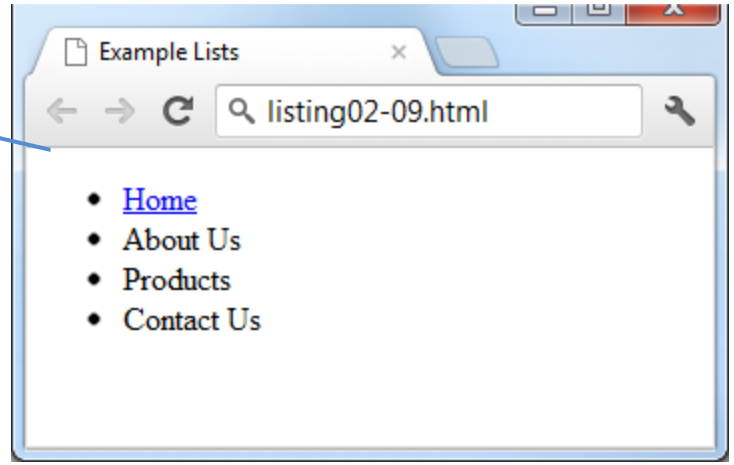
LISTS

- Unordered lists. Collections of items in no particular order; these are by default rendered by the browser as a bulleted list.
- Definition lists. Collection of name and definition pairs
- Ordered lists. Collections of items that have a set order; are by default rendered by the browser as a numbered list.

- HTML supplies several list elements.
- Most list elements are composed of one or more
  - Unordered List
    - Items in this list start with a list mark such as a bullet.
    - three bullet types
      - disc(default), circle, square.
      - bullet types can be changed using the "**TYPE**" attribute in <UL> element

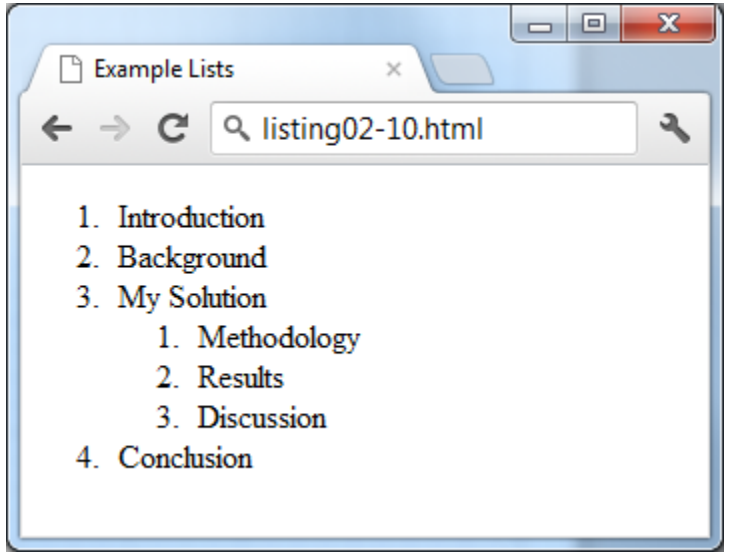
Notice that the list item element can contain other HTML elements

```
<ul>
   <li><a href="index.html">Home</a></li>
   <li>About Us</li>
   <li>Products</li>
   <li>Contact Us</li>
</ul>
```



- Ordered lists.

```
<ol>
   <li>Introduction</li>
   <li>Background</li>
   <li>My Solution</li>
   <li>
    <ol>
      <li>Methodology</li>
      <li>Results</li>
      <li>Discussion</li>
    </ol>
   </li>
   <li>Conclusion</li>
</ol>
```



FRAMES

- example :
  - Browser window containing three frames (two on the left and one larger one on the right).
  - window is created by using one or more frameset elements after the heading element
  - A collection of frames in the browser window is known as a **frameset**.
  - Divide your browser window into multiple sections.
    - load a separate HTML document

FORMS

- Forms are the standard user input mechanism in HTML / XHTML.
- Forms are used to collect users information.
- A form is an area that can contain form elements
  - The syntax is

  <form *parameters*> *...form elements...* </form>
- Form elements include:
  - **buttons**, **checkboxes**, text fields, radio buttons, drop-down menus, etc
- A form usually contains a Submit button to send the information in he form elements to the server
-

- **The <form> tag:**
  - The <form *arguments*> … </form> tag
  - The arguments to form tell what to do with the user input
    - action="*url*"
    - method="get" (default)
    - method="post"
    - target="*target*“ (same or new window)

```html
<form action="http://www.google.com/search">
  <div>
    Let's search Google:
    <input name="q" />
    <input type="submit" />
  </div>
</form>
```

