IF.03.01_BASIC WEB TECHNIQUES

Creating Web Sites with HTML, CSS and Javascript

UNIT 02

Html and a First Look Into CSS

GOALS FOR TODAY

- You know how html elements look like
- You know a solid first set of html tags and know what they do
- You know what css are good for
- You know how css rules look like
- You can style a simple web page (text) with css

A FIRST HTML PAGE

FIRST PAGE – INDEX.HTML

```
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>My Personal Web Technique Site</title>
    </head>
    <body>
        <article>
            <h1>Hello World (Wide Web)</h1>
            <section>
                <h1>Mission</h1>
                <p>
                   This course is for me ….
                </p>
            </section>

            <section>
                <h1>Personal Goals</h1>
                <p>
                    I want to learn in this course ….
                </p>
            </section>
        </article>
    </body>
</html>
```

FIRST PAGE – INDEX.HTML

```
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="tex
        <title>My Personal Web Technique Site</title
    </head>
    <body>
        <article>
            <h1>Hello World (Wide Web)</h1>
            <section>
                <h1>Mission</h1>
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            </section>

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```

Tells the browser, which version of html it can expect html5, html4 (strict or transitional), etc.

Strictly speaking, it is not part of html

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                </p>
            </section>
        </article>
    </body>
</html>
```

Most html elements are two-fold and embrace other elements, e.g., <html> and </html> or <h1> and </h1>.
Every html document starts with an html-element.

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```

Every html page should have a head and a body.
The head describes meta information.
The body contains the things which appear on the page.

FIRST PAGE – INDEX.HTML

```
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    </head>
    <body>

                                Wide Web)</h1>

                                h1>

                      This course is for me ….
                    </p>
                </section>

                <section>
                    <h1>Personal Goals</h1>
                    <p>
                        I want to learn in this course …
                    </p>
                </section>
            </article>
    </body>
</html>
```

Actually the head is not mandatory

Every html page should have a head and a body. The head describes meta information.
The body contains the things which appear on the page.

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                <p>
                    I want to learn in this course …
                </p>
            </section>
        </article>
    </body>
</html>
```

The article-element is used to structure your web content. A page may contain zero, one, or more articles. Articles may be nested, i.e., they may contain articles themselves.

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                <p>
                    I want to learn in this course …
                </p>
            </section>
        </article>
    </body>
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```

The section-element may be used to further structure your content. Again one may define several sections on a page and sections may contain other sections.

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    </head>
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            <section>
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                </p>
            </section>

            <section>
                <h1>Personal Goals</h1>
                <p>
                    I want to learn in this course ….
                </p>
            </section>
        </article>
    </body>
</html>
```

THE HEAD IN DETAIL

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```
<head>
   <meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
```

THE HEAD IN DETAIL

```
<head>
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```

The meta-element gives meta information about your page. In this case it says the web browser which type of content and which character set it can expect.

THE HEAD IN DETAIL

```
<head>
   <meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
```

THE HEAD IN DETAIL

```
<head>
    <meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
    <meta name=”description” content=”The very first page”/>
```

