IS 242 Web Application Development 1

Lecture 3: Introduction to HTML5: PART (3)
HTML Forms

Outlines of today's lecture

- HTML forms

- Form elements

- Input element

- Different types of input elements

- Select, textarea and button elements

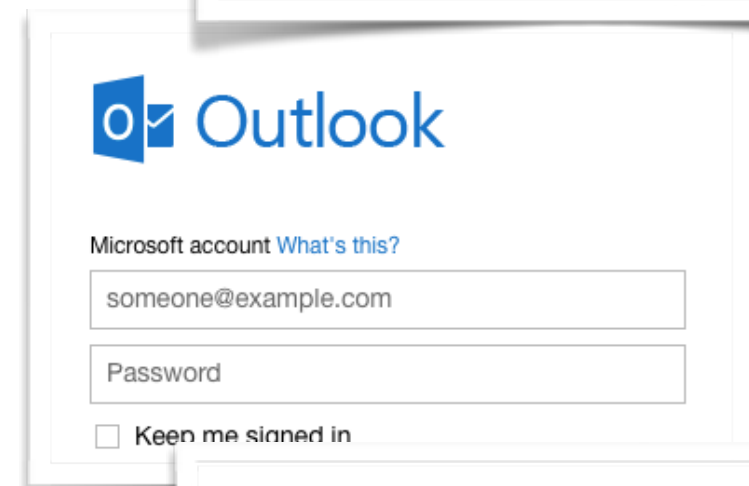# But first … what we addressed last week

- HTML attributes

- HTML images, hyperlinks, lists and tables

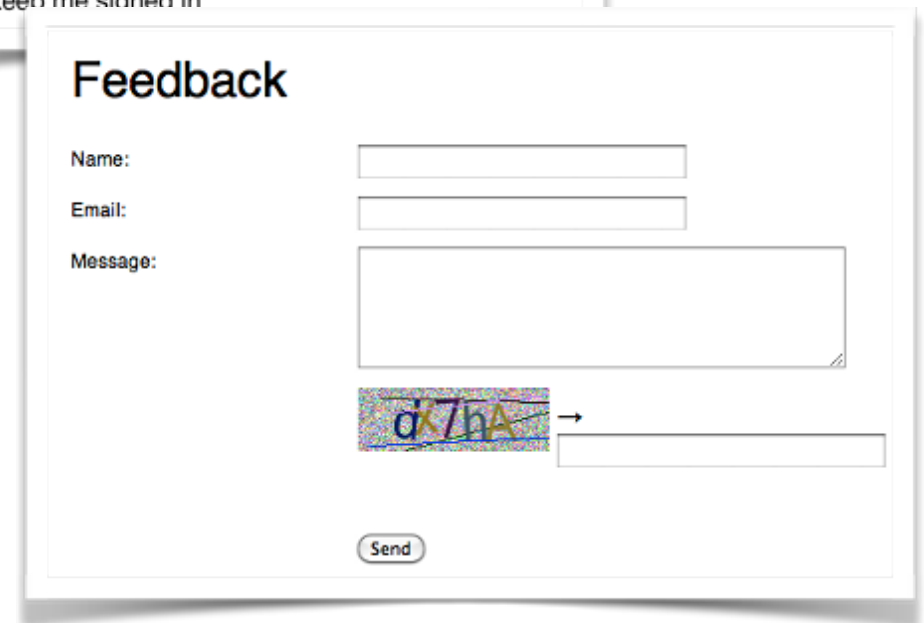- How would you create a table in HTML?

HTML Forms

- Forms are used to **gather information** from users and send it to web servers for processing.

- You can build forms that allow users to send feedback about a site, comment on an article, or buy products by submitting credit card information.

- To create a form, you can use a variety of input fields, including text fields, check boxes, drop-down menus, and radio buttons.

- Forms are an important way to make a site **interactive** instead of just a collection of static pages with text and images.

How to create a HTML Form

- To create a web form, you use the ⟨form⟩ element. This element will contain all your **form elements** such as fields, buttons..etc

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

- Let's see it in Google!

- The ⟨form⟩ element requires two attributes, **the action attribute** and the **method attribute**

The action attribute

- The action attribute **defines the action to be performed** when the form is submitted such as saving the data to the database or checking a user's log-in details.

