FITPED

HTML fundamentals

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HTML Fundamentals

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Introduction

Chapter 1

1.1 Introduction to HTML

1.1.1

Many young people think that if an institution, company or organization doesn't have a website, it is just like it didn't exist at all. Moreover, if the website is neglected it is discouraging people to contact.

It is very difficult to imagine modern life without Internet access. More and more often, we want to have the Internet "with us" in order to check the information instantly.

If you have similar observations and you think it's worth preparing a good website, then this course is for you.

To start learning web design there are a few things you should keep in mind:

- HTML and CSS are being ***constantly changed/upgraded by the W3C*** (*WWW Consortium*);
- older versions of browsers ***do not always interpret*** the newest HTML elements correctly or might even not know them at all;
- new versions of browsers ***should support*** pages saved in older/outdated language versions.

1.1.2

HTML (HyperText Markup Language) is a markup language that is ***used to create websites***.

Websites are usually created in editors and saved in text files. The browser interprets ***tags*** placed in the text files and displays the data stored there. To display the webpage in a browser you do not need Internet access. All you need is a file with a page code in HTML and a browser that will interpret it.

The HTML language defines the ***tags***, specifies their ***attributes*** and possible ***values***.

```
<tag attribute1="value1" attribute2="value2" ... >
</tag>
```

Most tags have a closing tag created with "/" (</tag>).

Paragraph marker - has a closing tag:

```
<p> This is the paragraph text.  </p>
```

But image tag - doesn't have closing tag:

```
<img src="bird.png" alt="titmouse on the tree">
```

Tag names should be written with ***lowercase letters*** (W3C recommendation).

1.1.3

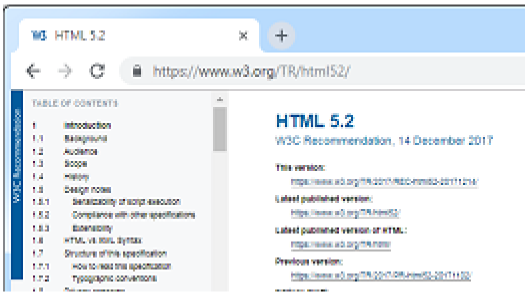
World Wide Web Consortium W3C is an international organization that looks after developing Internet standards, including developing HTML and CSS.

The W3C unites more than 400 organizations, companies, universities and government institutions. Information on ongoing work, research and new languages standards can be found at:

https://www.w3.org/

Anyone involved in web design should follow this website.

Currently recommended version of HTML is HTML5 (published in 2014), with the addition to HTML5.2 (published in December 2017).



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HTML 5.2

W3C Recommendation, 14 December 2017

This version:
https://www.w3.org/TR/2017/REC-html52-20171214/

Latest published version:
https://www.w3.org/TR/html52/

Latest published version of HTML:
https://www.w3.org/TR/html/

Previous version:
https://www.w3.org/TR/2017/PR-html52-20171102/

W3C is developing web languages and gives recommendations for using the best solutions. However, it has no legal power to force us to use them.

1.1.4

Choose the organization responsible for developing the HTML language.

- World Wide Web Consortium
- World Wide Web Network
- World Wide Web Corporation
- HTML Corporation
- Organization HTML in WWW

📝 1.1.5

Mark the correct statement.

W3C introducing a new standard of HTML5 language:

- changes the way websites are positioned in search engines and thus motivates us to apply newer standards.
- gives a company financial penalty if its website is not in HTML5 standard.
- has no legal power to force webdesigners to use new standards.

📖 1.1.6

In 2014, the *W3C* published a new, revolutionary version of the language for designing websites - ***HTML5***.

The creators of this standard have defined the basic principles that guided them:

- **Don't spoil the network** - no changes were made that would prevent the proper functioning of webpages, the standard should not change the rules, so the browsers should still display pages written in older HTML versions correctly.
- **Pave paths** - standardizing unofficial but widely used techniques.
- **Be practical** - any changes should be practical.

📖 1.1.7

The changes proposed in HTML5 are related to the increasing accessibility to the Internet.

The number of maintained websites is constantly increasing. The ***search engines algorithms*** are more and more complicated. Taking into account these changes, W3C has proposed new tags that have semantic significance.

Content placed in such tags will be more likely to be found by robots and programs that search for data on the Internet.

Examples of such tags are: ***<article>, <header>, <address>, <cite>, <time>*** etc.

🕮 1.1.8

The technology evolution forced new solutions for displaying websites on devices with different screen resolutions. The same website may look different on the screen of the smartphone and computer monitor.

New tags have been created in HTML5, which may behave differently depending on the device's resolution, e.g. ***<picture>***.

A website adapting its appearance to the device on which it is displayed is called ***responsive***.

As more and more people use the Internet on mobile devices, *responsive* websites are currently the required ***standard***.

The W3C has no legal power to force webdesigners to create only responsive websites, but the most popular search engine, Google, announced that from April 2015 it launched an algorithm that significantly affects the search results on mobile devices, promoting responsive websites.

📝 1.1.9

A responsive website is:

- the page that is displayed on the mobile device.
- the page that contains responsive content.
- the page that adapts to the resolution of the device on which it is displayed.
- the page that contains a drop-down menu.

🕮 1.1.10

The W3C currently defines ***two HTML standards***: *HTML5* and *XHTML5* (*XHTML* stands for *E**X**tensible HTML*).

These languages are very similar, but *XHTML* is a language with a more rigorous syntax. The current course will discuss the HTML5 standard.

The main differences between those languages are:

1. In *XHTML5*, the *<html>* tag must have the xmlns attribute specified.
2. Tags in *XHTM5* must be written in lowercase, and all attributes must be enclosed in quotation marks.

3. In *XHTML5*, each tag must be closed. Single tags such as *<img>* are being closed in the opening tag with mark "/" eg: *<img src = "file.png" alt = "" />, <br/>, <link .. ./>* etc.
4. Each attribute must have a specified value.

1.1.11

In XHTML, tags must be in lowercase letters.

- True
- False

1.1.12

In order to stay up to date with Internet standards, it is good to know a place, where you can find all updates, recommendations and good practices.

Obviously, the most important is the *W3C* website: https://www.w3.org/.

However, not everyone likes to read such extensive, formalized and precise descriptions. A much more practical and friendly site containing many courses on web technologies is the W3 Schools website:

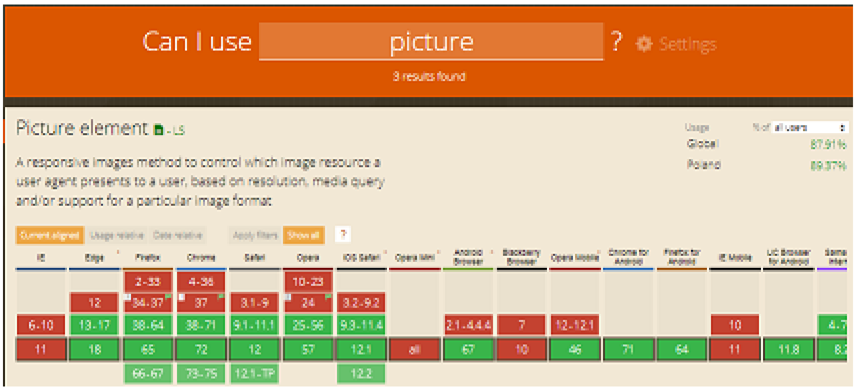
https://www.w3schools.com

You can find there *HTML*, *CSS*, *JavaScript*, *PHP* and many other courses related to web technologies.

1.1.13

Keeping in mind that the HTML language changes dynamically, it is good to know if the browser we use correctly interprets new elements.

On the Internet, you can find websites that test the most popular browsers in terms of support for new HTML or CSS elements, e.g.: https://caniuse.com/



Can I use picture ? Settings

3 results found

Picture element - LS

A responsive images method to control which image resource a user agent presents to a user, based on resolution, media query and/or support for a particular image format.

Usage % of all users

Global 87.91%

Poland 89.37%

IE	Edge	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mini	Android Browser	Blackberry Browser	Opera Mobile	Chrome for Android	Firefox for Android	IE Mobile	UC Browser for Android	Sams Inter
		2-33	4-36		10-23										
	12	34-37	37	3.1-9	24	3.2-9.2									
6-10	13-17	38-64	38-71	9.1-11.1	25-56	9.3-11.4		2.1-4.4.4	7	12-12.1			10		4.7
11	18	65	72	12	57	12.1	all	67	10	46	71	64	11	11.8	8.2
		66-67	73-75	12.1-TP		12.2									

Browsers support and correctly display pages saved in older/outdated versions of HTML. Please remember, that just because a tag is correctly displayed in the browser does not mean that it belongs to HTML5 specification.

1.1.14

Select all the correct statements.

- Each browser correctly displays HTML5 tags.
- The W3C is responsible for developing the HTML language.
- Browsers display correctly only pages written in HTML5.
- A page that is not responsive can not be displayed on a mobile device (e.g. a smartphone).
- The responsive website is adjusting to be displayed on devices with different resolutions.

1.1.15

It is not easy for a beginner webmaster to find and correct mistakes in the website's code, but a brilliant solution exists - the ***validator***.

A ***validator*** is a great tool designed by W3C experts that ***verifies the correctness*** of the tags used on the website:

https://validator.w3.org/

The ***validator*** is a program that indicates the syntax errors of the given code. It allows to verify:

- code of a page indicated by *URL* address;
- code of a page (HTML file) uploaded from the local computer;
- code of a page directly copied and pasted into the dialogue box of *the validator*.

The validator's page does not improve the semantics of the elements used nor content.

On the Internet, you can also find a lot of programs that check the website code, for example in terms of syntactical correctness, optimization or accessibility for people with disabilities, etc.

1.2 HTML document structure

1.2.1

HTML document is a text document. Thus, to create an HTML page code all you need is the simplest text editor.

A free text editor, commonly used by beginners is ***Notepad++***. This editor is very helpful in programming in many languages because of rich programming support, such as verifying the syntax or coloring the code. It allows to automatically complete the code and there are many additional plugins to upgrade its functionality and make programming easier.

Of course, every programmer has his favourite code editor.

Let's see the differences between editors and what we should pay attention to while choosing a program:

- price,
- functionality, ease of work,
- adaptation to a given operating system,
- possibility to install it on the user's computer or to be used in a browser (in the cloud).

1.2.2

The basic structure of each page in HTML should contain the following tags: ***<!doctype>, <html>, <head>, <title>, <body>*** arranged as follows:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Page Title</title>
</head>

<body>
```

```
<p>This is a paragraph.</p>
</body>
</html>
```

The first line of the page: ***<!DOCTYPE html>***, informs the browser about the type of document.

The entire page is placed between ***<html>*** and ***</ html>*** tags (the last one closes the whole page).

In ***<html>***, you should specify the *lang* attribute where you declare the ethnic *language* of the page (en, pl, sk, cs, it, ...).

Let's notice that there is no language version specified. It guarantees that changes to the recommended language version should not change the basic page template.

1.2.3

Enter the tag that informs the browser what type of document to display and must the first line of the HTML code.

Remember to use angle brackets in your answer.

1.2.4

Each HTML page consists of two parts: the ***<head>*** section and the ***<body>*** section.

The ***<head>*** section contains some very important data - ***metadata*** and ***tags*** that organize the work of the whole page, e.g.: page coding, title, styles, scripts, etc.

```
<head>
<title>Page Title</title>
<meta charset="UTF-8">
</head>
```

The ***<body>*** section contains data that is to be ***displayed in the browser's window***: text, image tags, movies, etc.

```
<body>
<p>This is a paragraph.</p>
</body>
```

1.2.5

Indicate two basic parts of each HTML page.

- <html> & <main>
- <head> & <body>
- <header> & <body>
- <header> & <html>

1.2.6

In order to properly display specific alphabet characters correctly on the website, you must declare the appropriate encoding.

```
<meta charset="UTF-8">
```

The current standard is ***UTF-8*** (*8-bit Unicode Transformation Format*) encoding.

This is the default way to encode pages in HTML5.

If the HTML5 page uses a different character set than UTF-8, it should be written in the ***<meta>*** tag.

Such a declaration should be placed in the ***<head>*** section of the website, eg.

```
<meta charset="UTF-16">
```

This declaration informs the browser about the format in which the data is stored in the * .html file. To make sure the country-specific letters are being displayed correctly, you should also ensure that the file is properly converted, according to the declared code page. Most popular HTML editors have this option built-in.

1.2.7

Enter the *<meta>* tag and its proper attribute (UTF-8) which is necessary to correctly display ethnic language letters that do not belong to the Latin alphabet.

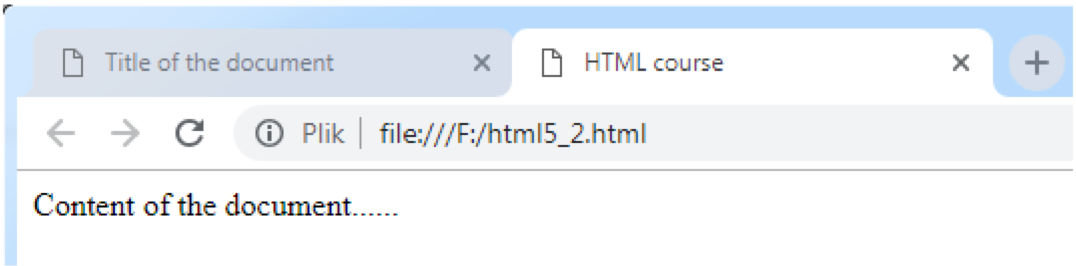
Remember to use angle brackets in your answer.

1.2.8

In the ***<head>*** section, the obligatory tag is ***<title>***.

It should contain the *title* of the site, which will be visible on the top of the card in the browser window and in the search engine's results.

```
<head>
<title> HTML course </title>
</head>
```



Content of the document......

1.2.9

Indicate a valid HTML5 document structure.

- <!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8"> <title>HTML course</title> </head> <body> Content of the document...... </body> </html>
- <html> <head> <meta charset="UTF-8"> <title>HTML course</title> </head> <body> Content of the document...... </body> </html>
- <!DOCTYPE html> <html> <header> <meta charset="UTF-8"> <title>HTML course</title> </header> <body> Content of the document...... </body> </html>
- <!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8"> </head> <body> Content of the document...... </body> </html>

1.2.10

The ***<head>*** section contains ***links*** to the ***external stylesheet*** or stylesheets.

As you know, text and graphical data are placed in a file with the extension "html", but the display format of this data is usually saved in an external file with the extension "***css***". In order for these files to "see" each other is necessary to connect them in the ***<head>*** section of the *.html file To do so you must insert a linking tag:

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

The first two attributes (*rel* and *type*) describe the inserted link, the value of the *href* attribute contains URL address of the file with the website style (*.css).

Saving the page formatting in an external file makes it easy to format multiple subpages of the web service.

📝 1.2.11

Complete the elements that are responsible for attaching a stylesheet file to a page in HTML.

```
<_____ rel="stylesheet" type="_____" href="style._____">
```

📖 1.2.12

Since the definition of the *HTML5* standard, *JavaScript* (JS) has become the default language for websites.

A file containing defined *JavaScript* functions can be attached to the page in the ***<head>*** section or in the ***<body>*** section (multiple times).

This is how you attach the *JavaScript* file when *.html and *.js files are in the same directory:

```
<script src="functions.js"></script>
```

📝 1.2.13

Complete the missing page elements.

```
<!DOCTYPE html>
<html _____="en">
<head>
<_____ charset="UTF-8">
<title>HTML course</_____>
</head>
<body>
<_____>Content of the document......</p>
</body>
</_____>
```

1.3 HTML document structure (programs)

1.3.1 Document structure - lang

Insert the appropriate attribute and value into the page template in HTML5, informing the browser that the page content is written in English.

```
<!DOCTYPE html>
<html >
      <head>
            <meta charset="UTF-8">
            <title>Title of the document</title>
      </head>
      <body>

      </body>
</html>
```

1.3.2 Document structure - doctype

In the specified section of the page, declare the type of the document (first line of the HTML page), informing the browser about the type of file loaded.

```
<html>
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>

      </body>
</html>
```

1.3.3 Document structure - title

Place the tag that is responsible for displaying the page title on the tab in the browser window. Place words in the title: *FITPED - courses*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
      </head>
      <body>

      </body>
</html>
```

1.3.4 Document structure - charset

In the given section of the page, declare the page encoding. Enter the UTF-8 encoding.

```
<!DOCTYPE html>
<html lang="en">
      <head>

            <title>FITPED - courses</title>
      </head>
      <body>

      </body>
</html>
```

1.3.5 Document structure - body

Insert the *<body>* section in the given HTML code of the page.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>

</html>
```

Text Formatting

Chapter 2

2.1 Paragraphs and headers

2.1.1

The paragraph tag ***<p>*** is the basic tag used to insert text on the page.

```
<p> Write text here ... </p>
```

It has an opening tag ***<p>*** and a closing tag ***</p>***. You can enter as much text as you want between them.

The paragraph text always begins with a new line. It creates a rectangular block of text.

```
<p>
<b> Albert Einstein </b> had the habit of saying that two
things are limitless: the universe and human stupidity. He
also claimed that imagination is more important than
knowledge, because knowledge is limited.
</p>
```

The ***<b>*** tag allows text to be bold - in the example above the name is distinguished.

2.1.2

You can use multiple paragraphs in an HTML document:

```
<h2>Murphy's Laws (selection)</h2>
<p>Every solution breeds new problems.</p>
<p>You will always find something in the last place you
look.</p>
<p>Everything goes wrong all at once.</p>
<p>Smile... tomorrow will be worse.</p>
```

Keep in mind that inside the paragraph ***<p>*** or header ***<h1>*** (nor other headers) tags you cannot insert another paragraph or header. These elements should be external to each other.

Line breaks inserted in the text or HTML editor does not matter in the HTML output. Each browser removes all additional blank or white characters, such as break row, tabs and spaces. Only the division into paragraphs made with the ***<p>*** tag is visible on the website.

2.1.3

If a piece of text in a paragraph must start with a new line, you can use the ***<br>*** tag. The text inserted after ***<br>*** should start as a new line. This tag does not have a closing tag.

```
<p>Einstein's wife, asked if she understands the theory of
relativity, replied:<br>
- No. But I know my husband and I know that you can trust
him.</p>
```

Sometimes you can find the same tag but with an extra closing character ***<br />***. This is the way of adding tags with no closing tags in XHTML versions of web pages.

2.1.4

What special tag should be inserted in front of a text inside a paragraph in order to start a new line in HTML?

Remember to use angle brackets in your answer.

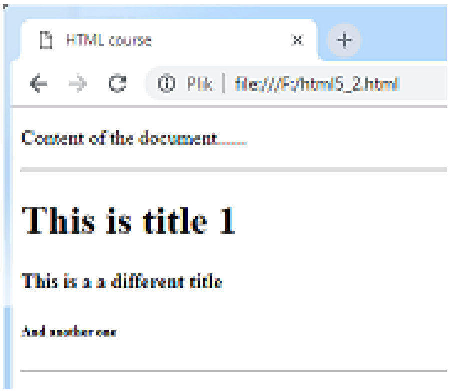
2.1.5

Use the ***<h1>***, ***<h2>*** ... ***<h6>*** tags to place headers on pages.

```
<h1> This is title 1</h1>
<h4> This is a different title </h4>
<h6> And another one</h6>
```

Each of them allows you to mark text as a header or title of paragraphs and place it in separate lines.

These tags have a similar meaning to the header styles in the word processor. The ***<h1>*** tag has the highest priority, and the next - lower. You can use them multiple times.



HTML course

Plik | file:///F:/html5_2.html

Content of the document......

This is title 1

This is a a different title

And another one

The ***<h1>*** tag is *bold* and has the largest font size, ***<h2>***, ... ***<h6>*** - are getting smaller and smaller.

📖 2.1.6

As you can see, each header tag has different formatting defined.

Each header tag is a block tag. It starts with a new line and occupies a rectangular area in the document.

Each header has defined upper and lower margins, font size, etc.

E.g.

```
h3 {
  display: block;
  font-size: 1.17em;
  margin-top: 1em;
  margin-bottom: 1em;
  margin-left: 0;
  margin-right: 0;
  font-weight: bold;
}
```

The unit used here to define the size of text and margins is *emphase* (*em*), a relative unit. The header font size is calculated relative to the font size of the parent (the parent element). You will read more about it later.

All browsers should display text in header tags in the same way, but this is not always the case. With help, in such a situation comes an external stylesheet that allows you to reset the available settings and custom formatting of individual tags.

2.1.7

Which of the header tags has the largest font size?

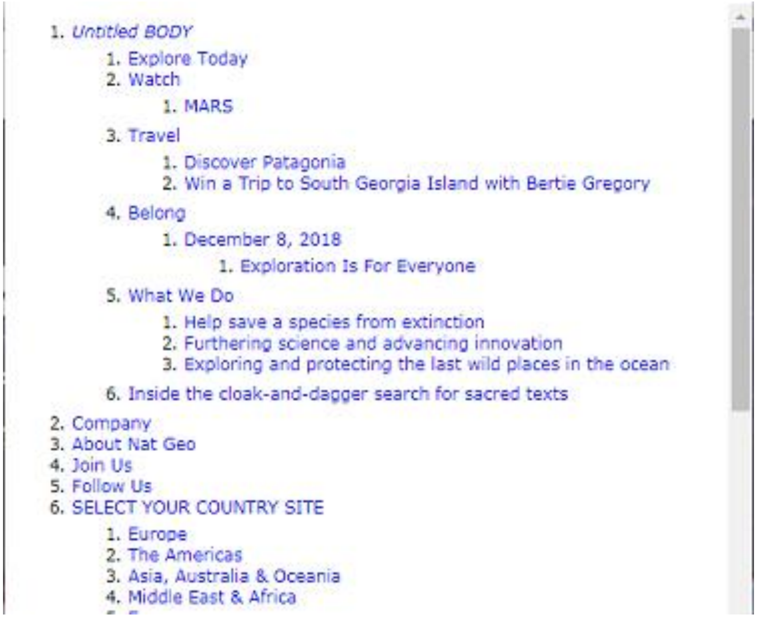
- <h1>
- <h6>
- <h7>

2.1.8

Header tags are very important for search engines. The text placed in these tags affects the positioning of the page.

These tags are also important for blind people who use page reading programs. It is the content of these tags that are read in the first place and thanks to the blind people find out what content is described on the website.

Thanks to the header tags, an outline page is created.



1. *Untitled BODY*
    1. Explore Today
    2. Watch
        1. MARS
    3. Travel
        1. Discover Patagonia
        2. Win a Trip to South Georgia Island with Bertie Gregory
    4. Belong
        1. December 8, 2018
            1. Exploration Is For Everyone
    5. What We Do
        1. Help save a species from extinction
        2. Furthering science and advancing innovation
        3. Exploring and protecting the last wild places in the ocean
    6. Inside the cloak-and-dagger search for sacred texts
2. Company
3. About Nat Geo
4. Join Us
5. Follow Us
6. SELECT YOUR COUNTRY SITE
    1. Europe
    2. The Americas
    3. Asia, Australia & Oceania
    4. Middle East & Africa

Can you guess which page this outline comes from?

2.1.9

Identify true sentences:

- The <h8> tag has the smallest font among the HTML header tags.
- Header tags are used only for nicer page formatting.

- Based on the header tags, a page outline (syllabus) is created.
- The text contained in the header tag is important when positioning the page in search engines.
- Devices that read pages for the visually impaired people, first read the text placed in the header tags.

2.1.10

If more than one title should be used in a document, they are placed side by side and the content contained in them is related to each other, it is recommended to use the ***<hgroup>*** tag.