THE HEAD IN DETAIL

```
<head>
    <meta http-equiv="content-type" content="text/html; charset=UTF-8"/>
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```

This meta element specifies, what search engines store as brief content description in their databases.

THE HEAD IN DETAIL

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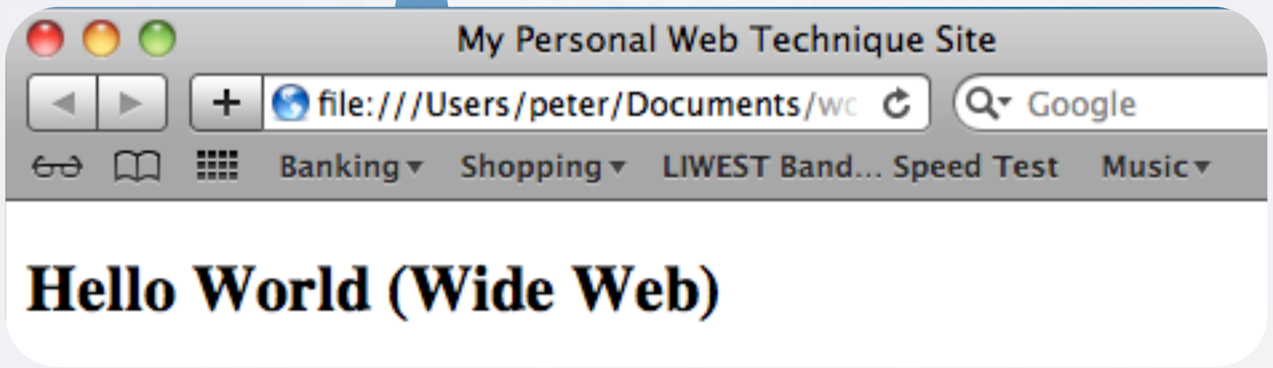
My Personal Web Technique Site
file:///Users/peter/Documents/wc
Google
Banking
Shopping
LIWEST Band... Speed Test
Music

Hello World (Wide Web)

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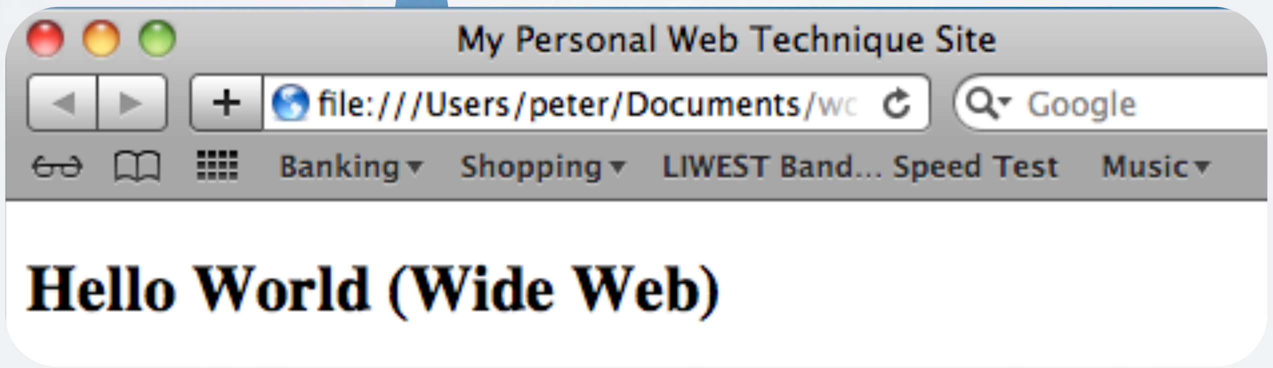
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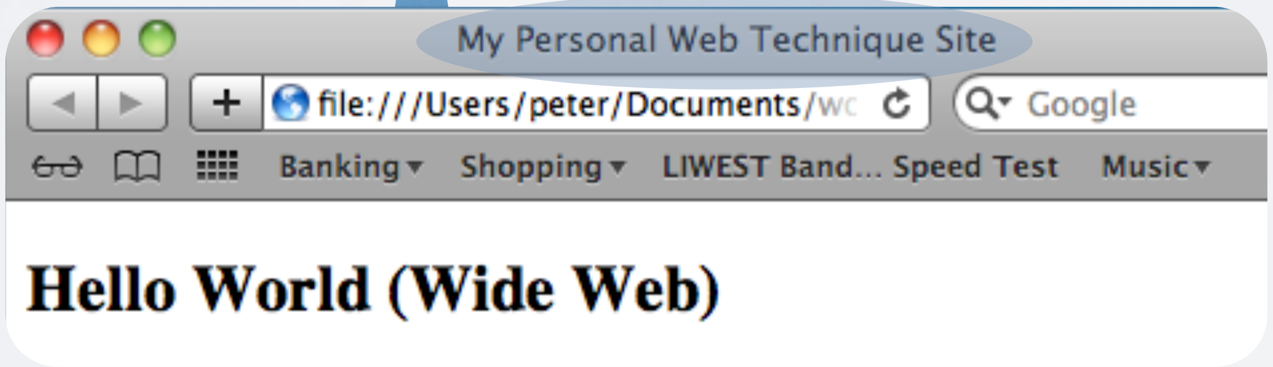

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         <p>This course is for me
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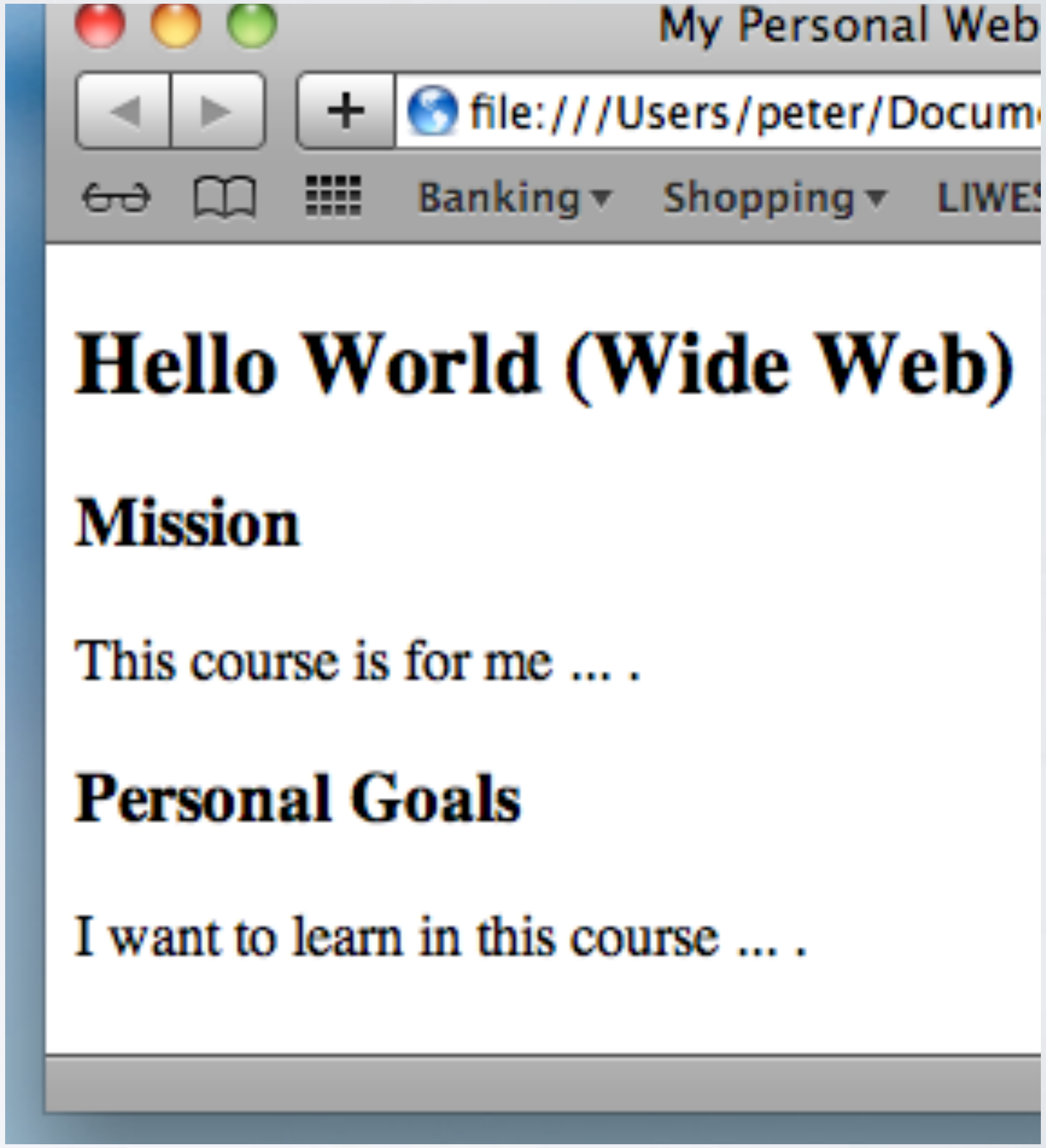

Hello World (Wide Web)

Mission

This course is for me … .

Personal Goals

I want to learn in this course … .

THE BODY IN DETAIL

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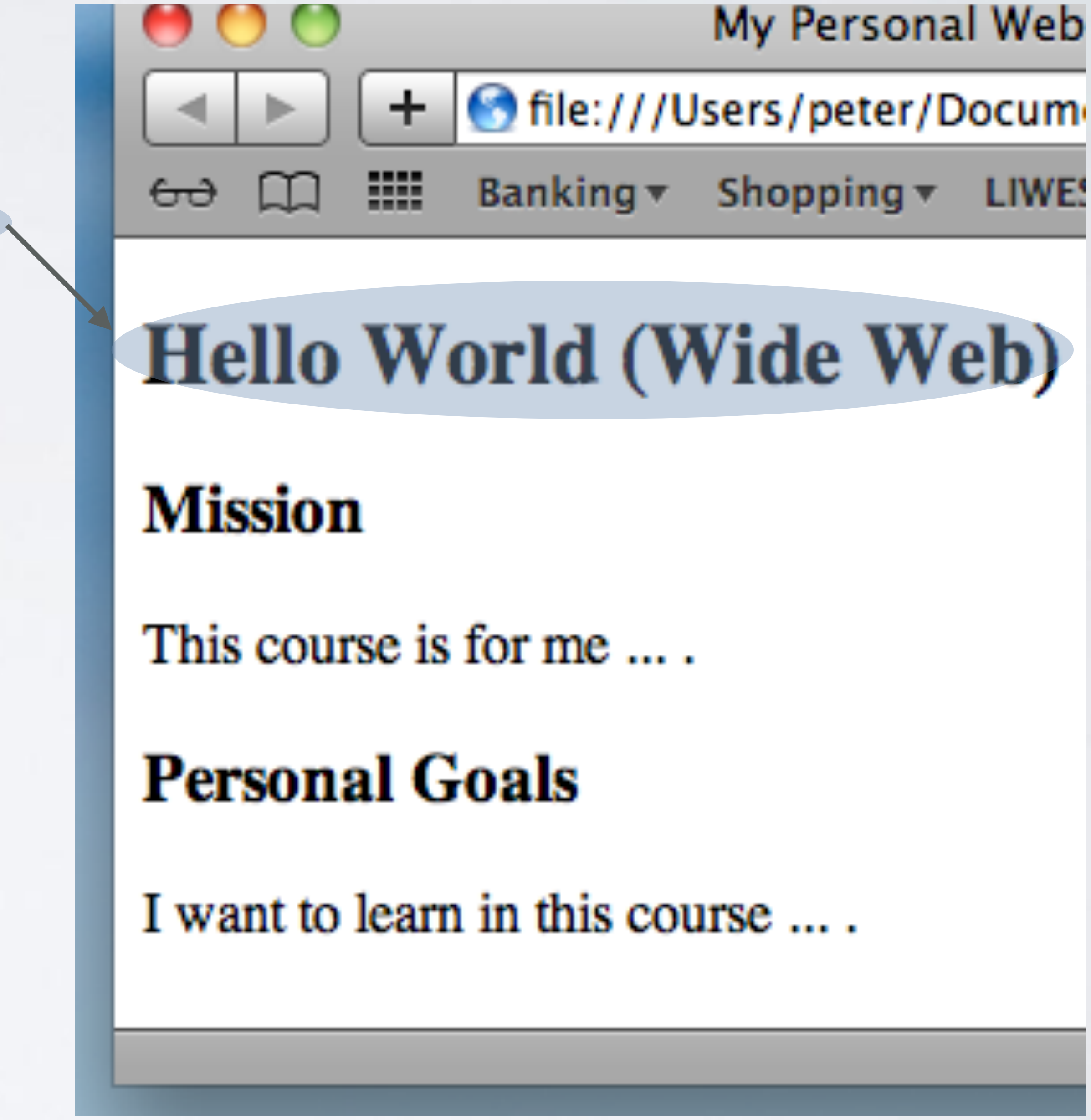

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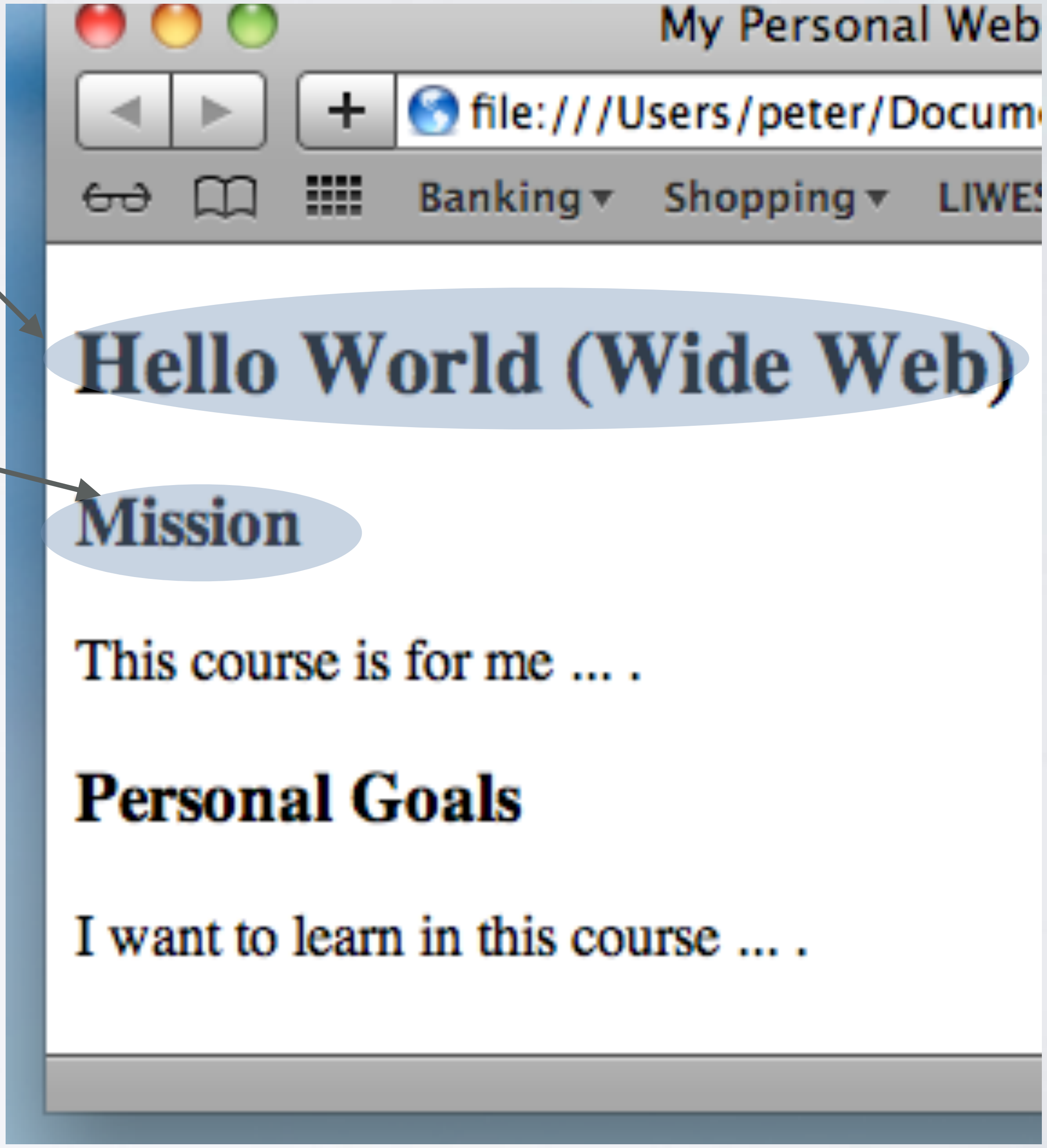

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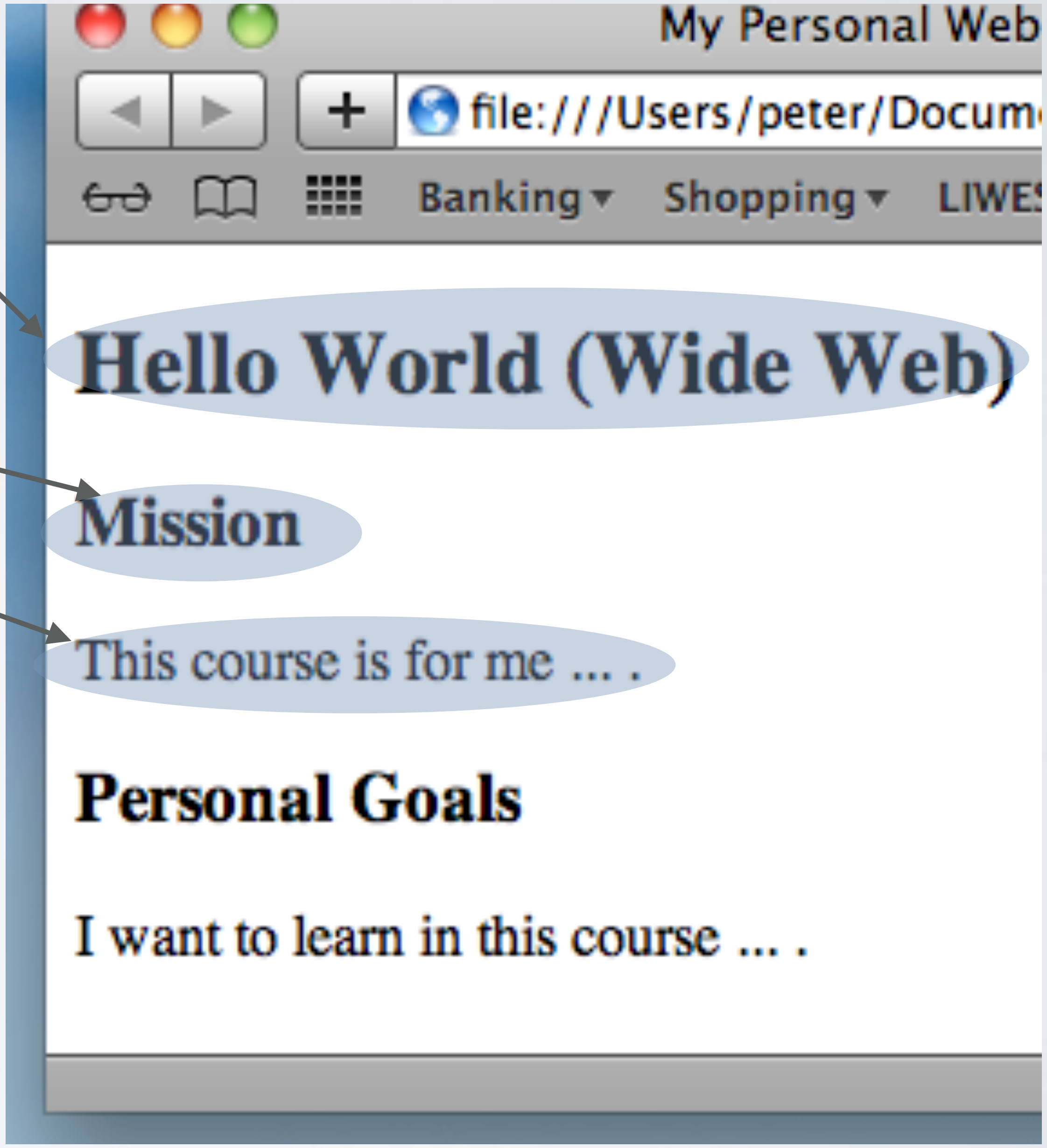

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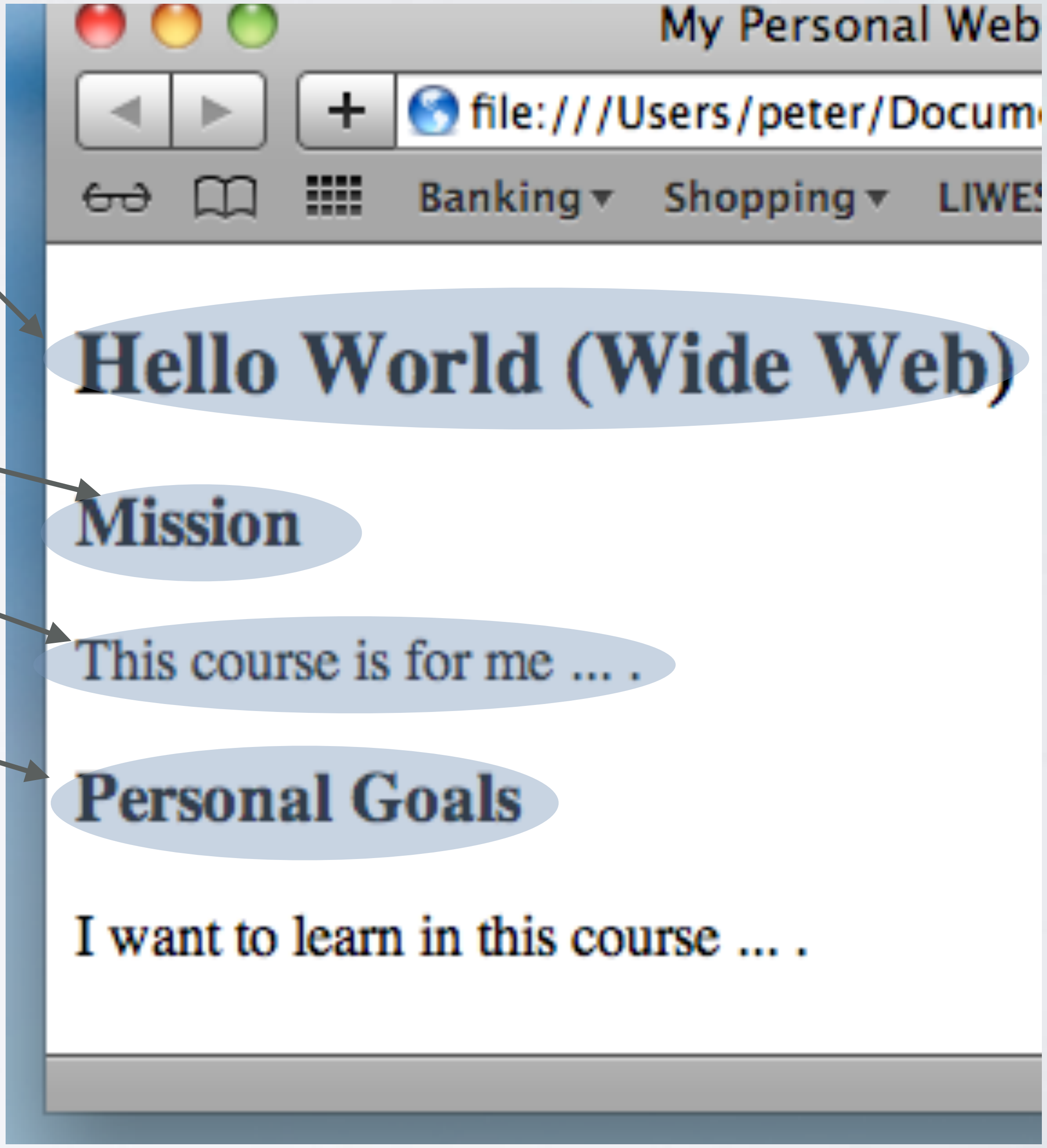

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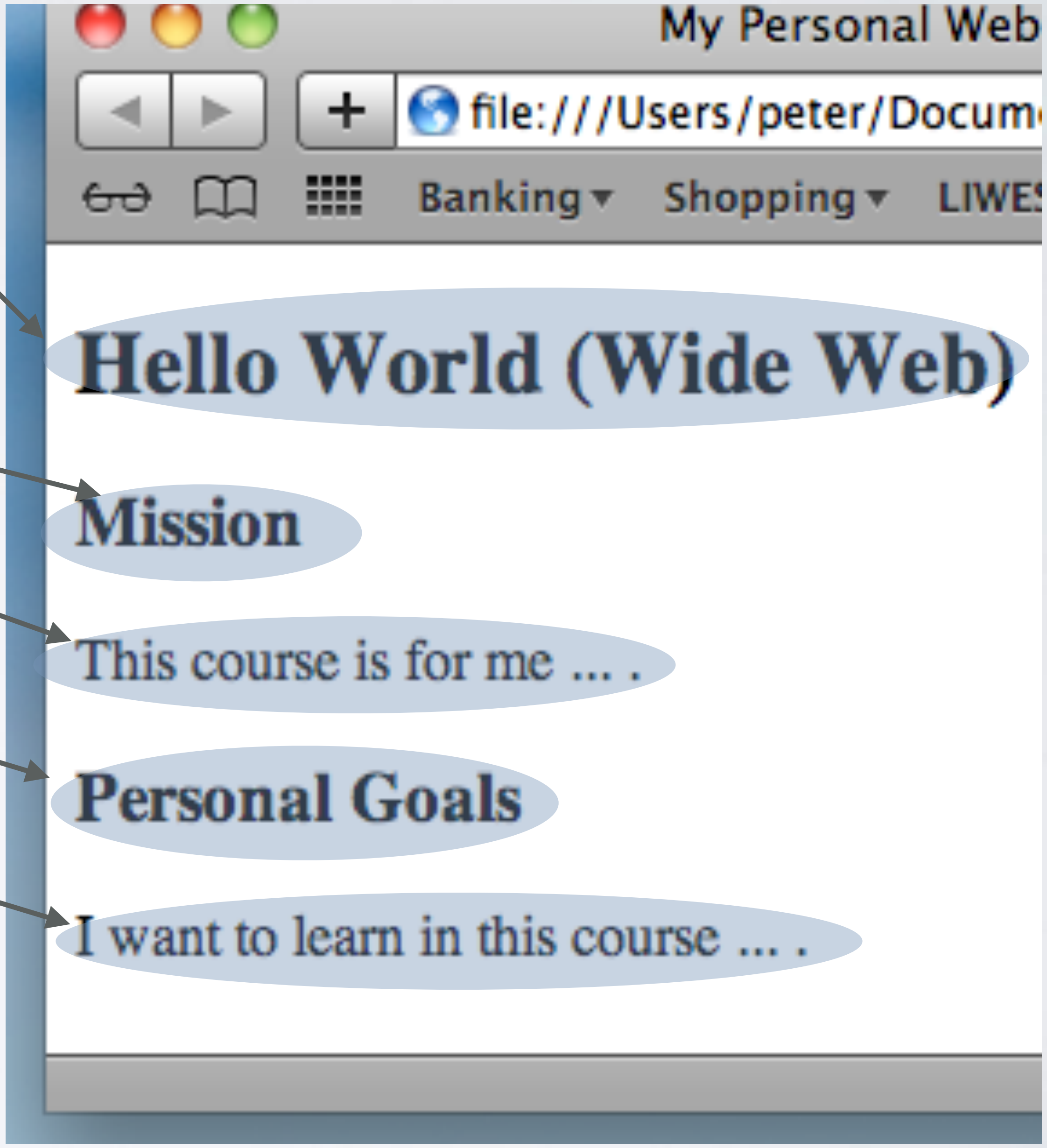

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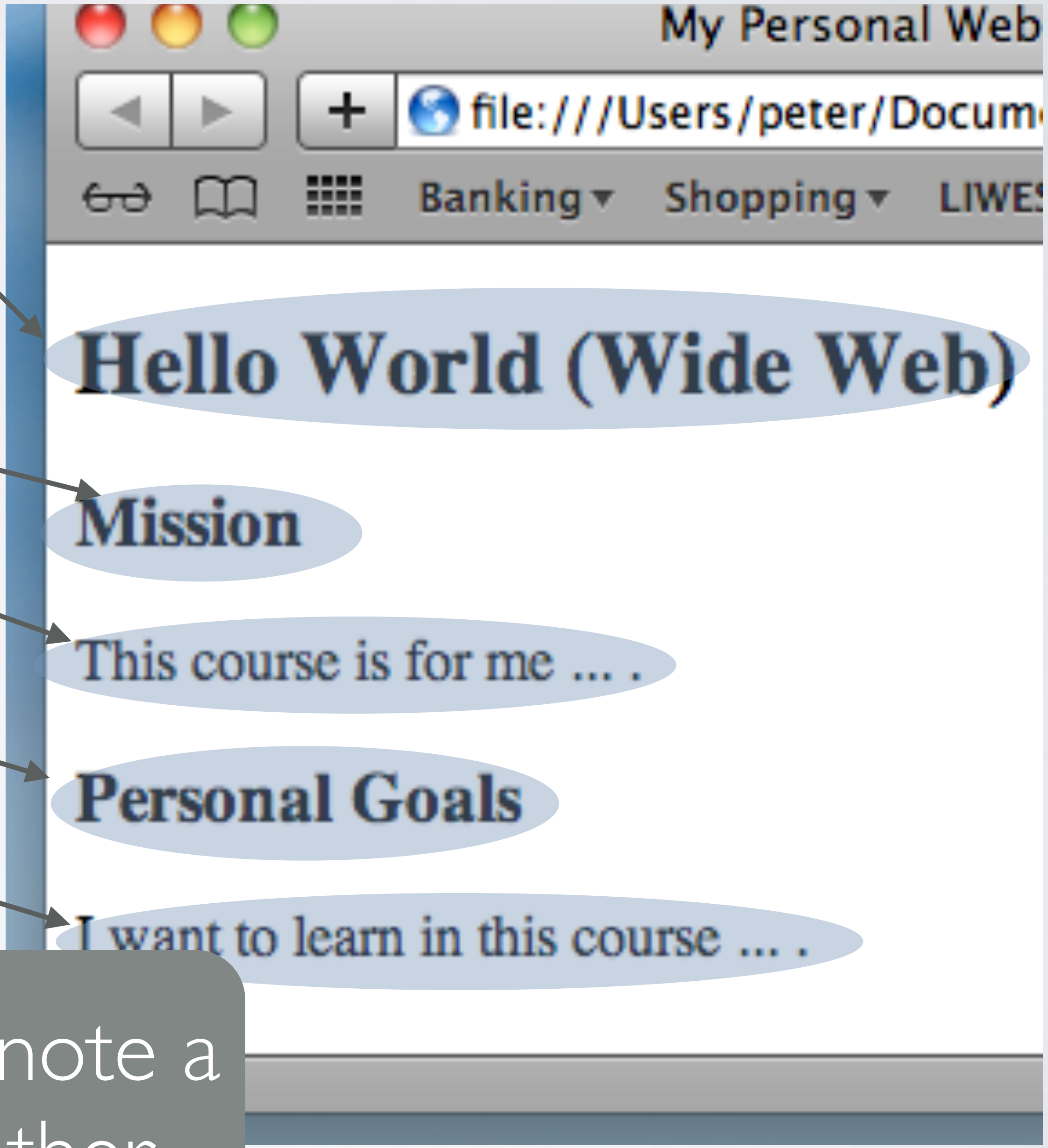

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Personal Goals

I want to learn in this course ... .

Btw, these p's denote a paragraph. Another structure tag.

STRUCTURE OF HTML ELEMENTS

STRUCTURE OF HTML ELEMENTS

