# Schedules

**Lectures**

| Week | Time | Room | Subject | Literature | Tutor |
|---|---|---|---|---|---|
| ***Week 1: Web essentials*** | Mon 7 Jan, 11:00-12:45 | Q105 | Web architecture; web protocols | Jackson Ch. 1 | Schreiber |
| | Mon 7 Jan, 13:30-15:15 | 08A00 (VU hoofdgebouw) | Content markup: HTML | Jackson Ch. 2 | Schreiber |
| | Wed 9 Jan, 13:30-15:15 | KC-159 | Presentation markup: CSS | Jackson Ch. 3 | Schreiber |
| | Thu 10 Jan, 11:00-12:45 | KC-159 | Internet and Web history; Web science | Article Schneiderman (see Materials) | Schreiber |
| ***Week 2: Data representation and scripting*** | Mon 14 Jan, 11:00-12:45 | Q105 | History of electronic documents, XML syntax | Jackson Ch. 7 | van Ossenbruggen |
| | Mon 14 Jan, 13:30-15:15 | Q105 | XML DTDs, Namespaces, XSLT, XPath | Jackson Ch. 2 | van Ossenbruggen |
| | Wed 16 Jan, 13:30-15:15 | 08A00 | Understanding scripting: Javascript | Jackson Ch. 4 & 5 | van Ossenbruggen |
| | Thu 17 Jan, 11:00-12:45 | 08A00 | Understanding scripting: DOM & AJAX | Jackson Ch. 5 & 7 | van Ossenbruggen |
| ***Week 3: Usage aspects*** | Mon 21 Jan, 11:00-12:45 | Q105 | HTTP servers | (a bit from Jackson Ch. 1, 6, 8) | van Ossenbruggen |
| | Mon 21 Jan, 13:30-15:15 | Q105 | Ensuring accessibility | WAI guidelines (see Materials) | Schreiber |
| | Wed 23 Jan, 13:30-15:15 | KC-159 | Evaluation of Web applications | ... | Hollink |
| | Thu 24 Jan, 11:00-11:45 | KC-159 | Security issues | ... | Tanenbaum |
| | Thu 24 Jan, 12:00-12:45 | KC-159 | Course summary and exam preparation | ... | Schreiber, van Ossenbruggen |

**Labs, assignments, exam**

| Week | Group | Time | Room | Subject & material(s) |
|---|---|---|---|---|
| ***Week 1*** | | Mon 7 Jan, 16:00 | | Start Assignment 1 |
| | A | Tue 8 Jan, 9:00-13:00 | S329, S345 | Lab session 1 |
| | B | Tue 8 Jan, 13:30-17:30 | S329 | |
| | C | Wed 9 Jan, 9:00-13:00 | S345 | |
| | | Thu 10 Jan, 13:00 | | Start Assignment 2 |
| | A | Thu 10 Jan, 13:30-17:30 | S329, S345 | Lab session 2 |
| | B | Fri 11 Jan, 9:00-13:00 | S329 | |
| | C | Fri 11 Jan, 13:30-17:30 | S345 | |
| ***Week 2*** | | Mon 14 Jan, 10:00 | | Deadline Assignment 1 |
| | A | Tue 15 Jan, 9:00-13:00 | S329, S345 | Lab session 3 |
| | B | Tue 15 Jan, 13:30-17:30 | S329 | |
| | C | Wed 16 Jan, 9:00-13:00 | S345 | |
| | | Thu 17 Jan, 13:00 | | Start Assignment 3 |
| | A | Thu 17 Jan, 13:30-17:30 | S329, S345 | Lab session 4 |
| | B | Fri 18 Jan, 9:00-13:00 | S329 | |
| | C | Fri 18 Jan, 13:30-17:30 | S345 | |
| ***Week 3*** | | Mon 21 Jan, 10:00 | | Deadline Assignment 2 |
| | | Mon 21 Jan, 16:00 | | Start Assignment 4 |
| | A | Tue 22 Jan, 9:00-13:00 | S329, S345 | Lab session 5 |
| | B | Tue 22 Jan, 13:30-17:30 | S329 | |
| | C | Wed 23 Jan, 9:00-13:00 | S345 | |
| | A | Thu 24 Jan, 13:30-17:30 | S329, S345 | Lab session 6 |
| | B | Fri 25 Jan, 9:00-13:00 | S329 | |
| | C | Fri 25 Jan, 13:30-17:30 | S345 | |
| ***Week 4*** | | Mon 28 Jan, 10:00 | | Deadline Assignment 3 |
| | A | Tue 29 Jan, 9:00-13:00 | S329, S345 | Support for Assignment 4 |
| | B | Tue 29 Jan, 13:30-17:30 | S329 | |
| | C | Wed 29 Jan, 9:00-13:00 | S345 | |
| | | Wed 30 Jan, 15:15-17:15 | FG1, FG2 | Tentamen |
| | | Fri 1 Feb, 10:00 | | Deadline Assignment 4 |
| | B | Fri 1 Feb, 11:00-12:30 | S329 | Presentations Assignment 4 |
| | A | Fri 1 Feb, 13:30-15:00 | S329, S345 | |
| | C | Fri 1 Feb, 15:30-17:00 | S345 | |