```
<hgroup>
<h2>The Fellowship of the Ring</h2>
<h3>Introduction </h3>
</hgroup>
```

This tag groups header and forwards only one of them to information (content). The header with the highest priority is always selected. In this case, it is ***<h2>***.

2.1.11

Is this section of the page correct?

```
<h2>Spring
<p>This joyful season</p>
</h2>
```

- False
- True

2.1.12

The given fragment of the page

```
<p> Text1 </p> <p> Text2 </p>  <h1>Text3 </h1>
```

will be divided into lines as follows:

```
a) Text1 Text2 Text3
```

```
b) Text1
Text2
Text3
```

```
c) Text1 Text2
Text3
```

- a)
- b)
- c)

2.1.13

Complete the given part of the page.

```
<hgroup>
<h3> Title2 </_____>
<_____> Title2 </h4>
</_____>
<p> Begining of the paragraph<_____>
This text begins with a new line inside the paragraph
</p>
```

2.2 Paragraphs and headers (programs)

2.2.1 Paragraphs

In the following section of the page insert three paragraphs containing text "*Paragraph 1*", "*Paragraph 2*", "*Paragraph 3*".

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>


```

```
        </body>
</html>
```

2.2.2 Headers 2

Place a *<h2>* header on the page with the text "*Outstanding Physicists*".

```
<!DOCTYPE html>
<html lang="en">
        <head>
                <meta charset="UTF-8">
                <title>FITPED - courses</title>
        </head>
        <body>

    </body>
</html>
```

2.2.3 Paragraphs with headers

Insert two paragraphs and two *<h3>* heading tags so that each paragraph is preceded by one heading.

```
<!DOCTYPE html>
<html lang="en">
        <head>
                <meta charset="UTF-8">
                <title>FITPED - courses</title>
        </head>
        <body>

        </body>
</html>
```

2.2.4 Paragraphs and headers (new line)

In the following paragraph insert breaking the line rule, so that the text "*My Bonnie lies over the sea*" started in the new line (without changing the paragraph). Use the *<br>* marker.

```
<!DOCTYPE html>
```

```
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
            <p>My Bonnie lies over the ocean. My Bonnie lies
over the sea.
      </p>

      </body>
</html>
```

2.2.5 More headers

Insert the *<h1>, <h2>* and *<h3>* tags into the page to create the structure shown below.

Nature of Africa

Flora

Animals

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
Nature of Africa
Flora
Animals
      </body>
</html>
```

2.2.6 Two paragraphs

In the following section of the page, enter the paragraph tags to keep the given division into lines.

Text 1 Text 2

Text 3

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
            Text 1 Text 2 Text 3
      </body>
</html>
```

2.2.7 Paragraphs and headers (hgroup)

Use the *<hgroup>* tag to combine *<h3>* and *<h4>* headers.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
            <h1>Africa's nature</h1>
            <h2>Flora</h2>
            <h2>Animals</h2>
            <h3>Mammals</h3>
            <h4>Birds</h4>
      </body>
</html>
```

2.3 Semantic Text Tags

2.3.1

Most HTML tags have their semantic meaning. The language specification defines in which situations they should be used on pages. Thanks to them, searching for information on the web should be more optimal. The ***<address>*** tag is used to place contact information on the site. Depending on the place where it is inserted, it may be address information of the author of the page, author of the article or company.

This tag is most often placed in the header or in the footer of the page (or other elements, e.g. ***<section>***).

```
<address>
Jon Brown<br>
j.brown@york.ab.edu.en
</address>
```

This tag does not have to contain traditional postal address data unless it is an important element of the contact details.

Inside the address tag, it is not allowed to insert block elements that influence the document structure.

Adding this element to the site may be helpful for search engines.

2.3.2

The ***<address>*** tag is used only to display the address data of the website owner.

- False
- True

2.3.3

The date placed on websites is not always correctly interpreted by programs that read pages or search for data.

```
<p>The concert of the Merry Kangaroo band will begin
on <time datetime="2020-01-04 09:00">the 4th of January 2020,
at 9.00</time>.
</p>
```

Data placed between ***<time>*** and ***</time>*** allows data to be saved in a format accepted/liked by users, and the datetime attribute allows storing data in a specified standard, understood by the machines.

Thanks to the correct date notification, the user will be able to add the date placed on the page to his mobile calendar with a single click. This tag will also allow you to create intelligent search results.

The ***<time>*** tag may represent one of the following values:

- time on a 24-hour clock,
- the exact date in the Gregorian calendar (with optional time and time zone information),
- valid/significant period of time.

2.3.4

Enter an attribute for the ***<time>*** tag, which will give the search engine the correct date.

```
<time _____="2020-01-04 09:00">
```

2.3.5

The ***<pre>*** tag tells the browser that its content is pre-formatted and that this format must be preserved. The spaces and line break entered in the editor will be correctly displayed on the website.

```
<pre>
for(i=0;i<N;i++)
  printf("%d,  ",i);
printf("\n");
</pre>
```

This tag is most often used to place the program code.

The text in the ***<pre>*** element is displayed in a fixed-width font.

For the ***<pre>*** tag, you can define an additional way to interpret white spaces and how to wrap text in CSS.

2.3.6

Which of the following tags is used to insert a piece of the program written in the programming language into the website, in such a way as to keep the user-inserted spaces and the division into lines?

- <pre>
- <br>
- <p>
- <p>

2.3.7

The text placed in the ***<b>*** tag is bolded.

```
<p>Winter this year was exceptionally <b> sunny </b> and
snowy.</p>
<p>Author of the article: <b> Adam Kowalski </b></p>
<p>A new discovery in the field of astronomy: <strong> Pluto
is a dwarf planet </strong></p>
```

Similarly to ***<b>*** tag, ***<strong>*** tag changes the font to bold.

The difference between these tags is that ***<strong>*** is a semantic element - it indicates an important text. The ***<b>*** tag is for formatting only.

2.3.8

The ***<i>*** tag is used to place italic text.

The text placed in the ***<em>*** tag is also italics, but for search engines, it has semantic meaning. It means "important text".

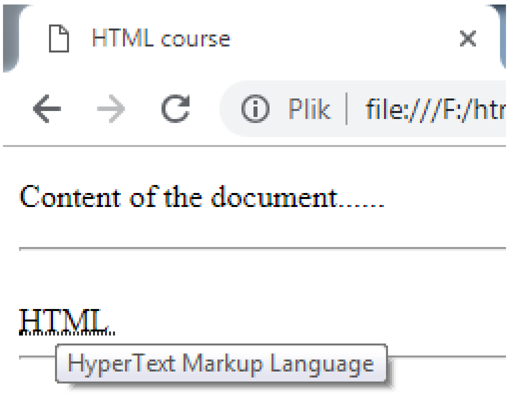
```
<p>The ABC company would like to thank the employees for their
help in organizing the <i>Holiday Song Festival</i> for
children from kindergartens and primary schools.</p>
```

```
<p>Important events of the past year include the <em>InSight
in a Mars landing</em>.</p>
```

2.3.9

More and more often, abbreviations of company names, organizations, programs etc. are used in communication. The ***<abbr>*** element is used to insert them on websites. The title attribute placed inside the ***<abbr>*** tag allows you to place a shortcut and show the hints to the user.

```
<abbr title="HyperText Markup Language" >
HTML
</abbr>
```



Content of the document......

HTML

HyperText Markup Language

In a similar way, you can mark such abbreviations as NATO, UNO, EU, etc.

2.3.10

Select the application for the given tag.

```
<b> _____
<abbr> _____
<pre> _____
<time> _____
<address> _____
```

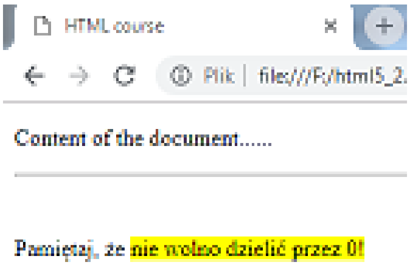
- name of the author of the publication
- contact details of the author of the article
- a fragment of the programming language code
- date and time of the concert
- page header
- short name of the organization (abbreviation)

2.3.11

Among new tags proposed by HTML5, the ***<mark>*** tag is worth mentioning.

This tag indicates text to be highlighted, written in black font on a yellow background (this formatting can be changed by the user in cascading style sheets).

```
<p>Remember that <mark> you cannot divide by 0! </mark></p>
```



Content of the document......

Pamiętaj, że nie wolno dzielić przez 0!

📖 2.3.12

An example of the announcement on the website.

```
<section>
On <time datetime = "2020-09-25 18:00">the 25-09-2020, at
18.00 </time>, in Cracow at 15 Grodzka Street, workshops on
the project <b>Responsive Web Design</b> with the <abbr title
= "World Wide Web Consortium
">W3C</abbr> representatives  will be held.
<p> For additional information, please contact:
<address> Karol Maj <br>karl.maj@grodzka.pl</address>
</p>
<p>Tickets for the workshops can be purchased at the ticket
office, at Grodzka 15, from 10.00-15.00. </p>
</section>
```

2.4 Semantic Text Tags (programs)

⌨ 2.4.1 Semantic Text (contact)

In the following section of the page save the contact details of the e-shopping company. Use the appropriate HTML tag.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>

        E-shopping company<br>
        e.zakupy@york.ab.com.en
      </body>
</html>
```

2.4.2 Semantic Text (date)

Using the appropriate date and time tag, mark the given date as 01-01-2020.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
            1 January 2020
      </body>
</html>
```

2.4.3 Semantic Text (time)

Using the *<time>* tag and the corresponding attribute, enter the arrival time information on the page.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      <p>Grandma arrives at 9:00 a.m.
      </p>

      </body>
</html>
```

2.4.4 Semantic Text (code formating)

The following code fragment in the programming language mark with appropriate tag so that the initial formatting (spaces and line breakdowns entered) was maintained.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>

      for(int i=1;i<=10;i++)
    {
        cout << liczba <<" ";
        liczba+=x;
        x+=5;
    }

      </body>
</html>
```

2.4.5 Semantic Text (lines)

Mark the following text with paragraph tag and insert tags to keep the division into lines.

How many roads must a man walk down

Before you call him a man?

The answer, my friend, is blowin' in the wind

The answer is blowin' in the wind.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      How many roads must a man walk down
      Before you call him a man?
      The answer, my friend, is blowin' in the wind
      The answer is blowin' in the wind.

      </body>
</html>
```

2.4.6 Semantic Text (bold)

Use the appropriate tag to indicate that the following text is significant. Use the semantic marker to bold the valid text.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      Strong wind and frost warning!
      </body>
</html>
```

2.4.7 Semantic Text (b)

Use the *<b>* tag to bold the vocalist's name in the following section of the page.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      <p>Ed Sheeran in Paris! As part of the European tour
"Now We", 10 concerts will be organised. The first of which
will take place in the French capital.</p>
      </body>
</html>
```

2.4.8 Semantic Text (shortcut)

Place the NATO shortcut on the page so that the full name of the North Atlantic Treaty Organization appears when you point the mouse at it.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      NATO
      </body>
</html>
```

2.4.9 Semantic Text Tags (tag using)

Place the title of the advertisement "Internet for Everyone" in the *<h3>* tag. Mark the W3C shortcut so that after pointing it with the mouse, the user can read the expanded abbreviation. Place the text of the announcement in the paragraph tags. In order to keep the division into lines use the *<br>* tag.

Internet for Everyone

The lecture of T. Berners- Lee, W3C chairman, entitled "Internet of tomorrow" will be held on August 21, 2020.

The topic of the lecture is the current state of W3C's work related to the development of the global semantic network.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      Internet for Everyone

The lecture of T. Berners- Lee, W3C chairman, entitled
"Internet of tomorrow" will be held on August 21, 2020.

The topic of the lecture is the current state of W3C's work
related to the development of the global semantic network.

      </body>
</html>
```

2.4.10 Semantic Text Tags (highlight)

In the given text fragment, highlight the W3C shortcut using the *<mark>* tag.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
<h3>Internet for Everyone</h3>

<p>The lecture of T. Berners- Lee, W3C chairman, entitled
"Internet of tomorrow" will be held on August 21, 2020. <br>
The topic of the lecture is the current state of W3C's work
related to the development of the global semantic network.
</p>
      </body>
</html>
```

2.5 Text formatting and colors

🕮 2.5.1

Formatting elements placed on a website usually takes place in cascading style sheets.

You can insert an inline style into each tag in the ***<body>*** section.

```
<tag style="property1:value1; property2:value2;...">
...
</tag>
```

The style is inserted only in the opening tag.

After the word "style", you should give the property that you want to change, for example, text alignment, font type or color, margin, etc.

Each property has values that can be assigned to it, e.g.: color: green, text-align: center.

```
<p style="color:green; text-align:center;">
Green and centered text ;)
</p>
<address style="font-size: 8px; color: blue;">
Contact: anna@newyork.ok
</address>
```

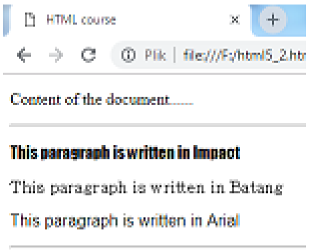
📖 2.5.2

An important element in the design of pages is the selection of font properties.

The designer can specify fonts that should be used on the site. However, if the chosen font is not installed in the operating system in which the page is displayed, the browser uses the default font.

You can use the font-family property to change the font of the text. The values it can take are font names, such as Arial, Calibri, Verdana or the font family.

```
<p style="font-family:impact"> This paragraph is written in
Impact </p>
<p style="font-family:batang"> This paragraph is written in
Batang </p>
<p style="font-family:arial"> This paragraph is written in
Arial </p>
```



Content of the document......

This paragraph is written in Impact

This paragraph is written in Batang

This paragraph is written in Arial

The CSS course will show you how to add your own fonts to the page.

📖 2.5.3

There are several default font types/families that are available in all browsers.

General font families are:

- **monospace** - all characters have the same width,
- **serif**- signs have additional, decorative ending lines,
- **sans-serif** - the characters of this font do not have decorative endings, the fonts of this family are considered one of the most convenient for reading on websites.

If the selected font is not available, the browser may insert another of the same type of fonts in its place, eg:

```
address {font-family: verdana,sans-serif}
```

Font names are not case-sensitive. They also do not have to be enclosed in quotes. The exception is fonts whose names consist of several words, such as "Times New Roman".

2.5.4

Enter the appropriate CSS property so that the text in the <h4> tag was written in the Impact font.

```
<h4 style="_____:impact">
Example text
</h4>
```

2.5.5

To change the font size, use the font-size property style.

The font size can be changed for the whole page, for elements of a given type (eg for all paragraphs) or for a single tag.

```
<p style="font-size: 25px; font-family: calibri">
This is a text formatted with calibri font, size 25px.
</p>
```

In the above example, only this one paragraph will have the font size changed.

An important issue in changing the font size is the unit of size. The default unit is px (pixel), but you can also use a new unit type - vw, which allows you to change the font size in a flexible way depending on the size of the browser window.

2.5.6

Use the ***text-align*** property to align text on a page. It can take one of the following values:

- **left**- text aligned to the left margin,
- **right**- text aligned to the right margin,
- **center**- centered text,
- **justify** - text aligned to both margins simultaneously.

```
<h1 style="text-align:center">
The Beatles band's website
```

```
</h1>
```

This property can be placed in any tag in which the text is placed.

2.5.7

Insert CSS property that is used to align text.

2.5.8

Almost all websites on the web use colors other than black and white. *Cascading style sheets* (CSS) allow you to change the color of the text, background, and border of almost all elements on the page.

The text color can be modified using the CSS: *color* property.

```
<body style="color:gray">
```

The above notification sets the font color for the entire page (because *<body>* covers all elements) to grey.

The property color can take values that are names of colors in English (the W3C specification allows the use of about 140 color names)

```
<p style=" color:red; font-family:helvetica;">
The storm has passed and a beautiful rainbow appeared over the meadow.
</p>
```

2.5.9

HTML introduced several ways to determine colors on the website.

The most popular and most convenient is the hexadecimal color notification.

Each color can be obtained by mixing three primary colors: ***red, green*** and ***blue*** (#rrggbb). The saturation level of one of the basic colors is determined using two hexadecimal digits (0, 1, 2, 3, ... 9, a, b, c, d, e, f). The color number defined in this way must be preceded by the *#* sign.

- red is # ff0000 (ff - the largest hexadecimal number indicates high color saturation in red),

- blue is # 0000ff (highest color saturation in blue),
- the maroon color is # 800080 (red and blue saturation).

```
<p style="color:#ffff00">
This paragraph is written in yellow.
</p>
```

2.5.10

The most common way to name *color* in CSS, starting with the # character, is a record that uses the notation:

- hexadecimal
- binary
- decimal
- octal

2.5.11

To make the page readable, the text color and the background color should be wisely selected. It is known that the yellow font on a white background will not be easily visible.

The *background-color* property is used to change the background color of the element. Its values, i.e. colors, are defined exactly as for the color property.

```
<pre style="background-color:grey;">
<script type="text/javascript">
      $(document).ready(function(){
            $("img").click(function(){
                  alert('foto marked');
            });
      });
  </script>
</pre>
```

```
<h2 style="background-color:#000000; color:ffffff;">
What is the color of the text and what is the background color
of this header?
</h2>
```

2.5.12

Match the property to its meaning:

```
color _____
font-size _____
background-color _____
font-family _____
```

- size of the text
- color of the text underline
- typeface of the text
- size of the background
- color of the text background
- color of the text

2.5.13

To format in the same way the many elements on the page, the external style sheet is used. This style is created in a separate text file.

The file extension should be "css".

This file connects to the page using the ***<link>*** tag in the ***<head>*** section of the document.

```
<link rel ="stylesheet" href="styl.css">
```

The file with the extension "html" contains HTML tags and content placed on the pages, while the file "css" describes the formatting of these elements, e.g.

```
p {color:darkblue; background-color:lightgrey;}
```

The above notation placed in the "css" file means that the text in all paragraphs of the HTML file (***<p>***) will be written in dark blue (navy) on a light grey background.

```
strong {color:red;}
```

Of course, in styles, you can distinguish the part of the tags, which will be formatted differently than the rest. Classes, inline styles or appropriately defined selectors can be used to differentiate formating.

2.5.14

Fill in the code to attach the style.css file to the *.html file.

```
<link rel="_____" _____="style.css">
```

2.5.15

Of course, in styles, you can distinguish the part of the tags, which will be formatted differently than the rest. ***Classes***, ***inline styles*** or appropriately defined ***selectors*** are used to do so.

Classes in CSS are similar to the formatting styles used in editors.

In the **.css* file, you can define a class for each tag.

```
p.big {font-size:2em; color:red;}
p.small {font-size:0.5em; color:green;}
```

The dot is a very important sign here. After the dot, the ***name of the class*** is given, in the curly braces, the ***formatting*** is given.

To use this formatting in the **.html* file, in the appropriate tag use the class attribute with the class name.

```
<p class="big"> This is a big red text </p>
<p class="small"> This is a small green text </p>
```

2.5.16

In the style_2.css file:

```
address.new1 {color:red;}
p.contact { color:blue;}
```

In the *conference.html* fie:

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Title of the document</title>
<link rel="stylesheet" href="style_2.css">
<head>
<body>
```

```
<p class="contact">
Contact to the person responsible for the organization of the
conference.
</p>
<address class="new1">
anna@abc.edu.en
</address>
<p class="contact">
Contact to the person in charge of contact with the media.
</p>
<address class="new1">
jon.baron@abc.edu.en
</address>
</body>
</html>
```

Each class can be used in the HTML document ***many times***.

