Cairo University
Faculty of Engineering
Computer Engineering Department

CMPN 425
Lab 2

Agenda

- HTML basics
- Cascading Style Sheets (CSS)

HTML Forms

- HTML forms are used to collect user input.
- The **<form>** element defines an HTML form:

```
<form>
.
form elements
.
</form>
```

- HTML forms contain **form elements**: Form elements are different types of input elements

HTML Forms: The <input> Element

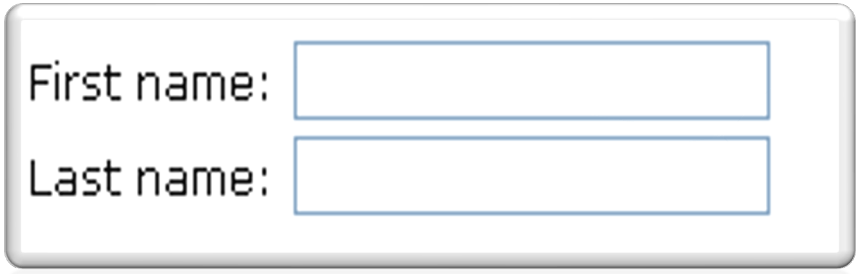
- The <input> element has many variations, depending on the **type** attribute.

- An input element can be of type:
  - text field,
  - checkbox,
  - password,
  - radio button,
  - submit button, and more.

The Input Element - Text Fields

<input type="text" />

```
<html>
    <body>
        <form>
            First name: <input type="text" name="firstname"/><br/>
            Last name: <input type="text" name="lastname" />
        </form>
    </body>
</html>
```



The Input Element-Password Field

<input type="password" />

```
<html>
    <body>
        <form>
            Password: <input type="password" name="pwd" />
        </form>
    </body>
</html>
```

The Input Element- Radio Buttons

<input type="radio" />

```
<html>
    <body>
        <form>
            <input type="radio"  name="gender " checked/> Male<br />
            <input type="radio" name="gender" /> Female
        </form>
    </body>
</html>
```

The Input Element- Submit Button

<input type="submit" />

```
<html>
    <body>
        <form name="input" action="html_form_action.asp" method="get">
                Username: <input type="text" name="user" />
                <input type="submit" value="Submit" />
        </form>
    </body>
</html>
```

The Input Element- Submit Button

- **<input type="submit">** defines a button for **submitting** a form to a **form-handler**.
- The form-handler is typically a server page with a script for processing input data.
- The form-handler is specified in the form's **action** attribute.
- If the action attribute is omitted, the action is set to the current page.
- The **method attribute** specifies the HTTP method (**GET** or **POST**) to be used when submitting the forms:
  - Get:
    - the default method.
    - If the form submission is passive (like a search engine query), and without sensitive information.
    - When you use GET, the form data will be visible in the page address
  - Post:
    - If the form is updating data, or includes sensitive information (password).
    - POST offers better security because the submitted data is not visible in the page address.

The Input Element- Submit Button

To be submitted correctly, each input field must have a ***name attribute***

The <select> Element (Drop-Down List)

```
<html>
    <body>
        <form action="">
            <select name="cars">
                <option value="volvo">Volvo</option>
                <option value="saab">Saab</option>
                <option value="fiat">Fiat</option>
                <option value="audi" selected>Audi</option>
            </select>
        </form>
    </body>
</html>
```

- The **<option>** elements defines the options to select.
- The list will normally show the first item as selected.
- You can add a selected attribute to define a predefined option.

The <button> Element

```
<html>
    <body>

        <button type="button" onclick="alert('Hello World!')">
          Click Me!</button>

    </body>
</html>
```

Send Email From a Form

```
<h3>Send e-mail to someone@example.com:</h3>
<form action="MAILTO:someone@example.com" method="post"
    enctype="text/plain">
Name:<br />
<input type="text" name="name" value="your name" /><br />
E-mail:<br />
<input type="text" name="mail" value="your email" /><br />
Comment:<br />
<input type="text" name="comment" value="your comment"
    size="50" />
<br /><br />
<input type="submit" value="Send">
<input type="reset" value="Reset">
</form>
```

Send Email From a Form-Comments

- The **size** attribute specifies the size (in characters) for the input field.

