"Ss. Cyril and Methodius" University in Skopje
FACULTY OF COMPUTER
SCIENCE AND ENGINEERING

INTRODUCTION TO WEB DESIGN

INTRODUCTION TO HTML

WEBPAGE STRUCTURE

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LECTURE OVERVIEW

Get a feel for how markup works

- understanding of elements and attributes

See how browsers interpret HTML documents

Learn the basic structure of an HTML document

Introduction to basic HTML tags

Understand the tags related to text formatting

HOW THE WEB WORKS?

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3. The unique number that the DNS server returns to your computer allows your browser to contact the web server that hosts the website you requested.

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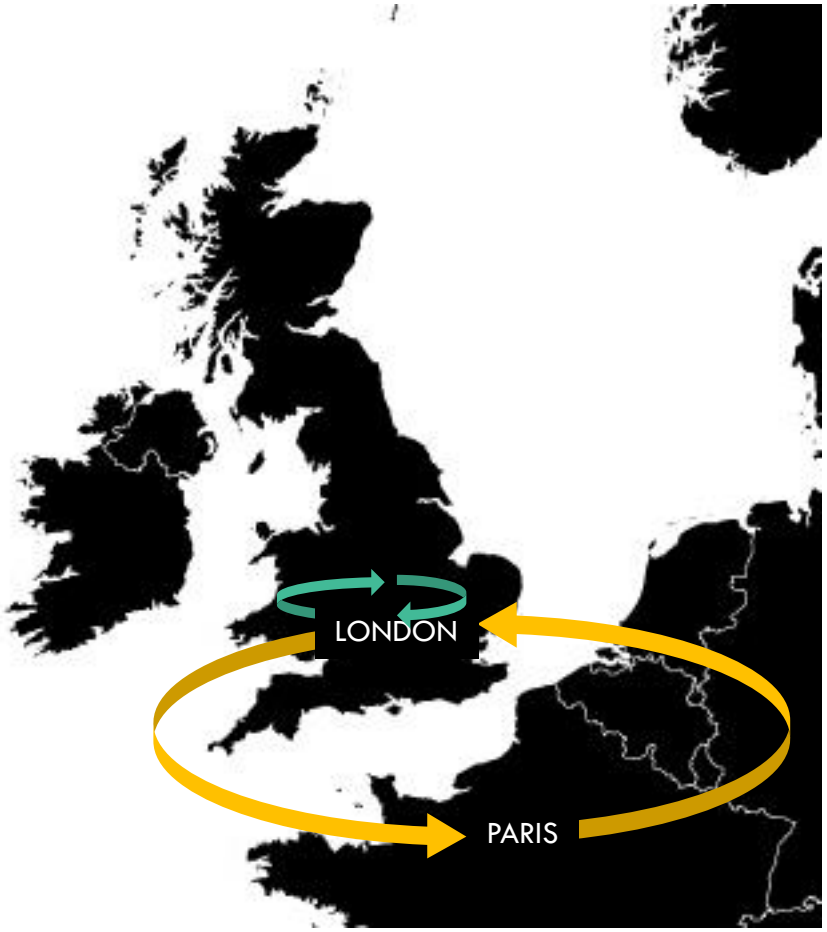

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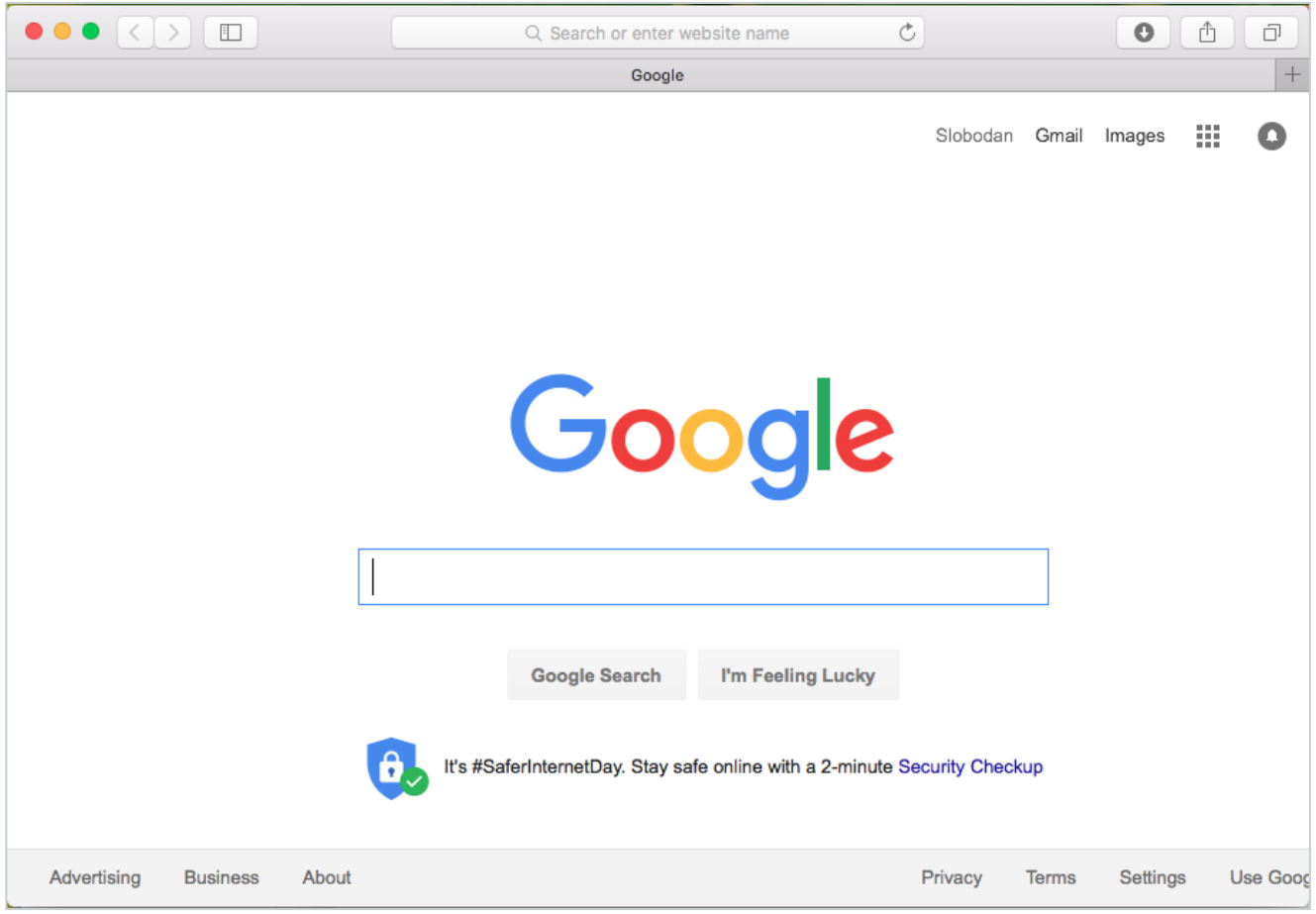
4. The web server then sends the page you requested back to your web browser.

