



Универзитет „Св. Кирил и Методиј“ - Скопје  
**ФАКУЛТЕТ ЗА ИНФОРМАТИЧКИ НАУКИ  
И КОМПЈУТЕРСКО ИНЖЕНЕРСТВО**

## Lesson 4

HTML 3

# Web Design



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## Links - (reminder)

- Each web page has its own address (URL)
- The links allows us to connect different documents
- By clicking on a link we are moving from one page to another, or within the content of the same page
- Navigation to key parts of the page
- Predefined, links are rendered in this manner:
  - unvisited link: underlined and blue
  - visited link: underlined and purple
  - active link: underlined and red

# Linking documents

- The tag is `<a>`
- The most important attribute in the link definition is "href". This attribute shows the URI to which the link points
- Depending of the way we link a resource there are 3 types of paths:
  - absolute - `http://www.google.com/ig/`
  - relative:
    - relative to the document - `../login/login.html`
    - relative to the site - `/sitemap/map.html`

# Absolute paths

- The absolute path (URL) contains the full information about the location of document and the way it is transferred:
- <http://www.sajt.com/nekoj/portfolio.html>
- When should we use them – absolute paths are used to link to content to another web site.
- How should we use them – when you write the address never forget the protocol (http, https, ftp, ssh, telnet, sftp, mailto ...)
- example:

```
<a href="http://finki.ukim.mk"> FINKI WebSite </a>
```

# Paths relative to the document

- Relative paths should be used when possible
- Relative paths specify where a document can be found relative to the current current page on the same computer.
- Navigation is done using relative Unix paths to the file
  - - specifies the current folder
  - .. - moves to the parent folder
  - / - separates the father and child in the hierarchy of the file system.
- ../img/photo.jpg - go one level up, enter the folder img and find the file photo.jpg
- Products.html - locate the file Products.html which is in the same folder
- ./view/category/category1.html - go to the sub-folder view, then in its sub-folder category and locate the file category1.html

## Paths relative to the site

- If it site is a large site, which uses multiple servers, then paths relative the site should be used
- The root of the site is marked as "/"
- There is no direct link from one page to another, but each path must "go" through the root of the site
- Not all web servers can work with such links

```
<a href="/eshop/products.html"> Products </a>
```

# Attributes of the <a> tag

Attribute	Value	Description
charset	char encoding	Specifies the character-set of a linked document Not supported in HTML5
coords	coords	Specifies the coordinates of a link Not supported in HTML5
href	URL	Specifies the destination of a link
hreflang	language code	Specifies the language of a linked document
Media (HTML5)	media query	Specifies what media/device the target URL is optimized for. Default value: all
name	section name	Specifies the name of an anchor Not supported in HTML5
rel	alternate, author, bookmark, external, help, license, next, nofollow, noreferrer, prefetch, prev, search, sidebar, tag	Specifies the relationship between the current document and the target URL
rev	text	Specifies the relationship between the linked document and the current document Not supported in HTML5
shape	default, rect, circle, poly	Specifies the shape of a link Not supported in HTML5

# anchors in HTML4

- Anchors are places in the HTML document to where it can directly navigated
- Each `<a>` tag which does not have href is treated as an anchor
- Defining an anchor (HTML 4):

```
<a name="anchor"> Some Text </a>
```

- Navigating to an anchor:
  - The navigation is being done through the fragment part of the link

```
<a href="#anchor">To the anchor on this page</a>  
<a href="https://mail.google.com/mail/u/0/?shva=1#inbox"> Gmail  
inbox </a>
```



# ■ Anchors in HTML5

- In HTML 5 the name attribute is forbidden
- Each tag is treated as a link there is no href attribute defined
- Each element which has his own id is an anchor
- Example

```
<div id="title"> </div>  
<a href="#title"> Go to title </a>
```

## Working with links

- If we want some element to be a link, we just need to wrap it in a `<a>...</a>` tag
- The target attribute specifies where should the link be opened. The attributes `_parent`, `_top` and `_frameset` are used only when we work with frames.
- `_blank` - opens the link in a new window. Used when we are linking to an external site, but we do not want the user to leave our site.
- `_self` - opens the link in the same window

# Examples with links

## ■ Image as a link

```
<a href="http://google.com">
```

## ■ Link for an ftp connection

```
<a href="ftp://user:password@server/pathname">...</a>
```

## ■ E-mail link, which opens the default mail client

```
<a href="mailto:jksim@finki.ukim.mk?subject=Homework&cc=ivan.kitanovski@finki.ukim.mk&body=MyHomeowrk">Email homework</a>
```