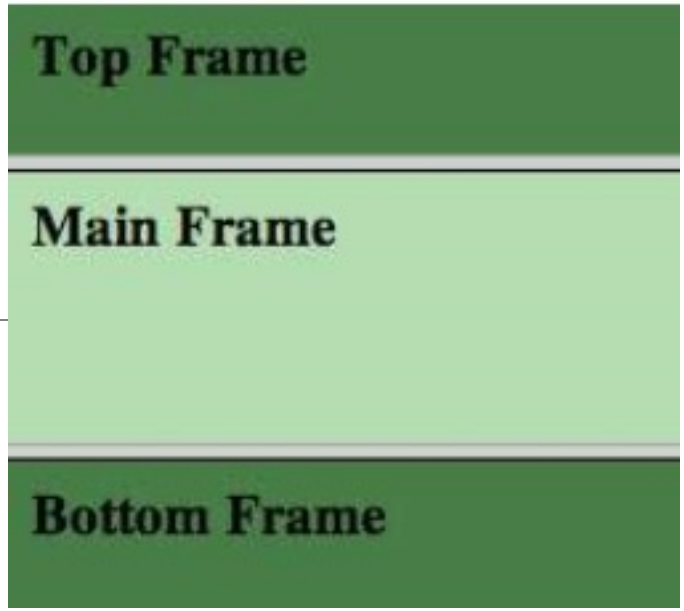
- enctype="text/plain" → See other types
  - The enctype attribute can be used only if method="post".
  - Spaces are converted to "+" symbols, but no special characters are encoded

HTML Frames

- HTML frames are used to divide your browser window into multiple sections where each section can load a separate HTML document.
- A collection of frames in the browser window is known as a frameset.
- The window is divided into frames in a similar way the tables are organized: into rows and columns.

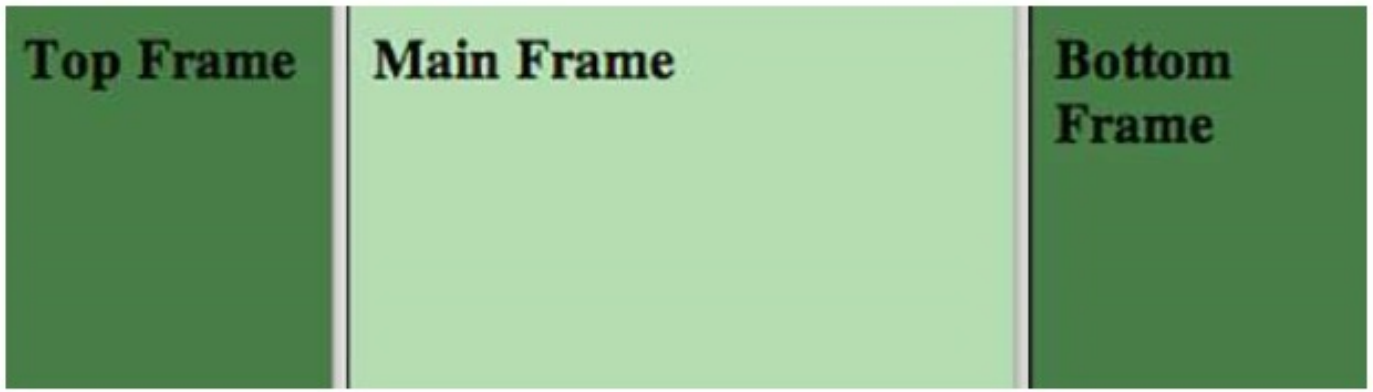
HTML Frames-Horizontal Frames

```
<html>
    <frameset rows="10%,80%,10%">
        <frame src="frame_a.htm" />
        <frame src="frame_b.htm" />
        <frame src="frame_c.htm" />
    </frameset>
</html>
```



HTML Frames-Vertical Frames

```
<html>
    <frameset cols="25%,50%,25%">
        <frame src="frame_a.htm" />
        <frame src="frame_b.htm" />
        <frame src="frame_c.htm" />
    </frameset>
</html>
```



HTML Frames-Comments

- You can specify the width of each column/ height of each row in one of four ways:
  - Absolute values in pixels: *cols="100, 500,100"*.
  - A percentage of the browser window: *cols="10%, 80%,10%"*.
  - Using a wildcard symbol: *cols="10%, *,10%"*.
  - As relative widths of the browser window: *cols="3*,2*,1*"*.
    → Here the window is divided into sixths: the first column takes up half of the window, the second takes one third, and the third takes one sixth.