2.5.17

Fill in the code of the page so that the paragraph was written in *Tahoma*, font size *30px* and aligned to the *right* margin.

```
<body>
<_____ style="_____:tahoma;_____ :30px;_____ :_____>
A smile is a short curve that straightens everything ;)
</p>
</_____>
```

2.6 Text formating (programs)

2.6.1 Text alignment

In the given paragraph, align the text to the *centre*. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      <p> Web design course
</p>
      </body>
</html>
```

2.6.2 Change font

In this paragraph, change the font typeface to *Calibri*. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
      <p>The Nobel Prize in Literature was awarded to Olga
Tokarczuk (Poland).
</p>
      </body>
</html>
```

2.6.3 Text size

Place a font size 2.0em in the given header tags. In the paragraphs, set the font size to 1.5em. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
<h1>Oscars 2019 </h1>
<p>The best movie: Green Book</p>
<p>Best director: Alfonso Cuarón.</p>

      </body>
</html>
```

2.6.4 Alternative font

In this section of the page, change the font typeface to *Verdana* or, if not available, to another sans-serif font. When entering formatting, you should indicate to your browser that it can insert a *sans-serif* font when it cannot use *Verdana*. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
<p>Green Book tells a story of a little smart guy from the
Bronx who becomes a chauffeur of the extravagant upper class
musician and sets off on a tour for weeks together.
</p>
      </body>
</html>
```

2.6.5 Text alignment

In the given section of the page, align the paragraphs to the right margin and the headings to the middle of the page. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
<h2>Green Book - Oscar 2019</h2>
<p > It tells the story of a little smart guy from the Bronx
who becomes a chauffeur of an extravagant musician from the
upper classes, and together they embark on a multi-week tour.
</p>
<h2>Shape of water - Oscar 2018 </h2>
<p>This is a movie tale for adults. It is about the feeling of
man and its creation brought to a government laboratory.</p>
      </body>
</html>
```

2.6.6 Page background

Change the page code so that the background of the whole page is grey. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body>
<h2 style="text-align:center;">Green Book - Oscar 2019</h2>
<p style="text-align:right;"> It tells the story of a little
smart guy from the Bronx who becomes a chauffeur of an
extravagant musician from the upper classes, and together they
embark on a multi-week tour.
</p>
<h2 style="text-align:center;">Shape of water - Oscar 2018
</h2>
<p style="text-align:right;">This is a movie tale for adults.
It is about the feeling of man and its creation brought to a
government laboratory.</p>
      </body>
</html>
```

2.6.7 Text color

Format the text of the page so that it uses a font t*ahoma*, in the color #0000ff. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - kursy</title>
      </head>
      <body>
<h2 style="text-align:center;">Green Book - Oscar 2019</h2>
<p style="text-align:right;"> It tells the story of a little
smart guy from the Bronx who becomes a chauffeur of an
extravagant musician from the upper classes, and together they
embark on a multi-week tour.
</p>
```

```
<h2 style="text-align:center;">Shape of water - Oscar 2018
</h2>
<p style="text-align:right;">This is a movie tale for adults.
It is about the feeling of man and its creation brought to a
government laboratory.</p>
      </body>
</html>
```

2.6.8 External style - font formatting

In the *style.css* file, enter the selector so that all *<h2>* headers on the page are written in a font size of 1.5, in black (#000000 or #000).

2.6.9 External style - alignment of text

In the *style.css* file, enter the formatting so that all paragraphs are aligned to both margins at the same time and the headers *<h3>, <h4>* are aligned to the centre.

2.6.10 CSS text formating

Change the following code so that the page text was green and the text in *<h2>* and *<h3>* header tags were black. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>
      </head>
      <body >
<h2>Michelangelo</h2>
<p>One of the greatest artists of the Renaissance era, and
also considered to be one of the greatest artists in the
history of the world. </p>
<h3>Painter</h3>
<p>Author of frescoes in the Sistine Chapel, among others.
</p>
<h3>Sculptor </h3>
<p>Among the sculptures most famous are Pietà and David. </p>
<h3 >Architect</h3>
```

```
<p>Of the architectural works, the design of the dome of St.
Peter's Basilica deserves attention.
</p>
      </body>
</html>
```

2.6.11 Mark tag

Change the background colour of the text in the *<mark>* tag to blue (aqua). Use internal CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - courses</title>

      </head>
      <body>
<h2>Michelangelo</h2>
<p>One of the greatest artists of the Renaissance era, and
also considered to be one of the greatest artists in the
history of the world. </p>
<h3>Painter</h3>
<p>Author of frescoes in <mark>the Sistine Chapel</mark>,
among others. </p>
<h3>Sculptor </h3>
<p>Among the sculptures most famous are <mark>Pietà and
David</mark>. </p>
<h3 >Architect</h3>
<p>Of the architectural works, the design of <mark>the dome of
St. Peter's Basilica</mark> deserves attention.</p>
      </body>
</html>
```

2.7 HTML entities

2.7.1

When designing a website, you often encounter the problem of placing characters or special symbols in the content. Among the characters that might be inserted on the page there should be mentioned:

- characters that format the page (e.g., a non-breaking space),

- characters reserved for HTML (e.g., <,>, &),
- signs, mathematical symbols, physical or technical symbols (e.g., a symbol, degree symbol, infinity, arrows),
- other symbols commonly used (eg currency symbols - euro, pound or yen)
- other characters (eg copyright).

Such unusual characters are inserted on the pages using the ***entities***.

An entity can be inserted on the page:

- using its ***name*** preceded by ***&*** sign (eg &lt; means the character <),
- using its ***decimal number*** preceded by both ***&#*** signs (eg &#60; means the character <),

The name of the entity is the easiest to remember, however not all entities have defined names and not all browsers correctly interpret them.

2.7.2

Entering the entity begins the character:

- &
- $
- @
- #

2.7.3

A very useful sign for better formatting of the page is a ***soft connector***.

This sign can be inserted on the page with the help of the entity: ***&shy;*** or ***&#173;***.

It is used to automatically divide long words. By inserting such a sign in the right place in the word, the browser has the option to divide the word, if necessary, and then display "**-**".

If the layout of the text in the paragraph is such that the word is entirely in that row - you can not see that the entity is there.

The second important entity that helps to format is the ***non-breaking space (NON-BREAKING HYPHEN) - &nbsp;***.

This space should be used wherever two words should always be in the same row. Then they are as if they were glued together with the &nbsp;.

2.7.4

In order to make sure that single-letter words (e.g. a) are not at the end of the line, you can use:

- the entity that will insert the optional connector
- an entity that will insert a non-breaking space
- an entity that will insert a soft connector
- an entity that will insert a soft space

2.7.5

To place a fragment of the HTML code on the website, instead of the characters "**<**" and "**>**", enter the ***entities***.

```
<pre>
In the &lt;footer &gt; tag you should place data regarding the
regulations/legal aspects of using the website.
&amp;lt; is an entity for the left angle bracket "<",
and &amp;gt;, is an entity for the right angle bracket ">".
</pre>
```

The browser will display:

In the ***<footer>*** tag you should place data regarding the regulations/legal aspects of using the website.

&lt; is an entity for the left angle bracket "**<**" and ***&gt;*** is an entity for the right angle bracket "**>**".

In the above example the following entities were used:

- ***&lt;*** - inserts sign "<",
- ***&gt;*** - inserts sign ">",
- ***&amp;*** - inserts sign "&".

2.8 Entities (programs)

2.8.1 Entities brackets

Enter the following text in the paragraph below:

The solution to the equation is a set of numbers belonging to the range <-10, 20>.

Use entities:

- &lt; - character <
- &gt; - character >

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - HTML</title>
      </head>
      <body>
<h2>Mathematics 2020</h2>
<p>The solution to the equation is a set of numbers belonging
to the range -10, 20.
</p>
      </body>
</html>
```

⌨ 2.8.2 Entities space

In the *<h2>* tag, put the title "*We invite you to the New Year's Eve party in Krakow!*", in such a way that the words "*in Krakow*" are always placed in the same line. Use an entity - a non-separable space - *&nbsp;*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED - HTML</title>
      </head>
      <body>
       We invite you to the New Year's Eve party in Krakow!
      </body>
</html>
```

Graphics and Audio, Video

Chapter 3

3.1 Graphics

📖 3.1.1

To insert images on pages, use the ***<img>*** tag.

```
<img src="file.ext" alt="description">
```

This tag has two obligatory attributes:

- ***src*** - indicates the file to be displayed on the page,
- ***alt*** - contains the description of the picture.

```
<img src="flowers.png" alt="Photo of flowers">
```

On the webpages, we usually use graphics saved in the following formats: *jpg, gif, png,svg*. These formats are characterized by good quality with a high degree of compression, thanks to which the pages take up less space and load more quickly.

The text placed in the *alt* attribute is read by special programs dedicated to blind people. If the image content is not essential to the page reception, you can leave the *alt* attribute with empty quotes.

📝 3.1.2

Choose the graphic file formats that are recommended for the Internet:

- png
- jpg
- gif
- bmp
- cdr
- swf
- tiff

📖 3.1.3

If the path to the file is not specified in the ***src*** attribute, the browser assumes that the image file and the *.html file are in the same directory.

```
<img src="file.ext" alt="Image description">
```

If the image file is in another directory, you should enter the appropriate path to the file. It should describe the track to go from the file with the *html* extension to the place where the image files are located. For example, when the images are in the directory named "*graphics*":

```
<img src="graphics/file.ext" alt="Image description">
```

If you insert an image placed on another server, the path should contain an absolute address to the file:

```
<img src="http://www.ng/file.ext" alt="image description">
```

While inserting a picture from another server, please be aware of the ***copyright***.

🕮 3.1.4

The ***images*** have the ***size*** that has been saved in the source file by default.

Of course, this can be changed in several ways:

- using ***cascading style sheets***,
- using the ***width*** and ***height*** attributes,
- using ***scripts*** that change the size of the image depending on different parameters.

It is recommended to specify the proper size of the images so that a specific space was reserved while loading the page. If you do not specify the width and height, then the page content could be rearranged.

Example:

```
<img src="new.jpg" alt="new_home" width="200px"
height="150px">
```

HTML5 recommends that the *width* and *height* attributes for the ***<img>*** tag have a value in pixels (***the values of these attributes must not be given in percent***).

📝 3.1.5

Chose all attributes that are required for the ***<img>*** tag.

- align
- width
- src

- alt
- height

3.1.6

Most often image size is being set in the styles, e.g.

```
<img src="new.jpg" alt="new_home" style="width:100%;">
```

The example above shows an image that occupies 100% of the container's width and can be scaled with it. It may happen that the image displayed in the browser will be larger than the one saved in the file. To avoid this situation, it is worth using a different solution:

```
<img src="new.jpg" alt="new_home" style="max-width:100%;
height:auto;">
```

Now, the width of the image will never exceed its original width.

3.1.7

The width and height attribute values, specifying the height and width of the image in the ***<img>*** tag should be given in percentages.

- False
- True

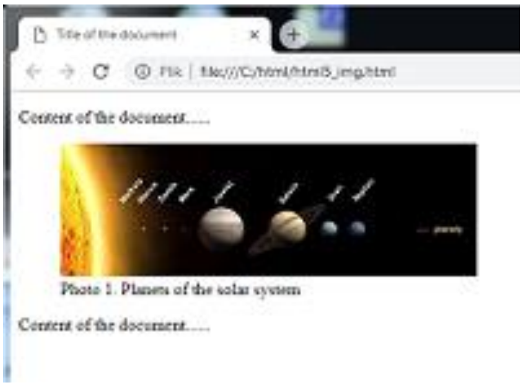
3.1.8

The ***<figure>*** and ***<figcaption>*** tags are closely related.

The first one is conceived as a container for photos, illustrations, diagrams, codes. The second, placed inside the ***<figure>***, includes the signature of the inserted graphic elements.

```
<figure>
<img src="planets.jpg" alt="photo of planets">
<figcaption>
 Photo 1. Planets of the solar system
</figcaption>
</figure>
```

Browsers display the ***<figure>*** tag as a block tag (inserted in a new line) and give it margins. Such a "package" of graphics makes it easy to format.



Content of the document.....

Photo 1. Planets of the solar system

Content of the document.....

3.1.9

Which tag is used to insert the signature under the graphic?

**Remember to use angle brackets in your answer.*

3.1.10

Responsive web design, i.e. adapting to the resolution of the device on which it is displayed is now a must. Preparing a graphic that will change size depending on the container is not always enough.

The ***<picture>*** tag is a great solution when you want to have a flexible image box. It allows you to easily manipulate the size of graphics, insert cropped images or completely different images for selected resolutions.

The *HTML5* specification introduced a new way of putting graphics on a website. Depending on the resolution of the device on which the page is displayed, the browser can decide which image to load.

```
<picture>
<source media="resolution1" srcset="file_1.ext">
<source media="resolution2" srcset="file_1.ext">
<source media="resolution3" srcset="file_2.ext">
<img src="file.ext" alt="description" style="width:auto;">
</picture>
```

The ***<picture>*** tag only "includes" suggestions for files that will be placed on the page at different device resolutions. The web designer decides how many ***<source>***

tags he places here and what resolutions of mobile devices he will take into account.

3.1.11

The following code allows the browser to load one of three files.:

```
<picture>
  <source media="(min-width: 992px)" srcset="file_1.ext">
  <source media="(min-width: 576px)" srcset="file_2.ext">
  <img src="file.ext" alt="description" style="width:auto;">
</picture>
```

In the ***<source>*** tags, specify the selected device resolution parameters and the file that should be displayed.

The browser should interpret the first of the listed ***<source>*** criteria.

In the given example *file_1.ext* will be displayed when the browser window has at least 992px *width* or more, *file_2.ext* when at least 576px and less than 992px.

The last ***<img>*** element will be displayed when the browser preview window is less than 576px or if the browser does not yet support the ***<picture>*** tag.

The *media* attribute can take values similar to a media query in styles.

3.1.12

The *<picture>* tag is used to:

- inserting multiple images at once
- inserting several images with different resolutions
- inserting graphics depending on device resolution
- insert images other than jpg, gif or png

3.1.13

In the ***<picture>*** tag it is important to specify the width of the browser window for which the corresponding image will be displayed.

```
<picture>
```

```
<source media="(min-width: 576px) and (max-width:
768px)" srcset="file_1.ext">
<source media="(min-width: 992px)" srcset="file_2.ext">
<img src="file_3.ext" alt="description" style="width:auto;">
</picture>
```

The value of the ***media*** tag can be defined in a similar way as in the case of media queries in styles (@media - see the CSS course).

Frequently asked questions related to the width, height or orientation (horizontal/vertical) of the device on which the page is displayed, e.g.

```
(min-width: 450px)
(max-width: 650px)
(min-width: 30em)
(orientation: portrait)
(orientation: landscape)
(max-width: 650px) and (orientation: landscape)
```

📝 3.1.14

```
<picture>
<source media="(min-width: 992px)" srcset="tree.jpg">
<source media="(min-width: 576px)" srcset="flower.jpg">
<img src="landscape.jpg" alt="description"
style="width:auto;">
</picture>
```

Which image will be displayed when interpreting the above code, if the minimum width of the device on which the page is displayed is 480px?

- landscape.jpg
- tree.jpg
- flower.jpg

🕮 3.1.15

We attach many files to websites. These are files with fonts, graphics, music, films, etc.

If the attached file and the page are in the same directory, it is enough to provide the file name.

```
<img src="maps.png" alt="maps">
```

If the attached file is in a subdirectory, a relative path must be provided.

```
<img src="images/maps.png" alt="maps">
```

If the attached file is on another server, we provide the full server address and file name.

```
<img src="https://priscilla.fitped.eu/images/fitped.svg"
alt="logo">
```

Sometimes we place many files on the same server. To avoid long URLs, we can insert a <base> tag in the <head> section with a *href* attribute that will specify the basic URL, for all relative addresses in the document.

```
<head>
...
<base href="https://priscilla.fitped.eu/images/">
...
</head>
```

Consequently, after such URL is indicated, instead of

```
<img src="https://priscilla.fitped.eu/images/fitped.svg"
alt="logo">
```

we can use:

```
<img src="fitped.svg" alt="logo">
```

by inserting the same image *fitped.svg* from *https://priscilla.fitped.eu/images/*.

Using the ***<base>*** tag improves the readability of the page. However, please note that there can only be one ***<base>*** tag on the page. All files attached to the page using relative addresses will refer to the specified server.

3.1.16

To attach files from the same server to the page, without providing the full URL, insert the *<head>* tag:

- <base>
- <url>
- <source>

3.1.17

```
<head>
...
<base href="https://priscilla.fitped.eu/images">
...
</head>


If we put the base address in the <head> section, we can refer
to files in directories and subdirectories as follows:

<img src="../index.html" alt="">  <!--
https://priscilla.fitped.eu/-->

<img src="citroen.jpg" alt="">  <!--
https://priscilla.fitped.eu/images/citroen.jpg/-->

<img src="svg/tree.svg" alt="">  <!--
https://priscilla.fitped.eu/images/svg/tree.svg-->
```

3.2 Graphic (programs)

3.2.1 Tag base

Place a tag on the page that defines the basic URL to which all relative addresses of the inserted images will refer. The graphics are located on the server: *https://priscilla.fitped.eu/images/*. Use the ***<base>*** tag.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>Graphics - HTML course</title>
            <style>
                  figure { width:100px; }
                  img {width:100px;}
                  figcaption {background-color:lightgreen;}
            </style>
      </head>
      <body>
      <h2 > Holiday </h2>
      <figure>
            <img src="boats.svg" alt="sea" >
            <figcaption>
            Photo 1. Boats
            </figcaption>
      </figure>
      <figure>
            <img src="sea.svg" alt="sea" >
            <figcaption>
            Photo 2. Sea
            </figcaption>
      </figure>
      <figure>
            <img src="boats.svg" alt="sea" >
            <figcaption>
            Photo 3. Boats
            </figcaption>
      </figure>
      <figure>
            <img src="sea.svg" alt="sea" >
            <figcaption>
            Photo 4. Sea
            </figcaption>
      </figure>
      </body>
</html>
```

3.2.2 Inserting an image

Insert an image file *tree.svg* into the page. In the *alt* attribute write the text "a tree".

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
<h2>The most beautiful trees </h2>
<figure>

</figure>
      </body>
</html>
```

3.2.3 A few images

Insert the image *logo.svg* in each of the paragraphs given below *(alt="logo")*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      <style>
        img{width:100px;}
      </style>
      </head>
      <body>
<p>
Headquarter in Brno
We invite you to work with us!
</p>
<p>
Headquarter in Nitra
We invite you to work with us!
</p>

      </body>
</html>
```

3.2.4 Image size

Change the size of the image below to 300px wide and 200px high. Use the appropriate attributes.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
<h2>The most beautiful trees </h2>
<figure>
<img src="tree.svg" alt="a tree">
</figure>
```

```
      </body>
</html>
```

3.2.5 CSS image size

Change the size of the image below so that its *width* is 50% and the *height* matches proportionally. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
<h2>The most beautiful trees </h2>
<figure>
<img src="tree.svg" alt="a tree">
</figure>
      </body>
</html>
```

3.2.6 Image in a folder

In the directory where the page files are located, there is a "photo" directory. There are files with graphics, including *a photo.svg*. Insert the *photo.svg* image on the page taking into account its location in relation to the HTML file.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
<h2>The most beautiful ... </h2>
<figure>

</figure>
      </body>
</html>
```

3.2.7 Web image

Insert an image file on the website at the address:
https://cdn.pixabay.com/photo/2020/03/02/04/52/people-4894818_960_720.png

Put the text "people" in the *alt* attribute.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
<h2>People</h2>
<figure>

</figure>
      </body>
</html>
```

3.2.8 Image caption and grouping

For an image on a graphic page, insert a tag for the caption and place a tag that groups the image with the caption.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
        <base href = "https://priscilla.fitped.eu/images/">
      </head>
      <body>
<h2>The history of old cars</h2>
<img src="citroen.jpg" alt="citroen">
Photo 1. Citroen
<img src="volkswagen.jpg" alt="volkswagen">
Photo 2. Volkswagen
</body>
</html>
```

3.2.9 Caption background

In the internal CSS style, embedded in the HTML document, format the *figcaption* selector so that the text in the document has a yellow background.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
<style>

</style>
      </head>
      <body>
<h2>The history of old cars</h2>
<figure>
<img src="citroen.jpg" alt="citroen">
<figcaption>
Photo 1. Citroen
</figcaption>
</figure>
<figure>
<img src="volkswagen.jpg" alt="volkswagen">
<figcaption>
Photo 2. Volkswagen
</figcaption>
</figure>

      </body>

</html>
```

3.2.10 Picture tag

The *<picture>* tag allows you to insert different images on a page, depending on the resolution of the device on which it is displayed. Complete the *<picture>* tag record so that with a resolution of 992px and higher the *boats.svg* image is loaded and displayed. For other resolutions and if the browser does not support *<picture>*, the *sea.svg* file should be loaded.

To see how this tag works, change the size of your browser window or display the page on devices of different resolutions.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/" >
      </head>
      <body>
            <h2>Holidays</h2>
            <figure>
          <picture>

          </picture>
          <figcaption>
            Photo 1. Sea
          </figcaption>
            </figure>
      </body>
</html>
```

3.2.11 Picture tag 2

Complete the *<picture>* tag record so that with a resolution of 790px and above, the *big_house.svg* image is loaded and displayed. For other resolutions (max-width: 789px) the *small_house.svg* file should be loaded. Browsers that do not yet interpret this tag should display the file *house.svg*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
       <base href="https://priscilla.fitped.eu/images/" >
      </head>
      <body>
<h2>Holiday</h2>
<figure>
<picture>

</picture>
<figcaption>
Photo 1. House
</figcaption>
</figure>
```

```
      </body>
</html>
```

3.2.12 Picture tag 3

Complete the *<picture>* tag so that at a resolution of 960px and above, the *boats.svg* image is loaded and displayed.

For resolutions above 620px (and below 960px) *house.svg* should be loaded and below 620px *nyt.svg* should be loaded.

However, browsers that do not yet interpret this tag should display *tree.svg*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
<h2>Holiday</h2>
<figure>
<picture>
    <source media="(min-width: 960px)" >
    <source media="(min-width: 620px)" >
    <source media="(max-width: 619px)" >
    <img  alt="file" >
</picture>
<figcaption>
Photo 1. The sea
</figcaption>
</figure>
      </body>
</html>
```

3.3 Audio and video tags

3.3.1

Before the HTML5 standard, to display videos you had to install the appropriate browser plugins. Currently, the browser itself is responsible for the correct display of audio and video files.

The ***<video>*** tag is used to play movies in the browser.

```
<video width="400" height="600" controls>
  <source src="file.mp4" type="video/mp4">
  <source src="file.ogg" type="video/ogg">
</video>
```

Between the opening and closing ***<video>*** tag, place the ***<source>*** tags with the *src* and *type* attributes. These attributes inform the browser about which file and in what format it will be played.

Despite the multiplicity of video file formats, HTML5 supports only three video file formats: *MP4, WebM* and *Ogg*. Unfortunately, not all browsers correctly display popular video file formats. That's why it is good to add video files in different formats. If the browser cannot play the first on the list file, it will go to the next one.

The *WebM* and *Ogg* formats contain free, open-source codecs. The most popular format - mp4 is associated with the H.264 codec, which is patented, licenses are managed by the MPEG LA group.

It is therefore worth placing more than one source file on the page.

3.3.2

Each ***<video>*** tag should contain the *controls* attribute. This attribute has no value, but it allows you to place a toolbar with ***controls on the film to*** control the movie display (eg start, stop, louder etc.). From the user's point of view, this attribute is **necessary**.

Important attributes are *width* and *height*. They determine the size of the window in which the movie will be played. It is better to set these values so that when the page is loaded the browser has reserved appropriate space for the video element.

