

Internet Technologies

Introduction to HTML and CSS – Part 2 (Exercises)

Block, inline-block, class, id, css pseudoclasses



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HTML element types

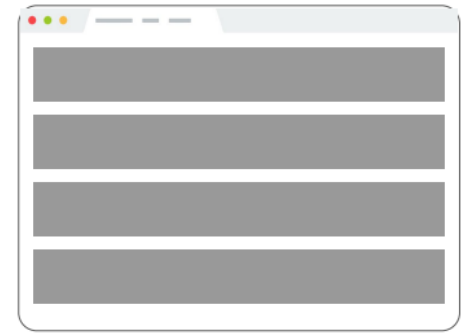
1. **block**: flows **top-to-bottom**; **has** height and width
`<p>` `<h1>` `<blockquote>` `` `` `<table>` `<div>`

2. **inline**: flows **left-to-right**, **does not have** height or width

`<a>` `` `` `
` ``

a. **inline block**: flows **left-to-right**, **has** height and width equal to size of the content

``



Classes and ids



- Special HTML attributes used on **any** HTML element to apply styling
 - **class**: Applied on 1 or more elements; identifies a **collection** of elements
 - **id**: Applied on exactly 1 element per page; identifies **one unique** element

Element selector in CSS file		Selected elements
ID selector	#title	element with id="title"
Class selector	.focus	elements with class="focus"

Ex: `<h1 class="focus">HW1</h1>`, `<h2 id="title">Date</h2>`

- Can apply multiple classes by space-separating them:
`<h1 class="focus new">HW1</h1>`
 - Highest priority: class declared last in the css file

More on `class` and `id`



- `classes` have no special abilities in the browser
- `ids` have special browser functionality: "hash (#) value" in the URL
 - Example: <http://yourdomain.com#comments>
 - Browser attempts to locate the element with an `id` of "comments" and will **automatically scroll** the page to show that element
- This is an important reason why having `ids` be absolutely unique is important. So your browser knows where to scroll!

Selector examples

```
selector {  
    property: value;  
}
```



Selector	Description
p	All <p> elements
.abc	All elements with the abc class, i.e. class="abc"
#abc	Element with the abc id, i.e. id="abc"
p.abc	<p> elements with abc class
p#abc	<p> element with abc id (p is redundant)
div p	<p> elements that are descendants of a <div>
h1, h2	<h1> and <h2> elements



Selector examples

- You can combine selectors:

```
#main li.important strong {  
  color: red;  
}
```

CSS

- Q: What does this select?



Selector examples in CSS files

- You can combine selectors:

```
#main li.important strong {  
  color: red;  
}
```

CSS

- Q: What does this select?
- A: Read from right to left:
 - **** tags that are children of **** tags that have an **"important"** class that are children of the element with the **"main"** id.



Colliding styles

- When styles collide, the most specific rule wins ([specificity](#))

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

CSS

```
<div>  
  <strong>What color am I?</strong>  
</div>
```

HTML

Colliding styles



- Specificity precedence rules (details):
 - Inline CSS rules e.g. `<h1 style="font-size:22px;">Hello</h1>`
 - `ids` are more specific than `classes`
 - `classes` are more specific than element names
 - Element selector e.g. `h1 { color: yellow; }`
 - Style rules that directly target elements are more specific than style rules that are inherited
 - CSS styles are inherited from parent to child

```
body {  
    color: black;  
}
```

CSS

Text color in every element inside `<body>` will be black unless otherwise.



Colliding styles

- The `!important` rule overrides any other declarations.

```
strong { color: red !important; }  
strong { color: blue; }
```

CSS

```
<div>  
  <strong>What color am I?</strong>  
</div>
```

HTML

Aside: The process of figuring out what rule applies to a given element is called the [cascade](#). This is where the "C" in *Cascading* Style Sheets comes from.

Exercise 1



- Download lab3-exercise1.html from the course website (Lab 3) to develop the webpage shown below.
- Follow the guidelines shown in the next slide.

CS 344: Internet Technologies

Spring 2019

Lectures

In this section you will find information about the lectures and the slides involved.

- **Lecture 1: Internet History and TCP/IP Review.**
- Lecture 2: Focus and Learning in the Internet era
- Lecture 3: Internet Architecture

Labs

Laboratories are taking place every Wednesday on Lab B103. They focus on providing hands on experience.

- **Lab1: Introduction to HTML**
- Lab2: Introduction to CSS
- Lab3: Introduction to Javascript

Assignments

Take-to-home assignments. Please send deliverables to lab instructor email prior the end of the deadline.

1. **Assignment 1: Towers of Hanoi**
2. Assignment 2: Dimensionality Reduction

Exercise 1

Fonts

body: Arial

h1 & h2: Tahoma



Italics (without ``) h1, green

CS425: Internet Technologies

Spring 2019 h2, red color, left aligned

h2, blue color, background #ccc, center aligned, takes 50% of the area width within which is placed (hint: use a class so you can reuse it on all h2 titles)

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Yellow background

Labs

width 50%

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- **Lab1: Introduction to HTML**
- Lab2: Introduction to CSS
- Lab3: Introduction to Javascript

Fonts: Consolas

Dashed border, 2px, black, area inside border covers 50% of the viewport

magenta, bold (see CSS pseudo-classes in [Lab3](#) (slide 62) to learn how to select the first element among sibling elements)

Assignments

Yellow background

Take-to-home assignments. Please send deliverables to lab instructor email prior the end of the deadline.