HOW THE WEB WORKS



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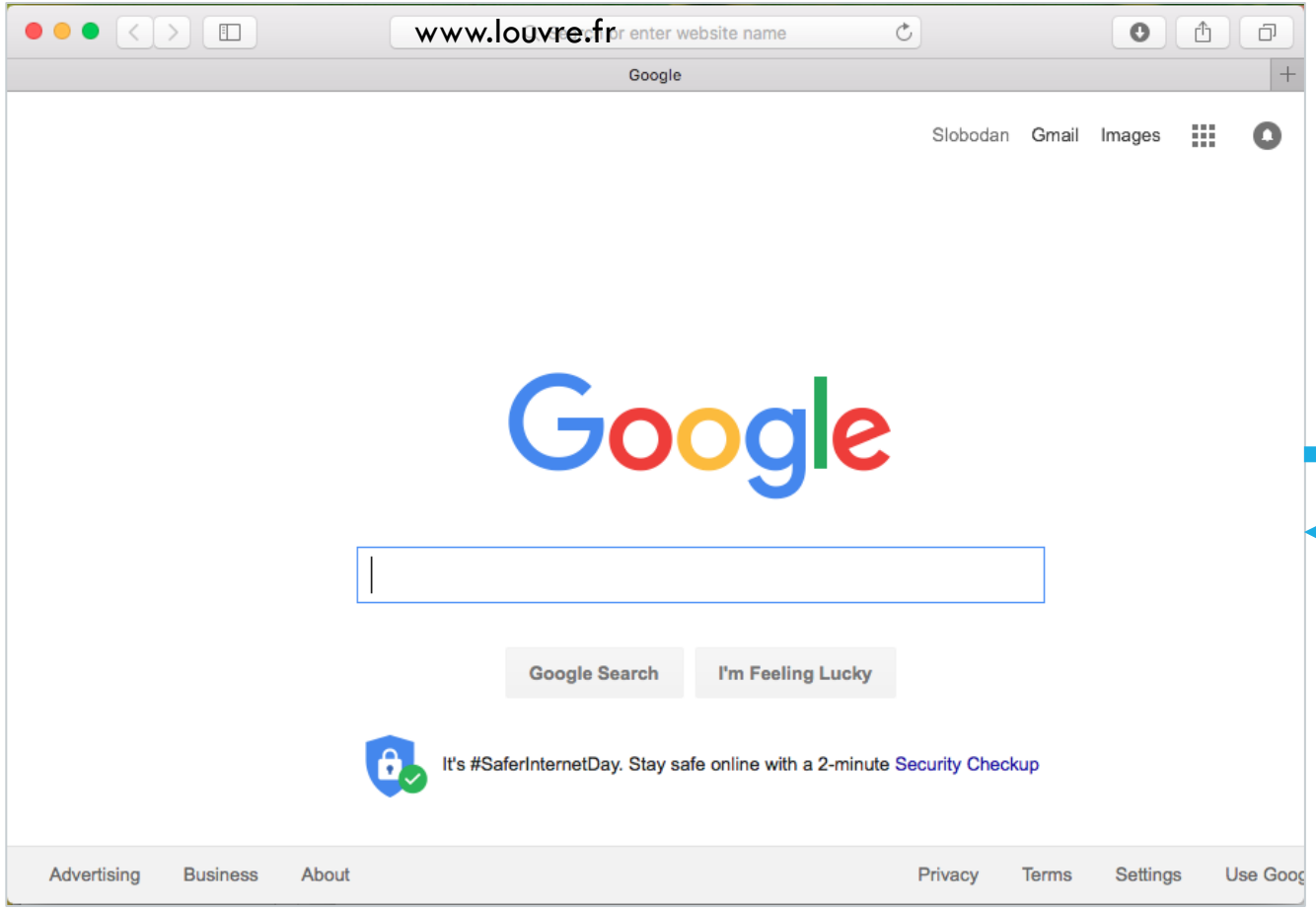

