582519 Scientific Writing for MSc in Computer Science:
Seminars and MSc thesis

Lecture 6, 8.10.2013
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Last week's task: How did it go?

-- fill comments here --

What is the situation of your paper?
- finished,
- almost finished
- still under writing
- missing several pages
- only half-written
- just started
- not yet started

Final check of your paper:

- Abstract
- ACM classification
- Table of content: page numbers
- Reference list layout
- Citations for references, no reference without citation

- Language: spell check

- Final read through (if corrections, read again)

Practise steps towards MSc thesis

Step 1: Scientific writing
   writing with support of small team and TA
Steps 2 & 3: seminars
   Using and improving writing
   Oral presentation
Final step: MSc thesis
   Individual work about unique topic
   Discussion support from supervisor
   One (or two) draft feedback

Seminars

- Learning objectives of a seminar:
  http://www.cs.helsinki.fi/en/node/61694/matriisi
- Two themes:
  - Written scientific communication
  - Oral scientific communication

Seminar format

Duration: 2 periods, one whole term/semester
Number of participants: 12 students

Application period for seminars:
- For Spring term seminars: early November
- For Fall term seminars: early May

- Teachers select students based on the applications
  - suitability of background, progress of studies, …

Seminar structure

Seminar

Participation

Oral presentation

Discussion

Written presentation

Study Diary

- Comments, opinions, experiences, etc.

- 2. period
- 45 min each
- transparencies

- 1. period
- 10-15 pages
- Based on articles

- conclusion, feedback
- grading suggestion
- "What did I learn?"

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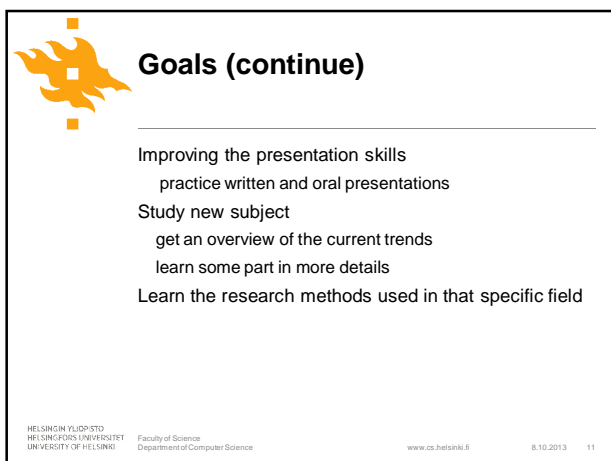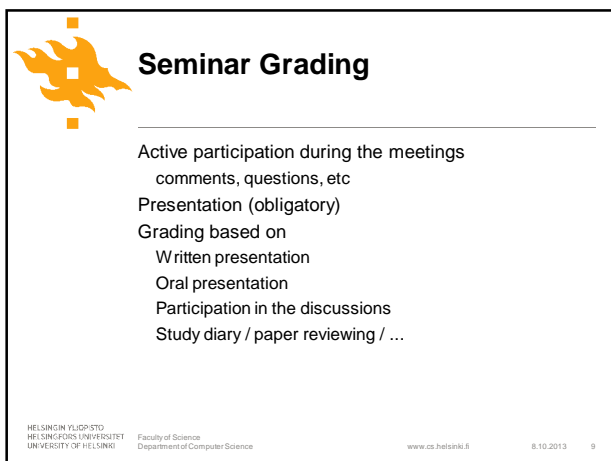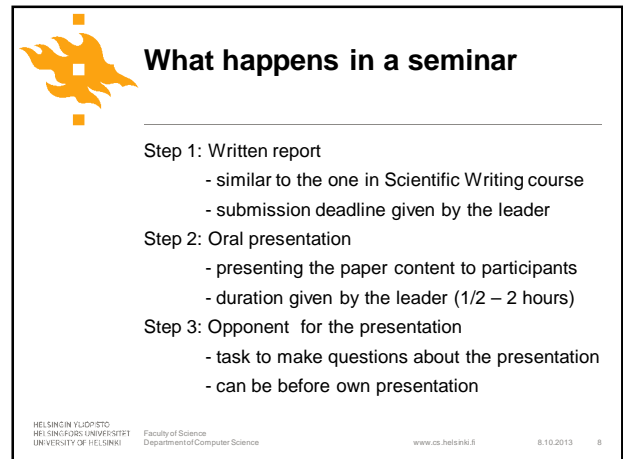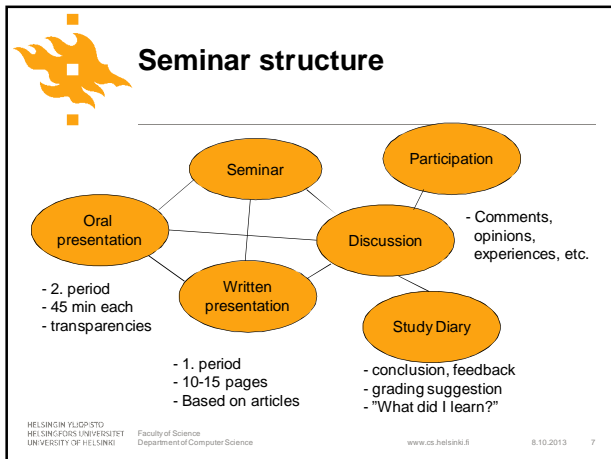Department of Computer Science
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What happens in a seminar

