Document Object Model

Agenda

Document Object Model

HTML DOM structure

JS HTML DOM basics

JS programming simplification

Document Object Model

HTML, XHTML, XML documents
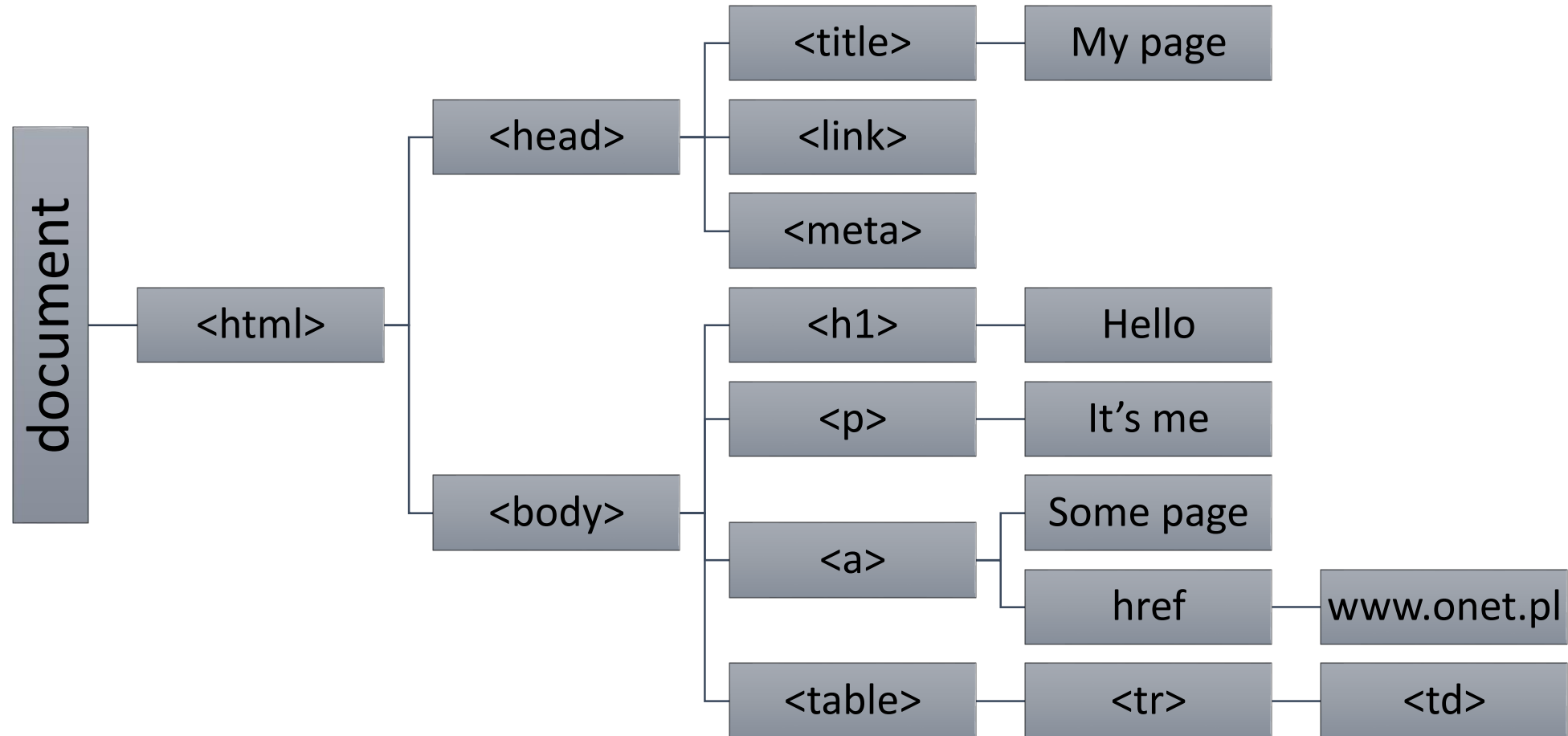
Cross-platform, language-neutral programming interface (API)

