

COMP2707: Advanced Website Design

Lecture 2: HTML & CSS

Objectives

- create web pages with HTML
- add style with CSS

HTML?

- markup language allowing to identify common sections of a web page
- markup elements define each section
- code is a mix of text user sees in the browser surrounded by a variety of markup elements
- an element is a part of HTML tags containing content
- elements containing only a single tag are 'void elements'

Structure of a Basic Web Page

- document type, or doctype specifies the rules for document language
- `<html>` tag is the root element
- two main sections are the
and
- head: container for all descriptive info about the document
- body: includes content that the user sees in the browser window

CSS?

- used to add presentation information to web pages
- CSS can display information for different devices
- express style characteristics from an HTML element
- rules contain a selector and a declaration

The History of HTML

- Tim Berners-Lee first proposed HTML at the European Lab for Particle Physics (CERN) in 1989
- TBL joined the ideas of the browser, a markup language (HTML), and a communications protocol (`http:`) that allowed hypertext linking
- HTML is an application of the Standard Generalized Markup Language (SGML), a standard for specifying document structure

A Need for Standards

- World Wide Web Consortium (W3C) was founded in 1994 at MIT
- W3C sets jointly developed standards for HTML and other markup languages, which benefits everyone

Table 1: HTML Versions

Version	Release Date	Highlights
HTML 1.1	1992	First informal draft
HTML 2	1995	First release supported by graphical browsers. HTML 2.0 docs are still viewable by all browsers

Version	Release Date	Highlights
HTML 3.2	1997	Introduced forms and tables
HTML 4.01	1999	Added support for style sheets; increased support for scripting and interactivity
HTML5	Definition completed in 2012	nominated as a recommendation in 2014
HTML5.1	Planned for 2016	New element and attribute refinements

XML and XHTML: Extensible Markup Language

- released by the W3C in 1997
- XML lets devs define their own markup language
- essential to creating applications for the web, but has a stricter syntax than HTML
- provides a solutions to the widely varying HTML coding standards
- W3C combined XML and HTML to create XHTML, which follows the rules of XML

XML Syntax Rules

- documents must be well-formed
- all tags must nest properly and not overlap
- use all lowercase for element names
- always use closing tags
- empty elements are signified by a closing slash
- attribute values must be contained in quotation marks

Problems with XHTML

- newer versions of XHTML moved too far away from existing web development
- relaxed syntax rules still must be applied because of legacy code

HTML5

- offers two syntaxes: HTML compatible and XML compatible
- best practice is to code using syntax that follows stricter rules

Proposal for HTML5

- proposed by the Web Hypertext Application Technology Working Group (WHATWG)
- supports standards-based coding
- compatible with HTML and XHTML
- compatible with CSS
- supports new page layout elements
- application and media compatible

MIME (Multipurpose Internet Mail Extensions)

- defines content types for the web, determines the type of document
- declared in a `<meta>` element in the `<head>` section
- contains a character set identifier `<meta http-equiv="Content-Type" content="text/html; charset=utf-8">`