```
<video width="300" height="200" controls autoplay>
<source src="promotional_video.mp4" type="video/mp4">
<source src="promotional video.ogg" type="video/ogg">
</video>
```

The *autoplay* attribute has no value assigned. It forces the browser to automatically enable video playback as soon as the page is loaded. This attribute is often used on websites that emit advertisements. It should only be used in justified cases.

3.3.3

What attribute you must add to the *<video>* tag in order to display the standard video toolbar?

3.3.4

More and more often we watch movies on mobile devices. When creating a website, we must take into account the speed of page loading. Because movies are usually "heavy" files, it's a good idea to do a smart plan of loading movies on our website.

The *preload* attribute, for the ***<video>*** tag, informs the browser about the way it should load the movie.

It has three possible values:

- *auto* - downloads the movie file as soon as the page is loaded,
- *metadata* - allows you to download only the first frame of the movie, dimensions, playlists etc., the browser should not download the video itself until the user starts it,
- *none* - disables automatic downloading of the file and its data in the background of page loading.

The *poster* attribute allows you to place graphics in the movie's playback location. It should be used by the browser in three situations:

- if the first frame of the movie has not been downloaded yet,
- if the *preload* attribute is set to *none*,
- when the selected video file was not found.

3.3.5

Which attribute of the *<video>* tag allows for automatic movie playback:

3.3.6

Placing the *loop* attribute in the ***<video>*** tag (without any value) causes the film placed on the website is being played ***indefinitely*** until the page is closed. Such an attribute is used in a situation where we want to show some information for a long time, eg. data on historical collections are displayed on monitors in museums, etc.

The attribute *muted* (without any value) is used to ***mute*** the sound of a movie before it is played. The user can restore the appropriate volume using the displayed movie controls.

It is better to avoid an automatic movie playback. Many Internet users abandon websites that instantly after loading the page play the film, associating the content with intrusive ads.

3.3.7

Match the attributes of the *<video>* tag to their meaning.

```
poster _____
autoplay _____
loop _____
preload _____
```

- causes the movie to be played in a loop
- causes the movie to be played back from the end
- the file is played automatically before the page is loaded
- causes loading of the image, that will be placed in the place of the movie
- the browser turns on the file automatically after the page has been loaded
- informs you whether and what part of the video should be loaded at start
- causes the image to be loaded, which will be displayed in the place where the movie is being played in a given situation

3.3.8

The ***<audio>*** tag is used to place music files on websites. The syntax and attributes of this tag are similar to the ***<video>*** tag. Between the ***<audio>*** opening tag and the closing tag, place the ***<source>*** tags to specify the source audio files.

```
<audio controls>
  <source src="file1.ogg" type="audio/ogg">
  <source src="file1.mp3" type="audio/mpeg">
</audio>
```

The HTML5 specification supports three types of sound files: *MP3, Ogg* and *WAV*. As in the case of video files, it is also necessary to make sure that the browsers correctly interpret the given file format.

The *controls* attribute allows you to place the toolbar to handle the file on the page. If we do not add the *controls* attribute to the ***<audio>*** tag, the user will not be able to see where the file is inserted and will not be able to play or stop it.

This tag is also used to play sound effects and music in games.

3.3.9

Select the video file extensions that you can insert into the website.

- .Ogg
- .MP4
- .WebM
- .MP3
- .WAW

3.3.10

The HTML5 standard introduces several possible attributes for the ***<audio>*** tag:

- *src* - indicates the source of the file, i.e. the name of the file to be played (if we decide to provide only one file format),
- *loop* - allows you to perform the file in the loop (playing over and over again),
- *muted* - disables the sound before enabling playback,
- *controls* - places controls on the page to handle the audio file (start, stop, etc.),
- *preload* - informs the browser about the way of loading the file, can take one of the values *none*/ *auto*/ *metadata*.

In the case of placing a large number of audio and video files on the website, it is worth considering the best way of loading files so that the user doesn't have to wait too long to load the page and its elements.

3.3.11

Which attribute of the *<audio>* tag affects how the file is read?

- autoplay
- loop
- preload

3.4 Audio and video (programs)

3.4.1 Video

Fill in the code so that the *GoldenEye2.mp4* video is displayed on the page.

Fill in the tag with the movie control buttons.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
            <h2>Movie</h2>

      </body>
</html>
```

3.4.2 Video - atributes

Change the size of the area where the film is displayed to 400px wide and 320px heigh.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
<h2>Movie</h2>
<video controls >
  <source src="GoldenEye2.mp4" type="video/mp4">
  <source src="GoldenEye2.ogg" type="video/ogg">
</video>
      </body>
</html>
```

3.4.3 Video - formats

Insert the movie *advertising.ogg* or *advertising.mp4* (if the browser does not interpret the *ogg* format).

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
      <h2>Movie</h2>
      <video controls>

      </video>
      </body>
</html>
```

3.4.4 Looped video

Enter the appropriate attribute into the *<video>* tag to display the advertisement in a loop.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
      <h2> Movie</h2>
      <video controls>
        <source src="advertising.ogg" type="video/ogg">
        <source src="advertising.mp4" type="video/mp4">
      </video>
      </body>
</html>
```

3.4.5 Video atributes 2

Add the appropriate attributes to the *<video>* tag inserted on the page to automatically play the video and mute the sound.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
      <h2>Movie</h2>
      <video controls>
        <source src="advertising.ogg" type="video/ogg">
        <source src="advertising.mp4" type="video/mp4">
      </video>
      </body>
</html>
```

3.4.6 Video atribute preload

Add attributes to the *<video>* tag that will allow only the metadata (dimensions, first frame, playlist, etc.) to be loaded while the page is loading.

The browser should not download the file itself until the user starts it.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
      <h2>Movie</h2>
      <video controls>
        <source src="advertising.ogg" type="video/ogg">
        <source src="advertising.mp4" type="video/mp4">
      </video>
      </body>
</html>
```

3.4.7 Audio

Insert the sound file "*cosmos.mp3*" into the page.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
            <h2>Music</h2>
            <audio controls>

        </audio>
      </body>
</html>
```

3.4.8 Audio atributes

Complete parts of the page so that the *<audio>* tag will play the sound file automatically when the page is loaded.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
            <h2>Music</h2>
            <audio controls>
                  <source src="cosmos.mp3" type="audio/mpeg">
            </audio>
      </body>
</html>
```

3.4.9 Audio atributes 2

In the given *<audio>* tag, add the attributes so that the music is played in a loop.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
      <h2>Music</h2>
      <audio controls>
      <source src="cosmos.mp3" type="audio/mpeg">
      </audio>
      </body>
</html>
```

3.5 Iframe

🕮 3.5.1

The ***<iframe>*** tag has been used in HTML for a long time. However, the HTML5 specification changed the way it was used on pages and introduced new attributes.

Inserting this tag on the page creates an additional frame (area on the page) in which another page or other file can be displayed.

This tag can be used in the following situations:

- for embedding media/films ***from other websites***,
- for embedding ***own media*** that stay independent of the basic HTML document,
- for embedding "***applets***" of other websites.

```
<iframe src="file.html" width="500" height="800">
</iframe>
```

The *src* attribute points to a file that should be displayed in a frame. The *width* and *height* attributes define the size of the frame. Frame dimensions can be given in percent or in pixels. Omitting the unit means accepting the default value, that is pixels.

Frames embedded with ***<iframe>*** are often used in online advertising where the content comes from an external file.

3.5.2

The *<iframe>* tag must end with a closing tag (*</iframe>*).

- True
- False

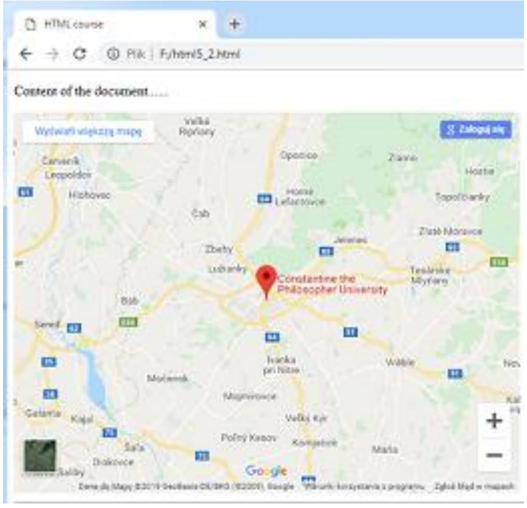
3.5.3

The popular youtube.com service allows you to share your videos on websites.

After clicking on the video sharing link on YouTube it is possible to copy ready HTML code for pasting to your own site. The shared video is ***always*** placed in the ***<iframe>*** tag.

Many websites contain a map that, for example, indicates the location of the company. The map can be downloaded from *maps.google.com*. The shared map is put on the page using the ***<iframe>*** tag, for which the source is a link to the page with the selected map. The map inserted in this way stays interactive.

```
<iframe
src="https://www.google.com/maps/embed?pb=!1m18!1m12!1m3!1d169
882.6219745547!2d17.99175135560867!3d48.294850741286275!2m3!1f
0!2f0!3f0!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x476b3ee43b2f6763
%3A0x75a567f979f5bed3!2sConstantine+the+Philosopher+University
!5e0!3m2!1spl!2spl!4v1550583026451" width="600" height="450"
frameborder="0" style="border:0" allowfullscreen></iframe>
```



Content of the document.....

Please note that from July 2018 Google introduced fees for the use of maps by "large" companies.

3.5.4

Due to the specific nature of the ***<iframe>*** tag, HTML5 introduced a new *sandbox* attribute.

This attribute may introduce additional restrictions for elements placed in the frame.

```
<iframe src="file.htm" sandbox></iframe>
```

This attribute can occur without a specified value - then it introduces a full list of available restrictions, or it may contain a list of predefined values separated by spaces, which remove certain restrictions (the ability to execute scripts, send forms, etc.).

3.5.5

Select the attributes of the *<iframe>* tag.

- src
- width
- sandbox
- height
- type
- align
- href

3.5.6

Fill in the provided code in such a way that in a frame with a width of 400px and a height of 300px, a file *star.html* was placed.

```
<_____ _____="star.html" _____="300" _____="400">
</_____>
```

3.6 Iframe (programs)

3.6.1 Iframe - map

Use the *<iframe>* tag to insert the map saved as a link below.

https://www.google.com/maps/embed?pb=!1m14!1m12!1m3!1d17118422.687034663!2d25.080652302241877!3d51.475998819398725!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f13.1!5e0!3m2!1spl!2spl!4v1578138696000!5m2!1spl!2spl

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h2>Map of Europe</h2>
https://www.google.com/maps/embed?pb=!1m14!1m12!1m3!1d17118422
.687034663!2d25.080652302241877!3d51.475998819398725!2m3!1f0!2
f0!3f0!3m2!1i1024!2i768!4f13.1!5e0!3m2!1spl!2spl!4v15781386960
00!5m2!1spl!2spl
      </body>
</html>
```

3.6.2 Iframe - youtube

In the *<iframe>* tag, insert the video file in the link below.

https://www.youtube.com/embed/w0ffwDYo00Q

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h2>Simon's Cat</h2>
      <iframe ></iframe>
      </body>
</html>
```

3.6.3 Iframe - file

Use the *<iframe>* tag to insert the contents of the **data.html** file into the page. For the defined tag, enter the attributes that will set the frame width to 400px and height to 300px.

```
<!DOCTYPE html>
```

```
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
      </head>
      <body>
            <h2>Data</h2>
            <iframe ></iframe>
      </body>
</html>
```

Lists and Links

Chapter 4

4.1 Lists

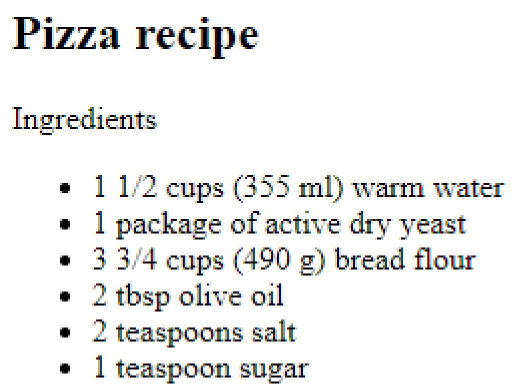
4.1.1

Numbered and unordered (bulleted) lists are special elements of pages, due to their structure. On the one hand, they are used to display data that is a list, on the other hand, it is used to create a ***navigation menu***.

It is worth knowing both applications of lists.

```
<h2>Pizza recipe</h2>
<p>Ingredients</p>
<ul>
<li>1 1/2 cups (355 ml) warm water</li>
<li>1 package of active dry yeast</li>
<li>3 3/4 cups (490 g) bread flour</li>
<li>2 tbsp olive oil </li>
<li>2 teaspoons salt</li>
<li>1 teaspoon sugar</li>
</ul>
```

The ***<ul>*** tag covers the entire list. Each list point is placed in the ***<li>*** tag.



Pizza recipe

Ingredients

- 1 1/2 cups (355 ml) warm water
- 1 package of active dry yeast
- 3 3/4 cups (490 g) bread flour
- 2 tbsp olive oil
- 2 teaspoons salt
- 1 teaspoon sugar

4.1.2

Which of the following examples correctly defines a bulleted list?

- <p>Shopping list</p> <ul> <li>chocolate</li> <li>coffee </li> <li>flowers </li> </ul>
- <ul> <p>Shopping list</p> <li>chocolate</li> <li>coffee </li> <li>flowers </li> </ul>
- <p>Shopping list</p> <ul> <li>chocolate, <li>coffee, <li>flowers. </ul>

4.1.3

The bullet characters in the ***<ul>*** list can be changed only in styles, using the *list-style-type* property.

```
<ul style="list-style-type: square">
<li>Monday</li>
<li>Tuesday</li>
<li>Wednesday</li>
</ul>
```

This property can take one of the following values:

- *disc* - dot (default value),
- *circle* - circle,
- *square* - square,
- *none* - no bullets, empty sign.

A very important value is "*none*". The navigation menu based on the list uses this value.

Using the *list-style-image* property, the list can be scored with an image saved in the file.

4.1.4

Complete the elements of the ***<ul>*** list. Enter items that will remove the bullet character.

```
<ul style="_____:_____">
<li>Friday</li>
<li>Saturday</li>
<li>Sunday</li>
</_____>
```

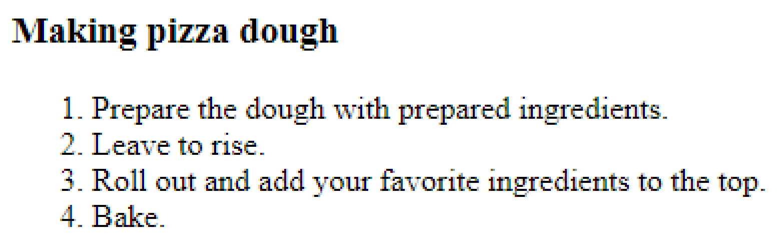
4.1.5

The ordered (numbered) list starts with the ***<ol>*** tag.

The next points of the list are placed in the ***<li>*** tags.

```
<h3>Making pizza dough</h3>
<ol>
<li>Prepare the dough with prepared ingredients.</li>
```

```
<li>Leave to rise.</li>
<li>Roll out and add your favorite ingredients to the
top.</li>
<li>Bake.</li>
</ol>
```



Making pizza dough

1. Prepare the dough with prepared ingredients.
2. Leave to rise.
3. Roll out and add your favorite ingredients to the top.
4. Bake.

4.1.6

HTML5 has restored, removed from the previous version, the *type* and *start* attributes for the ***<ol>*** tag.

```
<p>New Year's resolutions</p>
<ol  start ="2" type="A">
<li>Smile more often.</li>
<li>Stop using plastic bottles and bags.</li>
<li>Eat a veggie in every meal.</li>
</ol>
```

The *start* attribute indicates from which number to start numbering.

The *type* attribute defines how the list elements are numbered.

4.1.7

The *type* attribute can have the following values:

- *type="1"* displays points in the form of numbers 1., 2., 3., 4., ...
- *type="A"* displays points in the form of letters A., B., C., D., ...
- *type="a"* displays points in the form of letters a., b., c., d., ...
- *type="I"* displays points in the form of numbers I., II., III., IV., ...
- *type="i"* displays points in the form of numbers i., ii., iii., iv., ...

Much more different numbering characters can be found in CSS styles. The *list-style-type* attribute allows you to choose from a dozen or so possible values.

The new attribute of the ***<ol>*** tag is *reversed*, which causes the numbering of the list from the largest to the smallest. This attribute has ***no value***.

4.1.8

Which marker begins the creation of a numbered list:

- <ol>
- <ul>
- <li>
- <dl>

4.1.9

A numbered list can use the CSS property: *list-style-type* (like the ***<ul>*** list) and use many different numbering characters.

```
<ol style="list-style-type:lower-alpha">
 <li> Alfa</li>
 <li> Beta</li>
 <li> Gamma</li>
 <li> Delta</li>
</ol>
```

4.1.10

Just like in a text editor, you can embed lists inside your web pages. The internal list ***<ul>*** does not require a comment - it is intuitive. In the ***<ol>*** list, pay attention to the location of the first element ***<li>***. Its ending is only after closing the ***</ ul>*** tag. The ***<ul>*** inner list is inserted between the ***<li>*** a ***</ li>*** tag.

```
<ol>
<li>SPRING
<ul>
<li>March</li>
<li>April</li>
<li>May</li>
</ul>
</li>
<li>SUMMER
<ul>
```

```
<li>June</li>
<li>July</li>
<li>August</li>
</ul>
</li>
</ol>
```

Embedded lists are also used to create a *drop-down menu*.

📝 4.1.11

Indicate which of the given fragments correctly defines the embedded list.

- <ol> <ul> <li>Topic 1 </li> <li>Topic 2 </li> <li>Topic 3 </li> </ul> <li>Topic 4 </li> <li>Topic 5 </li> </ol>
- <ol> <li> <ul> <li>Topic 1 </li> <li>Topic 2 </li> <li>Topic 3 </li> </ul> </li> <li>Topic 4 </li> <li>Topic 5 </li> </ol>

🕮 4.1.12

The navigation *menu* on the page is often created using the following structure:

```
<nav>
<ol>
<li><a href="page1.html">Page1</a></li>
<li><a href="page2.html">Page2</a></li>
<li><a href="page3.html">Page3</a></li>
<li><a href="page4.html">Page4</a></li>
</ol>
</nav>
```

In the CSS course, a way of formatting such a layout of elements will be presented.

🕮 4.1.13

In addition to bulleted and numbered lists, HTML also uses the list of definitions. They are used to define and describe dictionary entries. The ***<dl>*** tag includes a list of definitions, the described password/term is in the ***<dt>*** tag, and the descriptive part is enclosed in the ***<dd>*** tag.

```
<dl>
```

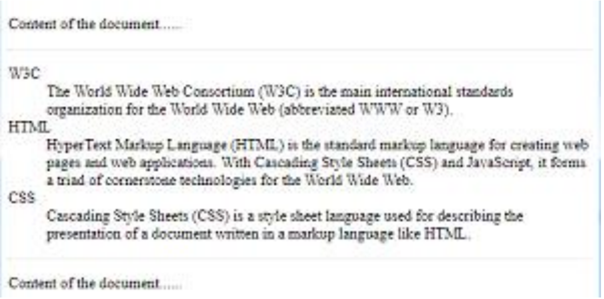
```
<dt>W3C</dt>
<dd>The World Wide Web Consortium (W3C) is the main
international standards organization for the World Wide
Web (abbreviated WWW or W3).</dd>
<dt>HTML</dt>
<dd>HyperText Markup Language (HTML) is the standard markup
language for creating web pages and web applications.
With Cascading Style Sheets (CSS) and JavaScript, it forms a
triad of cornerstone technologies for the World Wide Web.</dd>
<dt>CSS</dt>
<dd>Cascading Style Sheets (CSS) is a style sheet
language used for describing the presentation of a document
written in a markup language like HTML.</dd>
</dl>
```

4.1.14

Elements of the list of definitions are displayed on the page with the appropriate margin of passwords and their description.

The structure of this type of list allows for a convenient way of formatting individual elements.

To format the list of definitions, use CSS.



Content of the document......

W3C

The World Wide Web Consortium (W3C) is the main international standards organization for the World Wide Web (abbreviated WWW or W3).

HTML

HyperText Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web.

CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML.

Content of the document......