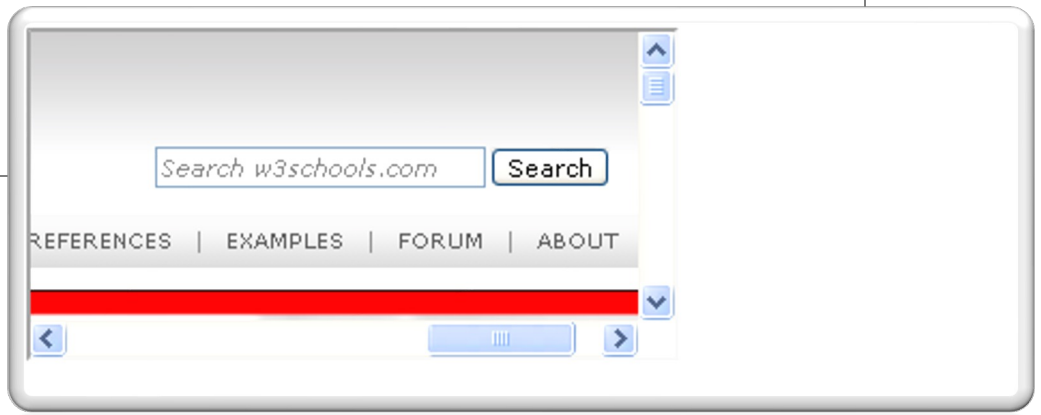
HTML Frames-Disadvantages

- There are few drawbacks with using frames, so it's never recommended to use frames in your webpages:
  - Some smaller devices cannot cope with frames often because their screen is not big enough to be divided up.
  - Sometimes your page will be displayed differently on different computers due to different screen resolution.
  - The browser's *back button* might not work as the user hopes.
  - There are still few browsers that do not support frame technology.

Inline Frames

- An iframe is used to display a web page within a web page.

```
<html>
    <body>
        <iframe src=" frame_a.htm "></iframe>
    </body>
</html>
```



HTML Meta Element

- Metadata is data (information) about data.
- The <meta> tag provides metadata about the HTML document. Metadata will not be displayed on the page, but will be machine parsable.
- Meta elements are typically used to specify page description, keywords, author of the document, last modified, and other metadata.
- The metadata can be used by browsers (how to display content or reload page), search engines (keywords), or other web services.

The HTML Meta Element

- The following meta element defines a description of a page:

```
<head>
  <meta name="description" content="Free Web tutorials on
    HTML, CSS, XML" />
</head>
```

- The following meta element defines keywords for a page:

```
<head>
    <meta name="keywords" content="HTML, CSS, XML" />
</head>
```

The HTML meta Element-Redirect to a new web address

```
<html>
<head>
    <meta http-equiv="Refresh"
    content="5;url=http://www.google.com" />
</head>

<body>
    <h1>Sorry! We have moved!</h1>
    <h2>The new URL is:
       <a href="http://www.google.com">http://www.google.com</a>
    </h2>
    <p>You will be redirected to the new address in five seconds.</p>
</body>
</html>
```

HTML Scripts

- The <script> tag is used to define a client-side script, such as a JavaScript.
- The script element either contains scripting statements or it points to an external script file through the src attribute.
- The script below writes Hello World! to the HTML output:

```
<script type="text/javascript"> document.write("Hello
World!")
</script>
```

HTML Entities

- Reserved characters (for example ‘ < ‘) in HTML must be replaced with character entities.
- Characters, not present on your keyboard, can also be replaced by entities.
- A character entity looks like this:

```
&entity_name;

OR

&#entity_number;
```

The advantage of using an entity name, instead of a number, is that the name is easier to remember.
The disadvantage is that browsers may not support all entity names, but the support for numbers is good.

HTML Useful Character Entities

Note: Entity names are case sensitive!

Result	Description	Entity Name	Entity Number
	non-breaking space		
<	less than	&lt;	&#60;
>	greater than	&gt;	&#62;
&	ampersand	&amp;	&#38;
¢	cent	&cent;	&#162;
£	pound	&pound;	&#163;
¥	yen	&yen;	&#165;
€	euro	&euro;	&#8364;
§	section	&sect;	&#167;
©	copyright	&copy;	&#169;
®	registered trademark	&reg;	&#174;
™	trademark	&trade;	&#8482;

HTML URLS

- A Uniform Resource Locator (URL) is used to address a document (or other data) on the world wide web.

- Any web address, follows these syntax rules:

scheme://host.domain:port/path/filename

HTML URLS

- Explanation:
  - **scheme** - defines the **type** of Internet service (most common is **http**)
  - **host** - defines the **domain host** (default host for http is **www**)
  - **domain** - defines the Internet **domain name** (google.com)
  - **port** - defines the **port number** at the host (default for http is **80**)
  - **path** - defines a **path** at the server (If omitted: the root directory of the site)
  - **filename** - defines the name of a document or resource

HTML URLS-Common URL schemes

Scheme	Short for	Used for
http	HyperText Transfer Protocol	Common web pages. Not encrypted
https	Secure HyperText Transfer Protocol	Secure web pages. Encrypted
ftp	File Transfer Protocol	Downloading or uploading files
file		A file on your computer

HTML URLS-URL Encoding

- URLs can only be sent over the Internet using the ASCII character-set.
- Since URLs often contain characters outside the ASCII set, the URL has to be converted into ASCII.
- URL encoding converts characters into a format that can be transmitted over the Internet.
- URL encoding replaces non ASCII characters with a "%" followed by hexadecimal digits.
- URLs cannot contain spaces. URL encoding normally replaces a space with a plus (+) sign, or %20.