Document node -> object

Access and update the document content dynamically

[W3C Recommendation](#)

HTML DOM structure

HTML DOM

Defines:

HTML elements as objects

Properties of all HTML elements

Methods to access all HTML elements

Events for all HTML elements

Introduction to the DOM

JavaScript HTML DOM

JS HTML DOM basics

Finding elements in DOM structure

```
var element = document.getElementById(id);
var element = document.getElementsByTagName(name);
```

Changing elements

```
element.innerHTML = new html content;
element.attribute = new value;
element.onclick = function(){code};
```

JS programming simplification

JQuery – cross-platform JavaScript library

Write less, do more

HTML DOM manipulation

Ajax (asynchronous JavaScript and XML)

Tutorials

jQuery Learning Center

jQuery Tutorial (w3schools)

JQuery basic syntax

$(selector).action()

Selector

- By element name

```
$("h1").hide();
```

- By element id

```
$("#student").val("Adam");
```

- By element class

```
$(".studentdata").focus( function(){
      $(this).css("color", "red");
});
```

To do

Translate the phrase

1. Open the translate.html document.

2. Create a JavaScript code to translate the English phrase to the Polish one.

3. When the user moves the mouse over the text, The English text is to be replaced with the Polish one.

4. When the user moves the mouse away from the Polish translation, the original English text is to appear again

5. See **JavaScript Events**.

Alter the DOM

1. **Open the alter.html document.**

2. **Create a JavaScript program in which:**

    - After clicking on the song title, the **Part 2** is to be added at the end of the song title
    - After clicking on the band name, the band description is to be displayed below the lyrics
    - After clicking on the lyrics, the text is to be displayed in italics
    - After double clicking on the page, the page background colour is to be changed to yellow
    - When you try to copy the part of the lyrics, the copyright message is to be displayed in a popup window
    - When you click on the visible band description, the band picture is to be displayed below the description (https://upload.wikimedia.org/wikipedia/en/d/d6/Pink_Floyd_-_all_members.jpg); note: to display the band picture, create a JavaScript code to add an <img> element below the description paragraph (see JavaScript HTML DOM Elements (Nodes), HTML DOM setAttribute() Method)

Create DOM elements

1. In the node.html, create a JavaScript program to create the table below.

2. Scour the Internet for a JavaScript code on how to add new elements to your webpage.

Email	Connecting to the Internet
receive/get/open an email	use/access/log onto the Internet
exchange email addresses	access/connect to/locate the server
open/send/contain an attachment	browse/surf/search/scour the Internet
open/check your inbox	install/use/configure a firewall

Do the typing test

1. In the typing.html, create a program to do a typing test.

2. Run a timer when you start typing the given text in the text area.

3. After 30 seconds, stop the timer and calculate, how many words and characters you managed to type.

4. Display the results below the text area.

5. To measure the time, use the JavaScript setTimeout() function.

Fill in a form

1. In the form.html document, create a form according to the university form excerpt.

2. The form does not have to look exactly the same, as shown, but it must contain the same information.

3. To improve the form quality, use the bootstrap framework.

4. Create an object to store the form data. Add a method 'display()' for displaying the object properties in the console.

5. Add a 'Submit' button below the form.

6. After clicking on the button, save the form data (input fields) in the object. To retrieve the input field values, you can use the jQuery framework.

7. Then call the object method for displaying data in the console.

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The personal questionnaire
for part-time Bachelor programmes

PERSONAL DATA fill in in accordance with the passport/ID card	
Surname (family name):	
Name (names) /first name/:	
Gender:	⦿ male ◯ female
Father's first name:	
Mother's first name:	
Date of birth:	dd-mm-yyyy
Place of birth: as in your passport/ID card	
Citizenship (country):	▾