# Regulations

## Sending email to course instructors

All email to the course instructors should de sent to:

wt-l@few.vu.nl

The email should be brief and to the point. Always sign with your full name, group number and student number. If you want to address the question to a particular instructor, then start the subject line of the message with the name of the instructur followed by a colon (:).

## Grading

*10%: answers to lab questions*
: No grade is given; the point is awarded when answers show that an appropriate amount of work has been done. If the work is poor but not altogether bad, a half point is awarded.

*60%: assignments*
: Each assignment submitted before the deadline is evaluated and receives a grade from 0-10. The four assignments have the same weight: each 15%.

*30%: written exam*

To **pass the course** three conditions must be met:

1. Answers to all lab questions must have been submitted.
2. The score of the written exam must be 5.5 or higher.
3. The total weighted grade must be 5.5 or higher.

## Attendence of Lab sessions

Students are expected to attend the Lab sessions. If there are compelling reasons for you not to attend, please inform the student assistant of your group in advance through email to the WT mailing list (see above). Students which haven't attended Lab sessions will be required to give a short oral explanation to the student assistant of their answers to the Lab questions.

Students should work in groups of two, unless they have explicit permission of the tutor to work alone.

# Web Technology: background information

NOTE: most links point to relevant Wikipedia pages. These pages might change during this course.

- Web essentials
- HTML

## Web Essentials

**Internet**

Internet:read in particular: *"1 Terminology"*, *"2 History"*, *"3.1 Internet protocols"*, *"3.2 Internet structure"*, *"3.3 ICANN"*, *"3.4 Language"*, and *"10 The name Internet"*.

**Internet protols**

- Internet Protocol (IP): read introduction and *"3 Reliability"* (only first part).
- IP address: read introduction and *"1.1 IP version 4"*.
- TCP: read *"1 Reason for TCP"*, *"2 Applicability of TCP"*, and *"4.2 Data transfer"* (only first paragraph).
- UDP: read introduction

**Donain Name Service/System**

DNS: read *"1 Uses"*, *"2 History"*, *"3.1 The domain name space"*, *"3.2 Parts of a domain name"*, *"3.3 DNS servers"*, *"3.4 DNS resolvers"*, and *"3.5 Address resolution mechanism"*.

**World-Wide Web**

WWW: read in particular *"1 How the web works"*, *"2 History"*, *"3 Standards"*, and *"6 Statistics"*.

**Hypertext Transfer Protocol**

HTTP: read *"1 Request Message"*, *"2 Request Methods"* (only first three methods: get, post, header), *"4 Status Codes"*, *"5 Persistent Connections"*, *"6 HTTP session state"*, and *"8 Sample"*.

**Universal Resource Locator/Identifier**

URI/URL: read *"1 Relationship to URL and URN"*, *"2 Syntax"*, *"3 History"*, and *"4 URI reference"*.

**MIME types**

MIME: read *"1 Introduction"* and *"2.2 Content-Type"*.

