Software Development for Web and Mobile

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Grading system

Criteria	Score %
Final Exam	20 %
Individual Work	40 %
Workgroups	20 %
Class Participation	20 %

Course structure

The structure of the course will remain the same, with lectures, lab sessions, and a final exam.

There will be individual assignments, and group assignments.

Changes in assignments

Code assignments are a pain in the back, so we're changing the approach and relying on Github for everything.

For you the process will be similar to the one we've been following for the last assignments.

Syllabus

Sessions 1 & 2 (today)

- Remember how the Internet works
- Recap on HTTP servers and HTTP clients
- Web browsers
- Introduce web technologies: HTML & CSS
- Start learning HTML

Sessions 3 & 4

- More HTML!
- Styling web pages: CSS
- CSS: How does it work?
- different ways to include it in a web page

Sessions 5 & 6

- CSS in more depth
- CSS precedence
- Lab session!

Sessions 7 & 8

- Dinamic HTML
- Javascript
- JS libraries

Sessions 9 & 10

- Python for the backend
- Web servers
- Handling data from the frontend

- More backend

Session 12

- lab session. Backend + frontend

Sessions 13, 14 & 15

- Back - front communication.
- AJAX

- Lab: Back - front communication.

- Final exam

HTTP Recap

HTTP

What's HTTP?

A protocol

Based on clients and servers

Clients sends requests to servers. Servers answer with responses

HTTP Methods

method	**intention**
GET	access to a resource
POST	update a resource
PUT	create a resource
DELETE	delete a resource

HTTP Server

Let's create a server that receives a name and answers saying hello, name

HTTP Client

Let's create a function that uses **requests** to get a salutation from the server

HTML

HTML stands for **Hypertext Markup Language**. It's a language
that describes how the information
should be presented in webpages

CSS

CSS stands for **Cascading Style Sheets**. It's the language to describe presentation of webpages (colors, fonts, sizes, etc).

Web browsers

What are web browsers?

HTTP clients

With a rendering engine

Lifecycle of a web request

Browser sends HTTP request to server

Server responds with the HTML

Browser renders the HTML

Browser gets the CSS and applies it to the page

HTML example

Let's see how HTML and CSS works in a well known web application: Github

Other web browsers

Not all browsers are equal, lets use lynx to browse the web :)

Code editors

So far we've only used spyder for code editing, but it only works on python.

Now we'll need other code editor:

Install VScode

Install Visual Studio code from https://code.visualstudio.com/

(You may already have it from when you installed anaconda)

HTML

HTML documents are defined by tags, which look as follows:

```
<tag>content</tag>
```

HTML

Let's dissect that piece of code:

<tag> is the opening tag

</tag> is the closing tag

content is the... content of that tag. (it may contain other tags as well)

HTML

Let's see a real world example

```html
<p>this is a paragraph</p>
```

the <p> tag is used to represent paragraphs!

HTML structure

In HTML, all the visible structure of the document must go inside
the <**body**> tag

```
<body>
  <p>the 'p' tag represents a paragraph</p>
</body>
```

HTML structure

On the other hand, all the HTML tags that are not meant to be rendered go inside the **<head>** tag.

For example, the title tag is one of these tags:

```html
<head>
  <title>this is the title</title>
</head>
<body>
  <p>the 'p' tag represents a paragraph</p>
</body>
```

HTML structure

Finally, for an HTML document to be well formed, it needs to be wrapped in the HTML tag

```html
<html>
  <head>
    <title>this is the title</title>
  </head>
  <body>
    <p>the 'p' tag represents a paragraph</p>
  </body>
</html>
```

HTML structure

Let's create our first web page!

Some HTML tags

Now let's see some HTML tags

Paragraphs

text paragraphs in HTML are represented with the <**p**> tag

```
<p>
this is the first paragraph of my text. As you can see it
also contains <strong>other tags</strong>
</p>
<p>
In the second paragraph, I wanted to write this other thing
but I'm running out of ideas for what to write
</p>
<p>
In the last paragraph of my text I want to <strong>finish</strong>
it
</p>
```

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```

Headings

Headings are used in html in the same way a word doc, or in a newspaper, to capture reader's attention.

What's the most important heading in the image? and the second one?

Headings

HTML provides us with 6 different tags to represent 6 different levels of headings: **<h1>**, **<h2>**, **<h3>**, **<h4>**, **<h5>**, and **<h6>**.

```
<h1>this is the h1</h1>
<h2>this is the h2</h2>
<h3>this is the h3</h3>
<h4>this is the h4</h4>
<h5>this is the h5</h5>
<h6>this is the h6</h6>
```

Headings

Here's an example of the headings of these slides:

```
- Preamble
  - Course structure
  - Changes in assignments and exercises
  - Go over syllabus together
```

Headings

We could represent the previous headings in HTML as follows:

```html
<html>
  <head></head>
  <body>
    <h1>Preamble</h1>
    <h2>course structure</h2>
    <h2>Changes in assignments and exercises</h2>
    <h2>Go over the syllabus together</h2>
  </body>
</html>
```

Hyperlinks

Hyperlinks are the most vital part of HTML. They allow us to go to other documents when clicking them.

Hyperlinks

We create links in HTML using the $<$**a**$>$ tag.

```
<a>this is a link, but doesn't have an address to go to...</a>
```

In order to give an address to the link, we need to use the **href attribute**:

```
<a href="https://google.com">this takes you to Google!</a>
```

Homework

Homework

Create the HTML for what it could be your Wikipedia entry.

- different parts of your life

- links to your presence in the web

Resources

Free course to learn HTML:
https://www.codecademy.com/courses/learn-html

Mozilla development network docs:

https://developer.mozilla.org/en-US/docs/Web/HTML