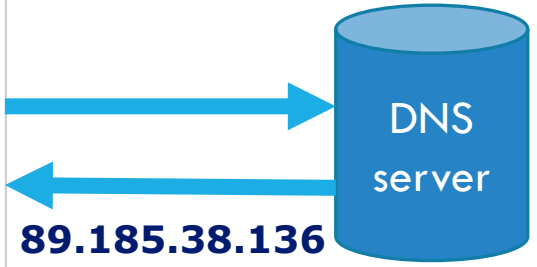

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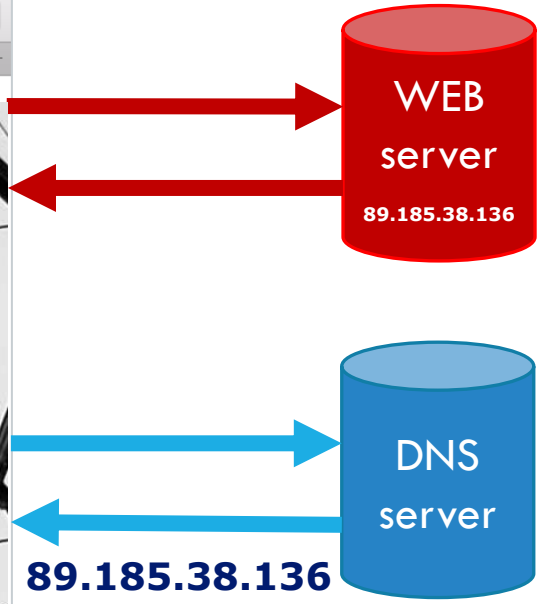

HOW TO CREATE A WEB PAGE?

All websites use HTML and CSS

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HTML – Hypertext Markup Language

- not a programming language
- consists of HTML **elements** called **tags** or **markers**
- these tags instruct web browsers how to render the web page structure
- HTML documents are stored as text files with the extension **.html** or **.htm**

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CSS – Cascading Style Sheets

- is a presentation language created to style the appearance of content
- CSS should not be written inside of an HTML document and vice versa

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As a rule, HTML will always represent content, and CSS will always represent the appearance of that content

HOW TO CREATE A WEB PAGE?

All websites use HTML and CSS

Larger websites often make use of more complex technologies on the web server

- usage of a database to store data
- programming languages such as PHP, ASP.Net, Java, or Ruby …
- these technologies are actually used to produce HTML and CSS that is then sent to the browser

HOW TO CREATE A WEB PAGE?

All websites use HTML and CSS

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In this course you will learn the basics of web design.
The more advanced web-programming technologies will be covered in other courses.

UNDERSTANDING STRUCTURE

We come across all kinds of documents in every day of our lives

- Newspapers, insurance forms, shop catalogues…

Many web pages act like electronic versions of these documents

- newspapers show the same stories in print as they do on websites;
- you can apply for insurance over the web;
- stores have online catalogs and e-commerce facilities.

In all kinds of documents, structure is very important in helping readers to understand the messages you are trying to convey and to navigate around the document

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In order to learn how to write web pages, it is very important to understand how to structure documents.

UNDERSTANDING STRUCTURE

Example structure of a story in a newspaper:

- headline,
- some text,
- (possible) some images,
- subheadings (for large stories) that split the story into separate sections

Structure helps readers understand the stories in the newspaper.

UNDERSTANDING STRUCTURE

Example structure of a story in a newspaper:

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- some text,
- (possible) some images,
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Structure helps readers understand the stories in the newspaper.

The structure is very similar when a news story is viewed online.

UNDERSTANDING STRUCTURE

Example structure of an insurance form:

- headings for different sections,
- each section contains a list of questions with areas for you to fill in details or checkboxes to tick

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Again, the structure is very similar online.

