

IAB207 – Rapid Web Application Development

2019 S2

Week 2

The View in MVC (HTML & CSS)

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Agenda

- HTML
 - Introduction
 - Basic Page Structure
 - HTML Tags
 - Content Models
 - Formatting Content
 - Structuring Content
 - Forms

Agenda

- CSS
 - Introduction
 - Getting Started
 - CSS in action

HTML



HTML – Introduction

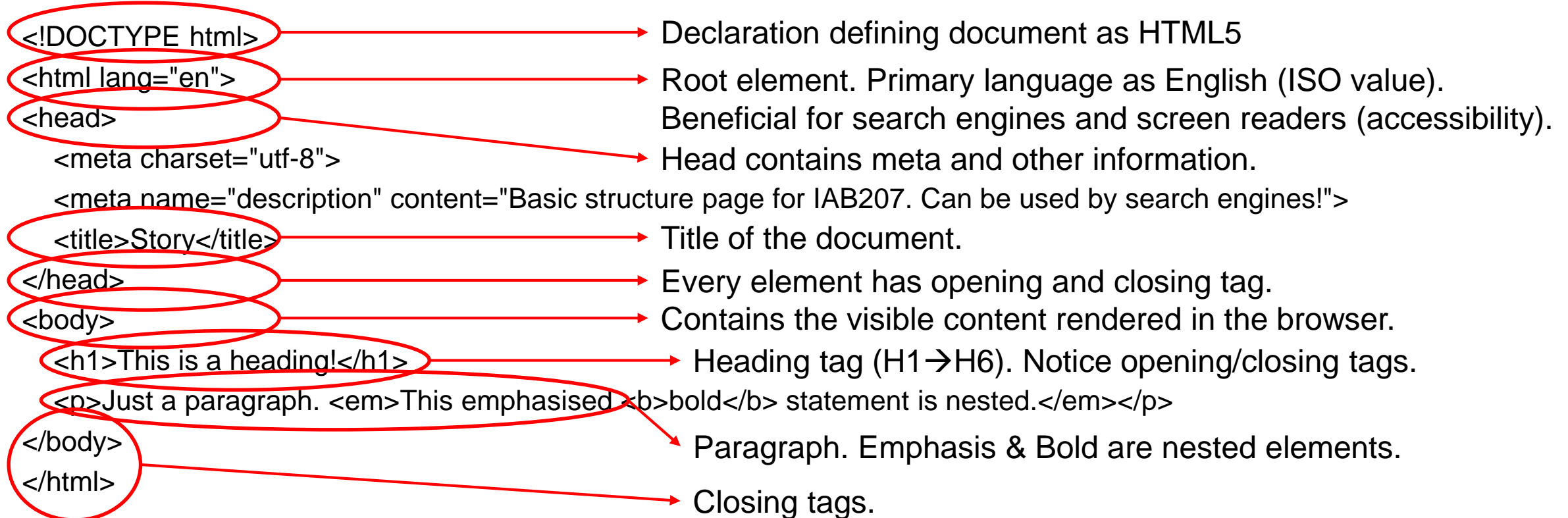
- **H**yper **T**ext **M**arkup **L**anguage
 - Create web pages (Structure)
 - Browsers interpret element tags
 - History
 - 1991: Tim Berners-Lee | 1995: HTML 2.0 | 1997: HTML3 → HTML 4 (Universal)
 - 2000
 - W3C → XHTML (☹ 2009)
 - Web Hypertext Application Technology Working Group (WHATWG) → HTML
 - 2014: HTML 5
 - 2017: HTML 5.2 (Current)
 - Recommended resources
 - <https://webplatform.github.io/>
 - <https://developer.mozilla.org/en-US/>





HTML IN ACTION 😊 (INDEX0.HTML)