- The common way to submit a form to a server is by using **a submit button**.

- Normally, the form is submitted to a web page on a web server.

- Example: `<form action="action_page.php">`

The method attribute

- The method attribute **specifies the HTTP method (GET or POST)** to be used when submitting the forms

- If you forget to specify a method attribute on your form, the **GET method is used by default**

```
<form action="action_page.php" method="GET">
  or:
<form action="action_page.php" method="POST">
```
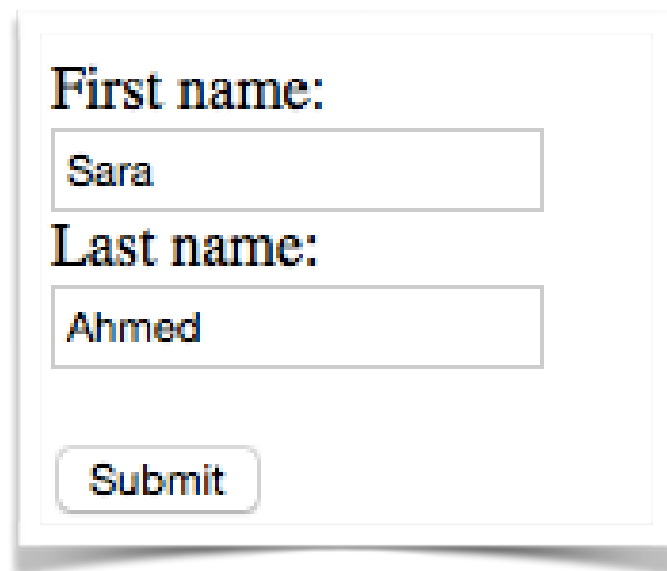
The GET method

- The GET method sends your form data **within a URL**

- When a user submits the form, **the browser will start to create a new URL** to send the user to

- This method is commonly used when performing tasks that just need to fetch existing data from a web server, such as searches

GET method example

First name:

Sara

Last name:

Ahmed

Submit

- When a user submits the form, the browser will start to create a new URL to send the user to. For the form above the URL will look something like the one below.

- http://www.domainname.com/action_page.php?firstname=Sara&lastname=Ahmed

- Domain, path and parameters.

- Have a look at how the URL is constructed when submitting a query to Google search engine!

When to use GET method

- If the form submission is **passive** (e.g. fetching existing data from a web server) like a search engine query, and **without sensitive information**

- GET is best suited to **short amounts of data.** Size limitations are set in your browser

The POST Method

- The data is **not added to the URL as parameters**. Instead, the data is effectively sent in the background and completely hidden from the URL

- The POST method should be used when performing any action that will involve **data being updated/saved to a database**

- While it is also technically possible to save data using the GET method, it is considered a security best practice to use POST for these actions.

When to use POST method

- If the form is **saving/updating data**, or includes **sensitive information** (password).

- POST offers better security because the submitted data is not visible in the page address.

\<form\> Elements

- Some of the \<form\> elements:

  - The \<input\> element

  - The \<select\> element

  - The \<textarea\> element

  - The \<button\> element

The ⟨input⟩ Element

- The main form control element that you will use in your web forms is the **⟨input⟩ element**

- It is used for **collecting all sorts of data** from your users

- You can specify what sort of data you want to collect using the **type** attribute

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

Input type: text

- `<input type="text">` defines a one-line input field for text input.

- Example:

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

First name:

Last name:
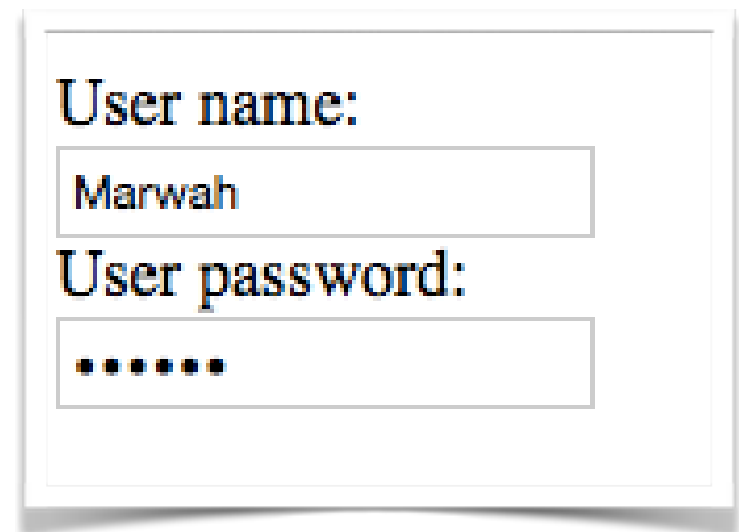
Note: The form itself is not visible. Also note that the default width of a text field is 20 characters.