- `<p>This is a paragraph with non-sense text</p>`

STRUCTURE OF HTML ELEMENTS

Start-Tag

- `<p>This is a paragraph with non-sense text</p>`

STRUCTURE OF HTML ELEMENTS

Start-Tag

End-Tag

- `<p>This is a paragraph with non-sense text</p>`

STRUCTURE OF HTML ELEMENTS

Start-Tag

End-Tag

- `<p>This is a paragraph with non-sense text</p>`

Element Content

STRUCTURE OF HTML ELEMENTS

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- `<p>This is a paragraph with non-sense text</p>`

Element Content

STRUCTURE OF HTML ELEMENTS

Start-Tag

End-Tag

- <p>This is a paragraph with non-sense text</p>

Element Content

- <a href=”html_cheatsheet.html”>HTML Schummler</a>

STRUCTURE OF HTML ELEMENTS

Start-Tag

End-Tag

- <p>This is a paragraph with non-sense text</p>

Element Content

- <a href=”htmlcheatsheet.html”>HTML Schummler</a>

Start Tag

STRUCTURE OF HTML ELEMENTS

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End-Tag

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- <a href=”html_cheatsheet.html”>HTML Schummler</a>

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- `<p>This is a paragraph with non-sense text</p>`

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STRUCTURE OF HTML ELEMENTS

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- `<p>This is a paragraph with non-sense text</p>`

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- `<a href=”html_cheatsheet.html”>HTML Schummler</a>`

Attribute

Start-Tag

- `<br />`

STRUCTURE OF HTML ELEMENTS

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End-Tag

- <p>This is a paragraph with non-sense text</p>

Element Content

- <a href=”html_cheatsheet.html”>HTML Schummler</a>

Attribute

Start-Tag

Start-Tag

- <br />

STRUCTURE OF HTML ELEMENTS

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- <p>This is a paragraph with non-sense text</p>