HTML – Basic Page Structure





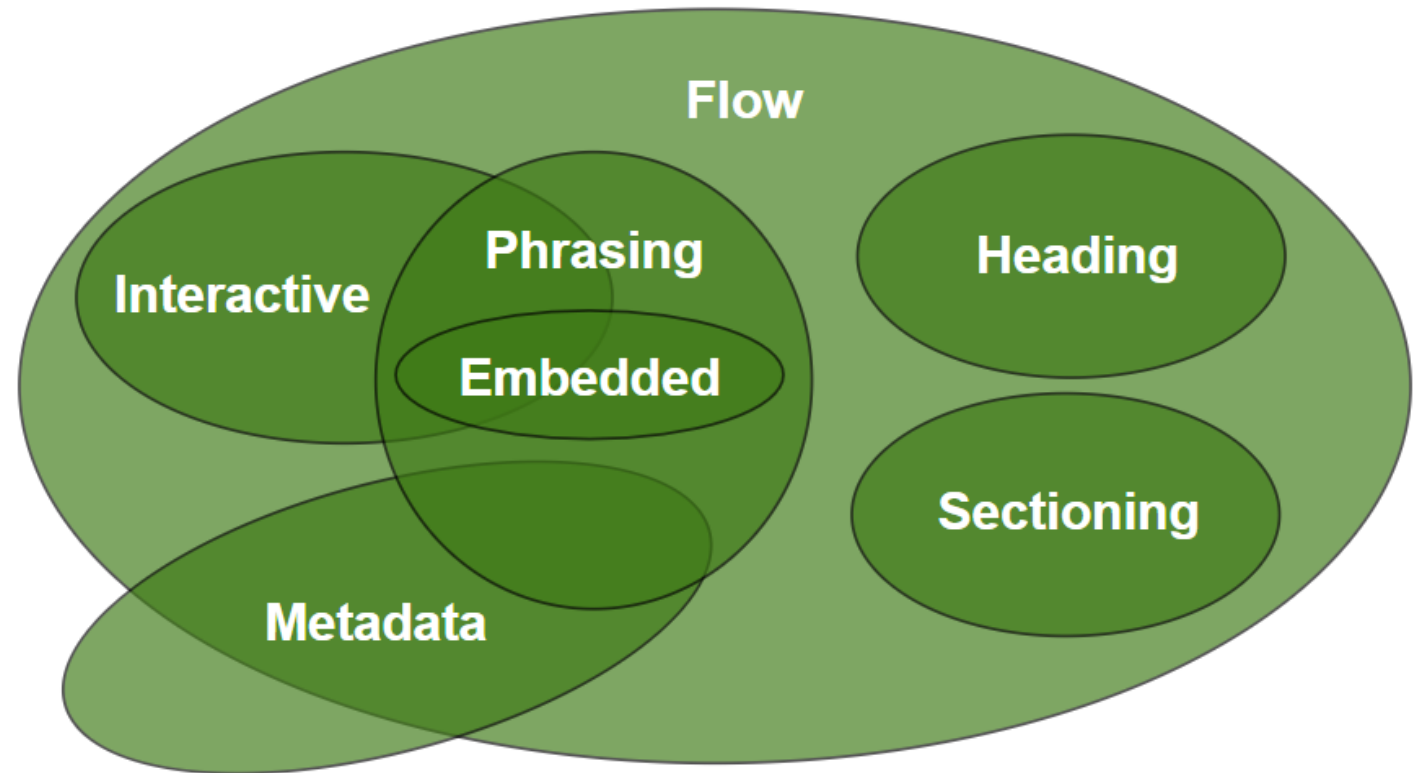
HTML IN ACTION 😊 (INDEX1.HTML)

HTML Tags

- Elements surrounded by angle brackets
 - <https://developer.mozilla.org/en-US/docs/Web/HTML/Element>
- `<tag>` - Opening tag | `</tag>` - Closing tag
- Examples
 - `<head></head>`
 - `<title></title>`
 - `<body></body>`
 - `<p></p>`
- Exceptions: `<!DOCTYPE>` , `<meta>`, `
`, ``

Content Models

- Metadata content
- Flow content
- Sectioning content
- Heading content
- Phrasing content
- Embedded content
- Interactive content



[HTML Living Standard — Last Updated 16 July 2019](#)

Science and Engineering Faculty

Formatting Content

- Headers (<H1>...<H6>)
- Paragraphs (<p>)
- Tables (<table>, <tr><td>)
- Line Breaks (
)
- Emphasis (,, <i> etc)
- Special Characters
 - <https://dev.w3.org/html5/html-author/charref>
- Whitespace ()
- Images ()
- Links (

HTML IN ACTION 😊 (INDEX2.HTML)

Structuring Content

- Why?
- Semantic elements
 - Header: Usually header of page but can be used elsewhere
 - Nav: Defines section with navigation
 - Main: Represents dominant content of the body of the page
 - Article: Self-contained content separate to main content
 - Section: Defines section of a document, ideal for grouping

Structuring Content

- Semantic elements
 - Aside: Related to main content but independent of main flow
 - Footer: Usually footer of page but can be used in other parts of page
 - Div: Generic container for content – requires CSS to modify content or layout
- WAI-ARIA: Web Accessibility Initiative – Accessible Rich Internet Applications - Allow assistive technologies to convey appropriate information to persons with disabilities. (<https://w3c.github.io/using-aria/>)