Input type: password

- `<input type="password">` defines a password field

- The characters in a password field are masked (shown as asterisks or circles)

```
<form>
  User name:<br>
  <input type="text" name="username" />
  <br>
  User password:<br>
  <input type="password" name="psw" />
</form>
```

User name:

Marwah

User password:

••••••
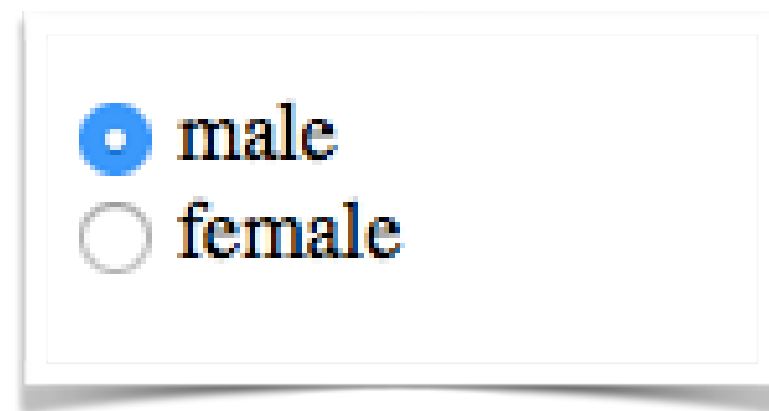
Input type: radio

- `<input type="radio">` defines a radio button

- Radio buttons let a user select ONE of a limited number of choices

- All radio buttons in a group have the same name.

```html
<form>
  <input type="radio"
   name="gender"
   value="male"
   checked />
   male
<br>
  <input type="radio"
   name="gender"
   value="female" />
   female
</form>
```
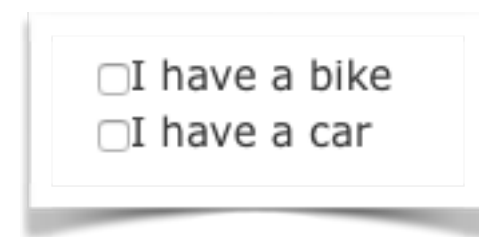
- male
- female

Input type: checkbox

- `<input type="checkbox">` defines a checkbox

- Checkboxes let a user select ZERO or MORE options of a limited number of choices.

```html
<form>
  <input type="checkbox"
   name="vehicle"
    value="Bike" />
    I have a  bike
<br>
<input type="checkbox"
name="vehicle"
value="Car" />
I have a car
</form>
```

☐ I have a bike
☐ I have a car

Input type:submit

- `<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 you omit the submit button's value attribute, the button will get a default text

```html
<form action="action_page.php">
  First name:<br>
  <input type="text" name="firstname"
   value="Mickey" />
  <br>
  Last name:<br>
  <input type="text" name="lastname"
   value="Mouse" />
  <br><br>
  <input type="submit" value="Submit" />
</form>
```

First name:

Mickey

Last name:

Mouse

Submit

19

Input type: button

- \<input **type="button"**\> defines a button

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

- Try this example:
https://www.w3schools.com/html/html_form_elements.asp

HTML5 Input Types

HTML5 added several new input types:

- color
- date
- datetime
- datetime-local
- email
- month
- number
- range
- search

- tel
- time
- url
- week

Input types, not supported by old web browsers, will behave as input type text.