4.1.15

To add a description to the password in the definition list, use the tag:

- <dd>
- <dt>
- <p>
- <dl>
- <ol>

4.2 Lists (programs)

4.2.1 Unordered list

From the product names given below, create a bullet list on the page:

- *orange juice,*
- *bananas,*
- *apples,*
- *lemons.*

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
            <h2>Shopping list</h2>
            <li>orange juice</li>
        <li>bananas</li>
        <li>apples</li>
        <li>lemons</li>
      </body>
</html>
```

4.2.2 Ordered list

From the following month names create a numbered list: January, February, March, April, May, June.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h2>Months</h2>
            <li>January</li>
        <li>February</li>
        <li>March</li>
        <li>April</li>
        <li>May</li>
        <li>June</li>
      </body>
</html>
```

4.2.3 Lists - atributes

In the list below, change the bulletin symbol to a square. Use the *type* attribute.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h2>Shopping list</h2>
      <ul>
        <li>orange juice</li>
        <li>bananas</li>
        <li>apples</li>
        <li>lemons</li>
      </ul>
</body>
</html>
```

4.2.4 Lists - style

Using the tag level *style*, change the style of the numbered list to *lower alpha letters*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h2>Months</h2>
      <ol>
        <li>January</li>
        <li>February</li>
        <li>March</li>
        <li>April</li>
        <li>May</li>
        <li>June</li>
      </ol>
</body>
</html>
```

4.2.5 Lists - format

In the given unordered list, change the font size to 1.5em and the typeface to *Tahoma*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h2>Shopping list</h2>
      <ul>
        <li>orange juice</li>
        <li>bananas</li>
        <li>apples</li>
        <li>lemons</li>
      </ul>
      </body>
</html>
```

4.2.6 Embeded list

Correct and complete the code so that the bulletin list is placed inside the numbered list.

1.Spring

- March
- April
- May

2.Summer

- June
- July

- August

```
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <ol>
      <li>March</li>
      <li>April</li>
      <li>May</li>
      <li>June</li>
      <li>July</li>
      <li>Agust</li>
      </ol>
      </body>
</html>
```

4.2.7 Lists - format 2

Format the bulletin list elements so that the spring month names are written in green font. Use inline CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
<ol>
      <li>Spring
      <ul>
            <li>March</li>
            <li>April</li>
            <li>May</li>
      </ul></li>
      <li>Summer
      <ul>
            <li>June</li>
            <li>July</li>
            <li>Agust</li>
      </ul></li>
```

```
</ol>
</body>
</html>
```

4.2.8 Definition lists

For the following section of the page, enter the missing elements of the definition list.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
<h2>International organisations</h2>
<dl>
<dt>UNESCO</dt>
<dd>Education, Science and Culture Organization. Its primary
objective is to promote international cooperation in the field
of culture, art and science, and to encourage respect for
human rights, regardless of skin colour, social status and
religion. </dd>
UNICEF
The Children's Aid Fund was established by the United Nations
General Assembly on 11 December 1946 to provide food and
health care for children and mothers in countries that were
destroyed by World War II. Today UNICEF is a humanitarian and
development organization working for children. From life-
saving vaccinations, through the construction of schools, to
immediate relief in a humanitarian disaster, UNICEF does
everything it can to help children live better.
</dd>
<dt>WHO </dt>The World Health Organisation's task is to work
towards increasing cooperation between countries in the field
of health protection and combating outbreaks of communicable
diseases, as well as setting standards for the composition of
medicines and food quality. The organisation also aims to
provide medical care to the world's population and reduce
infant mortality.
</dd>
</dl>
</body>
```

```
</html>
```

4.2.9 Definition lists - format

In the given list format the definition titles, so that they are aligned to the middle. Use internal CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
        <style>

        </style>
      </head>
      <body>
      <h2>International organisations</h2>
<dl>
<dt>UNESCO </dt>
<dd>Education, Science and Culture Organization. Its primary
objective is to promote international cooperation in the field
of culture, art and science, and to encourage respect for
human rights, regardless of skin colour, social status and
religion. </dd>
<dt>UNICEF</dt>
<dd>The Children's Aid Fund was established by the United
Nations General Assembly on 11 December 1946 to provide food
and health care for children and mothers in countries that
were destroyed by World War II. Today UNICEF is a humanitarian
and development organization working for children. From life-
saving vaccinations, through the construction of schools, to
immediate relief in a humanitarian disaster, UNICEF does
everything it can to help children live better.
</dd>
<dt>WHO </dt>
<dd>The World Health Organisation's task is to work towards
increasing cooperation between countries in the field of
health protection and combating outbreaks of communicable
diseases, as well as setting standards for the composition of
medicines and food quality. The organisation also aims to
provide medical care to the world's population and reduce
infant mortality.
```

```
</dd>
</dl>

      </body>
</html>
```

4.2.10 Definition lists - format 2

Format the list of definitions so that the definition descriptions were green. Use internal CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
<h2>International organisations</h2>
<dl>
<dt>UNESCO </dt>
<dd>Education, Science and Culture Organization. Its primary
objective is to promote international cooperation in the field
of culture, art and science, and to encourage respect for
human rights, regardless of skin colour, social status and
religion. </dd>
<dt>UNICEF</dt>
<dd>The Children's Aid Fund was established by the United
Nations General Assembly on 11 December 1946 to provide food
and health care for children and mothers in countries that
were destroyed by World War II. Today UNICEF is a humanitarian
and development organization working for children. From life-
saving vaccinations, through the construction of schools, to
immediate relief in a humanitarian disaster, UNICEF does
everything it can to help children live better.
</dd>
<dt>WHO </dt>
<dd>The World Health Organisation's task is to work towards
increasing cooperation between countries in the field of
health protection and combating outbreaks of communicable
diseases, as well as setting standards for the composition of
medicines and food quality. The organisation also aims to
provide medical care to the world's population and reduce
infant mortality.
```

```
</dd>
</dl>
      </body>
</html>
```

4.3 Links

4.3.1

Links are one of the most important elements of websites. They make navigation between pages possible.

The link most often redirects the user to another website or to another file.

```
<a href="https://www.nationalgeographic.org/">NATIONAL
GEOGRAPHIC</a>
<a href="https://en.wikipedia.org/wiki/Main_Page" >
Wikipedia</a>
```

The ***<a>*** tag must be obligatory closed with the closing tag ***</a>***. In between, you enter the text that will be placed on the website as the content of the link.

The *href* attribute indicates the address of the page to which the redirection will go. This attribute must appear in every link - ***it is obligatory***.

4.3.2

The ***<a>*** tag can redirect the user to another file of the same site. In this way, the navigation menu is created on the page.

```
<nav>
<a href="page1.html">Link1</a>
<a href="page2.html">Link2</a>
<a href="page3.html">Link3</a>
</nav>
```

The value of the *href* attribute should be the name of the page or label. The given page address is a relative address here (it is assumed that *page1.html* and other pages are in the same directory as the current page).

The ***<nav>*** tag includes a set of navigation links.

4.3.3

The ***<a>*** tag also allows you to place a link to a specific place on the page specified by the *id* (id).

```
<a href="#partone">Part one of the document</a>
```

In this case, the value of the *href* attribute should begin with the character "*#*", which means the reference to the identifier (that is, the name of the specific tag in which the *id="partone"* was placed).

The document should then contain any tag with *id="partone"*, e.g.

```
<h5 id="partone">The first part</h5>
```

Clicking the link takes the user to the part of the page where *<h5 id="partone">* has been placed.

Usually on long pages links to the beginning or end of the page are often placed *(TOP, END)*.

Please note that the *#* sign is added in the link, but not in the ***id*** attribute.

4.3.4

Using an identifier (*id* attribute), we can also define a link that will take the user to a specific place on the new page.

```
<a href="page1.html#chapter2">Charper two</a>
<a href="https://en.wikipedia.org/wiki/.eu#History">History
top level domain for the European Union</a>
```

The value of the *href* attribute should contain the ***url*** address or ***file name***, the ***#*** character and the name of the ***identifier*** to which a specific place in the document has been marked.

Remember that on the selected page, a marker with the appropriate identifier should be placed.

In a similar way, you can save a link to a specific place on the website. In the link below you should pay attention to the # sign, which indicates that the link concerns a ***fixed place*** on the given page.

```
<a
href="https://en.wikipedia.org/wiki/Kraków#Education">Educatio
n in Kraków </a>
```

4.3.5

Enter the value of the *href* attribute to create a paragraph link

```
<p id="new"> Text 1 </p>
<a href="_____">link to the paragraph with id="new" </a>
```

- p.new
- p#new
- page#new
- #new
- .new

4.3.6

Each element placed between ***<a>*** and ***</a>*** tags becomes a link.

In this case, the link is an image.

```
<a href="tatry_big.png" target="_blank">
<img src="tatry_small.png" alt="photo Tatra">
</a>
```

The *target="_ blank"* attribute allows you to open a link in a new window or tab.

This attribute defines the link opening location.

It can also accept other values:

- *_blank* - opens the link in a new window or tab,
- *_self* - opens the link in the same window/tab in which it was clicked (this is the default value),
- *_framename* - opens the linked document in a frame with the given name.

4.3.7

```
<a href="flowers.jpg" target="_blank"><img src="moutain.jpg"
alt="photo moutain" width="100" height="70"> </a>
```

Clicking on the picture link provided above will result in:

- enlarging the image flowers.jpg
- displaying the image mountain.jpg

- displaying the flowers.jpg image in a new browser tab
- displaying the mountain.jpg image in a new browser tab

4.3.8

The *target* attribute indicates the place where the link should be displayed. If a ***<iframe>*** frame is placed on the page, the link may be displayed inside it.

Note the name of the frame and the value of the *target* attribute.

```
<iframe src="mountain1.jpg" name="mountain" width="600"
height="400"></iframe>
```

...

```
<p>
<a href="tatry1_big.png" target="mountain">
<img src="tatry1_small.png" alt="photo Tatra" width="100"
height="70">
</a>
<a href="tatry2_big.png" target="mountain">
<img src="tatry2_small.png" alt="photo Tatra" width="100"
height="70">
</a>
<a href="tatry3_big.png" target="mountain">
<img src="tatry3_small.png" alt="photo Tatra" width="100"
height="70">
</a>
</p>
```

In the above example, clicking on the image *tatry1_small.png*, opens *tatry1_big.png* in the frame (iframe) named "*mountain*".

4.3.9

Which attributes can be used for the ***<a>*** tag?

- type
- src
- target
- title
- href

4.3.10

That the link will be implemented in the box below

```
<iframe src="pine.jpg" name="tree"></iframe>
```

select the value of the *target* attribute for it:

```
<a href="oak_big.jpg" target="_____">OAK</a>
```

- _self
- name_iframe
- pine.jpg
- tree
- _blank

4.3.11

By default, links put on the pages are underlined and have a blue font, while links that have already been visited by the user change the color of the text to purple.

The formatting of this type of element is different than in the case of plain text. The ***dynamics of the element*** is important here. A regular link is displayed differently than visited, indicated by a mouse or an active one. Each "behavior" of the ***link is formatted*** separately. Link formatting can be defined in a style embedded in the ***<head>*** section or in an external CSS attached to HTML.

Changing the formatting of links may look like this:

```
a:link {color: green; background-color: white;}
a:visited {color: brown; background-color: white;}
a:hover {color: white; background-color: green;}
a:active {color: pink; background-color: grey;}
```

Lets shortly see those ***pseudo-classes***:

- ***a:link*** here means the pseudo-class of a regular link,
- ***a:visited*** is the pseudo-class of the visited link,
- ***a:hover*** is a link indicated by the mouse,
- ***a:active*** is the active link (when clicked).

Formatting links will also be discussed in the CSS course.

4.3.12

To format the user-visited link, use the pseudo-classes in styles:

4.4 Links (programs)

4.4.1 Internal service links

In the following section of the page insert links to subpages of the service named: *page.html, page2.html*.

Assume that all pages of the service are placed in the same directory.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>

      </head>
      <body>
      Page 1   <!--(page1.html)-->
      Page 2   <!--(page2.html)-->
      </body>
</html>
```

4.4.2 External links

Place a link to the website at the address: *https://www.oscars.org/* .

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
       Academy of Motion Picture Arts and Sciences
      </body>
</html>
```

4.4.3 ID links

Complete the link entry so that it points to the element indicated by the identifier attribute (*id*) named "*who*".

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
        <style>
        dt{ text-align:center, font-size:14px}
        dd{color:green;}
        </style>
      </head>
      <body>
<h2>International organisations</h2>

      <p>- UNESCO - UNICEF - <a>WHO</a> -</p>

<dl>
<dt>UNESCO </dt>
<dd>Education, Science and Culture Organization. Its primary
objective is to promote international cooperation in the field
of culture, art and science, and to encourage respect for
human rights, regardless of skin colour, social status and
religion. </dd>
<dt>UNICEF</dt>
<dd>The Children's Aid Fund was established by the United
Nations General Assembly on 11 December 1946 to provide food
and health care for children and mothers in countries that
were destroyed by World War II. Today UNICEF is a humanitarian
and development organization working for children. From life-
saving vaccinations, through the construction of schools, to
immediate relief in a humanitarian disaster, UNICEF does
everything it can to help children live better.
</dd>
<dt id="who">WHO </dt>
<dd>The World Health Organisation's task is to work towards
increasing cooperation between countries in the field of
health protection and combating outbreaks of communicable
diseases, as well as setting standards for the composition of
medicines and food quality. The organisation also aims to
provide medical care to the world's population and reduce
infant mortality.
```

```
</dd>
</dl>
</body>
</html>
```

4.4.4 ID links 2

Insert into the appropriate *<dt>* tags the identifiers named *unesco* and *unicef.*

Define appropriate links in the paragraph at the beginning of the document.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
          <style>
          dt{ text-align:center, font-size:14px}
          dd{color:green;}
          </style>
      </head>
      <body>
<h2>International organisations</h2>

      <p>- UNESCO - UNICEF - <a href="who">WHO</a> -</p>

<dl>
<dt>UNESCO </dt>
<dd>Education, Science and Culture Organization. Its primary
objective is to promote international cooperation in the field
of culture, art and science, and to encourage respect for
human rights, regardless of skin colour, social status and
religion. </dd>
<dt>UNICEF</dt>
<dd>The Children's Aid Fund was established by the United
Nations General Assembly on 11 December 1946 to provide food
and health care for children and mothers in countries that
were destroyed by World War II. Today UNICEF is a humanitarian
and development organization working for children. From life-
saving vaccinations, through the construction of schools, to
immediate relief in a humanitarian disaster, UNICEF does
everything it can to help children live better.
</dd>
```

```
<dt id="who">WHO </dt>
<dd>The World Health Organisation's task is to work towards
increasing cooperation between countries in the field of
health protection and combating outbreaks of communicable
diseases, as well as setting standards for the composition of
medicines and food quality. The organisation also aims to
provide medical care to the world's population and reduce
infant mortality.
</dd>
</dl>
</body>
</html>
```

4.4.5 Link in new window

Insert the link that will open the portal: *https://www.smashingmagazine.com/* in a new window.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <a> Smashing Magazine </a>
      <p>Smashing Magazine is one of the most popular web
design magazines in the world.
      </p>

      </body>
</html>
```

4.4.6 Picture link

Use the inserted image to create a link to *https://www.nytimes.com/*.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h2> The New York Times </h2>
      <img src="https://priscilla.fitped.eu/images/nyt.svg"
alt="gazeta">

      </body>
</html>
```

4.4.7 Links - format

Change the typeface of all links to "*Arial*". Use internal CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
       <style>

        </style>
      </head>
      <body>
            <a href=”https://www.nytimes.com/” > The New York
Times </a>
      </body>
</html>
```

4.4.8 Links - format - hover

Change the background color of the link indicated by the mouse to light grey. Use internal CSS style.

```
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
        <style>

        </style>
      </head>
      <body>

      <a href="https://www.nytimes.com/">The New York
Times</a><br>
      <a href="https://www.smashingmagazine.com/">Smashing
Magazine</a><br>
      <a href="https://www.oscars.org/">Academy of Motion
Picture Arts and Sciences</a><br>
      </body>
</html>
```

4.4.9 Links - format - link visited

For links that have not yet been visited, set the background colour to yellow, and for links that have been visited, set the background colour to light green. Use internal CSS style.

```
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
            <style>

        </style>
      </head>
      <body>

      <a href="https://www.nytimes.com/">The New York
Times</a><br>
      <a href="https://www.smashingmagazine.com/">Smashing
Magazine</a><br>
      <a href="https://www.oscars.org/">Academy of Motion
Picture Arts and Sciences </a><br>


</body>
</html>
```

4.4.10 Links - format - underline

For links visited and not yet visited, delete the default underlining. Use internal CSS style.

```
<html lang="en">
      <head>
```

```
            <meta charset="UTF-8">
            <title>HTML</title>
        <style>
            a:link { background-color: yellow; }
            a:visited { background-color: lightgreen;}
        </style>
      </head>
      <body>
      <a href="https://www.nytimes.com/">The New York
Times</a><br>
      <a href="https://www.smashingmagazine.com/">Smashing
Magazine</a><br>
      <a href="https://www.oscars.org/">Academy of Motion
Picture Arts and Sciences</a><br>
</body>
</html>
```

Structural Tags

Chapter 5

5.1 Structural tags

5.1.1

For many years, the basis for the ***structure*** of the website was the ***<div>*** tag, which was given the appropriate identifier or class. Divs included headers, footers, content, galleries, page menus, etc. Div was the most important and most frequently used tag on the pages.

Using Google's tools, over a billion pages have been analyzed to see what is the most frequently defined parts of websites.

On this basis, the HTML5 specification introduced several semantic elements that should be used to build the ***site structure***. These are:

```
<article>
<section>
<header>
<footer>
<nav>
<aside>
```

Each of these tags should be used on the website in a specific situation.

5.1.2

Tag ***<header>*** is usually the first element of the page. It includes the ***title/name of the website, logo***, sometimes the main ***navigation menu***. Here you can place elements related to searching for information on the website.

The ***<header>*** element can be placed on the page many times, but always in a separate section/block. Often, ***<header>*** and ***<footer>*** are placed in the ***<article>*** and ***<section>*** tags.

```
<header>
    <h1>Ornithological society</h1>
    <img src="birds.jpg" alt="birds">
</header>
```

5.1.3

Select the tag in which to place the page header.

- <header>
- <nav>
- <head>
- <top>
- <main>

5.1.4

The ***<footer>*** tag specifies the footer of the page or section. It is usually placed at the bottom of the page or parent element.

In this element, usually, the data for the block in which it was placed is added:

- information about the website owner,
- copyright,
- contact details,
- return to the main page menu,
- links to related documents.

You can put several ***<footer>*** elements in one document.

```
<footer>
<img src="logo.gif" alt="logotype">|
<p>© 2019 The XX Company. All rights reserved.</p>|
Contact:<address>conact@xx.com</address>|
<a href="map.html">Map of the website</a>|
<a href="cookies.html">Cookies</a>
</footer>
```

The contact information inside the ***<footer>*** element should be put inside the ***<address>*** tag.

5.1.5

The ***<footer>*** tag:

- it can be placed on the page many times
- it can be placed on the page only once
- it may contain contact details
- it may contain a <section> tag
- it may contain the <article> tag
- it may contain information about copyright and regulations regarding the use of the page

5.1.6

The ***<nav>*** tag is used to define the main page ***navigation*** menu. It always contains links to other websites. Usually, these links are placed on the page by means of bulleted lists, so that they can be easily formatted.

```
<nav>
  <a href="news.html">News</a> |
  <a href="conf.html">Conferences</a> |
  <a href="public.html">Publications</a> |
  <a href="contact.html">Contact</a>
</nav>
```

Not all links on the page should be inside the ***<nav>*** tag.

Using the ***<nav>*** tag on pages is very important. Screen readers used by blind people can use this element to decide if a page should be rendered.

Texts placed in the links of the main navigation menu are important due to the positioning of the website in search engines.

5.1.7

Which of these tags should be inside the ***<nav>*** tag?

- <a>
- <img>
- <div>
- <ol>

5.1.8

The ***<article>*** tag represents independent content that could exist independently and that could be used repeatedly on other pages.

On websites, this tag should be used for:

- blog post,
- post on the forum,
- article in the newspaper,
- comment.

```
<article>
  <h3> An interview with Dr. Jan Smith</h3>
  <p>Was this surgery difficult? <br>
  The surgery was difficult but the patient survived.<br>
  ...</p>
  </article>
```

Same as with the ***<section>*** tag, here it is also recommended to place inside the ***<article>*** tag header tags (*h2, ..., h6*) to create a page outline element.

You can put a ***<section>*** tag in the ***<article>*** tag and vice versa.

📝 5.1.9

Enter the name of the tag that should be used to place (on the page) the post in the forum.

**Remember to use angle brackets in your answer.*

📖 5.1.10

The ***<section>*** tag includes page fragments with the content related to each other.

Usually, these contents contain header tags (*h2, ..., h6*) that are used to create the page outline.

```
<section>
<h2> News from the country </h2>
<p>Message content...
</p>
</section>
```

You can put other ***<section>*** and ***<article>*** tags in the ***<section>*** tag.

The HTML5 specification has no explicit boundary between the ***<article>*** and ***<section>*** tags.

📝 5.1.11

The ***<section>*** tag should be used to create a container for the entire page, true or false?

- False
- True

5.1.12

Select the tags that can be placed inside the ***<section>***.

- <header>
- <footer>
- <img>
- <div>
- <article>

5.1.13

Almost every page contains content loosely linked to the main part of the page. These are, for example, links to sites with similar topics, advertisements, additions/comments related to the content of the article, etc. These elements should be placed in the ***<aside>*** tag.

The ***<aside>*** tag defines the side panel of the page.

This tag is put on the page as a block marker.

```
<aside>
<div>Advertisement </div>
<div>Comments</div>
<div>Pages on similar topics</div>
<h4>Important!</h4>
<p>Text of an advertisement</p>
</aside>
```

The ***<aside>*** tag can be placed on the page many times.

The header tags placed here will not be visible in the page outline.

5.1.14

Select the sentences that describe the ***<aside>*** tag.

- it contains elements loosely linked to the site

- it should be placed inside the <section> or <article>
- it may appear on the site more than once
- it must contain ads related to the site
- it is used to place the side navigation menu

5.1.15

The ***<main>*** tag surrounds the main page content.

It can be placed on the site more than once.

It should not contain elements such as ***<nav>, <header>, <footer>, <aside>***. It should not be placed inside them.

```
<main>
<h3>Lesson 1</h3>
<section> Content...
</section>
<h3>Lesson 2</h3>
<section>Content...
</section>
<h3>Lesson 3</h3>
<section>Content...
</section>
</main>
```

5.1.16

Is the given part of the HTML5 page correct?

```
<main>
<header>
<h1> Web page of the sports bridge section </h1>
</header>
<article>
<h2> News</h2>
<p>
In 2019, the new section "E-sport: sports bridge" is launched.
All interested students of our university are invited to a
meeting for beginners on Mondays, at 18.00.
</p>
</article>
</main>
```

- No
- Yes

5.2 Structural tags (programs)

5.2.1 Header and footer

Insert the appropriate semantic tags *(<header>, <footer>*) into the corresponding parts of the page.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
      </head>
      <body>

      <h1>Page title</h1>

      <section>
      Page content
      </section>

The copyrights are owned by Jan Kowalski.
This website reflects the author's views only.