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- <a href=”html_cheatsheet.html”>HTML Schummler</a>

Attribute

Start Tag

Start-Tag

- <br />

A so-called void element
Is closed in its start tag
Seen by the slash (/) at the end.
The slash can be omitted.

STRUCTURE OF HTML ELEMENTS

Start-Tag

End-Tag

- `<p>This is a paragraph with non-sense text</p>`

Element Content

- `<a href=”html_cheatsheet.html”>HTML Schummler</a>`

Attribute

Start-Tag

Start-Tag

- `<br />`

A so-called void element
Is closed in its start tag
Seen by the slash (/) at the end.
The slash can be omitted.

- `<img src=”img/my_photo.png” alt=”Photo of me” />`

STRUCTURE OF HTML ELEMENTS

Start-Tag

End-Tag

- <p>This is a paragraph with non-sense text</p>

Element Content

- <a href=”html_cheatsheet.html”>HTML Schummler</a>

Attribute

Start-Tag

Start-Tag

- <br />

A so-called void element
Is closed in its start tag
Seen by the slash (/) at the end.
The slash can be omitted.

Well I’m sure
you can figure
this out yourself

- <img src=”img/my_photo.png” alt=”Photo of me” />

<!DOCTYPE>

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- <!DOCTYPE> tells the browser which version of html we use

<!DOCTYPE>

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    - Html 5: `<!DOCTYPE html>`

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- <!DOCTYPE> tells the browser which version of html we use
  - Html 5: `<!DOCTYPE html>`
  - Html 4.01 transitional: `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">`

<!DOCTYPE>

- <!DOCTYPE> tells the browser which version of html we use
  - Html 5: `<!DOCTYPE html>`
  - Html 4.01 transitional: `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">`
  - Html 4.01 strict: `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">`

<!DOCTYPE>

What the …???