STRUCTURING WORD DOCUMENTS

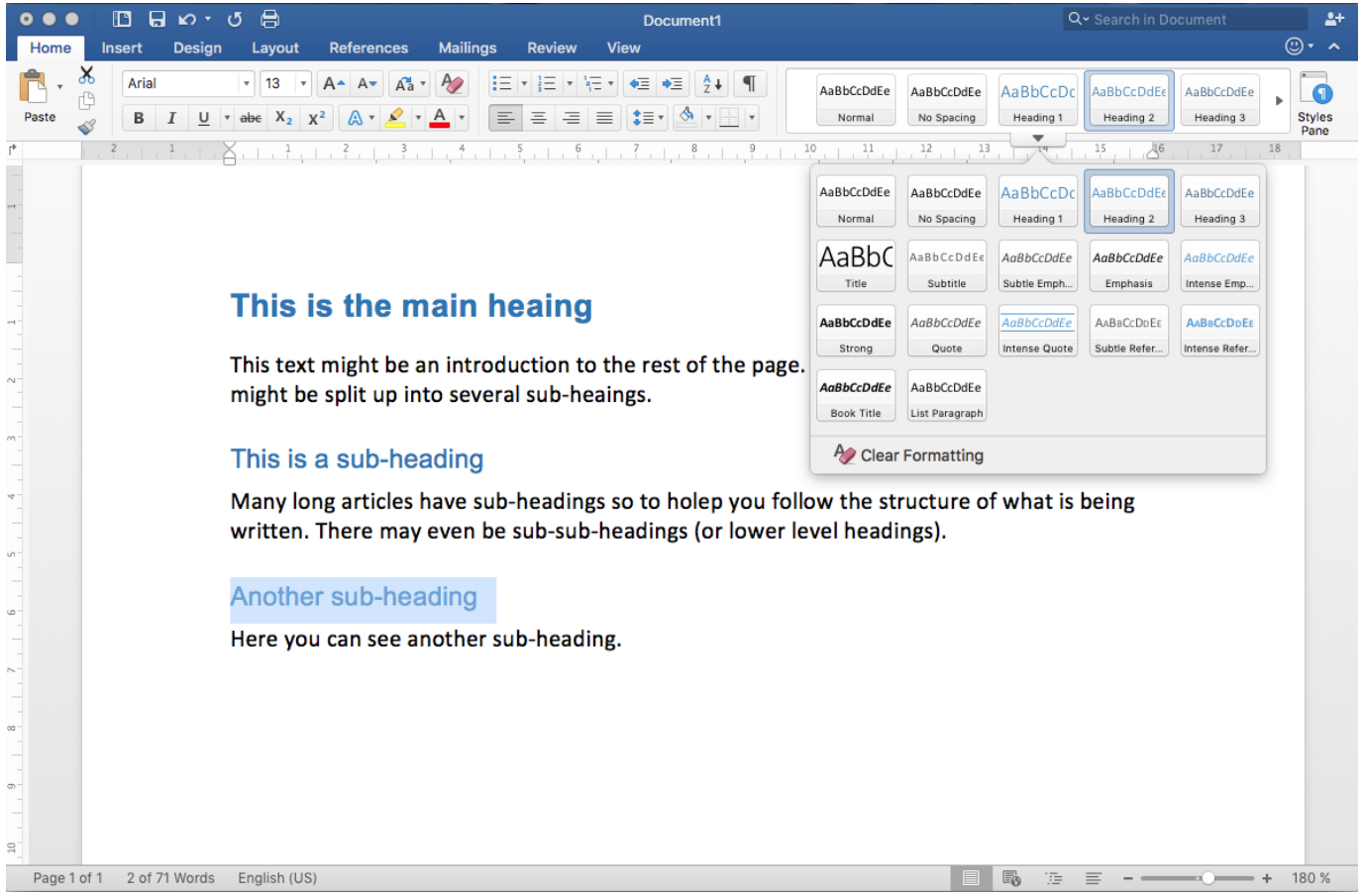
The use of headings and sub-headings in any document often reflects a hierarchy of information

- For example, a document might start with a large heading, followed by an introduction or the most important information. This might be expanded upon under subheadings lower down on the page.

When using a word processor to create a document, we separate out the text to give it structure.

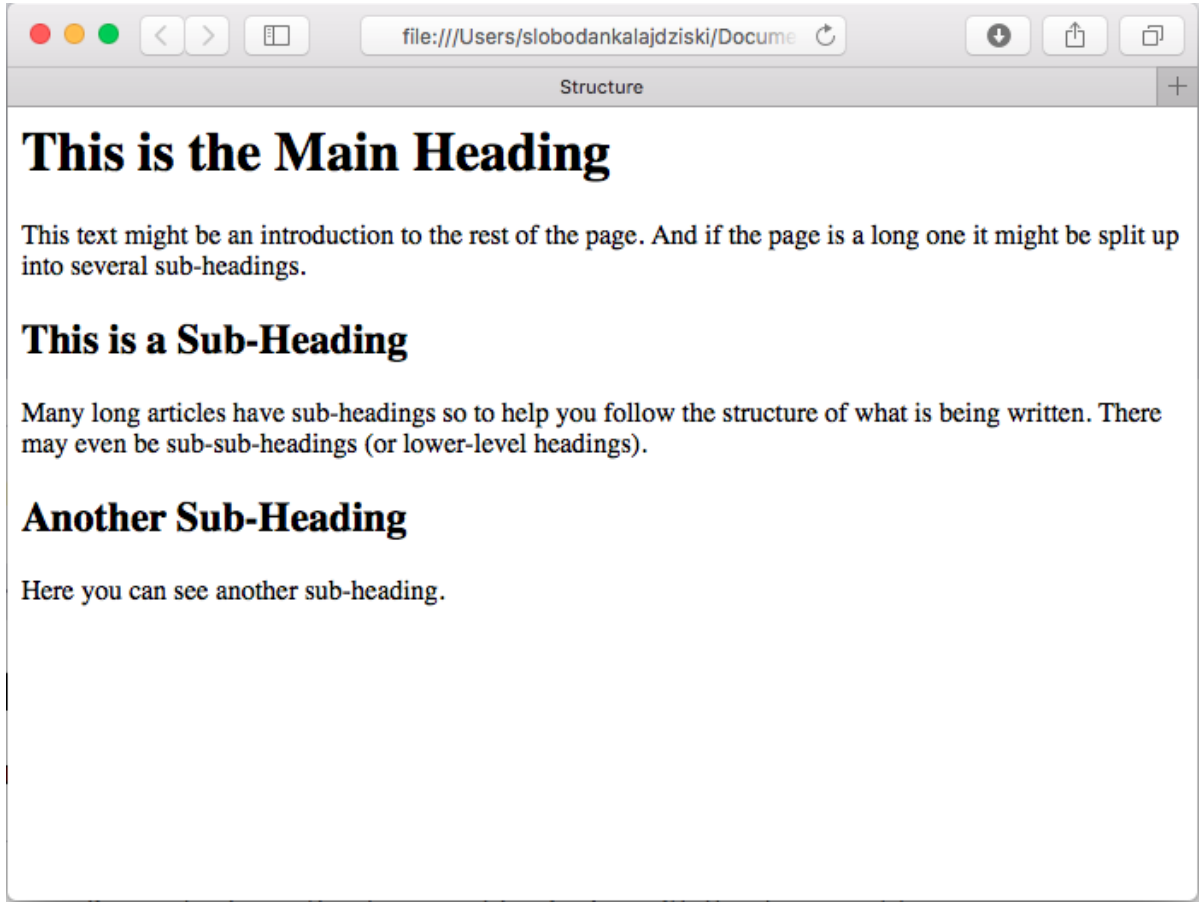
- each topic might have a new paragraph,
- each section can have a heading to describe what it covers.