HTML

Fir

Let's search Google: Submit Query


User Registration
Please complete the following form to register with our site:
User Name:
Password:
Gender:
Male
Female
How did you hear about us?:
Select answer
Please select this box if you wish
to be added to our mailing list
We will not pass on your details to any third party.
Register now

- The **<input>** tag
  - form elements use the input tag with a type="..." argument.
    - type can be text, checkbox, radio, password, hidden, submit, reset, button, file, or image
    - name: the name of the element
    - value: the "value" of the element; used in different ways for different values of type
    - read-only: the value cannot be changed
    - disabled: the user can't do anything with this element
    - Other arguments are defined for the input tag but have meaning only for certain values of type

A text field:

```
<input type="text" name="textfield" value="with an initial value">
```

A password field:

```
<input type="password" name="textfield3" value="secret">
```

BUTTONS

- submit: send data
- reset: restore all form elements to their initial state
- button: take some action as specified by JavaScript

A submit button:

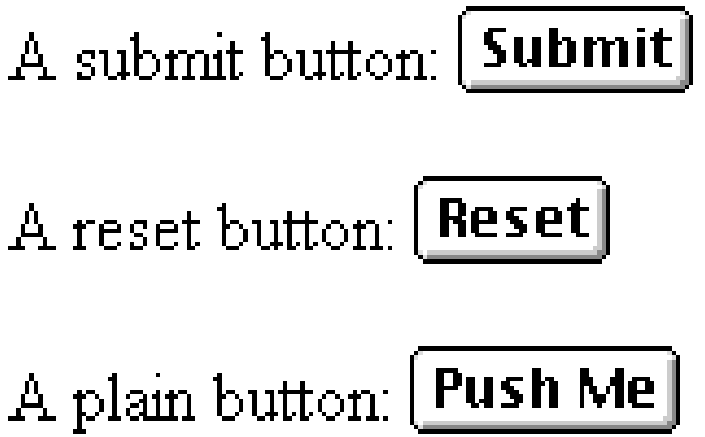
```
<input type="submit" name="Submit" value="Submit">
```

A reset button:

```
<input type="reset" name="Submit2" value="Reset">
```

A plain button:

```
<input type="button" name="Submit3" value="Push Me">
```



- Checkboxes

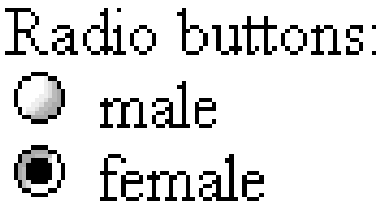
  type: "checkbox"
  name: used to reference this form element from JavaScript
  value: value to be returned when an element is checked

- A checkbox:

  <input type="checkbox" name="checkbox” value="checkbox" checked>

- Radio buttons

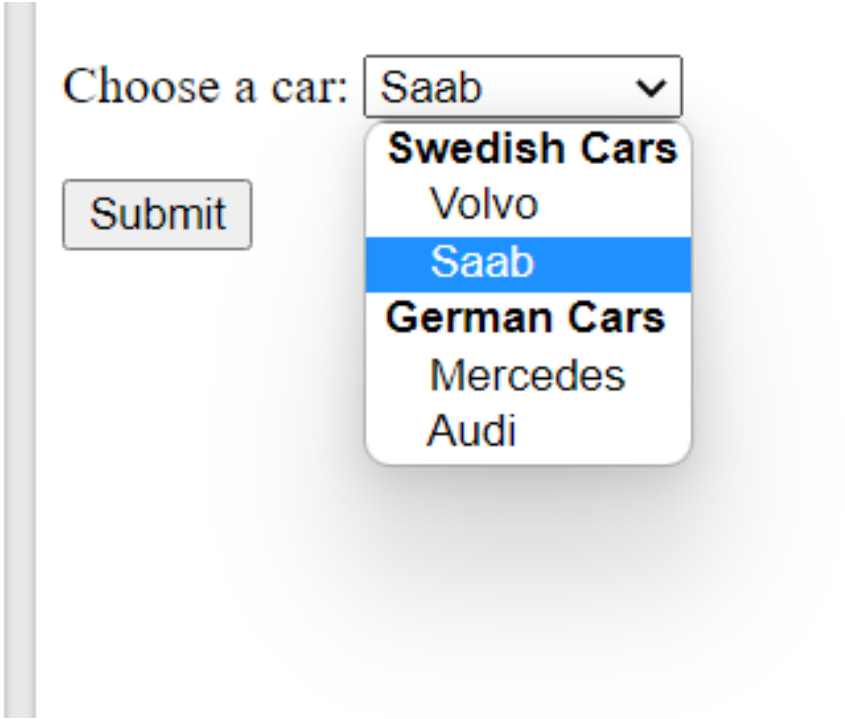
<input type="radio" name="radiobutton" value="myValue1"> male
<input type="radio" name="radiobutton" value="myValue2" checked> female