**Character sets/encodings**

- Character encodings: read introduction, *"1 Simple character sets"*, *"2 Modern encoding model"*
- Unicode: read introduction and *"1 Origin and development"*
- UTF-8: read introduction

**Web sersers**

- Web server: read *"1 Common features"*, *"3 Path translation"*, and *"6 Historical notes"*.
- secure server/https: read *"1 How It Works"* and *"2 Limitations"*.

## HTML

**Overview**

HTML: pay special attention to *"3 Semantic HTML"*.

# Assignment "Style sheets"

## Learning goals

After the assignment the student should:

- be able to understand a simple CSS style sheet;
- be able to write a simple style sheet in CSS format;
- understand the notion of different renderings of the same content;
- understand the notion of style sheets for different media types.

**Background:**
The purpose of the assignment is to illustrate the issues concerned with the separation of content an style and to understand what you can do with a style-sheet language such as CSS. To this end t students explore CSS in some detail. The student is not required to learn syntactic details of CSS I should be able to look these up in the appropriate documentation.

## The assignment

- Your job is to manually construct, with the help of a text editor such as **`jedit`** or **`emacs`**, three different CSS style sheets, namely:
  1. A style sheet entitled *"Professional"* that renders a HTML file in a business-like style. Choose appropriate fonts (e.g. Helvetica), colors, etc. The style sheet is meant to be used for screen display.
  2. A style sheet entitled *"Creative"* which constitutes a creative product of your imagination. Be bold and try out colors, font families, etc. that you haven't tried before. The style sheet is intended for screen display.
  3. A style sheet entitled *"Print"* intended for regular black-and-white printing, looking like a regular document, witl appropriate margins, text justification, heading sizes, etc.

  The style sheets should be defined in three different **`.css`** files.
- The HTML file with the answers to the Lab questions of Week 1 and Week 2 should use the three style sheets. To this end, include the appropriate definitions in the **`head`** element of the HTML file. The *"Professional"* style is the main style sheet for screen display; the *"Creative"* style should be defined as an alternate. Think also of appropriate class-attribute values for the elements in the HTML file. Such classes represent semantic markup of your answers to th questions (e.g. a paragraph of class "Note", a list item of type "Answer") that provide the hooks for defining custom-tailored styles.
- Make sure that, overall, you use a large number of the properties listed in Appendix 1.
- Consider the style requests described in Appendix 2. Find out whether/how you can do this in CSS. Include the corresponding style definitions in the *"Creative"* style (use comments in the CSS file to help locating these). Also, include a sample use of these style definitions in the HTML file.

## Hints and Tips

- This assignment covers material of Chapter 3 of Jackson.
- The W3C CSS 2.1 Recommendation (or some other online CSS manual) can be used as a reference.
- For selecting appropriate *"Professional"* and *"Print"* styles you might want to use the templates of respectively Powerpoint and Word as sources of inspiration.
- If you see initially no opportunity to use a particular CSS style property, be a bit creative.

## Submission details

Check the Blackboard site of the course for submission details.

# Appendix 1: List of typical CSS constructs to be used

This list is just indicative. You don't have to use all these style properties (although we would expect t see you use a significant number). You are of course free to use also other style attributes of the CSS 2.1 specification. For a list of style properties please consult http://www.w3.org/TR/CSS21/propidx.html.

| | |
|---|---|
| Margins | **`margin-top`**, **`margin-bottom`**, **`margin-left`**, **`margin-right`**, **`margin`** (shorthand notation) |
| Background | **`background-color`**, **`background-image`**, **`background-repeat`**, **`background`** (shorthand notation) |
| Border | **`border-color`**, **`border-style`**, **`border-spacing`**, **`border-width`**, **`border`** (shorthand notation) |
| Text | **`text-align`**, **`text-decoration`**, **`text-indent`**, **`text-transform`** |
| Foreground color | **`color`** |
| Fonts | **`font-size`** (absolute/relative), **`font-weight`**, **`font-style`**, **`font-variant`**, **`font-family`**, **`font`** (shorthand notation) |
| Lists | **`list-style-type`**, **`list-style-position`**, **`list-style-image`**, **`list-style`** **`(shorthand notation)`** |
| Properties for paged media | **`page-break-before`**, **`page-break-after`**, **`orphans`**, **`widows`** |
| Other | **`caption-side`** (in tables), **`float`** (e.g. for images), **`vertical-align`** |
| Link pseudo-classes | **`:link`** **`:visited`** **`:hover`**, **`:active`**, **`:focus`**, |

