The Hypertext Markup Language (HTML) –Part Ⅱ

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Web Programming

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>

```
<table border="1">
  <tr>
    <td>Hassan</td>
    <td>Rohani</td>
  </tr>
  <tr>
    <td>Barack</td>
    <td>Obama</td>
  </tr>
</table>
```

Hassan	Rohani
Barack	Obama

HEADERS AND CAPTIONS

- Tables can have *headers* and *captions*

```
<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>
```

Presidents	
First Name	**Last Name**
Hassan	Rohani
Barack	Obama

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

```html
<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

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

First name: [   ]
Last name: [   ]

FORMACTION

- 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)

```
<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>
```

FORM INPUTS

- 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

```
<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

```
<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

```
<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

```
<button type="button">Click Here!</button>
```

TEXTAREAS

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

```
<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

```
<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
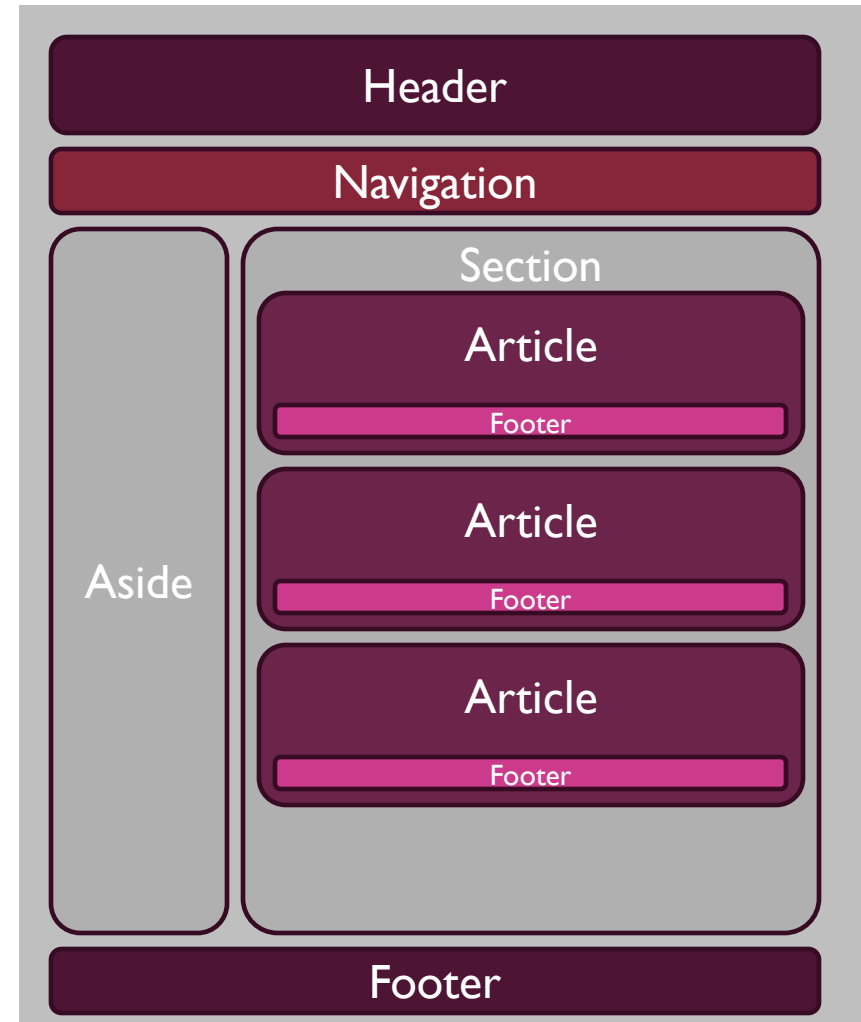- New form controls, like calendar and data list

NEW MEDIA ELEMENTS

<audio>	Defines sound content
<video>	Defines a video or movie
<source>	Defines multiple media resources for <video> and <audio>
<embed>	Defines a container for an external application or interactive content (a plug-in)
<track>	Defines text tracks for <video> and <audio>

NEW INPUTELEMENTS

- date

- number

- range   0 ——▽———— 100

- color

- search

- email

- url

- …

NEW SEMANTICELEMENTS

- <header>

- <nav>

- <section>

- <article>

- <aside>

- <figure>

- <footer>

Header
Navigation

Aside	Section
	Article
	Footer
	Article
	Footer
	Article
	Footer

Footer

FIRST LOOK AT HTML5

- Built-in audio and video support (without plugins)

- Enhanced form controls and attributes

- The Canvas (a way to draw directly on a web page)

- Drag and Drop functionality

- Support for CSS3 (the newer and more powerful version of CSS)

- More advanced features for web developers, such as data storage and offline applications.

THE <HTML> ELEMENT

Remember the DOCTYPE declaration from XHTML?

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

In HTML5, there is just one possible DOCTYPE declaration and it is simpler:

```
<!DOCTYPE html>
```

Just 15 characters!

The DOCTYPE tells the browser which type and version of document to expect. This should be the last time the DOCTYPE is ever changed. From now on, all future versions of HTML will use this same simplified declaration.

THE <HEAD> SECTION

Here is a typical XHTML <head> section:

```
<head>
  <meta http-equiv="Content-type" content="text/html; charset=UTF-8" />
  <title>My First XHTML Page</title>
  <link rel="stylesheet" type="text/css" href="style.css" />
</head>
```

And the HTML5 version:

```
<head>
  <meta charset="utf-8">
  <title>My First HTML5 Page</title>
  <link rel="stylesheet" href="style.css">
</head>
```

Notice the simplified character set declaration, the shorter CSS stylesheet link text, and the removal of the trailing slashes for these two lines.

BASIC HTML5 WEB PAGE

Putting the prior sections together, and now adding the <body> section and closing tags, we have our first complete web page in HTML5:

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="utf-8">
   <title>My First HTML5 Page</title>
   <link rel="stylesheet" href="style.css">
</head>
<body>
   <p>HTML5 is fun!</p>
</body>
</html>
```

Let's open this page in a web browser to see how it looks…

EXAMPLE: MAKE YOUR CONTENT EDITABLE

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <title>untitled
    </title>
</head>
<body>
    <h2> To-Do List</h2>
    <ul contenteditable="true">
        <li> GurpreetKaur(155) </li>
        <li> MeeruGupta
        <li> JyotiBatra </li>
        <li> JaskiranKaur </li>
    </ul>
</body>
</html>
```

To-Do List

- Gurpreet Kaur(1
- Meeru Gupta
- Jyoti Batra
- Jaskiran Kaur
- Presentati

EXAMPLE : HTML VIDEO & AUDIO

```html
<!DOCTYPE html>
<html>
<body>
    <div>
        <video width="400" controls>
            <source src="mov_bbb.mp4" type="video/mp4">
            Your browser does not support HTML5 video.
        </video>
    </div>
```

```html
    <div>
        <audio controls>
            <source src="horse.ogg" type="audio/ogg">
            <source src="horse.mp3" type="audio/mpeg">
            Your browser does not support the audio element.
        </audio>
    </div>
</body>
</html>
```

SUMMARY

- HTML5 has introduces 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

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  - http://cg.scs.carleton.ca/~morin/teaching/2405/

- W3C

  - http://dev.w3.org/html5/html-author/

  - http://w3.org/TR/css3-roadmap/

- Dive Into HTML 5 (prerelease site for an O'Reilly book)

  - http://diveintohtml5.org