# Working with images

- There are 2 types of images by the way the data is stored:
  - raster – information is stored on a pixel level
  - vector – information is stored as coordinates as geometric primitives
- There are multiple formats for presenting images in the web and those are:
  - jpeg, png, gif, bmp – for raster images
  - svg – for vector images

# Image quality

- Dimension – represents the width and height of an image. The images is always a rectangle with a certain dimension
- Resolution - it is a measure of the level of details in an image. In the computer industry it is measure in ppi (pixels per inch)
- Compression – there are two kinds of compression:
  - without lose of quality (looseless)
  - with lose of quality (loosy)

# Tips of creating imagesНасоки при креирање на слики

- Find an ideal trade-off between image quality and file size
- Be careful on the resolution
- Always add extensions to the images
- Always use small cases for the extension
- Keep you images in a separate folder. That way you will have better control.

# Adding images in HTML

- The `<img>` tag is used to show images.
- The image is not placed in the HTML, but it is shown in within the frames of the `img` tag.
- Mandatory attributes are:
  - `src` – specifies the location of the image. Always show relative paths.
  - `alt` – alternative text which is presented if the image cannot be showed / opened

# Attributes of the <img> tag

Attribute	Value	Description
alt	text	Specifies an alternate text for an image
src	URL	Specifies the URL of an image
align	top, bottom, middle, left, right	Specifies the alignment of an image according to surrounding elements HTML4 – Deprecated HTML5 – Not used
border	Pixels, %	Specifies the width of the border around an image HTML4 – Deprecated HTML5 – Not used
height	Pixels, %	Specifies the height of an image
hspace	pixels	Specifies the whitespace on left and right side of an image HTML4 – Deprecated HTML5 – Not used
ismap	ismap	Specifies an image as a server-side image-map
longdesc	URL	Specifies the URL to a document that contains a long description of an image HTML5 – Not used
usemap	mapname	Specifies an image as a client side image-map
vspace	pixels	Specifies the whitespace on top and bottom of an image HTML4 – Deprecated HTML5 – Not used
width	Pixels, %	Specifies the width of an image



## Width and height

- If not specified, they are automatically set to the width and height of the image
- If they are specified, then the image is resized to that size.
- Always try the width and height to be same as the image dimension
- If they are smaller, then you have extra data
- If they are larger, then the image might be stretched

# Alt attribute

- The alt attribute is meant to be shown in case the image cannot be opened /showed
- Helps to rank images - google and other search engines use the text to identify the image
- The alt attribute is read to visually impaired users
- Tips for the alt text:
  - it should describe the image
  - it should describe where it leads if it is a link
  - put alt="" if the image is just for decoration

# Coordinates and server mapping

- The image has its own coordinates which can be used for added interactivity
- The beginning of the coordinate system is in the top-left (0,0) and the coordinates "increase" towards the left (X) and towards the bottom (Y)
- The ismap attribute allows the coordinate of the image to be sent as query parameters to the server, if the image is used as a link.

```
<a href="http://this.html"> 
</a>
```

- The result of clicking the coordinates x=10, y=15 will be provided in the URL as: `http://this.html?10,15`

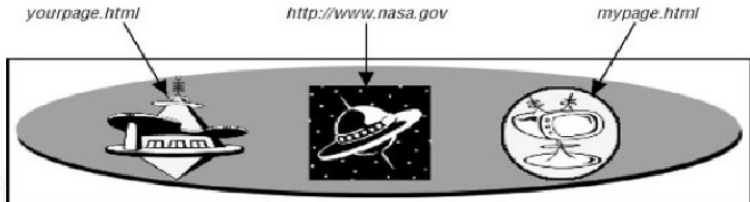
# Client mapping

- It is used when we want to partition the image in regions and each region will be a separate link to a HTML document
- A client map should be defined which will show how the image will be partitioned
- The map tag is used to define the map
- The attribute usemap must be placed in the img tag and it must specify the map that should be used
- The map defines one or more areas, which partitions the image
- Types of areas:
  - rect
  - circle
  - poly