Forms

- Used to collect/submit information
- `<form action="" method="" name=""></form>`
- Common elements
 - `<input name="" type="">`
 - `<select name="">`
 - `<option>`
 - `<textarea>`

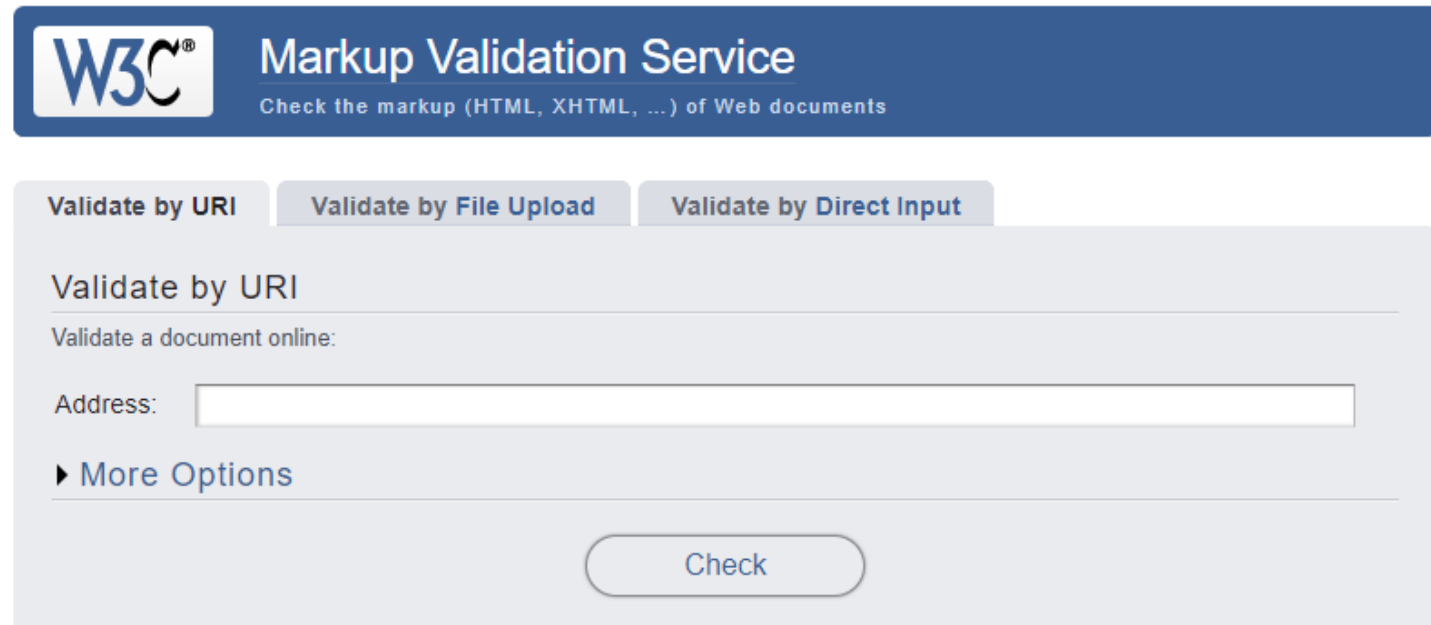
Forms: Input Type

- `button`: A push button with no default behavior.
- `checkbox`: A check box allowing single values to be selected/deselected.
- `color`: `HTML5` A control for specifying a color. A color picker's UI has no required features other than accepting simple colors as text ([🔗 more info](#)).
- `date`: `HTML5` A control for entering a date (year, month, and day, with no time).
- `datetime-local`: `HTML5` A control for entering a date and time, with no time zone.
- `email`: `HTML5` A field for editing an e-mail address.
- `file`: A control that lets the user select a file. Use the **accept** attribute to define the types of files that the control can select.
- `hidden`: A control that is not displayed but whose value is submitted to the server.
- `image`: A graphical submit button. You must use the **src** attribute to define the source of the image and the **alt** attribute to define alternative text. You can use the **height** and **width** attributes to define the size of the image in pixels.
- `month`: `HTML5` A control for entering a month and year, with no time zone.
- `number`: `HTML5` A control for entering a number.
- `password`: A single-line text field whose value is obscured. Use the **maxlength** and **minlength** attributes to specify the maximum length of the value that can be entered.
- `radio`: A radio button, allowing a single value to be selected out of multiple choices.
- `range`: `HTML5` A control for entering a number whose exact value is not important.
- `reset`: A button that resets the contents of the form to default values.
- `search`: `HTML5` A single-line text field for entering search strings. Line-breaks are automatically removed from the input value.
- `submit`: A button that submits the form.
- `tel`: `HTML5` A control for entering a telephone number.
- `text`: A single-line text field. Line-breaks are automatically removed from the input value.
- `time`: `HTML5` A control for entering a time value with no time zone.
- `url`: `HTML5` A field for entering a URL.
- `week`: `HTML5` A control for entering a date consisting of a week-year number and a week number with no time zone.