- <!DOCTYPE> tells the browser which version of html we us
  - Html 5: `<!DOCTYPE html>`
  - Html 4.01 transitional: `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">`
  - Html 4.01 strict: `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">`

<!DOCTYPE>

What the …???

- <!DOCTYPE> tells the browser which version of html we us
  - Html 5: `<!DOCTYPE html>`
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  - Html 4.01 strict: `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">`
- We always use `<!DOCTYPE html>`, i.e, html 5.

VALIDATING YOUR HTML SOURCE

- Browsers do not report syntactical problems
- Makes debugging difficult
- Check your html source via http://validator.w3.org/

SUMMARY OF FIRST HTML-TAGS

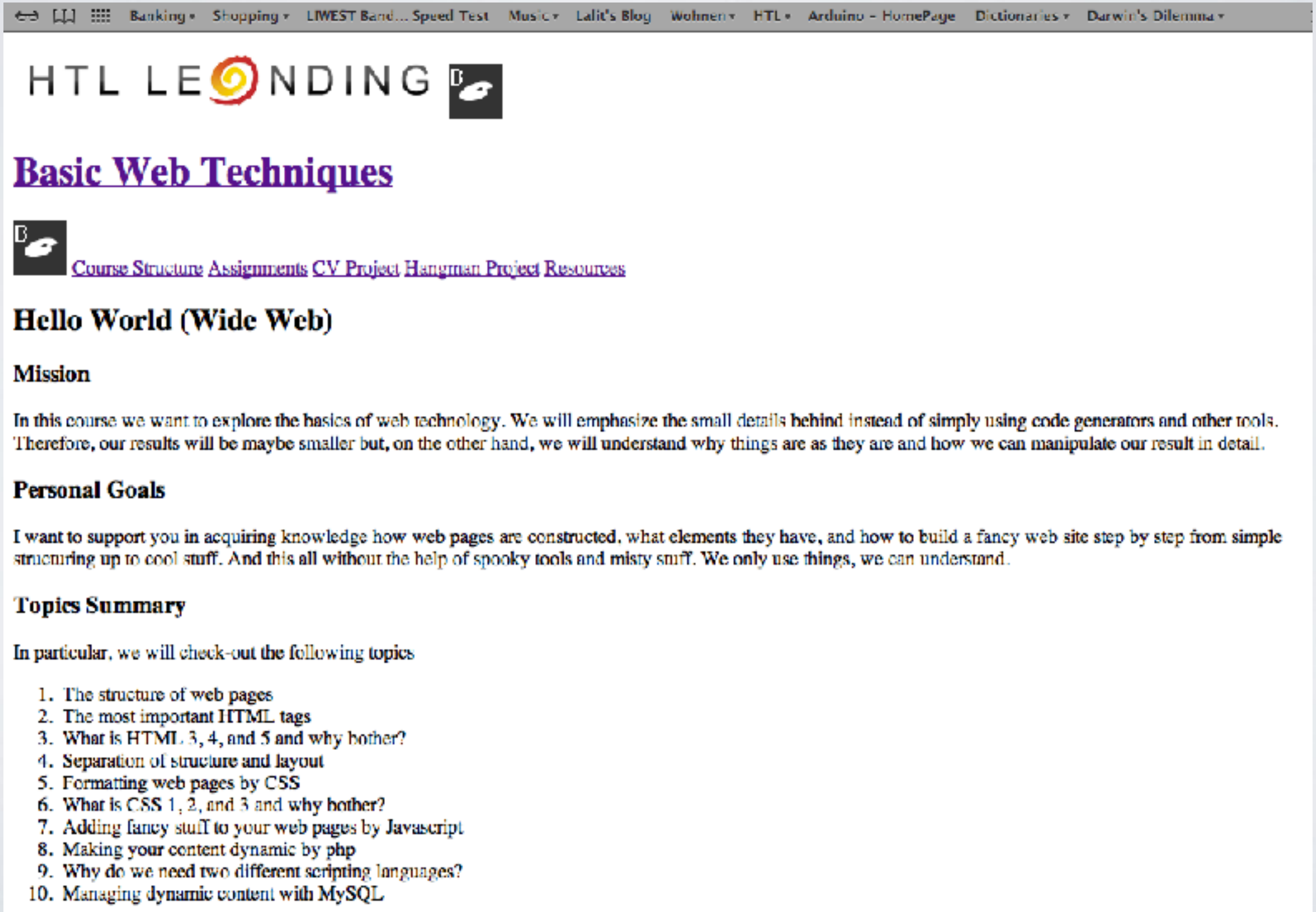
Tag	Known Attributes	Description
<!DOCTYPE>	---	see slides before
<a>	href	link
<article>	---	article
<body>	---	body of page
<br />	---	line break
<h1>, <h2>, …	---	head line; with Html 5 only h1 and h2 should be used
<head>	---	head of page
<html>	---	start tag
<img>	src, alt	includes an image
<meta />	http-equiv, name, content	meta information about page
<p>	---	paragraph
<section>	---	section
<title>	---	Title appearing in title bar

DEMO

- Continue the “Hello World”
- Try out
  - article, section, h1, and p
  - img, a
- Finally one construct: article.section.section.h1
- Validate the html code

CASCADING STYLE SHEETS (CSS)

WHAT ABOUT DESIGN?



Basic Web Techniques

Course Structure Assignments CV Project Hangman Project Resources

Hello World (Wide Web)

Mission

In this course we want to explore the basics of web technology. We will emphasize the small details behind instead of simply using code generators and other tools. Therefore, our results will be maybe smaller but, on the other hand, we will understand why things are as they are and how we can manipulate our result in detail.