1. **Assignment 1: Towers of Hanoi**
2. Assignment 2: Dimensionality Reduction

Dotted border, 2px, red

Blue background with 10% opacity. See `rgba(red ,green ,blue ,alpha)`

Exercise 2



- Modify both the html and css files of the first exercise to develop the webpage of the next slide using the following guidelines:
 - Two new sections: overview and content (the text is given in website)
 - Use `<h2>` for section titles (use the same styling as before)
 - A menu of links (menu items) on the top of the webpage with the following style:

Overview | Content | Lectures | Labs | Assignments

Lightgray background

- Menu items are separated by blue horizontal lines*

Overview | **Content** | Lectures | Labs | Assignments

- On mouse hover *, each link has red background
- **Each menu item will be a list item `` with a link** pointing to each web page section respectively (in order to display `` items next to each other consider changing their display attribute - by default `` is list-item element, you need to modify it: see [list-style-type](#))

(*) see CSS pseudo-classes in [Lab3](#) (`::after`, `a:hover` respectively)

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Spring 2019

Exercise 2

Overview

Αυτό το μάθημα αποτελεί μια εισαγωγή στις Τεχνολογίες Διαδικτύου και Παγκόσμιου Ιστού (World-Wide Web) με έμφαση στον σχεδιασμό και την ανάπτυξη σύγχρονων ιστοσελίδων (web sites) και εφαρμογών ιστού (web applications).

Παρουσιάζει την αρχιτεκτονική και την υποδομή των συστημάτων παγκόσμιου ιστού και την αρχιτεκτονική εφαρμογών πελάτη/εξυπηρετητή (client/server).

Τα θέματα που καλύπτονται περιλαμβάνουν τις ακόλουθες γνωστικές περιοχές και τεχνολογίες:

1. Λειτουργία και αλληλεπίδραση εξυπηρετητή ιστού (Web Server) και περιηγητή ιστού (Web Browser)
2. Πρωτόκολλο HTTP με έμφαση στα μηνύματα που ανταλλάσσονται μεταξύ browser και Web server
3. Εισαγωγή στις γλώσσες HTML, CSS, JavaScript για client-side programming (front-end development)
4. Εισαγωγή στη γλώσσα PHP, και χρήση Java και SQL για server-side programming (back-end development)
5. Δημιουργία δυναμικών ιστοσελίδων (dynamic web sites) με χρήση AJAX, JSON και διαδικτυακών εφαρμογών (web applications) με χρήση RESTful API για ανταλλαγή δεδομένων μεταξύ Πελάτη και Εξυπηρετητή μέσω μηνυμάτων HTTP (π.χ. GET, POST, PUT, DELETE).

Βασικός στόχος του μαθήματος είναι η κατανόηση και εξοικείωση με τις βασικές Τεχνολογίες Διαδικτύου, η ανάπτυξη ικανότητας στη χρήση γλωσσών Ιστού και ανάπτυξη ικανότητας στον προγραμματισμό Ιστοσελίδων και Εφαρμογών Ιστού. Πιο συγκεκριμένα:

1. Η απόκτηση ικανότητας ανάλυσης μιας ιστοσελίδας και προσδιορισμός των στοιχείων (elements) και των χαρακτηριστικών (attributes) τους.
2. Η απόκτηση ικανότητας δημιουργίας δυναμικών ιστοσελίδων χρησιμοποιώντας HTML5, Cascading Style Sheets (CSS), και JavaScript (JS) (front-end development)
3. Η απόκτηση ικανότητας προγραμματισμού του εξυπηρετητή (server-side programming) χρησιμοποιώντας PHP, Java και SQL (back-end development)
4. Η απόκτηση ικανότητας δημιουργίας δυναμικών ιστοσελίδων (dynamic web sites) με χρήση AJAX και JSON και διαδικτυακών εφαρμογών (web applications) με χρήση RESTful API για ανταλλαγή δεδομένων μεταξύ Πελάτη και Εξυπηρετητή μέσω HTTP μηνυμάτων.

Content

- Internet Fundamentals (Ανασκόπηση Βασικών Τεχνολογιών Διαδικτύου).
 - Principles of Hypertext (Αρχές Συστημάτων Υπερκειμένου).
 - Web Design Fundamentals (Σχεδιασμός και Ανάπτυξη Ιστικών Τόπων).
 - Hypertext Mark-up Languages (Γλώσσες Συγγραφής Περιεχομένου Ιστού).
 - Cascading Style Sheets - CSS, Page Layouts (Γλώσσες Τεχνοτροπίας και Στοιχιοθεσίας Ιστοσελίδων).
 - Web Design & Development (Μεθοδολογίες Σχεδιασμού και Ανάπτυξης Ιστικών Τόπων και Εφαρμογών).
- Introduction to PHP and Server-side Programming (Προγραμματισμός Εξυπηρετητών Ιστού με τη γλώσσα PHP).
- Dynamic content and HTML Forms (Δυναμικό Περιεχόμενο και Φόρμες).
- Introduction to Javascript and Client-side Programming (Εισαγωγή στη Javascript για Προγραμματισμό Πελατών Ιστού).
- Web 2.0 and AJAX (Αρχές Web 2.0 και Προγραμματισμός με Ασύγχρονη Javascript).
- Web Databases (Διασύνδεση Βάσεων Δεδομένων με το Παγκόσμιο Πληροφοριακό Περιβάλλον).
- RESTful APIs.

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