STRUCTURING WORD DOCUMENTS



Text editing tools, like Microsoft Word provide rich set of toolbars and pallets to apply style into word documents.

STRUCTURING WEB PAGES



We use structure in the same way when writing web pages

BUT, HOW IS THIS DONE?

STRUCTURING WEB PAGES

To describe the structure of a web page, we add code to the words we want to appear on the page

- Text being displayed on the screen is shown in black
- HTML code is displayed in blue

```
<html>
  <body>
    <h1>This is the Main Heading</h1>
    <p>This text might be an introduction to the rest of the page. And if the
        page is a long one it might be split up into several sub-
        headings.</p>
    <h2>This is a Sub-Heading</h2>
    <p>Many long articles have sub-headings so to help you follow the
        structure of what is being written. There may even be sub-sub-
        headings (or lower-level headings).</p>
    <h2>Another Sub-Heading</h2>
    <p>Here you can see another sub-heading.</p>
  </body>
</html>
```

HTML ELEMENTS

The HTML code is made up of characters placed inside angled brackets - these are called HTML **elements**

Elements are usually made up of two **tags**:

- an opening tag and
- a closing tag (the closing tag has an extra forward slash in it)

Each HTML element tells the browser something about the information that sits between its opening and closing tags

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HTML USES ELEMENTS TO DESCRIBE THE STRUCTURE OF PAGES!

Tags act like containers. They tell you something about the information that lies between their opening and closing tags.

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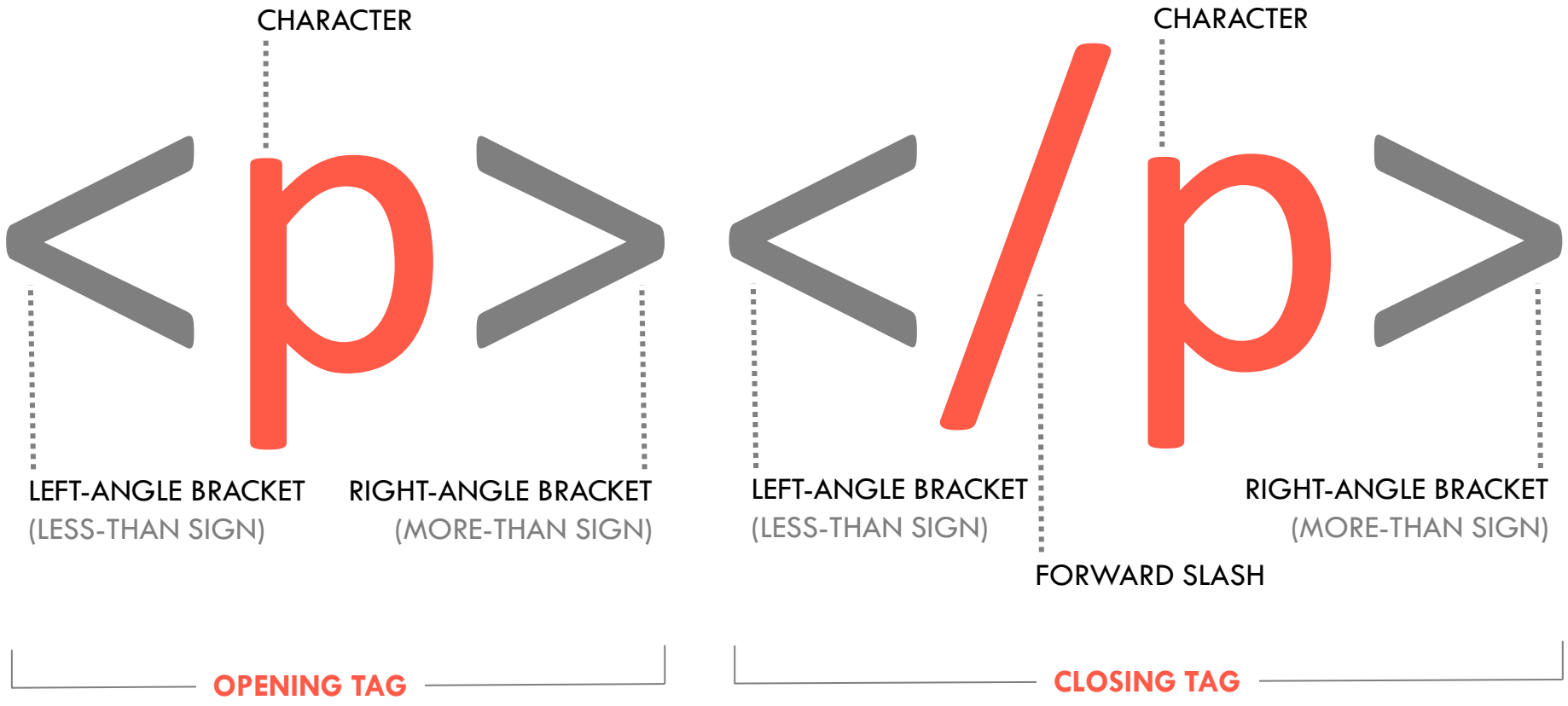
A CLOSER LOOK AT TAGS



