{POWER.CODERS}

HTML best practice

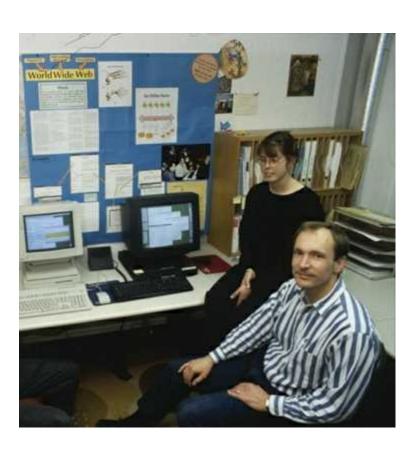
AGENDA

This class will be a combination of theory + practice

- > History and terminology
- > Quiz
- > Project best practice
- > Semantics and boilerplate
- Resources and online material
- Exercises
- > Appendix: More about domains

HISTORY AND TERMINOLOGY

HTML WAS INVENTED IN 1991 BY TIM BERNERS-LEE



> HTML is a standardized markup-language that allows us to structure documents to be processed by the browser. The standard contains a set of markups / tags that all browsers recognize.

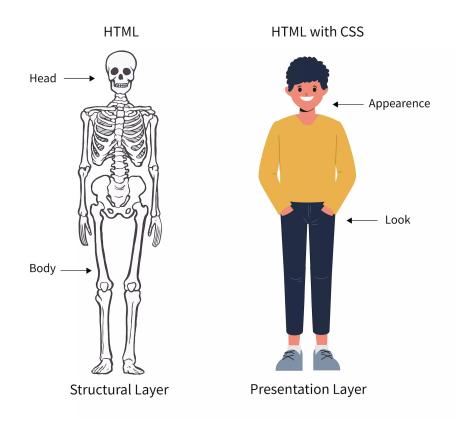
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- > HTML 5 in 2014

HTML vs CSS

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FRONT-END VS BACK-END

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- > Web development: The process of programming dynamic web applications
- > Web development Front-end: The outwardly visible elements of a website or application
- > Web development Back-end: The inner workings and functionality of a website or application.

What is HTML?

> HyperText Markup Language

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- > HTML is composed of **tags** that together provide a **blueprint** for a webpage.
- > Hypertext is a text enriched with hyperlinks.
- > Markup language uses tags to define the page layout and elements within the page. It is human-readable.

What are a few different HTML tags?

Which tag is used to create a link to another page?

1. <1>

2. k>

3. <a>>

4.

What is a container element compared to a stand alone element?

QUIZ

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Container Element

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Stand Alone Element

> An element that cannot contain anything else, like
 .

What are the two tags that nest directly within the <html> tags?

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> <head>

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- > <head>
- > <body>

What is a HTML comment?

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<!-- Document Content --> is only visible in the source code.

QUIZ

What is a HTML comment?

<!-- Document Content --> is only visible in the source code.

Comments can be used to organize your code into sections so you (or someone else) can easily understand your code. It can also be used to 'comment out' large chunks of code to hide it from the browser.

What is a relative path versus an absolute path?

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If a file is part of the same web site, then a **relative URL** can be used. This can be only the name of the file.

$Q_{U|Z}$

What is a relative path versus an absolute path?

If a file is part of the same web site, then a **relative URL** can be used. This can be only the name of the file.

If the file is located on another website, an **absolute URL** must be used. Absolute URLs contain the entire domain name and path.

```
<!-- Relative URLs -->
<a href="image-gallery.html">Image Gallery</a>
<a href="blog/first-blog-entry.html">My First Blog Entry</a>
<a href="../image-gallery.html">Back to Image Gallery</a>
<!-- Absolute URLs -->
<a href="https://www.my-colleague.com/blog.html">Blog of a Colleague</a>
```

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- > Inside the same folder we just use the filename, for example portrait.jpg.
- > Two dots (`..`) refer to the parent directory.
- > If we want to start in the root directory we add an `/` before the path of the file, for example /portrait.jpg.



What does a complete link (anchor) element look like?

What does a complete link (anchor) element look like?

This goes to google

What does block-level and inline elements mean?

What does block-level and inline elements mean?