# Appendix 2: special styles

- The first line of paragraphs is indented, except for the first paragraph following a heading ( practical reasons: limit this to level-two headings).
- The first line of a certain class of a textual block element (make your own choice) is shown in small caps.
- A paragraph of class "note" (find a use for this, e.g. for making remarks about your an automatically includes the phrase **`NOTE:`** prior to the text entered by the author of the HTML document (so: "Note: " is **not** present in the text of the HTML document).

# Assignment "Accessibility"

## Learning goals

After the assignment the student should:

- be able to understand the principles underlying accessible Web design;
- be able to conduct a basic accessibility evaluation based on the W3C checkpoints;
- have gained experience in writing a technical evaluation report;
- have gained experience in presenting results to a non-technical audience, both in written and ir oral form.

**Background:**
This exercise builds on the subjects students have learned during the first three assignments. You w need knowledge about HTML, CSS and scripting to understand the issues involved in evalua accessibility. Many principles of accessible design are actually principles of usability design in general.

## The assignment

- Select a major Dutch site to conduct a accessibility evaluation. Groups should as much as possible select different sites. Consult the student assistant to check whether your choic acceptable. In the appendix you can find a few suggestions.
- Check the accessibility of the site with the help of the W3C Accessibility Checkpoints. Select 4-6 typical pages of the Web site to base your evaluation on.
- Write a technical report about the results, typically containing:
    1. Date of the evaluation
    2. URLs of the Web site and the specific pages studied in the evaluation
    3. Table detailing the results of the evaluation per checkpoint
- Write a newspaper article with a length of 250-300 words in which you summarize the results for a nontechnical audience. Follow the common structure of newspaper article: the first pa summarizes the subject and the main results; the followup paragraphs provide more details. Give 1-3 useful "See also" links at the end of the article. Add to the article also a green card (fine, maybe a few minor problems), a yellow card (some serious problems, but not disastrous) or re card (too many serious accessibility problems) as the overall judgment of the Web site.
- Prepare a presentation of (maximum) four slides. You will be assigned 5 minutes to present results to other people in your lab group. See the lab schedule for details of time and place.

## Hints and Tips

- You are free in your choice of editing tool for writing the report and the article.
- You can use the Web Developer toolbar (a Firefox add-on) to help examining Web pages. With this toolbar you can easily inspect the CSS, disable style sheets, disable Javascript, and so on.
- Use you own judgment to assign a green, yellow or red card.
- W.r.t. the presentation: in 5 minutes with 4 slides you cannot give a full account of what you've done. A suggested structure for the presentation is: 1 slide about the Web site you evaluated, slide about the overall results (including the card you assigned), and 2 slides with juicy details of the evaluation, e.g. a problem you found.

## Submission details

Check the Blackboard site of the course for submission details.

## Appendix

Suggestions for Web sites to consider:

- Government slides: ministries, provinces, city councils
- National institutions: SER, CBR, CBS, SCP, etc.
- Educational institutions: universities, polytechnics, etc.
- Here are some more (random) suggestions:

```
http://www.amsterdam.nl/
http://www.nederlandsforensischinstituut.nl/
http://cda.nl/
http://www.euronext.com/
http://top2007.radio2.nl/
http://www.freerecordshop.nl/
http://www.hyves.nl/
```