A CLOSER LOOK AT TAGS

The characters in the brackets indicate the tag's purpose.

- For example, in the given tag below the **p** stands for paragraph.

The terms "tag" and "element" are often used interchangeably.

- Strictly speaking, an element comprises the opening tag ***and*** the closing tag ***and*** any content that lies between them.

ELEMENT'S PROPERTIES

HTML elements can be:

- **Containers** (contain open and closing tag)
  - Paragraph contents
- **Standalone** (only one tag, self-closing elements)
  -
  -

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Tags can be nested (and MUST NOT overlap)

```
<a>
  <b>
    <c>
    </c>
  </b>
</a>
```

correct nesting

```
<a>
  <b>
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    <c>
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```

incorrect nesting

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The attribute **name** indicates what kind of extra information you are supplying about the element's content.

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The **value** is the information or setting for the attribute.

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- Different attributes can have different values.

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The majority of attributes can only be used on certain elements.

- a few attributes (such as `lang`) can appear on any element
  - the value of the lang attribute is an abbreviated way of specifying which language is used inside the element
- most attribute values are either pre-defined or follow a stipulated format

BASIC HTML DOCUMENT STRUCTURE

`<body>`

- Everything inside this element is shown inside the main browser window.

`<head>`

- Before the **<body>** element you will often see a **<head>** element.
- This contains information *about* the page.

`<title>`

- The contents of the **<title>** element are either shown in the top of the browser, above where you usually type in the URL of the page you want to visit, or on the tab for that page.

BASIC HTML DOCUMENT STRUCTURE

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HTML