Block-level elements

- > start in a new line
- > take up the full width of the page
- > e.g. <h1-6>, ,

Inline elements

- > do not start in a new line
- > only take up the necessary width
- > e.g. <a>, ,

What is an attribute? Explain and list some examples.

QUIZ

What is an attribute? Explain and list some examples.

- An attribute provides additional information about the HTML element
- > It is placed inside an opening tag, before the right ankle bracket
- > Examples: class, id, style, src, href, ...

What is a HTML entity?

\mathbf{Q} UIZ

What is a HTML entity?

- > special characters: like accent marks and German umlaut, e.g. ü
- > invisible characters: like non-breaking spaces, e.g.
- > reserved characters: which would be interpreted as HTML code, e.g. <

OFTEN USED ENTITIES

```
> non-breakable space =  
                                      \Rightarrow ä = ä
\rangle -= –
\rightarrow - = —
                                      \rangle \ddot{U} = \Ü
> © = ©
                                      \rangle é = é
> \frac{1}{4} = & frac 14;
                                      \rangle è = è
> \frac{1}{2} = & frac12;
                                      > ← = ←
> \frac{3}{4} = \frac{8}{1} frac34;
                                      \rangle \uparrow = \↑
> « = «
                                      \rightarrow = →
> » = »
                                      \rightarrow \downarrow = \↓
```



PROJECT BEST PRACTICE

DEFINTION OF BEST PRACTICE

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A method or technique that has been generally accepted as superior to any alternatives because it produces results that are superior to those achieved by other means or because it has become a standard way of doing things.

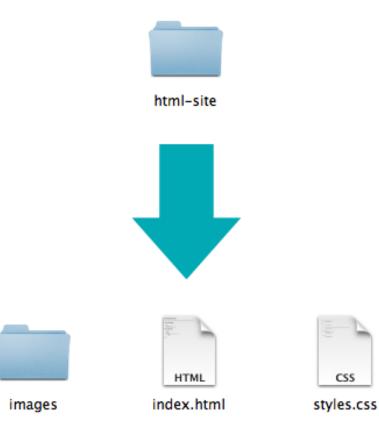
FOLDER STRUCTURE

All the files for your site should be stored within the same folder.

This includes:

- > HTML Files
- > CSS Files
- > Images
- Script files
- Anything else that will appear on your site

Note: File names should not include spaces or special characters. File names ARE case sensitive.



Naming Folders + Files

- > Name your file index.html
- > In file and folder names, only use lowercase letters, numbers, hyphens/dashes.
- > File names are usually case sensitive: INDEX.html vs. index.html
- > Use the right extension: .html vs .css vs .js

Tips + Shortcuts

After each opening tag, the next element should be indented with a tab for better overview. Make sure you follow this habit.

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Action	Windows	Mac
VSCode, save	Ctrl + s	₩ + S
VSCode, undo	Ctrl + z	₩ + Z
Switch apps	Alt + Tab	⊭ + Tab
Chrome, reload	Ctrl + r	# + r

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- is **searchable** by humans and bots

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- > is accessible for disabled people

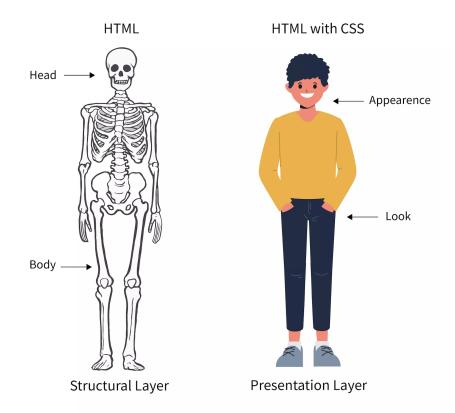
ANATOMY OF A WEBSITE

Your Content

+ HTML: Structure

+ CSS: Presentation

= Your Website



SEMANTICS

ve got nearly 15 years under my belt as web developer and I still question my use of HTML elements.

—Stephanie Eckles

Definition semantics:

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The correct interpretation of the meaning of a word or sentence.

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Definition semantic web:

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Definition semantic web:

Many HTML tags have semantic meaning. That is, the element itself conveys some information about the type of content contained between the opening and closing tags.

AN EXAMPLE

The something thing jumps over the something thing.

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The something thing jumps over the something thing.

What do you see in your mind?