# Web Technology - Lab Manual Week 3

1. HTTP is a so-called *stateless* protocol. Explain what this means. Name at least one advantage and disadvantage of the fact that HTTP is stateless.
2. One of the first applications of HTTP **cookies** was to add "shopping basket" functionality to the web sites of online shops. Explain why such sites are hard to build without cookies, and how cookies are used to implement electronic "shopping baskets". (max 100 words)
3. Briefly discuss the key (non-technical) drawback of cookies.
4. What is the difference between a Java **applet** and a Java **servlet**? Give a typical applet and a typical servlet example.
5. What is an HTTP **proxy**? What is an **caching proxy**? How do such proxies influence web analytics (web log analysis)?
6. Acquaint yourself with principles of color contrast, e.g. through the Color Contrast Check. Test three color combinations and write a short report of the results and how these should be interpreted.
7. Read some information about color blindness, e.g.in Wikipedia. Try the ViSCheck simulator with two colorful Web pages to check how these would appear to color-blind people. Report on the results.
8. The Lynx browser is a text-only browser. This browser is a helpful tool to check certain accessibility issues. Use the Lynx simulator to display `http://www.vu.nl` and `www.cs.vu.nl` and report about the results. Note: if you prefer to check two other sites, that's fine.
9. Find out what steganography is and how it differs from cryptography
10. Find out what OpenID is about. Describe briefly its rationale.
11. Choose an existing website and imagine that you are designing an A/B test to evaluate changes to that website. Information on A/B tests can be found at http://www.useit.com/alertbox/20050815.html. Discuss the two versions of the site you would want to test, which part of the site you would vary, and how you would measure performance of each version.
12. Choose an existing web site and build a mini-survey that could appear as a popup on that web site. Explain (briefly) the purpose of your survey, and why you choose to use open questions, yes/no questions and/or questions on a scale (e.g the Likert scale). The html of the survey should work, but obviously it does not need to work on the web site you chose. Include a link to that web site instead.
13. Jakob Nielsen publishes a bi-weekly column on usability. Choose one of his columns from http://www.useit.com/alertbox/, give a short summary of the column (in your own words), and give an example of a web site that clearly does or does not implement the guidelines in the column. Pick your own example, the site should not be mentioned in the column.
14. Read source "Funda gooit site helemaal open". Discuss the economic pros and cons of open access to product information. Give also your own opinion.
15. Read source "Re: wat heb jij op je brood?" Discuss the social effects of electronic communication on work relations. Give your own opinion on the email-free Friday.


## Source: "Funda gooit site helemaal open"

nrc·next
Vrijdag 7 september 2007

Vanmorgen • 3

# Funda gooit site helemaal open

Door Ben Vollaard
AMSTERDAM. De woningwebsite Funda, één van de grootste websites van Nederland, gooit zijn site open voor alle koophuizen. Vanaf vandaag zijn op Funda ook de ongeveer 20.000 te koop staande huizen te vinden van makelaars die niet zijn aangesloten bij makelaarsvereniging NVM. Hierdoor zijn op de website alle circa 123.000 nu in Nederland te koop staande huizen te vinden.

Deze koerswijziging is opmerkelijk omdat het gesloten karakter van Funda tot nu toe een belangrijk wapen was in de concurrentiestrijd met niet-NVM-makelaars. De NVM-makelaars hebben samen ongeveer 70 procent van de markt in handen. Ook voerde de NVM een juridische strijd tegen nieuwkomers als jaap.nl, die foto's kopieerde van makelaarssites.

Het buitensluiten van andere makelaars speelde concurrenten in de kaart. Vooral jaap.nl (deels eigendom van bankier Dirk Scheringa) wist de afgelopen maanden marktaandeel te winnen met als reclamekreet 'meer huizen dan Funda'.

De onlangs aangetreden directeur van Funda, Robert van Veelen, heeft de NVM-makelaars weten te overtuigen dat zonder het complete huizenaanbod „de tent je uit de vingers glijdt", zo vertelt hij in een gesprek. Dat heeft veel overtuigingskracht gekost. „De makelaars hebben een beeld van de wereld, maar op het internet is het soms net wat anders."

Huizensites zijn druk bezocht omdat de gemiddelde Nederlander eens in de zeven jaar verhuist.