```
<html>
  <head>
    <title>This is the Title of the Page</title>
  </head>
  <body>
    <h1>This is the Body of the Page</h1>
    <p>Anything within the body of a web page is displayed in the main
            browser window.</p>
  </body>
</html>
```

RESULT

This is the Body of the Page

Anything within the body of a web page is displayed in the main browser window.

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In XHTML 1.1, the entire design of the web page depends on CSS

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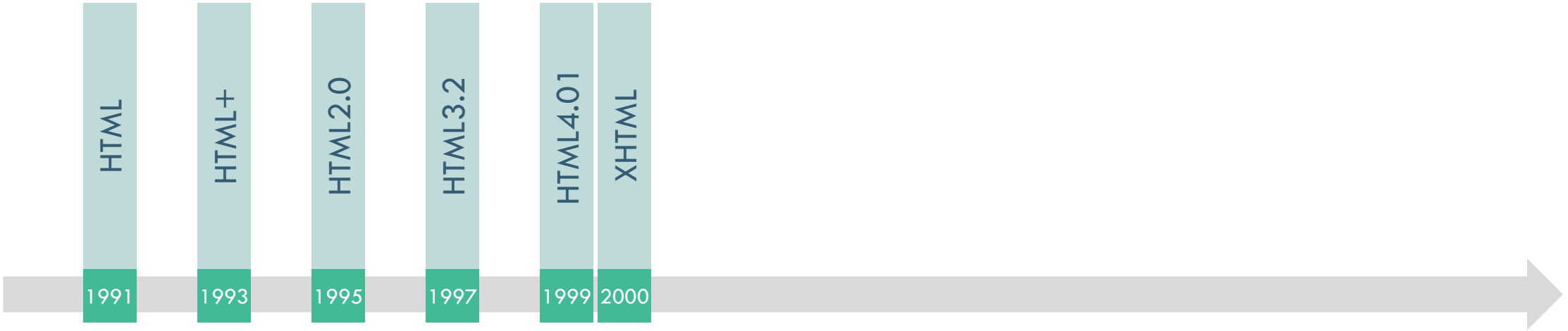

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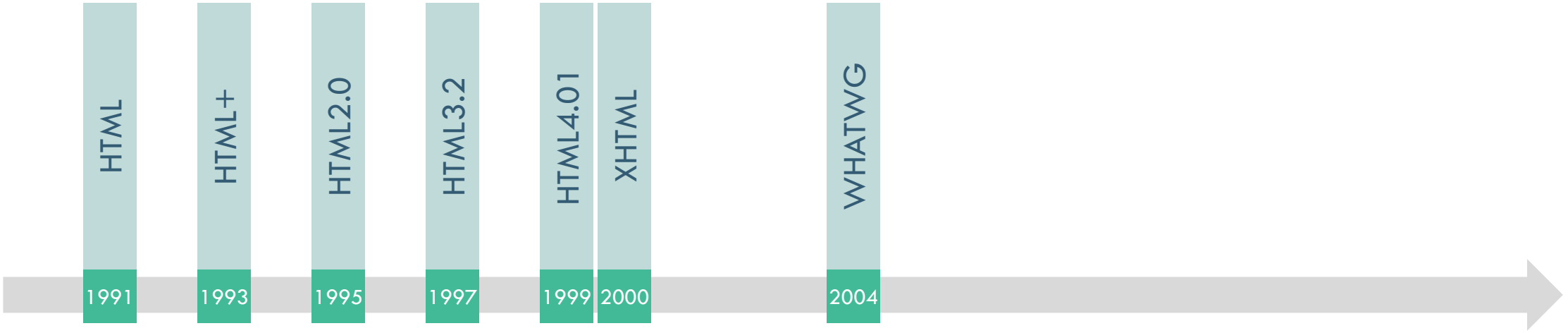

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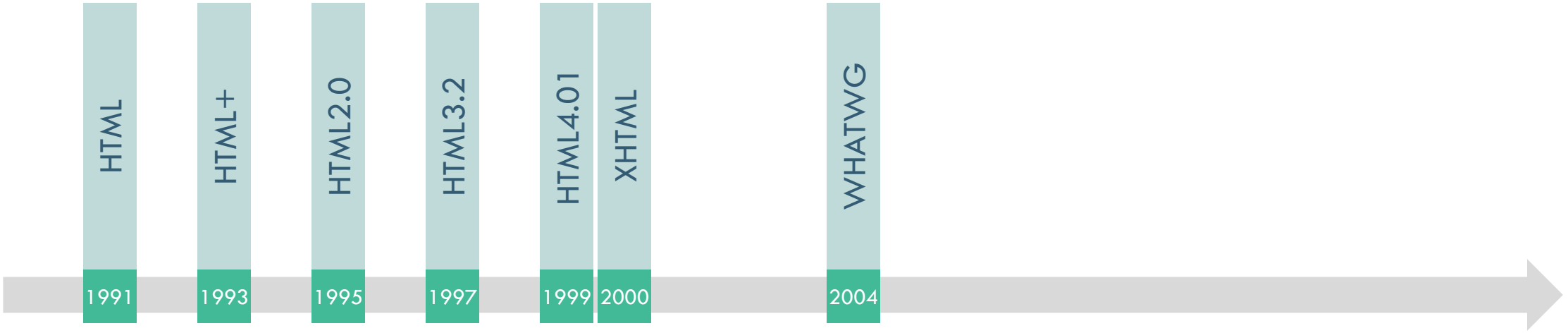

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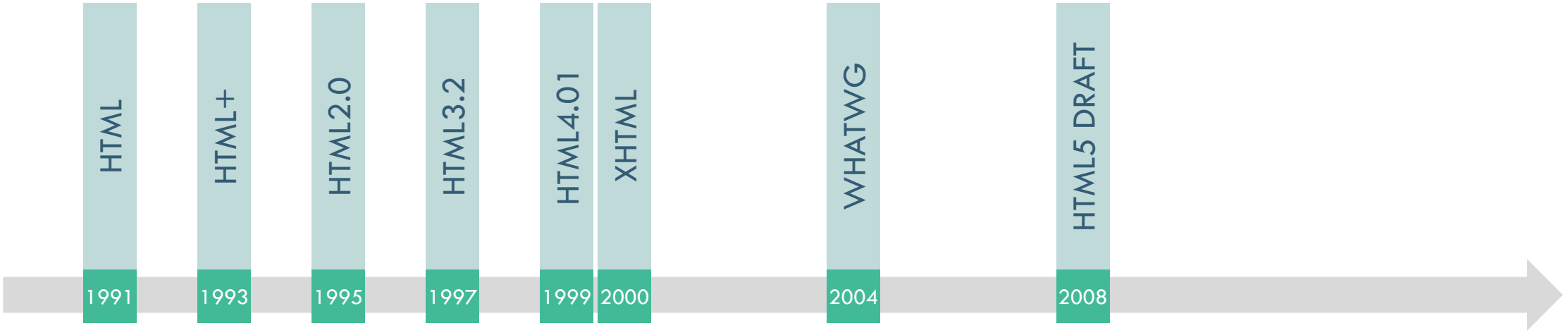

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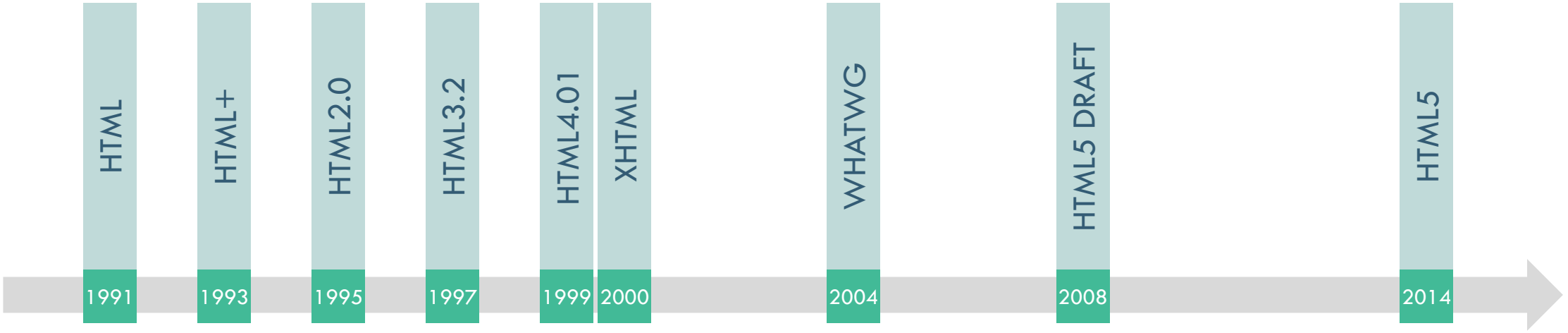

BASIC HTML DOCUMENT STRUCTURE

Starting from HTML 4.01, the first line in HTML documents must be a **DOCTYPE**

- DOCTYPE is a promise that the code that follows will be based on standards

In HTML 4.01 it is recommended and looks complicated:

```
<!DOCTYPE HTML PUBLIC "-//W3C/DTD HTML 4.01 Transitional//EN“
"http://www.w3.org/TR/html4/loose.dtd">
```

It is mandatory in XHTML:

```
<!DOCTYPE HTML PUBLIC "-//W3C/DTD XHTML 1.0 Transitional//EN”
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

In HTML5.0:

```
<!DOCTYPE html>
```

SIMPLE WEB PAGE TEMPLATES

HTML TEMPLATE

```
<html>
  <head>
    <title>Hello world example!</title>
  </head>
  <body>
    <p>Hello world!</p>
  </body>
</html>
```

HTML5 TEMPLATE

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Hello world example!</title>
  </head>
  <body>
    <p>Hello world!</p>
  </body>
</html>
```

XHTML TEMPLATE

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN“
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<html>
  <head>
    <title>Hello world example!</title>
  </head>
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```

BASIC HTML TAGS

<HEAD>

The contents of the HEAD element are not shown in the browser's main window

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Elements that can be nested inside HEAD element:

`<title>`	Defines the title of the HTML document, up to 64 characters
`<base>`	Specifies the base URL/target for all relative URLs in a document
`<link>`	Defines a link between a document and an external resource, like external stylesheet
`<meta>`	Defines the document's meta-data (like, page description, keywords, author of the document, last modified…) It is used by browsers (how to display content or reload page), search engines (keywords), or other web services

BASIC HTML TAGS

<HEAD> example

```
<head>
  <title>Web-page Title!</title>
  <base href="http://www.w3schools.com/images/" target="_blank">
  <link rel="stylesheet" type="text/css" href="theme.css">
  <meta name="description" content="Free Web tutorials”>
  <meta name="keywords" content="HTML,CSS,XML,JavaScript”>
  <meta name="author" content="Hege Refsnes”>
  <meta charset="UTF-8">
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```

BASIC HTML TAGS

<BODY>

The BODY element contains all the contents of an HTML document, such as text, hyperlinks, images, tables, lists, etc.

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List of attributes specified for the BODY tag:

`alink="color"`	Specifies the color of an active link in a document
`background="URL"`	Specifies a background image for a document
`bgcolor="color"`	Specifies a background color of a document
`link="color"`	Specifies the color of unvisited links in a document
`text="color"`	Specifies the color of the text in a document
`vlink="color"`	Specifies the color of visited links in a document

BASIC HTML TAGS

<BODY> example

```
<html>
  <head>
    <title>This is the Title of the Page</title>
  </head>
  <body text="yellow" bgcolor="green">
    <h1>This is the Body of the Page</h1>
    <p>Anything within the body of a web page is displayed in the main
          browser window.</p>
  </body>
</html>
```

BASIC HTML TAGS

<BODY>

example

```
<html>
  <head>
    <title>This is the Title of the Page</title>
  </head>
  <body text="yellow" bgcolor="green">
    <h1>This is the Body of the Page</h1>
    <p>Anything within the body of a web page is displayed in the main
        browser window.</p>
  </body>
</html>
```

BASIC HTML TAGS

COMMENTS

Adding comments to HTML documents by using <!-- … -->

Comments are not interpreted and rendered by the browser

```
<html>
  <head>
    <title>This is the Title of the Page</title>
  </head>
  <body>
    <!--This is comment and it is not displayed on a web page-->
    <p>This is paragraph displayed on the web page.</p>
  </body>
</html>
```

LESSON SUMMARY

HTML pages are text documents.

HTML uses tags to give the information they surround special meaning.

- Tags are often referred to as elements.
- Tags usually come in pairs. The opening tag denotes the start of a piece of content; the closing tag denotes the end.
- Opening tags can carry attributes (name and value), which tell us more about the content of that element.