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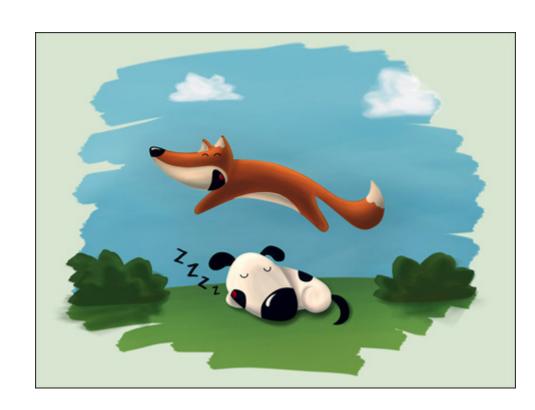
Non-graphical browsers, screen readers and bots do not see how the website looks like. They need the tags to understand the meaning of the content.

Now imagine

The quick brown fox jumps over the lazy dog.

Now imagine

The quick brown fox jumps over the lazy dog.



Now imagine

The quick brown fox jumps over the lazy dog.



= English-language pangram (contains all letters of the English alphabet)

SEMANTIC MARKUP

> requires that HTML elements are used according to their intended purpose.

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- > requires that HTML elements are used according to their intended purpose.
- > requires the separation of content and presentation.

> more searchable content

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- better search engine ranking

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- > better search engine ranking
- > less clutter of meaningless HTML

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- > less errors in source code and more performant

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- better search engine ranking
- > less clutter of meaningless HTML
- > less errors in source code and more performant
- > better accessible for assistive technologies, like screen readers

Better searchable?

Search Engine Optimization (SEO) is a huge and important topic in web development. There are specialists in SEO asking for a lot of money to optimize existing websites.

Semantic HTML and valid code is the base for good SEO. It makes all other SEO measures so much easier.

Better accessible?

The goal of **Accessibility** is that a person with a disability can

- > acquire the same information
- > engage in the same interactions
- > enjoy the same services

as a person without a disability.

BEST PRACTICE

Use span and div if you need HTML tags only for presentation purposes.

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Use span and div if you need HTML tags only for presentation purposes.

Try to avoid them in general. Always ask yourself, "is there a tag with better semantic meaning?"

Quick word to history

When you google **semantic web**, you will find the term often in relation with **HTML 5**.

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A lot of new semantic tags were introduced in 2014 with HTML 5, but HTML was from the beginning a language with semantic tags and meaning.

SEMANTIC HTML

Always use the tags best describing the content:

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Always use the tags best describing the content:

- > <h1> for headlines
- > <h2-6> for sub headlines
- > l> for unordered lists
- > for ordered lists
- > for complex data

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- > <h2> in the <section>
- > <h3> in the <article>

Each article should contain at least 1 headline. Each page should only have 1 h1>-tag.">h1>-tag.

Don't leave a number out, e.g. never write first <h1>, then <h3>.

SECTION IN ARTICLES

You can group articles in a section, e.g. news items within the section **news**.

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Can you think of an example?

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- > Which tags do you use? Why?
- > Check your buddy's markup and discuss the choice of tags.

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Done? Now, check the source code of the website.

- > What do you see?
- > Why?

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Try futurecoders.ch next.

Boilerplate

WHAT IS A BOILERPLATE?

The word "boilerplate" means standardized pieces of text for use as clauses in contracts or as part of a computer program.

An HTML boilerplate will contain the most common elements of a page as a sample that can be cloned and used as a starting point for a project.

HTML BOILERPLATE

Let's code our own boilerplate. What should it contain?

ONE POSSIBILITY

ONE POSSIBILITY

```
<!doctype html>
<html>
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Boilerplate</title>
  </head>
  <body>
    <header>
      < h1 > < /h1 >
      <nav>
      </nav>
    </header>
    <main>
      //main>
```

Examples of HTML boilerplates

- > htmlshell.com
- html5boilerplate.com
- > sitepoint.com

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Check them out. Most of them are more extensive than our example. Keep in mind: start small and add more if you need it.