**Funda-bezoek duurt lang**

Funda hoort bij **de vijf Nederlandse websites waar de bezoeker het langst** blijft hangen.

| | |
|---|---|
| 1. zylom.nl, spelletjes | 29 minuten |
| 2. nrc.nl, nieuws | 18 minuten |
| 3. mail.google, e-mail | 12 minuten |
| 4. marktplaats, 'te koop' | 9 minuten |
| 5. funda, woningen | 9 minuten |

Bron: Multiscope Visiscan



**problemen bij de bezorging**

Door een grote storing in de drukkerij in Amsterdam is *nrc.next* gisteren op veel plaatsen te laat of zelfs helemaal niet bezorgd. We hebben geprobeerd overal de krant na te bezorgen. In plaatsen waar dit niet is gelukt, ontvangen de abonnees de krant pas vandaag. Onze excuses voor dit ongemak.

**De uitgever van nrc.next**

**nu op nrc.nl**

**Trauma verwerken met foto**
Industrieel ontwerper Bas Groenendaal ontwierp Scope, een camera waarmee kinderen trauma's kunnen verwerken. Door in de rand van de camera te knijpen kun je er een foto mee maken. In de psychosociale hulpverlening wordt fotografie gebruikt om jezelf te uiten en om te gaan met de omgeving. Daarom is Scope letterlijk een kader, een rand waarin je knijpt om te fotograferen. Klap Scope open, plaats de spiegel erin en een kind kan een zelfportret maken. Zo geeft Scope begeleiders inzicht in de belevingswereld van het kind.

Meer weten? Kijk op nrc.nl/klaver

## Source: "Re: wat heb jij op je brood?"

nrc·next
Woensdag 14 november 2007

Loopbaan • 29

-----Oorspronkelijk bericht-----
Van: Swart, Lisette
Verzonden: Woensdag 14 november 2007 06:59
Aan: Next Redactie

# Re: wat heb jij op je brood?

## Steeds meer communicatie op de werkvloer gaat via e-mail

▸ Collega's mailen elkaar zo veel dat ze elkaar amper nog echt spreken.

▸ En dat missen ze, zo blijkt. Amerikaanse werkgevers hebben nu 'no e-mail Friday'.

Door Lisette Swart
ROTTERDAM. De roddels bij de koffieautomaat, het gesprek in de wandelgangen. Koffieconcern Douwe Egberts vond dat collega's te weinig op de werkvloer „onder het genot van een kop koffie" een gesprek met elkaar aangingen. „Iedereen mailt maar", zegt Reinier Smit, van Douwe Egberts coffee systems.

Dus liet het bedrijf door het bureau Motivaction onderzoeken hoe mensen mail en persoonlijk contact ervaren. En wat blijkt: meer dan de helft van de Nederlandse werknemers vindt dat persoonlijk contact op de werkvloer de afgelopen jaren is afgenomen door het gebruik van mail en zou weer vaker gewoon willen praten met collega's.

Een mail sturen aan een collega die een paar meter verder zit. Het gebeurt veelvuldig. „Lui, onzinnig en een teken des tijds", zegt Rob Rooken, mede-eigenaar van de Eerste Nederlandse Email Maatschappij (ENEM), een bedrijf dat mailverkeer beheert voor bedrijven.

Het is de tijd van de eeuwig groeiende inbox. Rooken heeft klanten die 15.000 tot 20.000 e-mails in hun inbox hebben. „Geen wonder dat je gek wordt", zegt Rooken. „Sommige bedrijven hebben zelfs een inboxpolicy: werknemers moeten eerst alle e-mails behandeld hebben voordat ze naar huis gaan."

Om het persoonlijk contact te bevorderen en de 'mailstress' door overvolle inboxen te reduceren, is bij verschillende Amerikaanse bedrijven (U.S. Cellular, Deloitte, Intel) een 'no e-mail Friday' ingevoerd. In Nederland is het nog niet zover. De mailloze dag bestaat nog niet.

„Mail is een van de grootste oorzaken van informatieoverload", zegt Rooken. „Een kennismaker ontvangt gemiddeld zo'n 60 mailtjes per dag." Uit onderzoek in 2007 van de Universiteit van Glasgow en de Universiteit van Paisley blijkt dat eenderde van de gebruikers zich gespannen voelt door volle mail-inboxen. Veel werknemers controleren zo'n 30 tot 40 keer per uur of ze nieuwe berichten hebben ontvangen.