Source: <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/input>

Validation

- <https://validator.w3.org/>



The screenshot shows the W3C Markup Validation Service interface. At the top, there's a blue header with the W3C logo and the text "Markup Validation Service" and "Check the markup (HTML, XHTML, ...) of Web documents". Below this, there are three tabs: "Validate by URI" (selected), "Validate by File Upload", and "Validate by Direct Input". Under the "Validate by URI" tab, there's a section titled "Validate by URI" with the text "Validate a document online:". Below this, there's a label "Address:" followed by a text input field. Under the input field, there's a link "► More Options". At the bottom right of the form, there's a "Check" button.

This validator checks the [markup validity](#) of Web documents in HTML, XHTML, SMIL, MathML, etc. If you wish to validate specific content such as [RSS/Atom feeds](#) or [CSS stylesheets](#), [MobileOK content](#), or to [find broken links](#), there are [other validators and tools](#) available. As an alternative you can also try our [non-DTD-based validator](#).

HTML IN ACTION 😊 (INDEX3.HTML)

CS5



CSS – Introduction

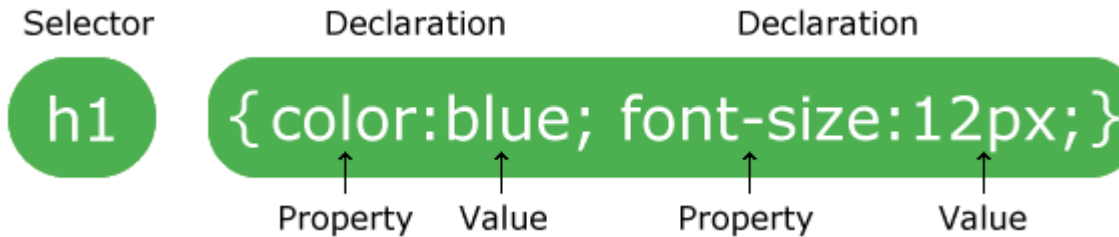
- Cascading Style Sheets
 - Give style or modify appearance of content
 - History
 - 1994: Håkon Wium Lie (CERN) – Cascading HTML Style Sheets proposal
 - Bert Bos (Argo – customizable browser with style sheets)
 - 1995
 - World Wide Web Consortium (W3C) Operational
 - CSS Presented (again) | Bert and Håkon met in person finally! | Showed implementations
 - 1997: CSS W3C working group
 - CSS2 (9 years to reach recommendation status)
 - CSS3 (Beijing doctrine – divided into modules moving independently)
 - Recommended resources
 - <https://www.w3.org/Style/CSS20/history.html>
 - <https://developer.mozilla.org/en-US/docs/Web/CSS>



CSS – Getting Started

- Syntax

- Selector
- Declaration



- How-to

- Internal – style sheet within document
- External – link to separate style sheet within <head> | <link rel="stylesheet" type="text/css" href="style.css">
- Inline – style attribute of specific element | <h1 style="color:red;">My Heading</h1>

- Example

- element id (#elementid)
- element class (.classname)

Source: https://www.w3schools.com/css/css_syntax.asp



Let's start with some basic styles for the body and the overall content of the page.

CSS IN ACTION 😊 (INDEX4.HTML)



Let's focus on the navigation and the banner or hero image.

CSS IN ACTION 😊 (INDEX5.HTML)



Let's focus on the main content area and the table.

CSS IN ACTION 😊 (INDEX6.HTML)



Let's finish today with CSS flexbox.

CSS IN ACTION 😊 (INDEX7.HTML)

CSS Layouts

- Grid
 - Grid based layout
 - Two dimensional model (rows and columns together)
 - https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Grid_Layout
- Flexbox
 - Responsive UI design/structure made easy
 - One dimensional (row or column at a time)
 - Children in flexible container becomes flexible
 - https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Flexible_Box_Layout

SUMMARY

QUESTIONS?

THANK YOU FOR BEING HERE 😊