RESOURCES AND ONLINE MATERIAL

- Handout: HTML reference sheet
- > When should alt tags be blank?
- > HTML outliner
- > W3C validator
- > Free accessibility course by Google

RESOURCES AND ONLINE MATERIAL

- > Why you should choose article over section
- > HTML 5 Doctor
- Semantics in HTML 5
- An introduction to the semantic web
- The ADA checklist 2019

Exercises

Exercise 1

Create a website to show off your new skills. Core HTML tags you should be able to include on your page(s):

- 1. A nav bar with a few links that either navigate to other pages or act as anchor tags.
- 2. A *heading* to signal something important or declare a new section/paragraph.
- 3. A couple *paragraphs* describing the amazing things you want to share. Remember to use *emphasis* on key words!
- 4. A *list* of key things to know about something in your paragraph. Why not do an ordered list and unordered list?
- 5. An *image* of something relevant.
- 6. A short contact form
- 7. A table to display additional contact data
- 8. A *footer* at the bottom of the page declaring your copyright on such a wonderful write-up, and make sure you use the copyright *symbol!*
- 9. Your page should validate in this at this link: W3 Validator.
- 10. Keep your code readabable and maintanable for your future self and future contributors.

Exercise 2

Draft the semantic outline of a newspaper page in HTML: Washington Post

- Which semantic tags would you use to describe the homepage?
- Create a HTML outline for a subpage
- > Your page should validate in this at W3C Validator.
- Check your document outline and web semantics with HTML5 Outliner.
- > Keep your code readabable and maintanable for your future self and future contributors.

Remember: all your exercises go to Github. Use git for regular commits to your github repo.

Exercise 3

Start with the HTML skeleton of our sample website

- > Be semantic
- Use comments to explain why you chose specific tags and keep it readable and maintanable
- Your page should validate in this at W3C Validator.
- Check your document outline and web semantics with HTML5 Outliner.

APPENDIX: MORE ABOUT DOMAINS

DOMAIN

Anatomy of domain names:

subdomain.domain.topleveldomain

DOMAIN

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subdomain.domain.topleveldomain

- > powercoders.org
- > www.gmail.com
- > calendar.google.com

TOPLEVELDOMAIN (TLD)

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As the use of these TLDs isn't restricted, they are used more flexibly than as originally intended.

COUNTRY-CODE TLDs

Each country has its own TLD (ccTLD), and they can decide who can register for domains with that TLD. Some also specify a set of "second-level-domain" for the TLDs.

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Each country has its own TLD (ccTLD), and they can decide who can register for domains with that TLD. Some also specify a set of "second-level-domain" for the TLDs.

- > .ch
- >.fr
- >.it
- > .de
- > .uk / .co.uk
- **>** ...

New gTLDs Program

Since 2013 new generic TLDs were introduced. Over a thousand new gTLDs:

New gTLDs Program

Since 2013 new generic TLDs were introduced. Over a thousand new gTLDs:

- > thematic: .hotel .bank
- > geographic: .florida .berlin
- > product-related: .toys .yoga
- > specific: .tech .design
- > individual: .codes .ninja
- **>** ...

Most users expect to type in a .com or .ch domain, so you should always try to reserve that name (though it's often taken).

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If you target a particular geographic market, it makes sense to get the ccTLD.

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If you're worried about competitors, you should purchase related TLDs (.info, .net, .biz).

If you target a particular geographic market, it makes sense to get the ccTLD.

For your own portfolio one of new gTLDs might be best, e.g. .codes or .dev.

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- Dashes and numbers are OK

The domain name is not case-sensitive - google.com = GOOGLE.com.

How to choose a domain name?

A good domain name follows these guidelines:

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A good domain name follows these guidelines:

- > Represents your name or business name
- > Short and memorable
- > Easy to say aloud
- > Easy to spell without mistakes
- Uses ASCII characters
- Doesn't infringe other's copyright

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But good domain names are often taken. You can try using hyphens (experts-exchange.com) or making a TLD form part of the name (del.icio.us) to make it more likely the name will be available.

SUBDOMAIN

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- > www.twitter.com
- > search.twitter.com
- > api.twitter.com

The www-Subdomain is the most common. If you type in a domain, e.g. google.com, it automatically refers to the www-subdomain. Try it yourself.

DOMAIN REGISTRARS

You must use a "domain registrar" to purchase a domain. Just google "register domain" to find a registrar.

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I register my domains with Metanet or Infomaniak.