Personal Goals

I want to support you in acquiring knowledge how web pages are constructed, what elements they have, and how to build a fancy web site step by step from simple structuring up to cool stuff. And this all without the help of spooky tools and misty stuff. We only use things, we can understand.

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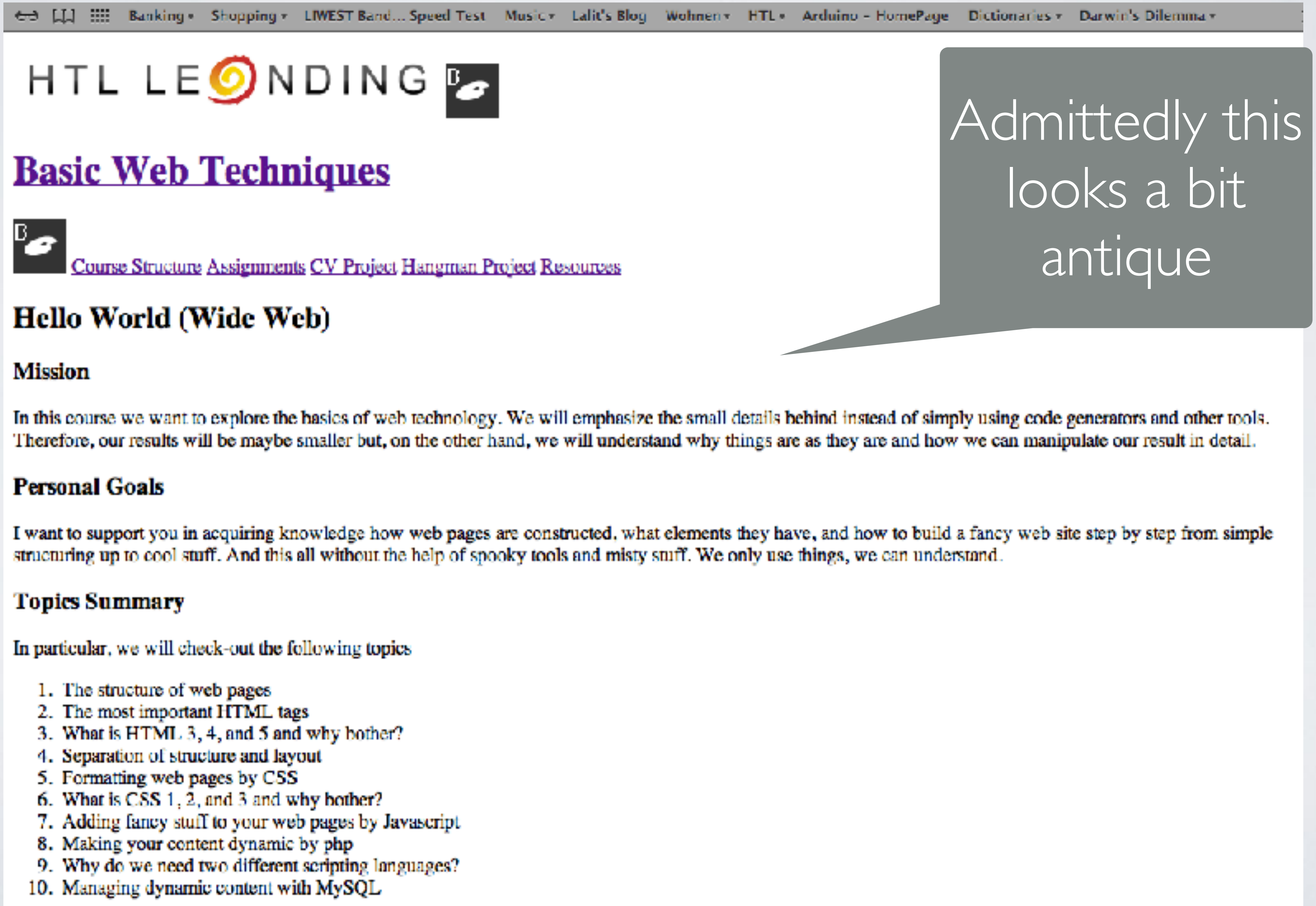

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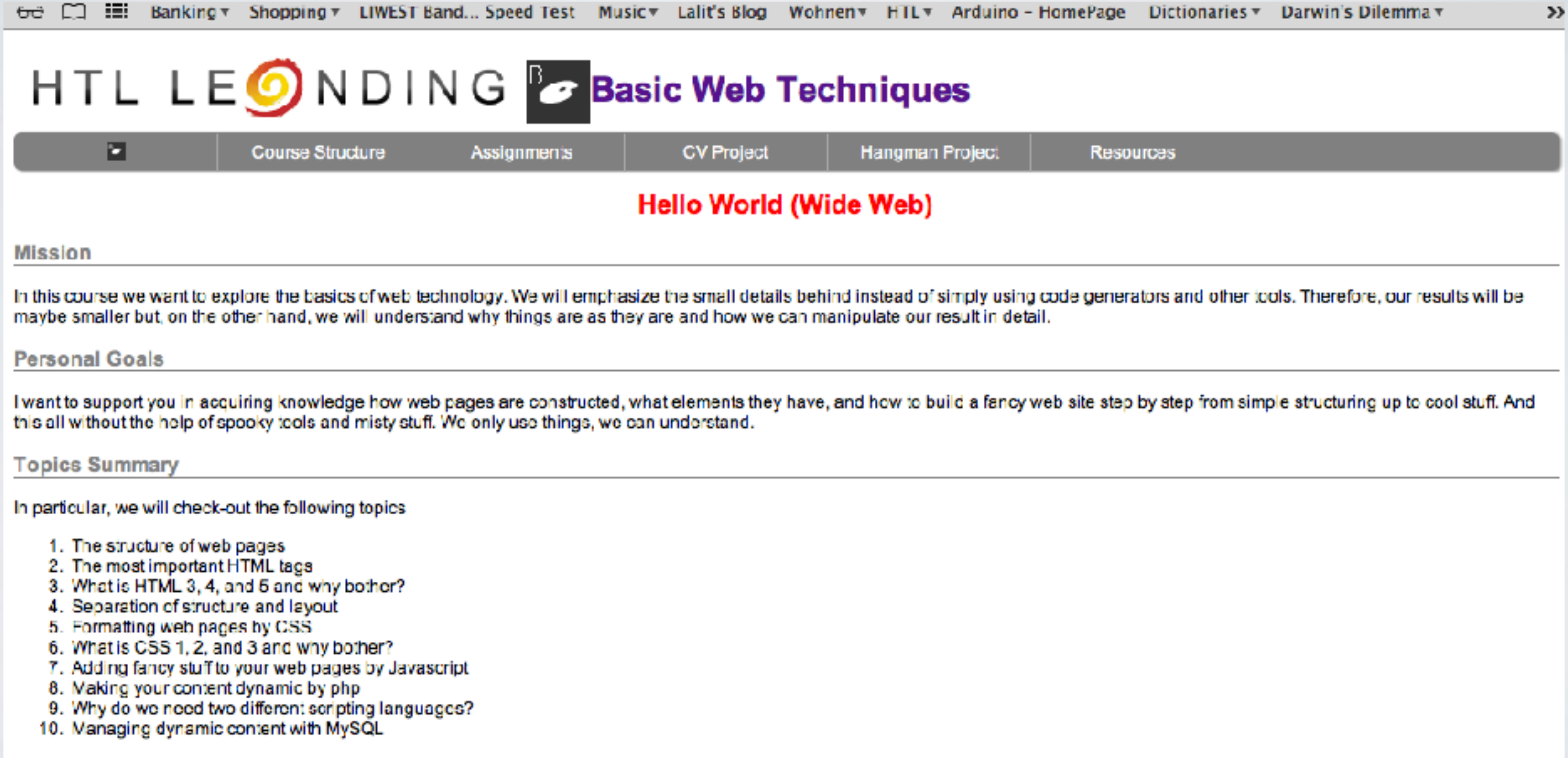
Admittedly this looks a bit antique

IS THIS ABOUT DESIGN?



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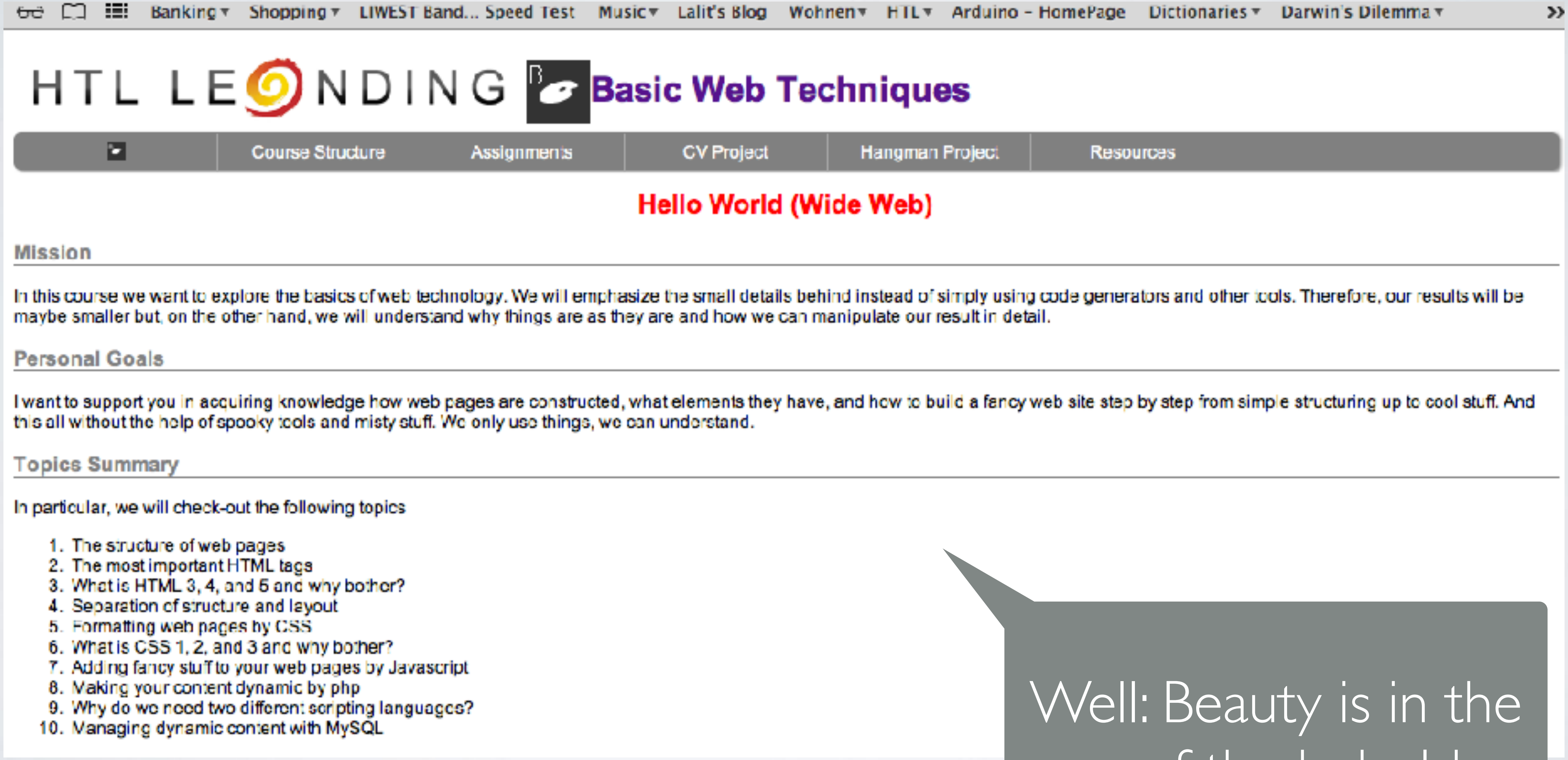

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Well: Beauty is in the eye of the beholder

HTML CARES ABOUT STRUCTURE (NOTHING ELSE)

- Up to now, we only considered WHAT we write
- We did NOT consider HOW it LOOKS like

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```
<article>

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  <section>
    <h1>Mission</h1>
    <p>
      In this course we want to d how we
      can manipulate our result in detail.
    </p>
  </section>
  …
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Both are headlines.
Correct and easy if we think about structure.
Correct and easy is good

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We expect them to be designed differently

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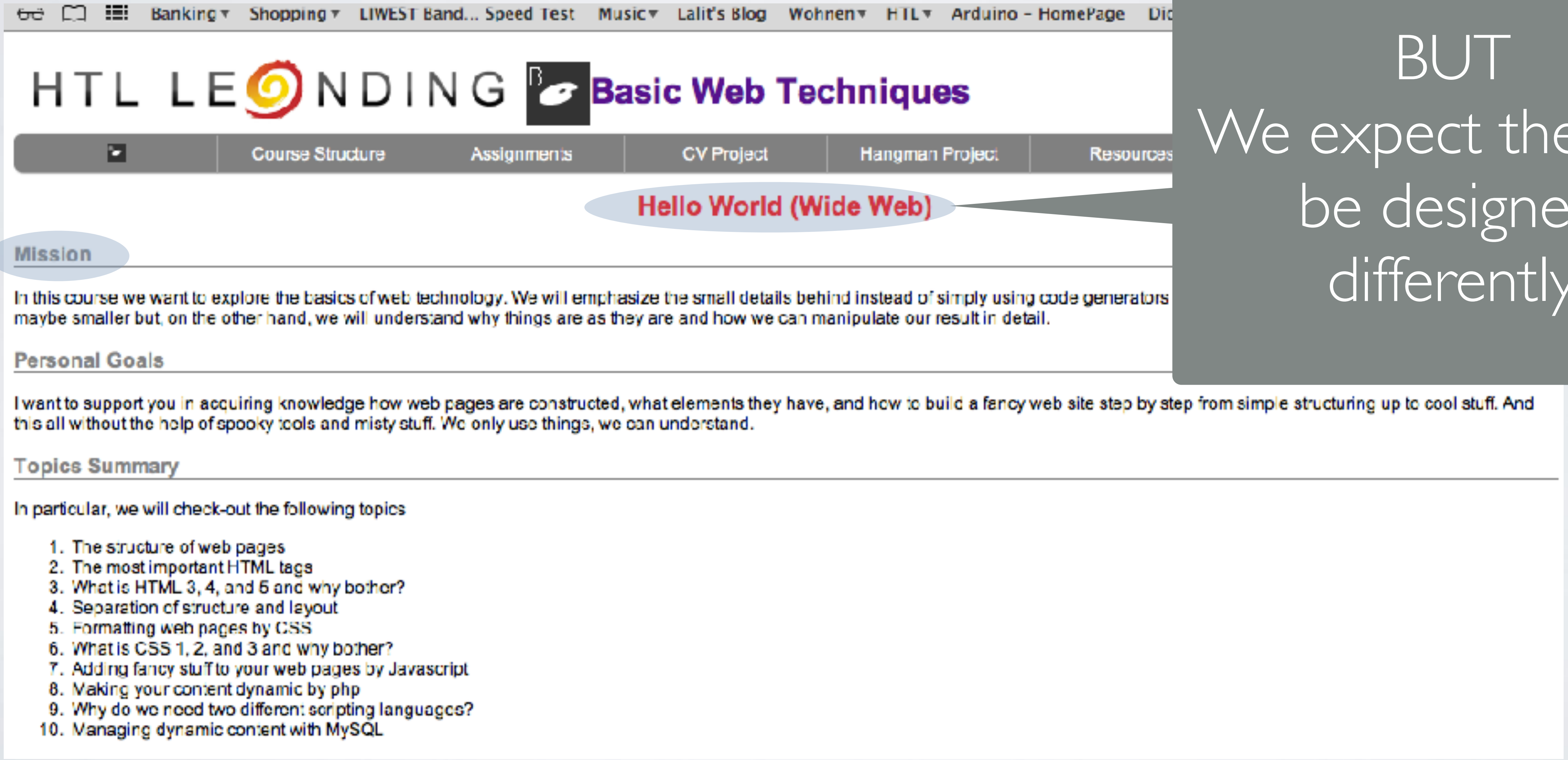

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WHAT ABOUT DESIGN NOW?

- We use Cascading Style Sheets (CSS) to make things look good
- CSS care about design (nothing else)
- Again
  - When writing text, we care about structure
  - When the structure is good and clear, we care about how it should look like

A CSS RULE