# Example of a client map

```
<map name="spacey">
<area shape="rect" coords="203,23,285,106" href=http://www.nasa.gov alt="" />
<area shape="circle" coords="372,64,40" href="mypage.html" alt="" />
<area shape="poly" coords="99,47,105,41,94,39,98,34,110,35,115,28
,120,35,133,38,133,42,124,42,134,58,146,56,157,
58,162,63,158,67,141,68,145,72,155,
73,158,75,159,80,148,83,141,83,113,103,87,83,7
2,83,64,80,64,76,68,73,77,72,79,63,70,59,67,53,6
8,47,78,45,89,45,99,47" href="yourpage.html" alt="" />


```



# Tables in HTML

- The basic use of tables is to shown tabular data
- The HTML language has no way of showing hte position of the elements
- Prior to CSS, they were used to web site design
- Some still used it in that manner - this is wrong!
- Tables are now used only to show data

# The <table> tag

- The table tag is used to create tables
- Within that tag additional elements are added
- Mandatory elements in the <table> tag are:
  - tr – defines a table row
  - td – defines a table cell. The content is aligned to the left
  - th – defines a header cell. The content is bold and centered
- Cells should not be empty (enter at least &nbsp;)

# Attributes of the <table> tag

Attribute	Value	Description
align	left, center, right	Specifies the alignment of a table according to surrounding text HTML4 – Deprecated HTML5 – Not Used
bgcolor	rgb(x,x,x), #xxxxxx, color-name	Specifies the background color for a table HTML4 - Deprecated HTML5 - Not Used
border	pixels (HTML4) "", 1 (HTML5)	Specifies the width of the borders around a table (HTML4) Specifies whether the table cells should have borders or not (HTML5)
cellpadding	pixels	Specifies the space between the cell wall and the cell content HTML5 – Not Used
cellspacing	pixels	Specifies the space between cells. HTML5 – Not Used
frame	void, above, below, hside, lside, rside, vside, box, border	Specifies which parts of the outside borders that should be visible HTML5 – Not Used
rules	none, groups, rows, cols, all	Specifies which parts of the inside borders that should be visible



# Simple table

```
<table border="1">
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
  </tr>
  <tr>
    <td>February</td>
    <td>$80</td>
  </tr>
</table>
```

Month	Savings
January	\$100
February	\$80

## HTML elements in <table>

- <tr> - defines a table row
- <td> - defines a table cell
- <th> - defines a table header
- <caption> - defines a table title
- <col> - defines the layout of a column
- <colgroup> - groups column for formatting
- <thead> - defines and groups the header part
- <tfoot> - defines and groups the footer part
- <tbody> - defines and groups the table content

# Table with elements

```
<table border="1">
  <caption>Books for sale</caption>
  <colgroup span="3" style="
    background:red">
    <col span="1" style="background:
      green" />
    <col span="2" style="background:
      purple" />
  </colgroup>
  <colgroup span="1" style="
    background:yellow" />
  <thead>
    <tr>
      <th>ISBN</th>
      <th>Title</th>
      <th>Price</th>
      <th>Author</th>
    </tr>
  </thead>
  <tfoot>
    <tr>
      <td>ISBN</td>
```

```
      <td>Title</td>
      <td>Price</td>
      <td>Author</td>
    </tr>
  </tfoot>
  <tbody>
    <tr>
      <td>3476896</td>
      <td>My first HTML</td>
      <td>$53</td>
      <td>Dragan</td>
    </tr>
    <tr>
      <td>3476000</td>
      <td>HTML 5 Intro</td>
      <td>$40</td>
      <td>Ivan</td>
    </tr>
  </tbody>
</table>
```

## Table with elements

Books for sale

ISBN	Title	Price	Author
3476896	My first HTML	\$53	Dragan
3476000	HTML 5 Intro	\$40	Ivan
ISBN	Title	Price	Author

## Rules for using the elements

- All elements must be properly embedded
- If the `<caption>` element is used, it must be defined after `<table>`
- The `<colgroup>` element must be before the content of the table
- The `<col>` element can be defined in `<colgroup>` or in `<table>` before the content
- If you are using `<thead>` and `<tfoot>`, they must be defined before `<tbody>`
- must be defined before `<thead>`

## Spacer Image

- Because of the different way the tables are rendered in different browsers (before CSS) a spacer image was used to control the size of the cells
- Spacer Image is a transparent gif image with dimensions 1px1px
- The images is resized according to the requirements and the cell is appropriately resized
- The image is placed in each cell of the last row of the table
- IT SHOULD BE AVOIDED!!!



# Questions ?