The Hypertext Markup Language (HTML) – Part II

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Outline

• HTML Structures
  – Tables
  – Forms
• New HTML5 Elements
• Summary
HTML Tables
Tables

• Tables are created with `<table>` tag
• Each table is divided into rows `<tr>`, containing table data `<td>`

```html
<table border="1">
  <tr>
    <td>Hassan</td>
    <td>Rohani</td>
  </tr>
  <tr>
    <td>Barack</td>
    <td>Obama</td>
  </tr>
</table>
```
Headers and Captions

- Tables can have *headers* and *captions*

```html
<table border="1">
  <caption>Presidents</caption>
  <tr>
    <th>First Name</th>
    <th>Last Name</th>
  </tr>
  <tr>
    <td>Hassan</td>
    <td>Rohani</td>
  </tr>
  <tr>
    <td>Barack</td>
    <td>Obama</td>
  </tr>
</table>
```
## Table Parts

```html
<table border="1">
  <thead>
    <tr>
      <th>Item</th>
      <th>Price</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td>Notepad</td>
      <td>$100</td>
    </tr>
  </tbody>
  <tfoot>
    <tr>
      <td>Total</td>
      <td>$100</td>
    </tr>
  </tfoot>
</table>
```
Column Groups

```
<table border="1">
    <colgroup>
        <col style="background-color: yellow" />
        <col style="background-color: lightgray" />
    </colgroup>
    <tr>
        <th>First Name</th>
        <th>Last Name</th>
    </tr>
    <tr>
        <td>Hassan</td>
        <td>Rohani</td>
    </tr>
    <tr>
        <td>Barack</td>
        <td>Obama</td>
    </tr>
</table>
```
HTML Forms
Forms

• HTML forms are used to get user input
• Form elements include:
  – Text Fields
  – Buttons
  – Menus
  – Checkboxes
  – Radio Buttons
Form Definition

- Forms are defined using `<form>` tag

```html
<form>
  First name:  
  <input type="text" name="fname"><br>
  Last name: 
  <input type="text" name="lname"><br>
</form>
```
Form Action

- Submit button is used to send data to server
- The form tag attributes:
  - action: a URL to which the information is sent
  - method: HTTP method for sending data (get or post)

```html
<form action="get-form.py" method="get">
  First name:
  <input type="text" name="fname"><br>
  Last name:
  <input type="text" name="lname"><br>
  <input type="submit" value="Submit">
</form>
```
The `<input>` tag is multipurpose

- Input type is specified using `type` attribute
  - text, password, checkbox, radio, button, submit, …
- They should all have `name` attribute
- Their initial state can be set by `value` attribute
- They can be disabled by `disabled` attribute
Checkboxes

- `<input type="checkbox" ...>`
- The `name` attribute names the checkbox
- The `value` attribute specifies the value bound to name if checkbox is submitted (default = on)
- The `checked` attribute indicates a pre-checked checkbox

```html
<form action="" method="get">
  <input type="checkbox" name="device" value="iPhone">iPhone<br>
  <input type="checkbox" name="device" value="iPad">iPad<br>
  <input type="submit" value="Submit">
</form>
```
Radio Buttons

- `<input type="radio" ...>`
- Used to select one of many options
- Radio buttons with same name form a group of mutually exclusive options

```html
<form action="" method="get">
  <input type="radio" name="device" value="iPhone"> iPhone<br>
  <input type="radio" name="device" value="iPad"> iPad<br>
  <input type="submit" value="Submit">
</form>
```
Text Boxes

• `<input type="text" ...>`
• The `size` attribute specifies the width in characters
• The `maxlength` attribute specifies the maximum number of characters

Your Full Name:
`<input type="text" name="fullname" size="30" maxlength="50">`
Passwords

• `<input type="password" ...>`
• Identical to a text box, but text typed into the box is not readable on browser
• Useful for submitting sensitive information, like passwords, but not secure at all

Password: `<input type="password" name="pass">`
Hidden Objects

- `<input type="hidden" ...>`
- Represents a hidden input, invisible to the user
- Useful for sending hidden data to server, or keeping track of data as user traverses a collection of pages

```html
<input type="hidden" name="id" value="a84re"/>
```
Buttons

• `<input type="submit" ...>`
  – A button that submits the form to the server

• `<input type="reset" ...>`
  – A button that resets all form fields to their default state

• `<input type="button" ...>`
  – A button that does nothing!
Button Tag

• The `<button>` tag can be alternatively used to create buttons

• The `type` attribute specifies the type of button
  – can be button, submit, reset

• Inside button element you can put text or image
  – this is the main difference with input buttons

```html
<button type="button">Click Here!</button>
```
Text Areas

• The `<textarea>` is used for multiline text input
• The `rows` and `cols` attributes specify the number of rows and columns

```html
<textarea rows="30" cols="50" name="text">
This is the text that you will see and can edit in the area.
</textarea>
```
Menus

- The `<select>` tag is used to create menus
- Each option is enclosed in an `option` tag
- The `size` attribute determines how many options to be displayed at once

```html
<select name="device">
  <option value="iPhone">iPhone</option>
  <option value="iPad">iPad</option>
  <option value="iMac">iMac</option>
</select>
```
Labels

- The `<label>` tag defines a label for an input element.
- The `for` attribute of the label must be equal to the `id` attribute of the input element.

```
<input type="checkbox" name="iPhone" id="iPhone">
<label for="iPhone">I like iPhone</label>
<br>
<input type="checkbox" name="iPad" id="iPad">
<label for="iPad">I like iPad</label>
```
HTML5 New Elements
HTML5 Main Features

- 2D graphics with `<canvas>` and `<svg>`
- New media elements
- Support for local storage
- Drag and drop support
- New content-specific elements
- New form controls, like calendar and data list
# New Media Elements

<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;audio&gt;</td>
<td>Defines sound content</td>
</tr>
<tr>
<td>&lt;video&gt;</td>
<td>Defines a video or movie</td>
</tr>
<tr>
<td>&lt;source&gt;</td>
<td>Defines multiple media resources for &lt;video&gt; and &lt;audio&gt;</td>
</tr>
<tr>
<td>&lt;embed&gt;</td>
<td>Defines a container for an external application or interactive content (a plug-in)</td>
</tr>
<tr>
<td>&lt;track&gt;</td>
<td>Defines text tracks for &lt;video&gt; and &lt;audio&gt;</td>
</tr>
</tbody>
</table>
New Input Elements

- date
- number
- range
- color
- search
- email
- url
- ...

[Image of a range input field with a value of 50]
New Semantic Elements

- `<header>`
- `<nav>`
- `<section>`
- `<article>`
- `<aside>`
- `<figure>`
- `<footer>`
Summary

• HTML5 has introduced lots of new features:
  – 2D drawing
  – Media playback
  – Input controllers
  – Web storage
  – Semantic, …

• HTML5 is still a work in progress

• Some features are not yet supported by major browsers
References

• W3Schools
  – http://www.w3schools.com/html

• Internet Programming by Pat Morin
  – http://cg.scs.carleton.ca/~morin/teaching/2405/