Agenda

- HTML basics
- Cascading Style Sheets (CSS)

Cascading Style Sheets

- Styles define **how to display** HTML elements
- Styles were added to HTML 4.0 **to solve the problem** where fonts , color… information were added to every single page, became a long and expensive process.
- **External style sheets** enable you to change the appearance and layout of all the pages in a Web site, just by editing one single file!
- External Style Sheets are stored in **CSS files.**

Cascading Style Sheets

- Styling can be added to HTML elements in 3 ways:
  - Inline - using a **style attribute** in HTML elements
  - Internal - using a **<style> element** in the HTML <head> section
  - External - using one or more **external CSS files**

CSS Syntax

```
element { property:value; property:value }
```

- The **element/selector** is an HTML element name.
- The ***property*** is a CSS property.
- The ***value*** is a CSS value.
- Multiple styles are separated with semicolon.

Inline Styling (Inline CSS)

- **Inline styling** is useful for applying a unique style to a single HTML element.
- Inline styling uses the **style attribute**.
- This inline styling changes the text color of a single heading:

```
<h1 style="color:blue">This is a Blue Heading</h1>
```

Internal Styling (Internal CSS)

- An internal style sheet can be used to define a common style for all HTML elements on a page.
- **Internal styling** is defined in the **<head>** section of an HTML page, using a **<style>** element:

```
<html>
<head>
<style>
body {background-color:lightgrey}
h1   {color:blue}
p    {color:green}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

External Styling (External CSS)

- External style sheet are ideal when the style is applied to many pages.
- With external style sheets, you can change the look of an entire web site by changing one file.
- **External styles** are defined in an external CSS file, and then linked to in the **<head>** section of an HTML page

External Styling (External CSS)

```html
<html>
<head>
  <link rel="stylesheet" href="styles.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Styles.css

```css
body {
    background-color: #d0e4fe;
}

h1 {
    color: orange;
    text-align: center;
}

p {
    font-family: "Times New Roman";
    font-size: 20px;
}
```

CSS Comments

- **/*This is a comment*/**

The id Attribute

- To define a special style for one special element, first add an id attribute to the element:

```
<p id="p01">I am different</p>
```

- then define a different style for the (identified) element:

```
p#p01 {
    color:blue;
}
```

The id Attribute-Example

```
<html>
<head>
<style>
p#p01 {
    color: blue;
}
</style>
</head>
<body>

<p>This is a paragraph.</p>
<p>This is a paragraph.</p>
<p>This is a paragraph.</p>
<p id="p01">I am different.</p>


</body>
</html>
```

The class Attribute

- To define a style for a special type (class) of elements, add a class attribute to the element:

```
<p class="error">I am different</p>
```

- Now you can define a different style for all elements with the specified class:

```
p.error {
    color:red;
}
```

The class Attribute-Example

```
<html>
<head>
<style type="text/css">
. center
{
text-align:center;
}
</style>
</head>

<body>

<h1 class="center">Center-aligned heading</h1>

<p class="center">Center-aligned paragraph.</p>

</body>

</html>
```

The class Attribute

- You can also specify that only specific HTML elements should be affected by a class.
- In the next example, ONLY p elements with class="center" will be center-aligned:

```
<html>
<head>
<style type="text/css">
p. center
{
text-align:center;
}
</style>
</head>

<body>

<h1 class="center">The heading will not be affected</h1>

<p class="center">Center-aligned paragraph.</p>

</body>

</html>
```

CSS Multiple style sheets

- External style sheet has these properties for the h3 selector:

```
h3
  {
  color:red;
  text-align:left;
  font-size:8pt;
  }
```

- Internal style sheet has these properties for the h3 selector:

```
h3
  {
  text-align:right;
  font-size:20pt;
  }
```

```
color:red;
text-align:right;
font-size:20pt;
```

Multiple Styles Will Cascade into One

- What style will be used when there is more than one style specified for an HTML element?

- Generally speaking we can say that all the styles will "cascade" into a new "virtual" style sheet by the following rules, **where number four has the highest priority:**

1. Browser default
2. External style sheet
3. Internal style sheet (in the head section)
4. Inline style (inside an HTML element)

ANY QUESTIONS?

THANK YOU