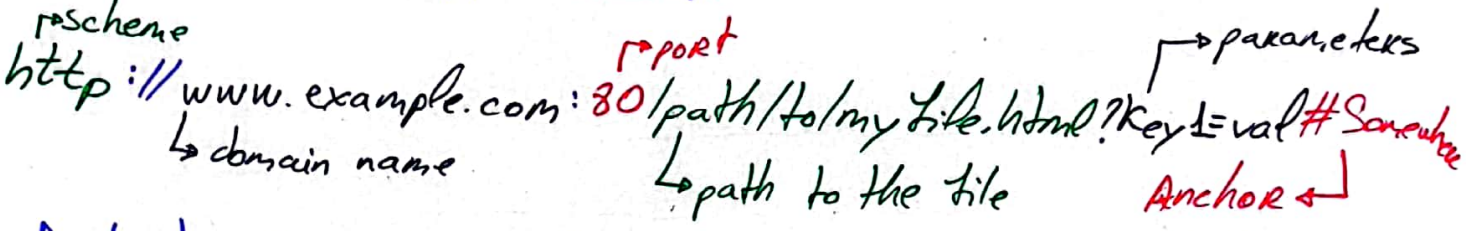
Curs 2

How a Web App Works. HTML & CSS

I How a web app works?



Definition: A web application is a program that runs on a browser. The web application addresses a particular problem in an interactive mode.

Your browser prepares to recognize this URL. It sends your request to the Domain Name Server (DNS), a repository of domain names and their IP addresses.

The browser sends the request to the found IP address using the HTTP protocol, asking it to send a copy of the website to the client.

Second, the web server processes the request.

If the server approves the client's request, the server sends the client a "200 OK" message and then starts sending the website's files to the browser as a series of small chunks.

Third, the browser assembles the small chunks and parses the HTML file first.

This leads to the browser recognizing any <link> element references to external CSS stylesheets and any <script> element references to script.

As the browser parses the HTML, it sends requests back to the server for any CSS files and any JavaScript files, then parses the CSS and JavaScript.

The browser generates an in-memory DOM.

Finally, a visual representation of the page is painted to the screen, and the user sees the page content and can begin to interact with it.

II HTML

Definition: **HTML** (HyperText MarKup Language) is the most basic building block of the web. It defines the meaning and structure of web content.

Other technologies besides HTML are generally used to describe a web page's appearance/presentation (CSS) or functionality/behavior (JS).

HTML uses "markup" to annotate text, images, and other content for display in a Web browser. HTML markup includes special "elements" such as: <head>, <title>, <body>, <header>, <footer>, <article>, <section>, <p>, , , <img>, <aside>, <audio>, <canvas>, <datalist>, <details>, <embed>, <nav>, <output>, <progress>, <video>, <ul>, <ol>, <li>, and many others.

① HTML Element

→ An HTML element is defined by a start tag, some content, and an end tag.
→ A tag consists of the element name surrounded by "<" and ">".
→ The name of an element inside a tag is case insensitive. That is, it can be written in uppercase, lowercase, or a mixture. For example, the <title> tag can be written as <Title>, <TITLE>, or in any other way.

② HTML Page structure

→ <!DOCTYPE html> : declaration defines that this document is an HTML5 document
→ <html> : the root element of an HTML page
→ <head> : contains meta information about the HTML page
→ <title> : title for the HTML page (which is shown in the browser's title bar or in the page's tab)
→ <body> : container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc
→ <h1> : large heading
→ <p> : paragraph

③ HTML Attributes

Obs!: All HTML elements can have attributes.
Definition: Attributes provide additional information about elements. They are always specified in the start tag: They usually come in name/value pairs like: <img src="img.jpg">.
HTML Attribute

④ HTML Classes

Definition: The HTML class attribute is used to specify a class for an HTML element.

Obs!: Multiple HTML elements can share the same class. Multiple classes can be assigned to the same HTML element.

```
<h2 class="city">PARIS</h2>
```

⑤ HTML IDs

Definition: The HTML id attribute is used to specify a unique id for an HTML element.

Obs!: You cannot have more than one element with the same id in an HTML document.

```
<h1 id="myHeader">My Header</h1>
```

III CSS

Definition: CSS (Cascading Style Sheets) describes how HTML elements are to be displayed on screen, paper, or in other media.

CSS is used to define styles for web pages, including the design, layout and variations in display for different devices and screen size.

The style definitions are normally saved in external .css files.

With an external stylesheet file, you can change the look of an entire website by changing just one file!

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① Types of CSS

There are 3 types of CSS styles declarations are as follows:

1. Internal (Embedded) Styles: placed inside the head section of a particular web page via the style tag. They are also called "Embedded" styles.
2. Inline Styles: placed directly inside an HTML element in the code
3. External Styles: separate page which is then linked to the web page.

② CSS Declarations

The selector points to the HTML element you want to style.

The declaration block contains one or more declarations separated by semicolons.

Each declaration includes a CSS property name and a value, separated by a colon.

Multiple CSS declarations are separated with semicolons, and declaration blocks are surrounded by curly braces.

③ CSS Combinators

Selector	Example	Example description
element element	div p	all <p> inside
element > element	div > p	all <p> with parent
element + element	div + p	all <p> immediately after
el1 ~ el2	p ~ ul	all preceded by a <p>

⑨ CSS Pseudo-classes

Definitions: A pseudo-class is used to define a special state of an element.
For example, it can be used to:

- style an element when a user mouses over it
- style visited and unvisited links differently
- style an element when it gets focus

IV SCSS

Definitions: SCSS is a preprocessor which lets you use features that aren't a part of the wider CSS standard yet, and provides better workflows for maintaining your stylesheets. It is one of the syntaxes used by Sass.

Obs!: Sass is a stylesheet language that's compiled to CSS. It allows you to use variables, nested rules, mixins, functions, and more, all with a fully CSS-compatible syntax. Sass helps keep large stylesheets well-organized and makes it easy to share design within and across projects.