      </body>
</html>
```

5.2.2 Navigation

Insert the appropriate semantic tag into the main navigation menu of the page, which has been placed in the ***<header>*** section (remember that this does not always have to be the case).

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
      </head>
      <body>
      <header>
      <h1> Page title </h1>

        <a href="#"> Link1 </a>|
        <a href="#"> Link2 </a>|
        <a href="#"> Link3 </a>|
        <a href="#"> Link4 </a>

      </header>
      <section>
      Page content
      </section>
      <footer>
The copyrights are owned by Jan Kowalski.
This website reflects the author's views only.
      </footer>
      </body>
</html>
```

⌨ 5.2.3 Formating

In the given part of the page, format the document header so that it has a grey background, while the text in the ***<nav>*** tag is aligned to the right. Use internal CSS style.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
        <style>

        </style>
      </head>
      <body>
            <header>
                  <h1>Page title</h1>
                  <nav>
                    <a href="#"> Link1 </a>|
              <a href="#"> Link2 </a>|
              <a href="#"> Link3 </a>|
              <a href="#"> Link4 </a>
                  </nav>
            </header>
            <section>
                   Page content
            </section>
            <footer>
The copyrights are owned by Jan Kowalski.
This website reflects the author's views only.
            </footer>
      </body>
</html>
```

5.2.4 Section

Insert a ***<section>*** tag to a given fragment of the page so that it includes the header with the title of the article, its content and the footer with the author's data.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
      </head>

      <body>
      <header>
      <h1>Page title</h1>
      <nav>
        <a href="#"> Link1 </a>|
        <a href="#"> Link2 </a>|
        <a href="#"> Link3 </a>|
        <a href="#"> Link4 </a>
       </nav>
      </header>

      <header>Article title</header>
      <h2>Summary</h2>
      <p>Content of the summary</p>
      <article>
      <p>Content of the article</p>
      </article>
      <footer>Author: J. Smith</footer>

      <footer>
The copyrights are owned by Jan Kowalski.
```

```
This website reflects the author's views only.
      </footer>
      </body>
</html>
```

5.2.5 Forum and article

Enter the appropriate semantic tag to post in the forum.

Place ***<article>*** tag to cover the entire post.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
        <style>
          article {background-color:lightgreen;}
          h5 {text-align:right;}
          footer {font-size:0.6em;color:blue;}
        </style>
      </head>
      <body>
      <header>
      <h1> Advertisements </h1>
      <nav>
               <a href="#"> Link1 </a>|
               <a href="#"> Link2 </a>|
               <a href="#"> Link3 </a>|
               <a href="#"> Link4 </a>
              </nav>
      </header>
      <h4> How do I log out of the Internet? The wanted
coach.</h4>
      <p> I'm looking for someone to teach me how to rest. I'm
programming in several languages, but I have a problem with
turning off my computer and logging out of the network. I'm
waiting for applications from people with a lot of pedagogical
experience. Generally I am looking for a personal coach.
      </p>
      <h5> <b>Mark</b></h5>
      <footer>
      <p>
The copyrights are owned by Jan Kowalski.
```

```
This website reflects the author's views only.</p>
      </footer>
      </body>
</html>
```

5.2.6 Aside

Place a ***<aside>*** tag on the page to include links related to the advertisement (placed in the ***<p>*** tag). This HTML tag is used to define an area on the page with loosely related content.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
        <style>
          article {background-color:lightgreen;}
          h5 {text-align:right;}
          footer {font-size:0.6em;color:blue;}
        </style>
      </head>
      <body>
        <header>
      <h1> Advertisements </h1>
      <nav>
               <a href="#"> Link1 </a>|
               <a href="#"> Link2 </a>|
               <a href="#"> Link3 </a>|
               <a href="#"> Link4 </a>
              </nav>
      </header>
      <article>
      <h4> How do I log out of the Internet? The wanted
coach.</h4>
      <p>I'm looking for someone to teach me how to rest. I'm
programming in several languages, but I have a problem with
turning off my computer and logging out of the network. I'm
waiting for applications from people with a lot of pedagogical
experience. Generally I am looking for a personal coach.
      </p>
      <h5> <b>Mark</b></h5>
      </article>
```

```
              <p>Ads block <br>
       <a href="#">Thermal pools</a>|
        <a href="#">Climbing walls </a>|
        <a href="#">Amateur chess</a>
        </p>


      <footer>
      <p>
The copyrights are owned by Jan Kowalski.
This website reflects the author's views only.
        </p>
      </footer>
      </body>
</html>
```

5.2.7 ID link - article

Insert an identifier named *art2* in the second ***<article>*** tag and fix the hyperlink so that clicking on *Link2* will move the user to the second article.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
      <style>
          article {background-color:lightgreen;}
          h5 {text-align:right;}
          footer {font-size:0.6em;color:blue;}
        </style>
      </head>
      <body>
      <header>
      <h1> Advertisements </h1>
      <nav>
               <a href="#"> Link1 </a>|
               <a href="#"> Link2 </a>|
               <a href="#"> Link3 </a>|
               <a href="#"> Link4 </a>
              </nav>
      </header>
      <article>
      <h4> How do I log out of the Internet? The wanted
coach.</h4>
      <p>I'm looking for someone to teach me how to rest. I'm
programming in several languages, but I have a problem with
turning off my computer and logging out of the network. I'm
waiting for applications from people with a lot of pedagogical
experience. Generally I am looking for a personal coach.
      </p>
      <h5> <b>Mark</b></h5>
      </article>
<article>
<h4>How to be beautiful, happy and rich? Wanted coach.</h4>
<p>I'm looking for someone who will make me beautiful, happy
and rich again. I am looking forward to receiving applications
from people with extensive pedagogical experience. Generally I
am looking for a coach.
</p>
<h5> <b>Sue</b></h5>
</article>

<aside>
        <p>Ads block <br>
       <a href="#">Thermal pools</a>|
        <a href="#">Climbing walls </a>|
        <a href="#">Amateur chess</a>
        </p>
</aside>
<footer>
      <p>
The copyrights are owned by Jan Kowalski.
This website reflects the author's views only.
        </p>
</footer>
      </body>
</html>
```

5.2.8 Link in footer

In the footer of the page, create a link called "*top*", which allows you to return to the main menu of the page. Use the id in the ***<nav>*** tag.

```
 <!DOCTYPE html>
<html lang="en">
```

```
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
        <style>
          article {background-color:lightgreen;}
          h5 {text-align:right;}
          footer {font-size:0.6em;color:blue;}
        </style>
      </head>
      <body>
        <header>
     <h1> Advertisements </h1>
      <nav>
               <a href="#"> Link1 </a>|
               <a href="#"> Link2 </a>|
               <a href="#"> Link3 </a>|
               <a href="#"> Link4 </a>
              </nav>
      </header>
      <article>
      <h4> How do I log out of the Internet? The wanted
coach.</h4>
      <p>I'm looking for someone to teach me how to rest. I'm
programming in several languages, but I have a problem with
turning off my computer and logging out of the network. I'm
waiting for applications from people with a lot of pedagogical
experience. Generally I am looking for a personal coach.
      </p>
      <h5> <b>Mark</b></h5>
      </article>
      <footer>
      <p>
The copyrights are owned by Jan Kowalski.
This website reflects the author's views only.
        </p>
        </footer>
      </body>
</html>
```

5.2.9 Page structure 1

Complete the given page structure with appropriate tags (***<header>***, ***<nav>***, ***<aside>*** and ***<footer>***).

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>

<style>
header { background-color:lightyellow;}
main { background-color:lightgreen;}
nav { background-color:lightgrey;}
footer { background-color:lightblue;}
aside{ background-color:lightpink;}
</style>
      </head>
      <body>
      PAGE TITLE
      MAIN MENU
      <main>
      PAGE CONTENT
      </main>
      ADS BLOCK
      FOOTER OF THE PAGE
      </body>
</html>
```

5.2.10 Page structure 2

Insert a ***<main>*** tag to cover the major, unique content of the page. This tag must not contain the header and footer of the page or advertising content.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
            <style>
            header { background-color:lightyellow;}
            main { background-color:lightgreen;}
            nav { background-color:lightgrey;}
            footer { background-color:lightblue;}
            aside{ background-color:lightpink;}
            </style>
      </head>
      <body>
```

```
            <header>
            PAGE TITLE
            </header>
             <nav> MAIN MENU </nav>
                  <section>
                        <h3>Sports news</h3>
                        <article>
                        <p>Basketball...</p>
                        </article>
                        <article>
                        <p>Ski jumping...</p>
                        </article>
                  </section>
                  <section>
                        <h3>Politics</h3>
                        <article>
                        <p>The European Parliament...</p>
                        </article>
                        <article>
                        <p>The government in Prague...</p>
                        </article>
                  </section>
            <aside>
            ADS BLOCK
            </aside>
            <footer>
            FOOTER OF THE PAGE
            </footer>
      </body>
</html>
```

5.2.11 Page structure 3

Insert a ***<main>*** tag to cover the major, unique content of the page. This tag must not include the header and footer of the page or advertisements. Pay attention to other uses of ***<section>*** and ***<article>*** tags.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML </title>
            <style>
            header { background-color:lightyellow;}
            main { background-color:lightgreen;}
            nav { background-color:lightgrey;}
            footer { background-color:lightblue;}
            aside{ background-color:lightpink;}
            </style>
      </head>
      <body>
            <header>
            PAGE TITLE
            </header>
             <nav>MAIN MENU</nav>
                         <article>
                         <header><h3>Basketball
2030.</h3></header>
                         <section>Content...</section>
                         <section>Bibliography...</section>
                         <footer>Author: <b>Tomasz
Kowalski</b> <br>
                         All rights reserved.
                         </footer>
                         </article>
                         <article>
                         <header><h3>Miraculous
diets</h3></header>
                         <section>Content...</section>
                         <section>Bibliography...</section>
                         <footer>Author: <b>Joanna
Szczypiorek</b> <br>
                         Wszystkie prawa zastrzeżone.
                         </footer>
                         </article>
            <aside>
            ADS BLOCK
            </aside>
            <footer>
            FOOTER
            </footer>
      </body>
</html>
```

5.3 Other elements block and inline

5.3.1

The ***<div>*** tag was the most important HTML tag a few years ago. Many pages on the web have a structured layout of elements page based on this tag.

HTML5 recommends using new semantic tags on your pages (***<section>, <article>, <nav>***, etc.). However, if none of the tags match the situation or you want to divide the tags inside, you can use the ***<div>*** tag. The ***<div>*** tag therefore became the "last selection" tag.

```
<article>
<h2>Title1</h2>
<div>
<p>The content of the article...</p>
</div>
<h2>Title2</h2>
<div>
 <p>The content of the article...</p>
</div>
<article>
```

This tag is just a "container" for other page elements. It is a block tag, the content contained in it begins with a new line.

5.3.2

The ***<span>*** tag is a universal linear element that can be used wherever the text should change the formatting of some fragment, but without changing the line.

In HTML5, it is recommended to use semantic text markers. However, if none of the new tags matches the situation, you can use the ***<span>*** tag as well:

```
<p>This year, the New Year's Eve party was simply
<span style="color:darkred; font-size:2em">awsome!!!</span>
</p>
```

5.3.3

Indicate tags that are block tags (the element inserted in them is placed in a new row):

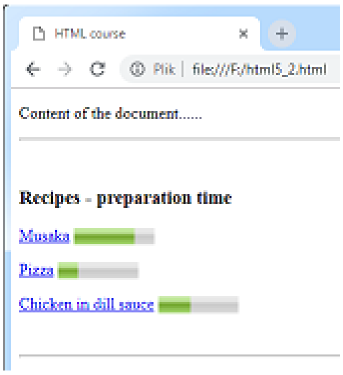
- <div>
- <p>
- <span>
- <section>
- <mark>
- <address>

5.3.4

Wherever a value should be shown graphically, the ***<meter>*** tag should be used.

```
<div>
<h3>Recipes - preparation time</h3>
<p><a href="#">Musaka</a> <meter min="0" max="2"
value="1.5"></p>
<p><a href="#">Pizza</a> <meter min="0" max="2"
value="0.5"></p>
<p><a href="#">Chicken in dill sauce</a> <meter min="0"
max="2" value="0.8"></p>
</div>
```

This tag may have several attributes. Here you can see the *minimum* and *maximum* values that can be shown on the bar and with the *value* attribute, the value that has been selected.



Content of the document......

Recipes - preparation time

Musaka

Pizza

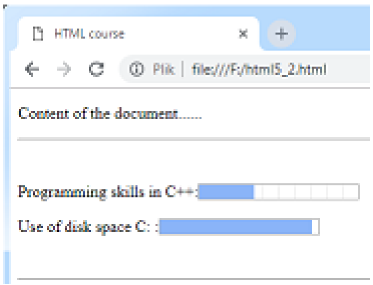
Chicken in dill sauce

5.3.5

The ***<progress>*** tag is used on pages to show the progress of the task.

```
<p>Programming skills in C++: <progress max="100"
value="35"></p>
<p>Use of disk space C: <progress max="100" value="95"></p>
```

Parameters *max* and *value* define the length of the selected part of the progress bar.



Content of the document......

Programming skills in C++:

Use of disk space C: :

5.3.6

The tag that graphically illustrates the progress of the task is:

**Remember to use angle brackets in your answer.*

5.3.7

Complete the code so that the program download progress bar was inserted at 60% and the available disk space at 70%.

```
Progress of the program download: <progress
max="100" _____>60% </progress>
Available disk space: <progress max="100" _____> 70%
</progress>
```

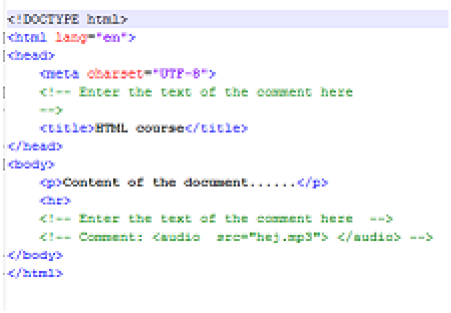
5.3.8

When you study or test the site, ***comments*** are very helpful, which you can insert directly into the page codes.

In the HTML file (unlike in CSS), the comment is ***multiline***.

The data included in the comment characters of the browser does not interpret.

```
<!-- Enter the text of the comment here -->
```



```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <!-- Enter the text of the comment here
    -->
    <title>HTML course</title>
</head>
<body>
    <p>Content of the document......</p>
    <hr>
    <!-- Enter the text of the comment here  -->
    <!-- Comment: <audio  src="hej.mp3"> </audio> -->
</body>
</html>
```

Many editors save the comment text with a ***different color***, to make the page easier to edit.

5.3.9

Enter the comment characters so that the text below is not interpreted by the browser.

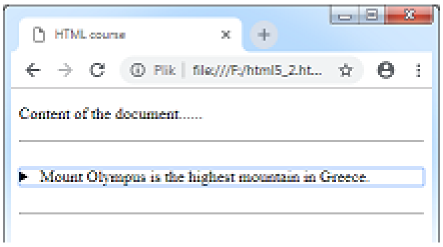
```
<_____ text of the comment
_____>
```

5.3.10

The ***<details>*** tag allows you to display content on the page, part of which the user can view or hide.

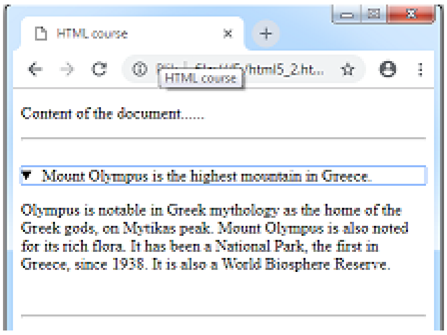
By default, the contents of the ***<summary>*** tag are displayed, after clicking on the arrow, the user can decide if he wants to display/read more. Second click allows to hide the text placed in ***<details>*** but outside ***<summary>***.

```
<details>
<summary>
Mount Olympus is the highest mountain in Greece.
</summary>
<p>Olympus is notable in Greek mythology as the home of the
Greek gods, on Mytikas peak. Mount Olympus is also noted for
its rich flora. It has been a National Park, the first in
Greece, since 1938. It is also a World Biosphere Reserve.
</p>
</details>
```



Content of the document......

▸ Mount Olympus is the highest mountain in Greece.



Content of the document......

▾ Mount Olympus is the highest mountain in Greece.

Olympus is notable in Greek mythology as the home of the Greek gods, on Mytikas peak. Mount Olympus is also noted for its rich flora. It has been a National Park, the first in Greece, since 1938. It is also a World Biosphere Reserve.

This tag is a new element in HTML5.

5.3.11

The ***<details>*** tag should be placed inside ***<summary>***, true or false?

- False
- True

5.4 Other elements block and inline (programs)

5.4.1 Comment

In the given section of the page, comment on the second image with the signature and the grouping tag.

The item placed in the comment will not be displayed in the browser.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
<style>
figcaption {background-color:yellow;}
```

```
</style>
      </head>
      <body>
<h2>The history of old cars</h2>
<figure>
<img src="citroen.jpg" alt="citroen">
<figcaption>
Photo 1. Citroen
</figcaption>
</figure>
<figure>
<img src="volkswagen.jpg" alt="volkswagen">
<figcaption>
Photo 2. Volkswagen
</figcaption>
</figure>
      </body>

</html>
```

5.4.2 Deletion of comments

In this section of the page, delete all comments.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
        <style>
         /*h2 {text-align:center;}
        figcaption {background-color:yellow;}
        img {width:30%; height:auto;}*/
        </style>
      </head>
      <body>
<h2>Old cars history</h2>
<!--<figure>
<img src="citroen.jpg" alt="citroen">
<figcaption>
Photo 1. Citroen
</figcaption>
```

```
</figure>
-->
<figure>
<img src="volkswagen.jpg" alt="volkswagen">
<figcaption>
Photo 2. Volkswagen
</figcaption>
</figure>
      </body>
</html>
```

5.4.3 CSS comments

In the internal CSS style comment the image formatting, so it had no impact on the document.

```
<!DOCTYPE html>
<html lang="en">
      <head>
           <meta charset="UTF-8">
           <title>HTML</title>
     <base href="https://priscilla.fitped.eu/images/">
       <style>
       h2 {text-align:center;}
       figcaption {background-color:yellow;}
       img {width:30%; height:auto;}
       </style>
      </head>
      <body>
<h2 >Old cars history</h2>
<figure>
<img src="citroen.jpg" alt="citroen">
<figcaption>
Photo 1. Citroen
</figcaption>
</figure>
<figure>
<img src="volkswagen.jpg" alt="volkswagen">
<figcaption>
Photo 2. Volkswagen
</figcaption>
</figure>

      </body>
```

```
</html>
```

5.4.4 Body comment

Make a comment on the second paragraph on this page ("*Fasten your seat belts. It's going to be a rough night.*"), so it was not displayed in the browser.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED</title>
      </head>
      <body>

<p>Let the Force be with you!</p>
<p>Fasten your seat belts. It's going to be a rough night.
</p>
<p>If you practiced your mastery of the sword as hard as a
humor, you'd be as good as Master Yoda.</p>
<cite>Star Wars</cite>
      </body>
</html>
```

5.4.5 Head comment

In the given code of the page, make a comment on the link that attaches the external style sheet, so it had no effect on the document.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED</title>
      <link rel="stylesheet" type="css" href="file.css">
      </head>
      <body>
<p>Let the Force be with you!</p>
<p>Fasten your seat belts. It's going to be a rough night.
</p>
<p>If you practiced your mastery of the sword as hard as a
humor, you'd be as good as Master Yoda.</p>
<cite>Star Wars</cite>
```

```
      </body>
</html>
```

5.4.6 Links from comment

In the given code of the page, add tags so that the presented images are links to relevant pages (check the links in the comments).

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      <base href="https://priscilla.fitped.eu/images/">
        <style>
         h2 {text-align:center;}
        figcaption {background-color:yellow;}
        img {width:30%;height:auto;}
        </style>
      </head>
      <body>
<h2>Old cars history</h2>
<figure>
<img src="citroen.jpg" alt="citroen"> <!-- change this image
into link to https://www.groupe-psa.com/en/-->
<figcaption>
Photo 1. Citroen
</figcaption>
</figure>
<figure>
<img src="volkswagen.jpg" alt="volkswagen"> <!-- change this
image into link to https://www.volkswagenag.com/-->

<figcaption>
Photo 2. Volkswagen
</figcaption>
</figure>-->

      </body>
</html>
```

5.4.7 Horizontal rule

On the specified page, insert horizontal lines (*<hr>* tag) after each paragraph.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED</title>
<style>
mark{background-color: aqua;}
</style>
      </head>
      <body>
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>FITPED</title>
<style>
mark{background-color: aqua;}
</style>
      </head>
      <body>
<h2 >Michelangelo</h2>
<p>One of the greatest artists of the Renaissance era, and
also considered one of the most outstanding artists in the
history of the world. </p>


<h3>Painter</h3>
<p>Author of frescoes in <mark>Sistine Chapel</mark>. </p>


<h3 >Sculptor</h3>
<p>Among the sculptures most famous are <mark>Pietà and David
</mark>. </p>


<h3>Architect</h3>
<p>Of the architectural works, the design of the dome
<mark>St. Peter's Basilica</mark> deserves attention.
</p>
```

```
        </body>
</html>

        </body>
</html>
```

5.4.8 Div

In the given section of the page, surround both *<h2>* and *<figure>* tags with the *<div>* tag.

The *<div>* tag is used to combine / group block elements. It does not change their position by itself, but it allows to format multiple tags together.

```
<!DOCTYPE html>
<html lang="en">
        <head>
                <meta charset="UTF-8">
                <title>HTML</title>
        <base href="https://priscilla.fitped.eu/images/">
                <style>
                        div {background-color:grey; }
                        figcaption {background-color:yellow;}
                        h2{text-align:center;}
                </style>

        </head>
        <body>
                <h2>Old cars history</h2>

                <figure>
                <img src="citroen.jpg" alt="citroen">
                <figcaption>
                Photo 1. Citroen
                </figcaption>
                </figure>
                <figure>
                <img src="volkswagen.jpg" alt="volkswagen">
                <figcaption>
                Photo 2. Volkswagen
                </figcaption>
                </figure>

        </body>
```

```
</html>
```

5.4.9 Span

You can use the *<span>* tag to change the formatting of the text in a paragraph.

Use the *<span>* tag to format the Latin name of the bat.