```
h1 {

   color: blue;

   text-align: center;

}
```

A CSS RULE

Selector

```
h1 {

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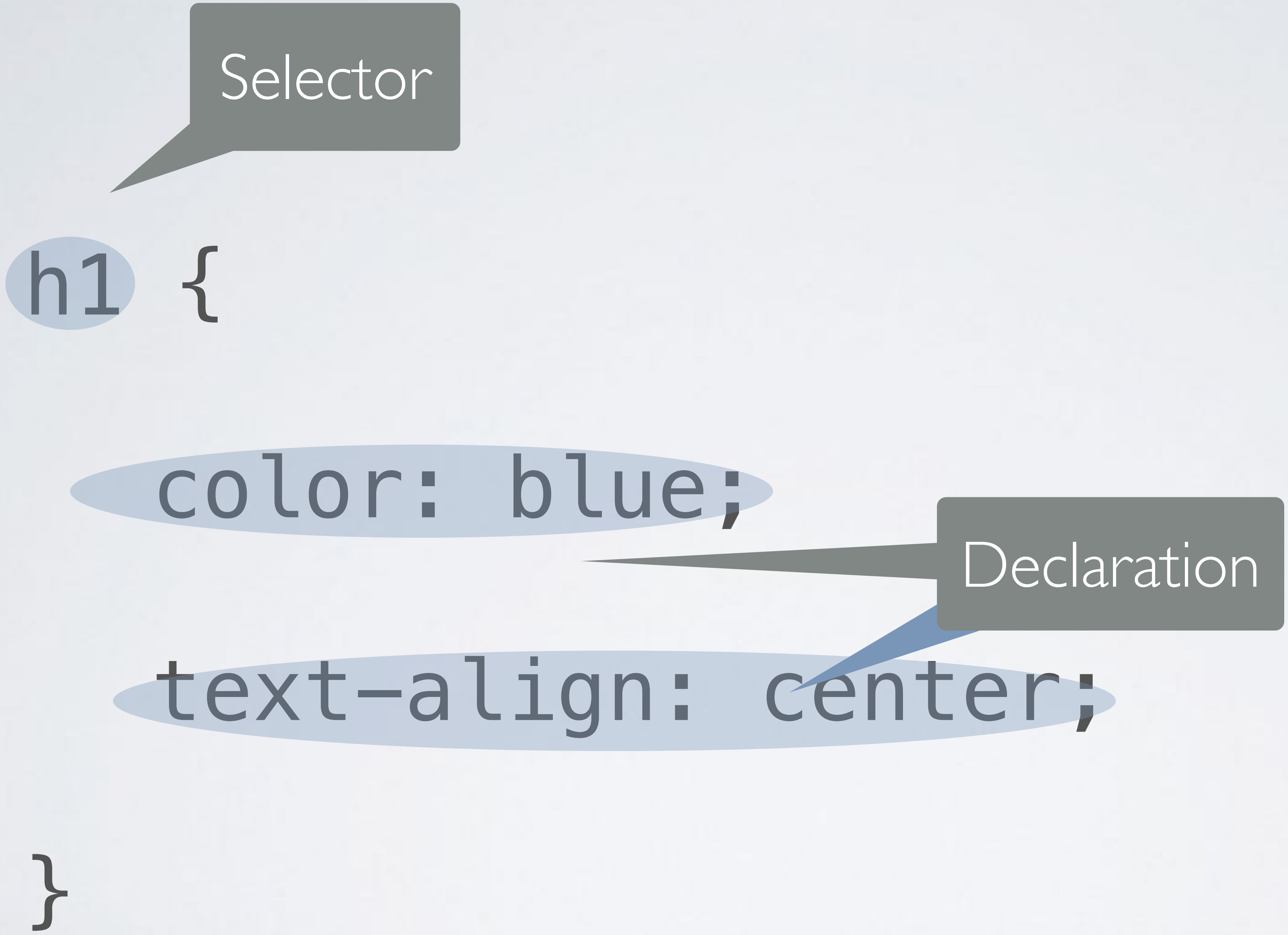