Step 1: Written report
- similar to the one in Scientific Writing course
- submission deadline given by the leader

Step 2: Oral presentation
- presenting the paper content to participants
- duration given by the leader (1/2 – 2 hours)

Step 3: Opponent for the presentation
- task to make questions about the presentation
- can be before own presentation

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Seminar Grading

Active participation during the meetings
   comments, questions, etc

Presentation (obligatory)

Grading based on
   Written presentation
   Oral presentation
   Participation in the discussions
   Study diary / paper reviewing / ...

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Teaching goals of a seminar

The development of communication skills
The development of intellectual and professional competence
The personal growth of students (and the tutor)

source: *Brown & Atkins: Effective teaching on Higher Education*

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Goals (continue)

Improving the presentation skills
    practice written and oral presentations

Study new subject
   get an overview of the current trends
   learn some part in more details

Learn the research methods used in that specific field

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Some types of thinking

Analysing
Logical reasoning
Evaluating evidence or data
Appraising and judging perceptively
Thinking critically
Synthesizing
Speculating creatively
Designing
Arguing rationally
Transferring skills to new contexts
Problem-solving

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What skills should the MSc thesis show?

Ability to manage a large theme systematically, with a defined goal and valuation scheme in mind

Independent work

Research steps

- Learning of the topic (search of information, critical reading)
- Formation of a research question (single line focus)
- Solution construction and evaluation

Coherent and complete written report (precise scientific argumentation and ease of understanding)

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What types of MSc theses there are?

Surveys

- Collection and critical evaluation of related works

Explorations

- Empirical approach, evaluation, construction of recommendations

Designs

- Small survey of related domains, combination of the findings to a design of a system, potentially construction, evaluation of the design

Always base your knowledge on articles published on scientific forums

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Scientific publications after graduation

- Journal articles
- Conference or workshop papers
- (Technical reports)

- PhD studies require some number of scientific publications to be done during the studies
- These will form the core of the thesis

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Publication process

- Different publishing schedules
  - Journal articles: several years from a manuscript to a published version
  - Conference or workshop articles: from few months to a year
- Different peer-reviewing processes
  - Level of refereeing (confidence on evaluation)
    - Journal, conference and workshop articles: reviewed by several objective referees
    - Technical reports and manuscripts: no peer review
  - At best, valuable feedback for authors

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Publication forum

- Intended publication forum may influence the contents and form of the text
  - Length of the text
  - Layout and structure of the text
  - Approach/perspective to be taken: theoretical or practical
- Authors should also take into account
  - the readers of the forum and their background knowledge
  - relevant work published on the same forum

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Questions and feedback session

- Now is your last chance to get answers to any unclear issues!

- Feedback: How to improve the course

- Remember to **fill the feedback form** for this course and all other courses as well – For every course during your studies!

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Internship 2014

(Use career services offered by Univ.)

- Your own responsibility – not organised by dept
- HIIT&dept offer some positions – application-based
- Companies announce positions, but accept open applications also
  - Helsingin sanomat (may be)
  - oikotie.fi
  - via personal connections
  - tko-äly rekry mailing list
  - bulletin board at department

- General information
  - guidetoworkinginfinland.fi
  - www.mol.fi/mol/en/index.jsp

  - www.tek.fi (Harjoittelupalkkasuositukset)

  - Unemployment funding requires voluntary membership in union or unemployment cash

Course exams and separate exams

Examination sessions:
- start sharp at the hour
- no bags near your
- turn of your mobile phone and put it in bag

You may have with you:
- pencils and rubber (and/or pens)
- small amount of snacks
- ID card (student ID is not official, but might be accepted)

Course exams and separate exams

Normally answers written to a 'concept paper' (folded A3-paper with grid)

- write name, student number, date, course name and your signature on every paper
- Start filling the folded paper as if it was a course book. (So first the cover, then turn open to left and fill left side, right side and finally the back cover)
- You can use multiple papers if necessary

- (On some courses, you might be asked to give answers to each question on separate sheet)

Answering

- Not just overview, but justifications and reasoning also
- Ofter questions require applying the knowledge, not just repeating

- Most courses: exercises give hints on the key points on the course

- A single right answer might not give you full points, if you have not explained how you reached the answer
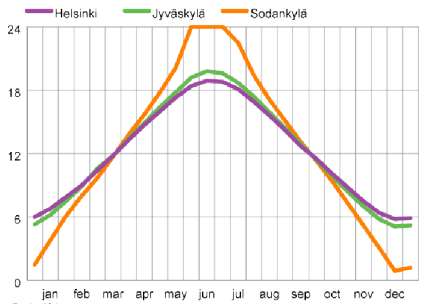
Preparing for exam

- Do the weekly exercises and relate them to the study goals of the course
- Understand the course content, both details and the 'big picture' – memorising is not enough for a master's
- Study the slides and the exercise questions
- read and learn the book (but not just memorizing!)