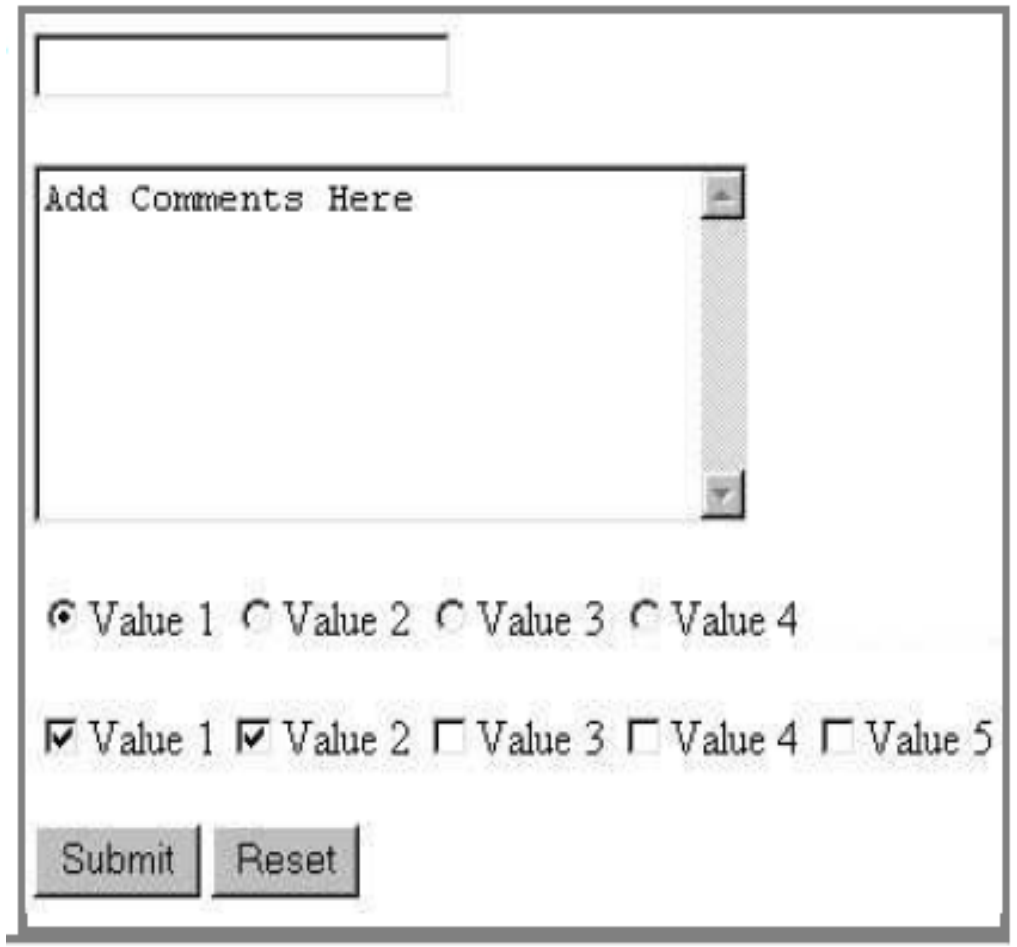
select tag:

- The <select> element is used to create a drop-down list.
- used in a form, to collect user input.
- **name and id** attribute

```
<label for="cars">Choose a car:</label>
<select name="cars" id="cars">
  <optgroup label="Swedish Cars">
    <option value="volvo">Volvo</option>
    <option value="saab">Saab</option>
  </optgroup>
  <optgroup label="German Cars">
    <option value="mercedes">Mercedes</option>
    <option value="audi">Audi</option>
  </optgroup>
</select>
```




Username:
Password:
City of Employment:
Web server:
— Choose a server —
Please specify your role:
Admin
Engineer
Manager
Guest
Single Sign-on to the following:
Mail
Payroll
Self-service
Login
Reset


Add Comments Here
Value 1
Value 2
Value 3
Value 4
Value 1
Value 2
Value 3
Value 4
Value 5
Submit
Reset

HIDDEN FIELDS

- All input fields are sent back to the server, including hidden fields
- This is a way to include information that the user doesn't need to see (or that you don't want her to see)
- The value of a hidden field can be set programmatically (by JavaScript) before the form is submitted
  - <input type="hidden" name="hiddenField" value="nyah">
    <-- right there, don't you see it?