Albert Meijer, onderzoeker en docent aan de Utrechtse School voor Bestuurs- en Organisatiewetenschap, vindt een mailloze vrijdag vooral een „symbolische maatregel". „Gebrek aan contact wordt als probleem ervaren en het is goed om er aandacht voor te vragen. Maar als er vrijdag geen mails gestuurd mogen worden, komen ze wel op een andere dag. Het is beter om te onderzoeken hoe het aantal mails structureel kan worden gereduceerd."

Ook Valerie Frissen, bijzonder hoogleraar ICT en sociale verandering aan de Erasmus Universiteit Rotterdam, beschouwt de mailloze dag als een „judieke actie" en niet als een serieuze trend. „Het is een leuk initiatief om mensen bewust te maken."

Bedrijven moeten gedragscodes invoeren voor het sturen van mails, vindt Frissen. „Wanneer stuur je wel en niet een mail? Laat duidelijk weten welke mails echt belangrijk zijn. Bij TNO geven ze minder serieuze mails het onderwerp 'spam', zodat werknemers kunnen kiezen of ze die lezen."

Uit de ICT-barometer 2007 van Ernst & Young blijkt dat managers en ICT'ers op het werk 8 uur per week mailen. Frissen: „Je doet het jezelf ook aan, als je hoort dat werknemers tientallen keren per uur hun mail controleren. Blijkbaar is het leuk om te mailen." Rooken merkt dat er „grappend" wordt gereageerd op het Amerikaanse initiatief. „Mensen kunnen zich een dag zonder mail tegenwoordig niet meer voorstellen, omdat ze dat juist de hele dag doen."

**Infomania leidt tot een**

# Web Technology - Exam preparation

Contents



## Exam subjects

The purpose of the exam is to test whether each individual student has grasped at a sufficient level the key concepts of this course. We expect that students who have actively participated in perfor assignments and in answering the lab questions will not find it to be a major hurdle. As preparation, we have collected the list of subjects and skills that covers together the exam material. The subjects an skills are (roughly) organized by lecture.

### Web essentials

Jackson Chapter 1 (this also includes material about HTTP servers, see furtheron). The subjects yo need to understand **conceptually** are listed on the page with background information on Ch. 1. Consult also the slides and the lab questions.

### Content markup: HTML

Jackson Chapter 2, in particular Secs. 2.1-2.8 and Sec. 2.10. See also the Wikipedia HTML page and consult the slides, Assignment 1 and the relevant lab questions.

You will need to understand the following subjects **conceptually**:

- Basic history of HTML
- Difference between HTML 4.01 and XHTML
- The separation of content and style
- The notion of semantic mark-up
- The basic structure of an HTML document
- The semantics of the HTML elements listed in the table of the appendix to Assignment 1
- The treatment of undefined/misspelled elements
- The notion of entity reference
- Element attributes
- The purpose of the `class` attribute
- The difference between block and inline elements
- Empty elements

In addition, we expect you to have acquired the following skills:

- You should be able to **read** and **understand** an HTML source document similar to the ones covered in the course
- You should be able to distinguish content and style markups in an HTML source text (see also the next exam subject.

## Style markup: CSS

Jackson Chapter 3. See also the Wikipedia CSS page and consult the slides, Assignment 2 and the relevant lab questions.

You will need to understand the following subjects **conceptually**:

- Motivation for a style-sheet language
- The three ways of defining style sheets: in a separate document, in the head and as an attribute
- The way to refer to a style sheet
- The notion of different media types; knowledge of the most popular media types
- Basic structure of style rules
- Th most common selectors and style properties (i.e. the ones used in Assignment 2)
- Cascading: prioritization of user, author and user agent style sheets
- Basics of the box model and th normal-flow layout

In addition, we expect you to have acquired the following skills:

- You should be able to **read** and **understand** a CSS style sheet similar to the ones covered in the course
- You should be able to understand how particular style definitions lead to a particular rendering on the media **`screen`** and **`print`**.