- When available look at the older exams

Length of day:
http://en.ilmatieteenlaitos.fi/length-of-day

Finnish Winter is coming

- October: A lot of rain, first snowstorms, no snow cover, but can be icy
- November: Very short days and cloud cover, a lot of rain or snow, or wet snow, or…   usually in Helsinki no snow cover
- December: Very, very short days, snow or wet snow, snow cover in Finland, might be also in Helsinki/Espoo
- January: Days slightly longer, snow cover in Helsinki also. Gulf of Finland ice covered
- February: Nice winter days, sun shine and blue sky, maybe skating above sea
- March: Nice winter days. The snow starts melting
- April: Days longer than night, Snow melts, still some snowstorms
- May: Long days, no snow, green trees and grass

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Oral presentation

- Prepare
- Clear goal and message

- Not everything in the paper to the presentation
- Focus on key points

- Make transparencies or some other visual support

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Oral presentation: Transparencies

key words, no sentences, mistsakes

Figures, pictures

Tables, lists

Numbers (used in the presentation)

Examples

Do not overfill one page

Avoid too small font size (this is 14), this is 18, this is 24, this is 12

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Font size

32 points : automatically offered by PowerPoint

28 points

24 points: smallest useable in Auditorium

20 points

18 points: smallest useable in any presentation (occasionally too small)

16 points

14 points

12 points: Normal size in written papers

10 points: A bit small even for printed reports

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Slide layout

Please, try to avoid full written sentences. They make the work for the audience very difficult. There is no time to follow the speech, because all the time and concentration goes to reading the slide.

This becomes even worse, if the presentation is directly read from the transparencies. There is no point in listening anymore. Also, the presenter eagerly uses very complex sentences that try to cover in one extreamly long sentence most of the material without loosing any details and facts.

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Example: Portable and handheld devices in a distributed system
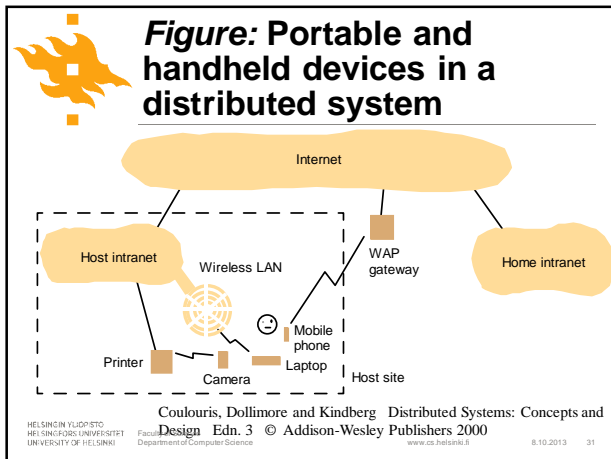
Devices
   Mobile phone
   Laptop
   Camera
Connection points
   WAP
   WLAN
   USB
   Intranet, Internet

How to clarify?

Figure !

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Figure: Portable and handheld devices in a distributed system

Internet

Host intranet

Wireless LAN

WAP gateway

Home intranet

Printer

Camera

Laptop

Mobile phone

Host site

Coulouris, Dollimore and Kindberg   Distributed Systems: Concepts and Design Edn. 3 © Addison-Wesley Publishers 2000

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Oral presentation: speech

Based on the transparencies
Each item on the transparencies covered
Nothing else is handled (except shortly)
Other notes
  to remember facts, extensions
  presentation hints
Use short sentences

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Oral presentation: voice

Clarity and strength
  avoid sitting
  speak to the furthest person
Voice makes the structure
  Stressing
    – importance
    – new theme
  Pauses
    – new theme

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Oral presentation: Other things

Computer, transparencies, blackboard
Notice the audience
Movements
Hands

Practice, practice,
  NEVER write down the whole oral presentation
  If uncertain, speak (and time) the whole presentation on your own or for a small audience

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One last time: Examples of probing questions

Does that always apply?
How is that relevant?
Can you give me an example?
Is there an alternative viewpoint?
How reliable is the evidence?
How accurate is your description?
You say it is x, which particular kind of x?
What's the underlying principle then?
In what situation would this rule break down?
What distinguishes the two cases?

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