HTML5 Element Categories

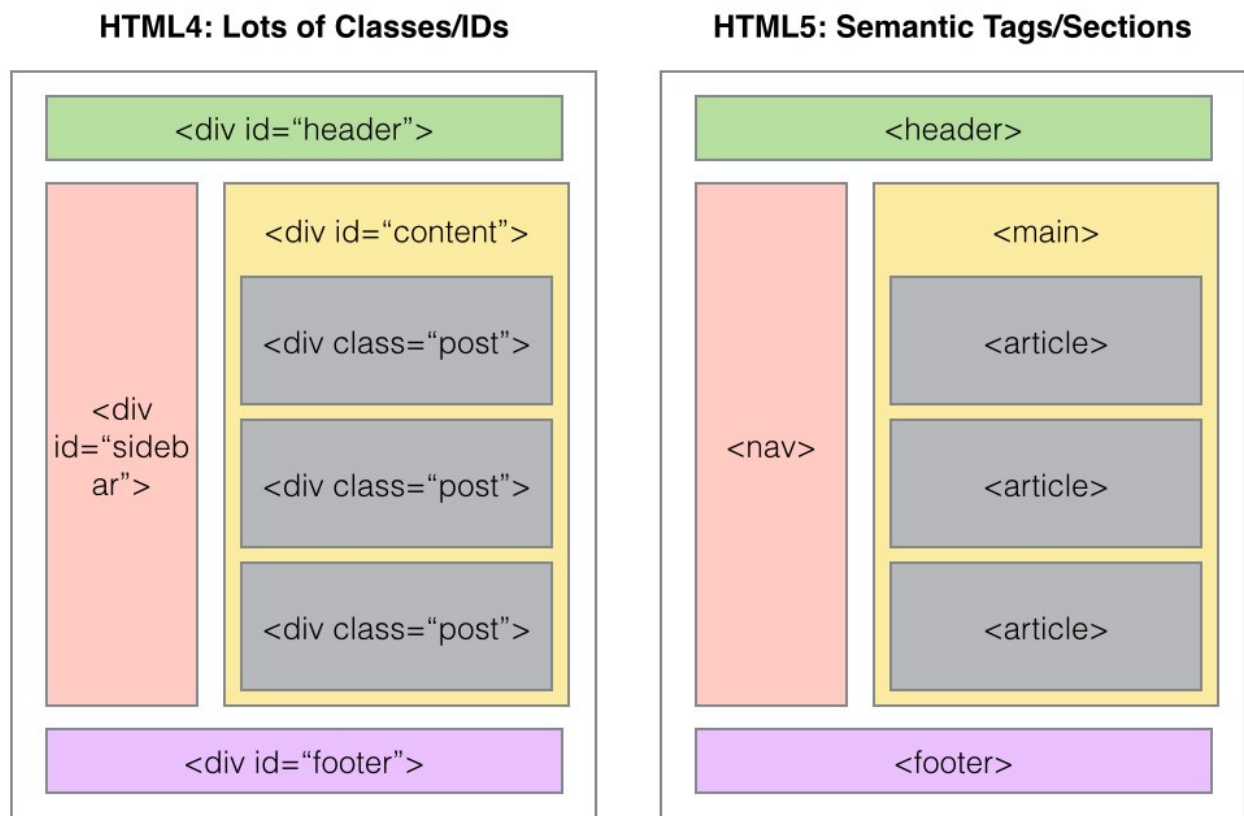
- metadata content, flow content, sectioning root, sectioning content, heading content, phrasing content, embedded content, interactive content, transparent
- elements can contain attributes that set properties

Attributes in HTML5

- early HTML had more attributes. HTML5 has less due to CSS
- global attributes can be applied to any element

HTML5 Elements for Page Structure

HTML4 vs HTML5 Page Structure on a Blog



<header> contains the page header content
<nav> contains the navigation elements for the page
<article> contains the primary page content
<section> defines sections or groupings of page content
<aside> contains additional content such as a quote or sidebar
<figure> contains images for the article content
<footer> contains page footer content

Interactive Capabilities in HTML5

- audio and video
- drawing canvas

- background application processing
- local data storage

Using Good Coding Practices

Stick to the Standards (W3C)

- separate content from presentation
- plan to be accessible to different devices

Use Semantic Markup

- semantic markup identifies the intended use of document sections
- document elements match the meaning and usage of the document sections

Validate Your Code

- enhances browser compatibility, accessibility, and exchange of data
- common mistakes: no doctype declaration, missing closing tags, missing alt attributes in `` elements, incorrect tag nesting, unquoted attributes

Summary

- make sure to check for support of new HTML5 elements
- use CSS
- code to the stricter HTML5 standard
- use good coding practices
- use semantic markup