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Declaration

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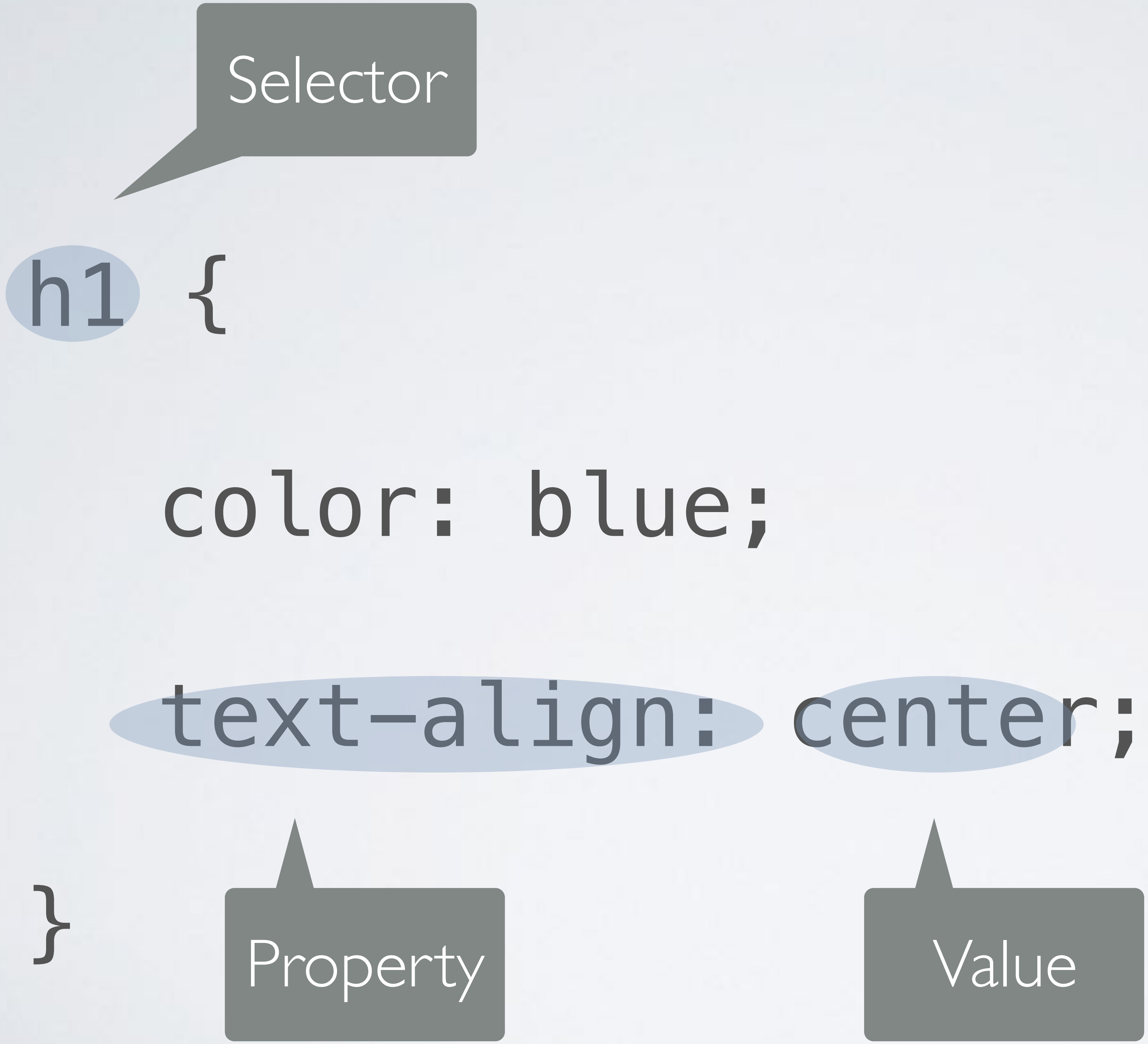

Selector

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h1 {

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}
```

Property

Value

A CSS RULE

Selector

```
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}
```

A CSS RULE

Selector

Note the semicolon after each declaration

```
h1 {

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   text-align: center;

}
```

GIVE IT A TRY – AN INLINE CSS

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```
<h1 style=”text-align: center”>Hello World (Wide Web)</h1>
```

GIVE IT A TRY – AN INLINE CSS

```
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```

Great, isn’t it?

GIVE IT A TRY – AN INLINE CSS

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<h1 style=”text-align: center”>Hello World (Wide Web)</h1>
```

- Suppose, you have a page with 10 head lines:

GIVE IT A TRY – AN INLINE CSS

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- Suppose, you have a page with 10 head lines:

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```

GIVE IT A TRY – AN INLINE CSS

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<h1 style=”text-align: center”>Introduction</h1>

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… (yawn)

Tedious, isn’t it?

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```
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<h1 style=”text-align: center”>Conclusion</h1>
```

GIVE IT A TRY – AN INLINE CSS

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… (yawn)

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```

INTERNAL CSS

- Declare styling rules once in the head
- Valid for the whole page

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```
<head>
   <style type="text/css">
      h1 {text-align: center;}
      p {margin-left:20px;}
      body {background-image:url("images/back40.gif");}
   </style>
</head>
```

INTERNAL CSS

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   <style type="text/css">
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```

OK, that helps a bit, but:

INTERNAL CSS

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OK, that helps a bit, but:
My web site has **two thousand four hundred and sixty eight** pages.

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```

OK, that helps a bit, but:
My web site has **two thousand four hundred and sixty eight** pages.
How to deal with that?

EXTERNAL CSS

- Declare CSS rules in an extra file
- Include it to html file via a link tag
- The include is again in the head

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- Include it to html file via a link
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Do you remember?
This is an empty
element.
Why?

```
<head>
   <link rel="stylesheet" type="text/css" href="mystyle.css" />
</head>
```

EXTERNAL CSS

- Declare CSS rules in an extra file
- Include it to html file via a link
- The include is

How were these guys called then??

Do you remember? This is an empty element. Why?

```
<head>
   <link rel="stylesheet" type="text/css" href="mystyle.css" />
</head>
```

COMBINATORS – CHILDREN AND OTHER DESCENDANTS

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- Internal and External CSS need to address elements explicitly

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```
article > h1 {text-align: center;}
```

COMBINATORS – CHILDREN AND OTHER DESCENDANTS

- Internal and External CSS need to address elements explicitly
    - Rule for h1 elements in articles

```
article > h1 {text-align: center;}
article h1 {color: red;}
```

COMBINATORS – CHILDREN AND OTHER DESCENDANTS

- Internal and External CSS need to address elements explicitly
  - Rule for h1 elements in articles

An h1 being a DIRECT CHILD of an article

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An h1 being a child, a grand-child, a grand-grand-child, … (briefly a descendant) of an article

```
article > h1 {text-align: center;}
article h1 {color: red;}
```

COMBINATORS – CHILDREN AND OTHER DESCENDANTS

- Internal and External CSS need to address elements explicitly
  - Rule for h1 elements in articles
  - Rule for h1 elements in sections inside sections inside articles

```
article > h1 {text-align: center;}
article h1 {color: red;}
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COMBINATORS – CHILDREN AND OTHER DESCENDANTS

- Internal and External CSS need to address elements explicitly
  - Rule for h1 elements in articles
  - Rule for h1 elements in sections inside sections inside articles

```
article > h1 {text-align: center;}
article h1 {color: red;}
article section section h1 {
    color: grey;
    border-bottom: 1px solid grey;
}
```

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COMBINATORS – SIBLINGS

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- Rule for all p elements located directly after an h2 element

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- Rule for all p elements located directly after an h2 element
- Rule for all p elements which are siblings of h2 elements

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```
h2 + p {text-align: center;}
```

COMBINATORS – SIBLINGS

- Rule for all p elements located directly after an h2 element

- Rule for all p elements which are siblings of h2 elements

```
h2 + p {text-align: center;}
h2 ~ p {color: red;}
```

PSEUDO CLASSES

- Style an element in different states
- E.g. style <a> elements
  - link: Content of the <a> element
  - active: Content when user clicks on it
  - visited: Content if the link has already been visited

THE MOST IMPORTANT STYLING DECLARATIONS

- Check them out at http://www.w3schools.com/cssref/default.asp
  - Backgrounds
  - Text
  - Fonts
  - Links

DEMO

- Style the text we made so far:
  - Font family, text-align (justify), colour
  - text-decoration: overline, line-through, underline
- text-transform
- font-size,
- Background colour, background image
- Style a link
- Hover pseudo class