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
        <style>
        span{font-family:impact; text-decoration: underline;}
        </style>
      </head>
      <body>
        <p>The common vampire bat (Desmodus rotundus) is a
small, leaf-nosed bat native to the Americas. It is one of
three extant species of vampire bat, the other two being the
hairy-legged and the white-winged vampire bats.
        </p>

<cite>https://en.wikipedia.org/wiki/Common_vampire_bat</cite>
</body>
</html>
```

5.4.10 Progress

Use the *<progress>* tag to illustrate the results of voting for social party programs.

- Parties of Healthy People 53/100
- Rich Party 71/100
- Party of Happy Men 99/100

```
<!DOCTYPE html>
<html lang="en">
      <head>
            <meta charset="UTF-8">
            <title>HTML</title>
      </head>
      <body>
      <h4>Political party support 2050 (forecast)</h4>
      <p>Parties of Healthy People
      <progress value="53" max="100"></progress>
      </p>
      <p>Rich Party:

      </p>
      <p>Party of Happy Men:

      </p>
</body>
</html>
```

Forms

Chapter 6

6.1 Form introduction

6.1.1

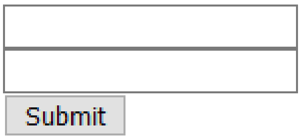
To collect user input you need to define a form. To introduce the form into the webpage you need to use the **<form>** tag.

A form can contain different types of fields, e.g. text fields, checkboxes, buttons. Most of them will be introduced with an **<input>** element.

Locate **<form>** and **<input>** tags in the code below:

```
<form>
      <input type="text" name="firstname"> <br>
      <input type="text" name="lastname">      <br>
      <input type="submit" value="Submit">
</form>
```

The code above will produce the following form:



6.1.2

Which tag defines a form in HTML?

- <form>
- <input>
- <data>
- <collect>
- <submit>

6.1.3

There are several attributes of the **<form>** tag. One of them is **action=""**. The value of this attribute determines a program that will process information gathered in the form after submitting it by clicking the submit button. URI (page or script) provided here can be both an absolute URI or a relative URI.

In HTML5 this attribute is not required. It cannot be empty. If not provided, the form will be processed by the same page or script, which sends it.

Suppose that the form is embedded on the website *www.example.eu/form.php*. Pay attention to the **action=""** attribute in the following forms:

1) Information gathered in this form will be sent to *www.example.eu/form.php*

```
<form>
        <input type="text" name="firstname">  <br>
        <input type="text" name="lastname">   <br>
        <input type="submit" value="Submit">
</form>
```

2) Information gathered in this form will be sent to *www.example.eu/output.php*

```
<form action="output.php">
        <input type="text" name="firstname">  <br>
        <input type="text" name="lastname">   <br>
        <input type="submit" value="Submit">
</form>
```

3) Information gathered in this form will be sent to *www.othersite.eu/output.php*

```
<form action="http://www.othersite.eu/output.php">
        <input type="text" name="firstname">  <br>
        <input type="text" name="lastname">   <br>
        <input type="submit" value="Submit">
</form>
```

6.1.4

Suppose that the following form is embedded on the website *www.dogs.eu/form.php*.

```
<form action="pets.php">
        <input type="text" name="name">  <br>
        <input type="submit" value="Submit">
</form>
```

What address will the form information be sent to?

- www.dogs.eu/form.php
- www.pets.eu/form.php
- www.dogs.eu/pets.php
- www.pets.eu/pets.php

6.1.5

The value of **action=""** attribute can also be **mailto:** with an e-mail address specified. Submitting such a form will invoke mail clients at the user's side. The user will still need to click Send button in the mail client.

Look at this example:

```
<form action="mailto:email@domain.eu">
        <input type="text" name="firstname">  <br>
        <input type="text" name="lastname">   <br>
        <input type="submit" value="Submit">
</form>
```

6.1.6

Complete the following code so that the information is sent to the *poll@fitped.eu* e-mail address:

```
<form action="_____">
        <input type="text" name="topic">  <br>
        <input type="text" name="grade">  <br>
        <input type="submit" value="Submit">
</form>
```

6.1.7

Another optional attribute of **<form>** tag is **method=""**, which specifies method of sending form. The two most popular methods of sending forms are:

- GET,
- POST.

These are HTTP methods that the browser uses to submit the form. If nothing is specified or the attribute has an invalid value, the default method is GET.

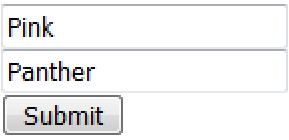
When you choose the GET method (**method="get"**), information is appended to the URI from **action=""** attribute with "?" as the separator. The server receives the resulting URI.

When you choose the POST method (**method="post"**), the server receives information included in the body of the form. The URI from the **action=""** attribute does not change.

Look at the example below:

```
<form action="http://www.othersite.eu/output.php"
method="get">
        <input type="text" name="firstname">  <br>
        <input type="text" name="lastname">   <br>
        <input type="submit" value="Submit">
</form>
```

If you fill the form as follows:



Pink

Panther

and click Submit button, the information will be sent to the following URI:

http://www.othersite.eu/output.php?firstname=Pink&lastname=Panther

Pay attention to values added after the "?" character.

6.1.8

What is the default method for submitting data from the form?

- get
- post
- dialog

6.1.9

Next optional attribute of **<form>** tag is **enctype=""**, which has the following possible values:

- **application/x-www-form-urlencoded**,
- **multipart/form-data**,
- **text/plain**.

These are HTTP methods that the browser uses to submit the form. If nothing is specified or the attribute has an invalid value, the default value is **application/x-www-form-urlencoded**.

6.1.10

Complete the following code so that it is a valid HTML form from which information is sent to *output.php* file by POST method:

```
<_____ _____="output.php" _____="post">
        <input type="text" name="firstname">  <br>
        <input type="text" name="lastname">   <br>
        <input type="submit" value="Submit">
</form>
```

6.1.11

Parts of the form can be included using the **<input>** element.

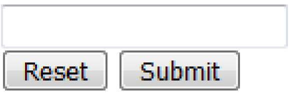
There are several types of **<input>** elements (**<input type="..."**>). Two of them are:

- **reset** – resets inscribed information to default values (**<input type="reset">**),
- **submit** – submits the form (**<input type="submit">**).

Look at the following code:

```
<form method="post">
      <input type="text" name="name">  <br>
      <input type="reset" value="Reset">
      <input type="submit" value="Submit">
</form>
```

Compare it with the screenshot below:



Below the text field there are two buttons: the reset button and submit button.

6.1.12

Other types of ***<input>*** elements are:

- *button* – no default behaviour,
- *checkbox* – single value to be selected and deselected,
- *file* – lets the user select a file (e.g. from the local drive),
- *hidden* – its value is submitted, but it is not displayed to the user,

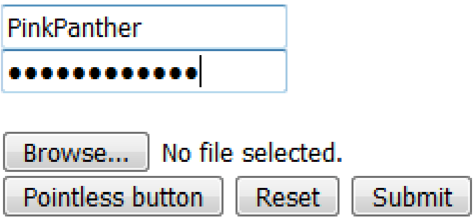
- *image* – submit button in graphical form; attributes *src* and *alt* are required,
- *password* – single-line text field with an obscured value,
- *radio* – allows selecting single value out of multiple choices,
- *text* – single-line text field.

If nothing is specified or the attribute **type=""** has an invalid value, the ***default*** value is **text**.

Look at the following code:

```
<form method="post">
    <input type="text" name="name">  <br>
    <input type="password" name="pass">   <br>
    <input type="hidden" name="day" value="Monday">   <br>
    <input type="file">   <br>
    <input type="button" value="Pointless button">
    <input type="reset" value="Reset">
    <input type="submit" value="Submit">
</form>
```

Compare it with the screenshot below:


PinkPanther

●●●●●●●●●●●●●

No file selected.

After filling in the two first fields, you see that the text field is displayed normally, while the *password* field's value is hidden. The third field is not visible. The fourth field allows a user to select a file. At the end there are three buttons: with no default action, *reset* button and *submit* button.

6.1.13

Which of the following *<input>* types are correct in HTML5?

- text
- password
- submit
- file
- hidden

- name
- value
- browse
- data

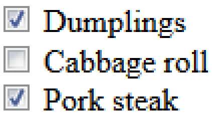
6.1.14

Lets look closer to two types of ***<input>*** elements:

- *checkbox* – single value to be selected and deselected,
- *radio* – allows selecting a single value out of multiple choices.

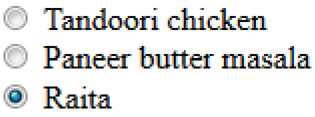
Compare the codes below with corresponding screenshots:

```
<form>
      <input type="checkbox" name="dumplings" checked>
      <label for="dumplings">Dumplings</label>    <br>
      <input type="checkbox" name="roll">
      <label for="roll">Cabbage roll</label>    <br>
      <input type="checkbox" name="steak" checked>
      <label for="steak">Pork steak</label>
</form>
```



☑ Dumplings
□ Cabbage roll
☑ Pork steak

```
<form>
      <input type="radio" name="indian" value="tandoori">
      <label for="tandoori">Tandoori chicken</label>    <br>
      <input type="radio" name="indian" value="paneer">
      <label for="paneer">Paneer butter masala</label>    <br>
      <input type="radio" name="indian" value="raita" checked>
      <label for="raita">Raita</label>    <br>
</form>
```



○ Tandoori chicken
○ Paneer butter masala
● Raita

As it can be seen, the ***<input>*** elements with the *checked* attributes are checked by default. To group radio elements together use the same name for them. The selected value will be sent from the *value* attribute.

The list of input types is longer. It contains also: *color, date, datetime, datetime-local, email, month, number, range, search, tel, time, url, week.*

6.1.15

Complete the following code so that:

- "Lasagne" is checked by default,
- "Pizza" and "Spaghetti" are in the same group as "Lasagne".

```
<form>
      <input type="radio" name="italian" value="lasagne"
_____>
      <label for="lasagne">Lasagne</label>    <br>
      <input type="_____" name="italian" value="pizza">
      <label for="pizza">Pizza</label>    <br>
      <input type="radio" name="_____" value="spaghetti">
      <label for="spaghetti">Spaghetti bolognese
</label>    <br>
</form>
```

Form Elements and Attributes

Chapter 7

7.1 Form elements and attributes

7.1.1

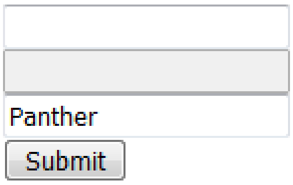
Every ***<input>*** element can have several different attributes, which are e.g.:

- *disabled* – field not available for use,
- *name* – identifies submitted information,
- *readonly* – field's value cannot be edited,
- *required* – field is required to have a value before form submission,
- *type* – indicates which type this element represents,
- *value* – current value (e.g. provided by the user).

See the example below:

```
<form>
        <input type="text" name="firstname" required>  <br>
        <input type="text" name="secondname" disabled>   <br>
        <input type="text" name="lastname" value="Panther"
readonly>   <br>
        <input type="submit" value="Submit">
</form>
```

It will produce the following form:



Panther

The first field is required. The form cannot be submitted if this field is empty. The second field is disabled and cannot be used. Also, it will not be sent to the server after submitting the form. The third field is read-only, so its value cannot be changed.

7.1.2

Which attribute determines that the value of an *<input>* element cannot be changed but it will be sent after submitting the form?

- readonly
- disabled
- reset
- required

- unchanged

7.1.3

It is possible to make a label associated with a form field. It can be done using ***<label>*** tag. Labels make it easier to navigate within the form.

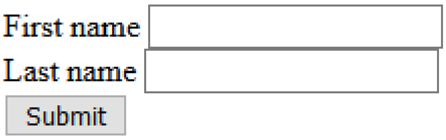
A ***<label>*** tag has two attributes:

- *for="id"* – indicates the unique identifier of the form field to which the label is associated; this attribute is obligatory;
- *accesskey="x"* – indicates the key, which pressing (together with the modifier key appropriate for a given browser) will activate the field associated with the label; this attribute is optional.

See the example below:

```
<form>
   <label for="firstname">First name</label>    <input
type="text" name="firstname">  <br>
   <label for="lastname">Last name</label>    <input
type="text" name="lastname">   <br>
   <input type="submit" value="Submit" accesskey="s">
</form>
```

Compare it with the following screenshot:



After pressing "s" key (together with the modifier key) the submit button will be automatically pressed.

7.1.4

To create a button use ***<button>*** tag. The difference between ***<button>*** and ***<input type="button">*** is that inside the ***<button>*** element you can put a text or an image. It has optional attributes *disabled*, *name*, *type* and *value* which behaviour is the same as for ***<input>*** tag. Possible type values are:

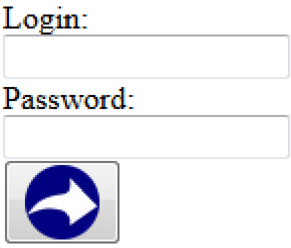
- *button* – no default behaviour,

- *reset* – resets inscribed information to default values,
- *submit* – submits the form.

If nothing is specified or the attribute has an invalid value, the default value is ***submit***.

See the following code and corresponding screenshot:

```
<form method="post">
    <label for="name">Login:</label>    <br>
    <input type="text" name="name">  <br>
    <label for="pass">Password:</label>  <br>
    <input type="password" name="pass">   <br>
    <button type="submit"><img src="image.png"></button>
</form>
```



7.1.5

What is the default behaviour of the following button?

```
<button type="button"><img src="image.png"></button>
```

- resetting the form
- submitting the form
- no default behaviour

7.1.6

A ***<textarea>*** tag creates a text field for entering larger parts of the text.

It has optional attributes:

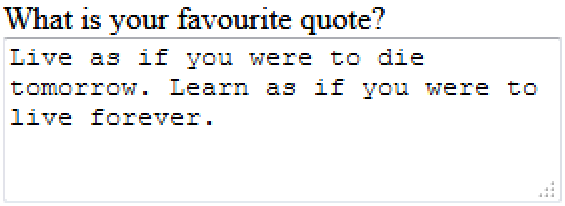
- *cols="w"* – the width **w** of the field in characters,
- *rows="h"* – the height **h** of the field in characters.

It is recommended to specify the size of the field using CSS, instead of *cols* and *rows* attributes.

Also, it has optional attributes: *disabled*, *name* and *readonly*, which behaviour is the same as for **<input>** tag.

See the code below and compare it with the screenshot:

```
<form>
    <label for="quote">What is your favourite quote?</label>
<br>
    <textarea id="quote" name="quote" cols="32" rows="4">Live
as if you were to die tomorrow. Learn as if you were to live
forever.</textarea>
</form>
```



What is your favourite quote?

```
Live as if you were to die
tomorrow. Learn as if you were to
live forever.
```

7.1.7

Complete the following code so that:

- the label is associated with the text field,
- the element present in the form is a text field,
- the element has a width of 64 characters,
- the element has a height of 16 characters.

```
<form>
    <label for="_____">Where are you going to go on
holidays?</label> <br>
    <_____id="holidays" name="holidays" _____="64"
rows="_____"></textarea>
</form>
```

7.1.8

A ***<select>*** tag creates a drop-down or scrolling list box. The elements of the list are contained in the ***<option>*** child elements.

A ***<select>*** tag has optional attributes:

- *disabled* – field not available for use,
- *multiple* – when present, a user can select multiple options; otherwise, it is possible to select only one option,
- *name* – identifies submitted information,
- *size* – determines the number of displayed list items.

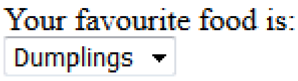
An ***<option>*** tag has optional attributes:

- *disabled* – field not available for use,
- *selected* – value will be selected initially,
- *value* – determines the value assigned to the list element when the option is selected.

Look at the code:

```
<form>
<label for="food">Your favourite food is:</label> <br>
<select name="food">
  <option value="pizza">Pizza</option>
  <option value="spaghetti">Spaghetti</option>
  <option value="dumplings" selected>Dumplings</option>
</select>
</form>
```

The third value will be selected initially:



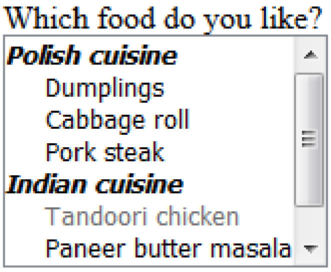
Your favourite food is:

To group options on the list use ***<optgroup>*** tag. The group label in ***label=""*** attribute cannot be selected by the user, it is only for information purposes.

See the code below:

```
<form>
<label for="food">Which food do you like?</label> <br>
  <select name="food" multiple size="7">
    <optgroup label="Polish cuisine">
      <option value="dumplings">Dumplings</option>
      <option value="roll">Cabbage roll</option>
      <option value="steak">Pork steak</option>
    </optgroup>
    <optgroup label="Indian cuisine">
      <option value="tandoori" disabled>Tandoori
chicken</option>
      <option value="paneer">Paneer butter masala</option>
      <option value="raita">Raita</option>
    </optgroup>
  </select>
</form>
```

The corresponding form will look as follows:



Which food do you like?

Polish cuisine
- Dumplings
- Cabbage roll
- Pork steak

Indian cuisine
- Tandoori chicken
- Paneer butter masala

The first option from Indian cuisine is disabled and it cannot be selected by the user.

7.1.9

What is the correct order of nesting the following tags?

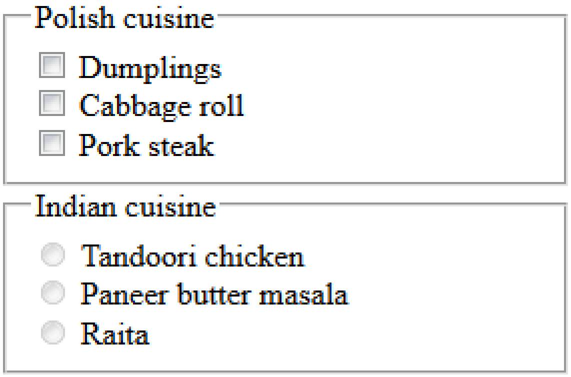
```
1 ______
2 ______
3 ______
4 ______
```

- <optgroup>
- <select>
- <form>
- <option>

7.1.10

To group logically and visually a group of form elements corresponding to related information use ***<fieldset>*** tag. To label the group use ***<legend>*** tag. You can disable the whole group of elements as can be seen in the code and screenshot below:

```
<form>
    <fieldset>
    <legend>Polish cuisine</legend>
      <input type="checkbox" name="dumplings">
      <label for="dumplings">Dumplings</label>    <br>
      <input type="checkbox" name="roll">
      <label for="roll">Cabbage roll</label>    <br>
      <input type="checkbox" name="steak">
      <label for="steak">Pork steak</label>    <br>
    </fieldset>
    <fieldset disabled>
    <legend>Indian cuisine</legend>
      <input type="radio" name="indian" value="tandoori">
      <label for="tandoori">Tandoori chicken</label>    <br>
      <input type="radio" name="indian" value="paneer">
      <label for="paneer">Paneer butter masala</label>    <br>
      <input type="radio" name="indian" value="raita">
      <label for="raita">Raita</label>    <br>
    </fieldset>
</form>
```



Polish cuisine

□ Dumplings
□ Cabbage roll
□ Pork steak

Indian cuisine

○ Tandoori chicken
○ Paneer butter masala
○ Raita

7.1.11

Which tag does label the group of elements in *<fieldset>*?

- <label>

- <legend>
- <optgroup>
- <group>

7.1.12

It is possible to process the form without site reloading. The basics for this are:

- **oninput** – property that processes input events on the ***<input>***, ***<select>***, and ***<textarea>*** elements,
- **e.value** – a string attribute that allows data values to work with an element **e**,
- **e.valueAsNumber** – returns the value of the element.

7.1.13

Adjust values with a corresponding description:

```
oninput _____
e.value _____
e.valueAsNumber _____
```

- returns the value of the element
- allows data values to work with an element
- property that processes input events

7.1.14

A site can inject some results of calculation or user action into a container made with ***<output>*** tag. The ***<output>*** tag can be a descendant of the ***<form>*** tag or it can be outside any ***<form>*** tag.

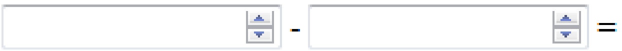
There are three attributes which this tag can have:

- *for* – space-separated list of elements' **id**s included in the calculation,
- *form* – if the ***<output>*** tag is outside the form, this attribute associates it with some form from the same document by this form's **id**,
- *name* – element's name which is used to identify the element while calculating.

Analyse the following code:

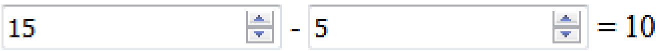
```
<form oninput="result.value = x.valueAsNumber -
y.valueAsNumber">
   <input name="x" type="number"> -
   <input name="y" type="number"> =
   <output name="result" for="x y"></output>
</form>
```

It will produce the following form:



- =

After entering numbers 15 and 5 in the fields, the result is displayed automatically:



15 - 5 = 10

7.1.15

The ***<output>*** tag have to be nested in the ***<form>*** tag.

- False
- True

Form Validation

Chapter 8

8.1 Form validation

8.1.1

Some ***<input>*** types in HTML5 are predefined to check if the value that is entered is of the correct format. One of these types is *email*. A form containing such a field will be sent only if the *email* field is empty or it contains a properly-formed e-mail address (*username@domain.tld*).

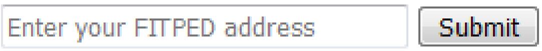
The ***<input type="email">*** has additional attributes:

- *maxlength* – maximum number of characters entered in the field,
- *minlength* – minimum number of characters entered in the field,
- *multiple* – if specified, it is possible to enter multiple, comma-separated, e-mail addresses,
- *pattern* – additional requirements that must be met by the entry, described as a regular expression,
- *placeholder* – a hint displayed for the user if nothing is entered in the field.

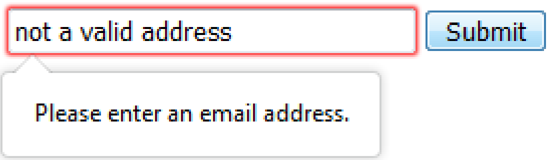
Look at the code below:

```
<form>
    <input type="email" name="email"
        placeholder="Enter your FITPED address"
        pattern=".+@fitped.eu" size="30">
    <input type="submit" value="Submit">
</form>
```

This will display the following form:


Enter your FITPED address

When the user enters something not matching the regular expression, he or she will see a hint from a browser and the form won't be processed:


not a valid address

Please enter an email address.

Other types that help to validate the user input are e.g.:

- *date* – validation if the entry is a date, a special date picker interface can be used,
- *tel* – validation if the entry is a telephone number, the valid format has to be entered with *pattern* attribute,

- *url* – validation if the entry is a URL.

Also, you can use a CSS pseudo-class for valid (**:valid**) and invalid (**:invalid**) elements to tell the user which fields should be corrected.

If the browser doesn’t support these types, the field will fall back to an ***<input type="text">***.

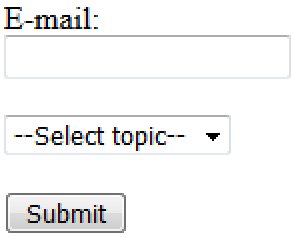
8.1.2

Form validation can also be done using *JavaScript*.

The below *JavaScript* function runs on every form submission due to *onsubmit="return validate()"* attribute in ***<form>*** tag:

```
<form name="newsletter" onsubmit="return validate()">
    <label for="email">E-mail:</label>    <br>
    <input type="text" name="email">    <br><br>
    <select name="topic">
        <option value="">--Select topic--</option>
        <option>Algorithms</option>
        <option>Databases</option>
        <option>Programming</option>
    </select>    <br><br>
    <button>Submit</button>
</form>
```

This is the appearance of the form:



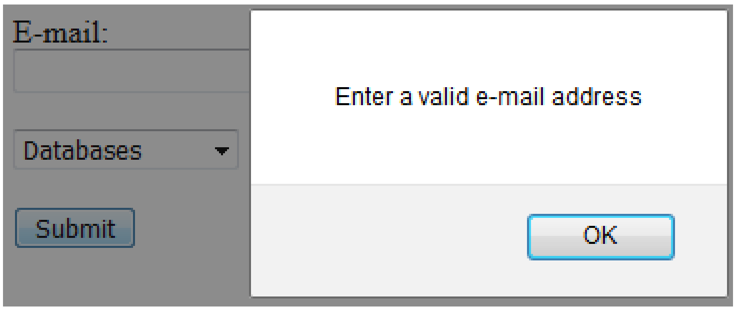
JavaScript validation function looks as follows:

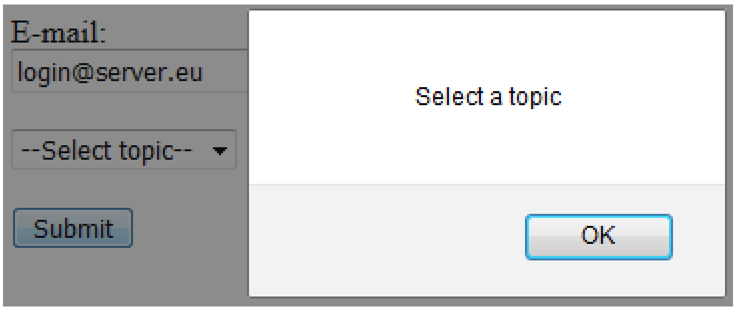
```
<script>
function validate()   {
    // pick DOM nodes
    var email = document.forms["newsletter"]["email"];
    var topic =  document.forms["newsletter"]["topic"];
    // check if e-mail field includes "@" character
    if (email.value.indexOf("@", 0) < 0)    {
        alert("Enter a valid e-mail address");
        email.focus();
        return false;
    }

    // check if anything is selected from topic options
    if (topic.selectedIndex < 1)    {
        alert("Select a topic");
        topic.focus();
        return false;
    }

    return true;
}
</script>
```

When any of the validation tests fail there appears a pop-up with an alert that was invalid in the form:


Enter a valid e-mail address


login@server.eu

Select a topic

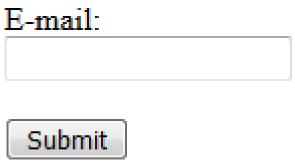
📖 8.1.3

Validation can be made using the constraint validation API.
Form’s *novalidate* attribute turns off the browser’s default validation. The ***<p class="error">*** tag is prepared for showing possible mistakes in filling the form.

This is an HTML code:

```
<form novalidate>
    <label for="email">E-mail:</label>    <br>
    <input type="email" id="email" name="email">    <br><br>
    <button>Submit</button>
</form>
<p class="error"></p>
```

It will produce the following form:

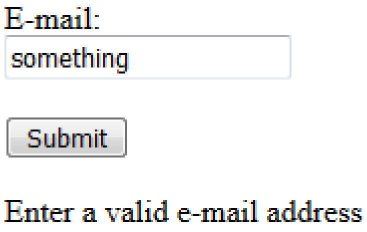


The validation is handled by the following *JavaScript* code:

```
<script>
// pick DOM nodes
var form  = document.getElementsByTagName('form')[0];
var email = document.getElementById('email');
var error = document.querySelector('.error');

form.addEventListener("submit", function (event) {
  // check if e-mail field is valid
  if (!email.validity.valid) {
    error.innerHTML = "Enter a valid e-mail address";
    event.preventDefault();
  }
}, false);
</script>
```

When a validation test fails there appears an error message below the form:


E-mail:
something

Enter a valid e-mail address

Aside from client-side validation always remember about server-side validation as malicious users can alter the network request.

8.1.4

How can a client-side validation be made in HTML form?

- predefined types of <form> element
- predefined types of <input> element
- JavaScript
- Java
- built-in API
- PHP sanitization filters

8.1.5

Even if a form has a client-side validation built-in, server-side validation is still necessary.

- True
- False

Tables

Chapter 9

9.1 Tables

📖 9.1.1

Tables in HTML can be inserted with ***<table>*** tag. Rows of the tables are defined with ***<tr>*** tags (*tr* stands for *table row*). Every cell is surrounded by ***<td>*** tag (*td* stands for *table data*).

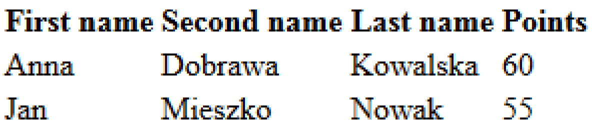
Cells in the table header are defined with ***<th>*** tag (*th* stands for *table header*). These cells are bold and centred by default. You can modify their formatting using CSS.

Number of ***<td>*** or ***<th>*** cells should be equal in every row.

The basic table structure looks as follows:

```
<table>
    <tr>
        <th>First name</th>
        <th>Second name</th>
        <th>Last name</th>
        <th>Points</th>
    </tr>
    <tr>
        <td>Anna</td>
        <td>Dobrawa</td>
        <td>Kowalska</td>
        <td>60</td>
    </tr>
    <tr>
        <td>Jan</td>
        <td>Mieszko</td>
        <td>Nowak</td>
        <td>55</td>
    </tr>
</table>
```

The code above will produce the following table:



First name	Second name	Last name	Points
Anna	Dobrawa	Kowalska	60
Jan	Mieszko	Nowak	55

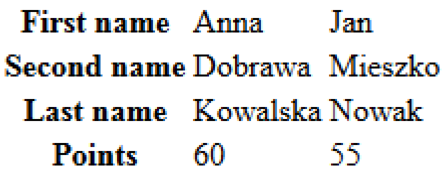
9.1.2

It is also possible to place header cells in the first column rather than in the first row. This requires putting a ***<th>*** cell as the first cell in every row.

The code in this situation looks as follows:

```
<table>
    <tr>
        <th>First name</th>
        <td>Anna</td>
        <td>Jan</td>
    </tr>
    <tr>
        <th>Second name</th>
        <td>Dobrawa</td>
        <td>Mieszko</td>
    </tr>
    <tr>
        <th>Last name</th>
        <td>Kowalska</td>
        <td>Nowak</td>
    </tr>
    <tr>
        <th>Points</th>
        <td>60</td>
        <td>55</td>
    </tr>
</table>
```

The code above will produce the following table:



First name	Anna	Jan
Second name	Dobrawa	Mieszko
Last name	Kowalska	Nowak
Points	60	55

9.1.3

The *<th>* cells are by default:

- centered
- bold

- italic
- underlined
- left-aligned
- right-aligned

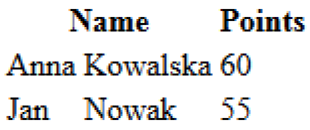
9.1.4

Selected cells can be multicolumn. To achieve this use the *colspan="x"* attribute (*colspan* stands for *column span*). The value of this attribute defines the number of merged cells.

Pay attention to ***<th colspan="2">*** in the first row:

```
<table>
    <tr>
        <th colspan="2">Name</th>
        <th>Points</th>
    </tr>
    <tr>
        <td>Anna</td>
        <td>Kowalska</td>
        <td>60</td>
    </tr>
    <tr>
        <td>Jan</td>
        <td>Nowak</td>
        <td>55</td>
    </tr>
</table>
```

The code above will produce the following table:



Name		Points
Anna	Kowalska	60
Jan	Nowak	55

9.1.5

Which tag defines table header cells?

- <table>

- <tr>
- <th>
- <td>
- <header>

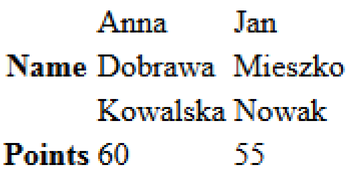
9.1.6

It is also possible to make multirows from the specified number of cells. Use the *rowspan="y"* attribute to achieve this (*rowspan* stands for... *row span*). The value of this attribute defines the number of merged cells.

Pay attention to ***<th rowspan="3">*** in the first row:

```
<table>
    <tr>
        <th rowspan="3">Name</th>
        <td>Anna</td>
        <td>Jan</td>
    </tr>
    <tr>
        <td>Dobrawa</td>
        <td>Mieszko</td>
    </tr>
    <tr>
        <td>Kowalska</td>
        <td>Nowak</td>
    </tr>
    <tr>
        <th>Points</th>
        <td>60</td>
        <td>55</td>
    </tr>
</table>
```

The code above will produce the following table:



Name	Anna	Jan
	Dobrawa	Mieszko
	Kowalska	Nowak
Points	60	55

9.1.7

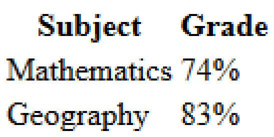
What attribute allows merging cells in columns?

9.1.8

Add table headers in the first row. They should have values "*Subject*" and "*Grade*".

```
<table>
    ______
      ______
      ______
    ______
    <tr>
      <td>Mathematics</td>
      <td>74%</td>
    </tr>
    <tr>
      <td>Geography</td>
      <td>83%</td>
    </tr>
</table>
```

The code above should produce the following table:



Subject	Grade
Mathematics	74%
Geography	83%

9.1.9

The ***<caption>*** tag defines the title of a table. It indicates the content of the table. It is optional and placed within the ***<table>*** element, before row definitions.

There are some strict rules that apply to the ***<caption>*** element:

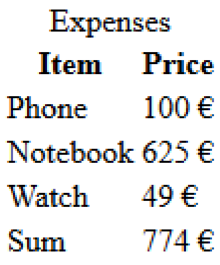
- it must be inserted immediately after the ***<table>*** tag,
- there can be only one ***<caption>*** per table.

The ***<caption>*** is centred above a table by default. You can modify its formatting using CSS.

See the example code below:

```
<table>
        <caption>Expenses</caption>
        <tr>
                <th>Item</th>
                <th>Price</th>
        </tr>
        <tr>
                <td>Phone</td>
                <td>100 €</td>
        </tr>
        <tr>
                <td>Notebook</td>
                <td>625 €</td>
        </tr>
        <tr>
                <td>Watch</td>
                <td>49 €</td>
        </tr>
        <tr>
                <td>Sum</td>
                <td>774 €</td>
        </tr>
</table>
```

The code above will produce the following table:



Expenses

Item	Price
Phone	100 €
Notebook	625 €
Watch	49 €
Sum	774 €

9.1.10

The ***<col>*** tag allows you to specify the style of table columns without having to repeat the declaration in each ***<td>*** element that composes the given column. It has an optional attribute ***span="n"***, which sets the number of columns to which the settings specified in the ***<col>*** element are applied.

Remember:

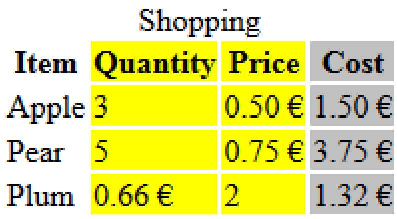
- In HTML the ***<col>*** element has no end tag.
- If you don't want to change column's style you can put empty ***<col>*** element for it.
- All ***<col>*** elements should be in a ***<colgroup>*** element.

Compare this with the example:

```
<table>
      <caption>Shopping</caption>
      <colgroup>
            <col>
            <col span="2" style="background-color: yellow;">
            <col style="background-color: silver;">
      </colgroup>
      <tr>
            <th>Item</th>
            <th>Quantity</th>
            <th>Price</th>
            <th>Cost</th>
      </tr>
      <tr>
            <td>Apple</td>
            <td>3</td>
            <td>0.50 €</td>
            <td>1.50 €</td>
      </tr>
      <tr>
            <td>Pear</td>
            <td>5</td>
            <td>0.75 €</td>
            <td>3.75 €</td>
      </tr>
      <tr>
            <td>Plum</td>
            <td>0.66 €</td>
            <td>2</td>
            <td>1.32 €</td>
      </tr>
</table>
```

If you don't understand the *style="..."* part, don't worry. You can learn this in the CSS course.

The code above should produce the following table:



Shopping

Item	Quantity	Price	Cost
Apple	3	0.50 €	1.50 €
Pear	5	0.75 €	3.75 €
Plum	0.66 €	2	1.32 €

9.1.11

What tag defines the caption for a table?

- <caption>
- <description>
- <signature>
- <label>
- <table>
- <specification>

9.1.12

The ***<thead>**, **<tbody>*** and ***<tfoot>*** tags are used to ***group content*** in an HTML table:

- ***<thead>*** logically group the rows of the table header,
- ***<tbody>*** logically group table content, i.e. rows that contain data,
- ***<tfoor>*** logically group table footer, i.e. rows containing data summary.

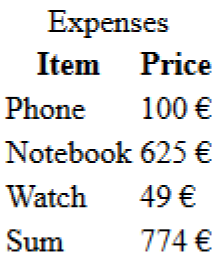
They should always be used together.

Logical grouping of elements enables the better layout of table printouts and easier extraction of data from the table by applications. E.g. browsers can use these elements to allow scrolling of table contents regardless of the header and footer.

Look at this example:

```
<table>
    <caption>Expenses</caption>
    <thead>
        <tr>
            <th>Item</th>
            <th>Price</th>
        </tr>
    </thead>
    <tbody>
        <tr>
            <td>Phone</td>
            <td>100 €</td>
        </tr>
        <tr>
            <td>Notebook</td>
            <td>625 €</td>
        </tr>
        <tr>
            <td>Watch</td>
            <td>49 €</td>
        </tr>
    </tbody>
    <tfoot>
        <tr>
            <td>Sum</td>
            <td>774 €</td>
        </tr>
    </tfoot>
</table>
```

The code above will produce the following table:



Expenses

Item	Price
Phone	100 €
Notebook	625 €
Watch	49 €
Sum	774 €

9.1.13

There are some strict rules about ***<thead>, <tbody>*** and ***<tfoot>***:

- they must be children of a ***<table>*** element,
- they must be after any ***<caption>*** and ***<colgroup>*** elements,
- they must have at least one ***<tr>*** tag inside.

Also:

- ***<thead>*** must occur before any ***<tbody>***, ***<tfoot>*** and ***<tr>*** elements,
- ***<tbody>*** must occur after any ***<thead>*** element,
- ***<tfoot>*** must occur after any ***<thead>*** and ***<tbody>*** element.

The table layout is not changed by the ***<thead>***, ***<tbody>*** and ***<tfoot>*** elements, by default. You can modify their formatting using CSS.

9.1.14

Arrange the listed tags in the order they should appear in an HTML table:

```
1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
```

- <tbody>
- <table>
- <tfoot>
- <colgroup>
- <caption>
- <thead>

9.1.15

Fill in the missing tags in the code below.

"*Item*" is in two columns and "*Apple*" is in two rows.

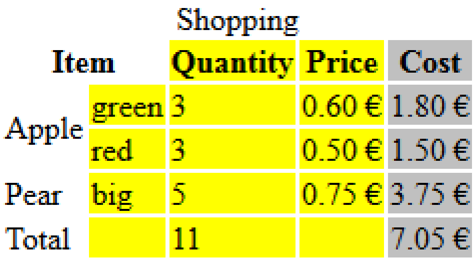
```
_____
      <caption>Shopping<_____>
      _____
            <col>
            <_____ span="3" style="background-color:
yellow;">
            <col style="background-color: silver;">
      </colgroup>
      _____
            <tr>
                  <th_____>Item</th>
                  <th>Quantity</th>
                  <th>Price</th>
                  _____Cost_____
            </tr>
      </thead>
      <tbody>
            <tr>
                  <td_____>Apple</td>
                  <td>green</td>
                  <td>3</td>
                  <td>0.60 €</td>
                  <td>1.80 €</td>
            </tr>
            <tr>
                  <td>red</td>
                   _____3</td>
                  <td>0.50 €</td>
                  <td>1.50 €</td>

            _____
            <tr>
                  <td>Pear</td>
                  <td>big</td>
                  <td>5</td>
                  <td>0.75 €_____
                  <td>3.75 €</td>
            </tr>

 _____
        <tfoot>
            <tr>
                  <td>Total</td>
                  <td></td>
                  <td>11</td>
                  <td></td>
                  <td>7.05 €</td>
            </tr>

      _____
</table>
```

The code above should produce the following table:



Shopping

Item		Quantity	Price	Cost
Apple	green	3	0.60 €	1.80 €
	red	3	0.50 €	1.50 €
Pear	big	5	0.75 €	3.75 €
Total		11		7.05 €

9.2 Tables (tasks)

9.2.1 Table 1 - Add table headers in the first row.

Add table headers in the first row. They should have values "*Subject*" and "*Grade*".

```
<table>




    <tr>
      <td>Mathematics</td>
      <td>74%</td>
    </tr>
    <tr>
      <td>Geography</td>
      <td>83%</td>
    </tr>
</table>
```

9.2.2 Table 2 - Fill in the missing tags in the code below.

Fill in the missing tags in the code below.

"*Item*" is in two columns and "*Apple*" is in two rows.

```
      <caption>Shopping</caption>

            <col>
            <col span="3" style="background-color: yellow;">
            <col style="background-color: silver;">
      </colgroup>

```

```
            <tr>

                  <th>Quantity</th>
                  <th>Price</th>

            </tr>
      </thead>
      <tbody>
            <tr>

                  <td>green</td>
                  <td>3</td>
                  <td>0.60 €</td>
                  <td>1.80 €</td>
            </tr>
            <tr>
                  <td>red</td>

                  <td>0.50 €</td>
                  <td>1.50 €</td>

            <tr>
                  <td>Pear</td>
                  <td>big</td>
                  <td>5</td>

                  <td>3.75 €</td>
            </tr>

        <tfoot>
            <tr>
                  <td>Total</td>
                  <td></td>
                  <td>11</td>
                  <td></td>
                  <td>7.05 €</td>
            </tr>

</table>
```

9.2.3 Table 3 - Add table headers so that they are in the first column.

Add table headers so that they are in the first column. Also, complete the remaining missing cell tags.

```
<table>
    <tr>
        Number
        1
        2
    </tr>
    <tr>
        Surname
        Smith
        Doe
    </tr>
</table>
```

⌨ 9.2.4 Table 4 - colspan

Add the first row as a header so that the first cell is two columns wide. The columns should have the following content: "Pupil" and "Grade".

```
<table>
    <tr>


    </tr>
    <tr>
        <td>Mary</td>
        <td>Smith</td>
        <td>C</td>
    </tr>
    <tr>
        <td>John</td>
        <td>Doe</td>
        <td>A</td>
    </tr>
</table>
```

⌨ 9.2.5 Table 5 - rowspan

Add the first column as a header so that the first cell is three rows high. Also, remember about the remaining header. The rows are to be "Pupil" and "Grade".

```
<table>
    <tr>

```

```
        <td>Sandra</td>
        <td>Jason</td>
    </tr>
    <tr>

        <td>Jessica</td>
        <td>Denis</td>
    </tr>
    <tr>

        <td>Kowalska</td>
        <td>Nowak</td>
    </tr>
    <tr>

        <td>B</td>
        <td>F</td>
    </tr>
</table>
```

9.2.6 Table 6 - caption

Set the caption to the table below that says "Purchases".

```
<table>
      <tr>
            <th>Name</th>
            <th>Price</th>
      </tr>
      <tr>
            <td>Chair</td>
            <td>10 €</td>
      </tr>
      <tr>
            <td>Desk</td>
            <td>25 €</td>
      </tr>
</table>
```

9.2.7 Table 7 - col

Specify the style of the table columns using a tag dedicated for this purpose. Use an attribute to style both columns in one tag. Make the columns green (hint: *style="background-color: green;"*).

```
<table>
  <caption>Purchases</caption>
      <tr>
            <th>Name</th>
            <th>Price</th>
      </tr>
      <tr>
            <td>Chair</td>
            <td>10 €</td>
      </tr>
      <tr>
            <td>Desk</td>
            <td>25 €</td>
      </tr>
</table>
```

9.2.8 Table 8 - thead, tbody

Add tags that logically group the table into a header (first row) and table contents (remaining rows).

```
<table>
  <caption>Purchases</caption>
      <tr>
            <th>Name</th>
            <th>Price</th>
      </tr>
      <tr>
            <td>Chair</td>
            <td>10 €</td>
      </tr>
      <tr>
            <td>Desk</td>
            <td>25 €</td>
      </tr>
</table>
```

9.2.9 Table 9 - missing

Fill in the missing tags so that the table is correct.

```
  Purchases</caption>

            Name</th>
            <th>Price</th>
      </tr>
      <tr>
            <td>Chair</td>
            <td>10 €</td>
      </tr>
      <tr>
            <td>Desk</td>
            <td>25 €</td>
      </tr>
</table>
```

9.2.10 Table 10 - tbody, tfoot

Add tags that logically group the table into a footer (last row) and table contents (remaining rows).

```
<table>
  <caption>Purchases</caption>
      <tr>
            <th>Name</th>
            <th>Price</th>
      </tr>
      <tr>
            <td>Chair</td>
            <td>10 €</td>
      </tr>
      <tr>
            <td>Desk</td>
            <td>25 €</td>
      </tr>
</table>
```

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