Try examples of input types:
https://www.w3schools.com/html/html_form_input_types.asp

Input type:email

- The <input **type="email"**> is used for input fields that should contain an e-mail address

- Depending on browser support, the e-mail address can be automatically validated when submitted

- Some smartphones recognize the email type, and adds ".com" to the keyboard to match email input

- **Example:**
```
<form>E-mail:
    <input type="email" name="email" />
</form>
```

Input type: range

- The ⟨input **type="range"**⟩ is used for input fields that should contain a value within a range.

- Depending on browser support, the input field can be displayed as a slider control.

- Example

Points: ▭————————⬇————————▭ Submit Query

```
<form>
  <input type="range" name="points" min="0" max="10" />
</form>
```

23

Input type: time

- The <input **type="time"**> allows the user to select a time.

- Depending on browser support, a time picker can show up in the input field.

- Example

```
<form>
  Select a time:
  <input type="time" name="usr_time" />
</form>
```

Input type: url

- The ⟨input **type="url"**⟩ is used for input fields that should contain a URL address

- Depending on browser support, the url field can be automatically **validated** when submitted

- Some smartphones recognize the url type, and **add ".com"** to the keyboard to match url input

Read about the rest of HTML5 input types from:

https://www.w3schools.com/html/html_form_input_types.asp

Other Input Attributes

- **The value attribute**

The value attribute specifies the initial value for an input field

```
<!DOCTYPE html>
<html>
<body>
<form action="">
First name:<br>
<input type="text" name="firstname" value="John">
<br>
Last name:<br>
<input type="text" name="lastname">
</form>
</body>
</html>
```

First name:

| John |

Last name:

| |

Other Input Attributes

- **The readonly Attribute**

The readonly attribute specifies that the input field is read only (cannot be changed)

```
<!DOCTYPE html>
<html>
<body>
<form action="">
First name:<br>
<input type="text" name="firstname" value ="John" readonly>
<br>
Last name:<br>
<input type="text" name="lastname">
</form>
</body>
</html>
```

First name:

John

Last name:

Other Input Attributes

- **The disabled Attribute**
  The disabled attribute specifies that the input field is disabled.

```
<!DOCTYPE html>
<html>
<body>
<form action="">
First name:<br>
<input type="text" name="firstname" value
="John" disabled>
<br>
Last name:<br>
<input type="text" name="lastname">
</form>
</body>
</html>
```

First name:

John

Last name:

Other Input Attributes

- **The size Attribute**

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

```
<!DOCTYPE html>
<html>
<body>
<form action="">
First name:<br>
<input type="text" name="firstname"
value="John" size="40">
<br>
Last name:<br>
<input type="text" name="lastname">
</form>
</body>
</html>
```

Other Input Attributes

- **The maxlength Attribute**

The maxlength attribute specifies the maximum allowed length for the input field.

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

<form action="">
First name:<br>
<input type="text" name="firstname"
maxlength="10">
<br>
Last name:<br>
<input type="text" name="lastname">
</form>

</body>
</html>
```

HTML5 Input Attributes

HTML5 added the following attributes for \<input\>:
- autocomplete
- autofocus
- form
- formaction
- formenctype
- formmethod
- formnovalidate

- formtarget
- height and width
- list
- min and max
- multiple
- pattern (regexp)
- placeholder
- required
- step

Examples of these attributes can be found here:
https://www.w3schools.com/html/html_form_attributes.asp

HTML5 Input Attributes (Cont.)

- **The min and max Attributes**
  - The min and max attributes specify the minimum and maximum value for an <input> element.
  - The min and max attributes work with the following input types: number, range, date, datetime, datetime-local, month, time and week.

- **The required Attribute**
  - The required attribute is a boolean attribute.
  - When present, it specifies that an input field must be filled out before submitting the form.
  - The required attribute works with the following input types: text, search, url, tel, email, password, date pickers, number, checkbox, radio, and file.

- **The placeholder Attribute**
  - The placeholder attribute specifies a hint that describes the expected value of an input field (a sample value or a short description of the format).
  - The hint is displayed in the input field before the user enters a value.
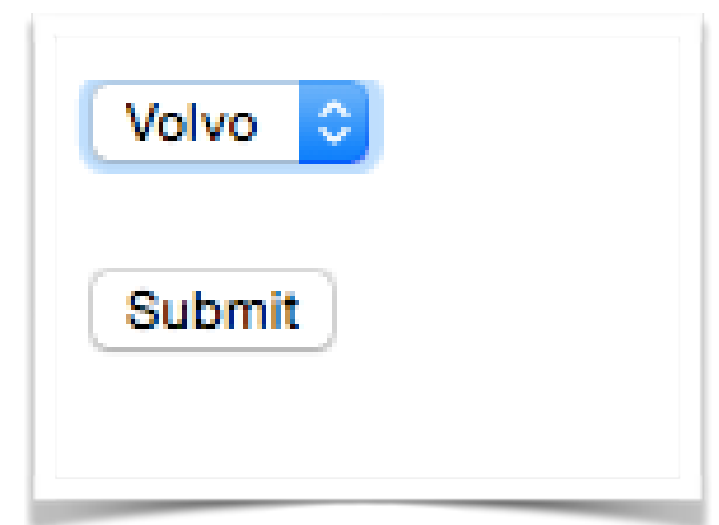 - The placeholder attribute works with the following input types: text, search, url, tel, email, and password.

Read about the rest of HTML5 input
attributes from:

https://www.w3schools.com/html/html_form_attributes.asp

The <select> Element

- The **<select>** element defines a drop-down list
- 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.