## XML and related standards

Jackson: Sections 2.10, 7.1, 7.2, 7.3
See also slides Lecture 5 and 6.

Students are expected to **conceptually** understand:

- key advantages and disadvantages of XML
- the relationship between XML, SGML, HTML 4.01 and XHTML 1.0
- how document markup that depends on particular software, hardware and layout can have negative impact on Web interoperability and reuse of content
- the notion of structured document formats (used for authoring) versus presentation formats (used for document delivery)
- difference between applying CSS style to (X)HTML versus applying CSS style to XML documents
- well-formed and valid documents, the tree structure of XML documents
- vocabularies, namespaces, DTDs, element and attribute declarations
- start, end and empty element tags
- entities, comments and CDATA sections
- XML declarations (<?xml ...), document type declarations (<DOCTYPE ...)
- character encodings (UTF-8 etc)
- the role of XSLT and XPath in document transformations

Students are expected to have the following practical skills:

- to **read and understand** element and attribute declarations using DTD syntax
- to **read and understand** simple path expressions using XPath syntax

## Scripting: JavaScript and the DOM

Jackson: Sections 4.1 - 4.9, 4.13, 5.1 - 5.6
See also slides of the corresponding lectures.

Students are expected to **conceptually** understand:

- key advantages and disadvantages of JavaScript, typical examples of JavaScript usage
- the role of the DOM when manipulating Web documents using JavaScript
- the role of events, event handlers and host objects in JavaScript

- understand how JavaScript programs communicate with the world (no print statement etc)
- main differences between JavaScript and Java
- concepts underlying development, testing and debugging of JavaScript code
- key advantages and disadvantages of AJAX technology, typical examples of AJAX usage

Students are expected to have the following practical skills:

- to **read and understand** elementary JavaScript code

### HTTP Servers

Jackson: Sections 1.1-1.5, 1.7
See also slides of the lecture.

Students are expected to **conceptually** understand:

- Basic concepts underlying HTTP request and HTTP response messages
- Basic functionality of a HTTP server
- Notion of static and dynamic content
- Notion of server logging
- Notion of web cookies
- Notion of "Virtual Hosts" (hosting multiple web sites on a single server)
- Notion of HTTP proxies, caching proxies and reverse-proxies
- principles of REST network architectures
- HTTP security and privacy issues

Students are expected to have the following practical skills:

- to be able **read and understand** elementary HTTP request and response messages

### Web science

Read the article of Schneiderman (see Blackboard, under "Materials | Articles"). Also study the slides and the relevant lab questions.

### Accessibility

As the deadline for Assignment 4 hasn't passed only subjects discussed in the lecture need to be studied.

### Evaluation

Study the slides and the relevant lab questions.

### Security

Study the slides and the relevant lab questions.

## Structure of the exam and sample questions

The exam will consist of 20 closed questions (worth 5 points) and two open questions (both worth points). The final point you get for free.

Here are two sample closed questions. Check the box in front of the statement in case you think statement is true. Otherwise, leave the checkbox empty. So, for every question *any number of statements can be true*.

1. Which of the following are valid IP4 addresses:
    - 124.185.78.10
    - 141.287.12.78

    - 124.185.78
    - 124.120.78.0
2. Which of the following statements about Internet protocols are true?
    - The TCP protocol is built on top of the IP protocol
    - The UDP protocol is built on top of the TCP protocol
    - The TCP protocol is more secure than the IP protocol.
    - The IP introduces the notion of "port".
3. Which of the following statement about cookies is correct?
    - Cookies often contain computer viruses.
    - Cookies are often used to adapt sites to personal wishes of visitors.
    - Cookies are often used to store earlier actions of a visitor.
    - Cookies can cause a privacy problem.

With respect to the open questions:

1. For the first question will be presented a HTML page source and accompanying CSS sty definitions. You will be asked to identify problems/issues with these sources.
2. For the second question you will get a short a text (such as the articles in the lab questions) and you will be asked about particular Web-science issues arising from this text.