```
1 <select name="cars">
2   <option value="volvo">Volvo</option>
3   <option value="saab">Saab</option>
4   <option value="fiat">Fiat</option>
5   <option value="audi">Audi</option>
6 </select>
```
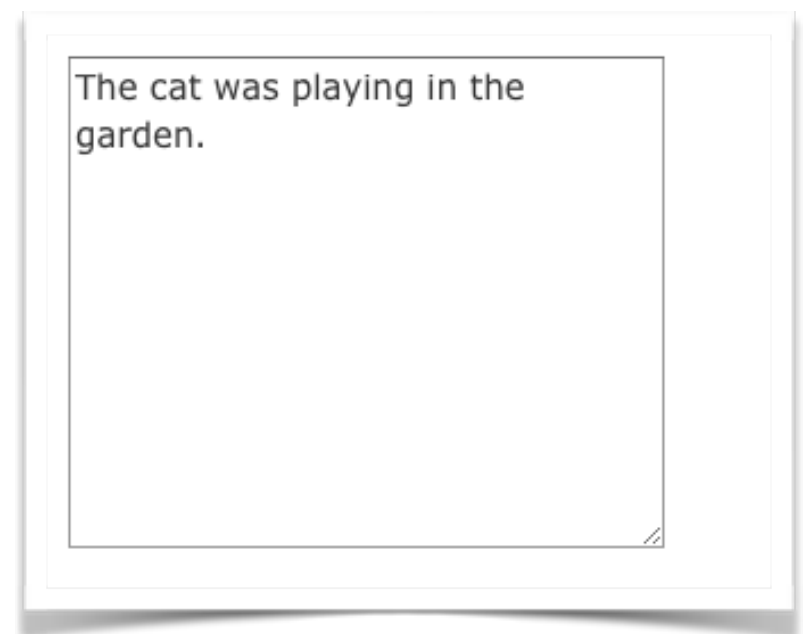
Volvo

Submit

The <textarea> Element

- The **<textarea>** element defines a multi-line input field (**a text area**)

```
1 <textarea name="message"
2   rows="10" cols="30">
3 The cat was playing in the garden.
4 </textarea>
```

The cat was playing in the garden.

The <button> Element

- The **<button>** element defines a a clickable button

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

Click Me!

HTML5 Form Elements

- HTML5 added the following form elements:

  - <datalist>

  - <keygen>

  - <output>

For more details, please refer to this address:

https://www.w3schools.com/html/html_form_elements.asp

H. W

- It is your responsibility to read about all input types and attributes under the *HTML Forms* heading from http://www.w3schools.com/html/default.asp.

References

- www.w3schools.com
- West, M. (2012). *HTML5 foundations*. John Wiley & Sons.
- Robson, E., & Freeman, E. (2012). *Head first HTML and CSS*. O'Reilly Media, Inc.
- Duckett, J. (2011). *HTML and CSS: Design and Build Websites*. John Wiley & Sons.
- Deitel & Deitel (2011). *Internet and World Wide Web How to Program, 5th Edition, Harvey & Paul Deitel & Associates.*