DD143X/dkand13

Degree Project in Computer Science First Level

Examensarbete inom datalogi Grundnivå

Mårten Björkman

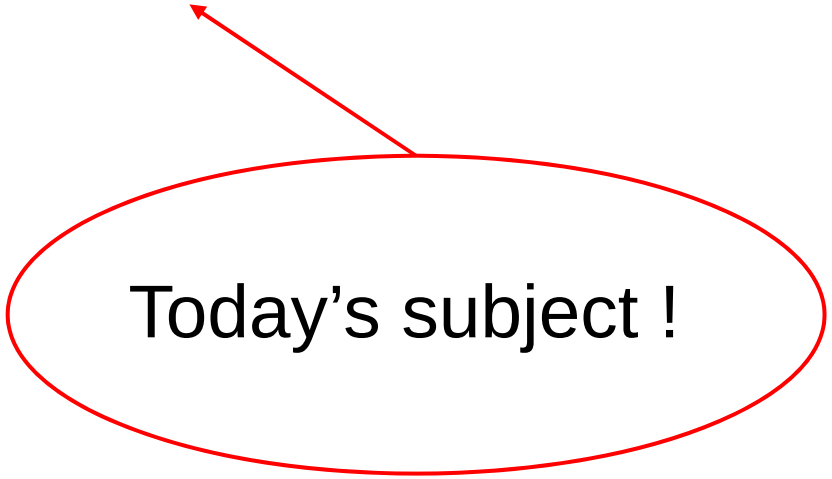
Associate Professor

CVAP / CSC

Basics

DD143X has two parts:

- MVK project – 9 hp, PRO1
- Bachelor’s essay (kandidatuppsats) – 6 hp, UPP1



Practicalities

Registration:

- The course uses RAPP.
- Important to activate your registration in RAPP.

For questions and discussions:

- KTH Social (www.kth.se/social/course/DD143X)
- Good way to find a project partner.

Objectives

To demonstrate that you possess the skills required of a professional engineer in the computer industry.

According to KTH

Studenten ska:

- Kunna tillämpa relevanta kunskaper och färdigheter som förvärvats inom huvudområdet på ett givet problem.
- Inom givna ramar, självständigt kunna analysera och diskutera frågeställningar och lösa större problem på grundnivå inom huvudområdet.
- Reflektera kring, värdera och kritiskt granska egna och andras vetenskapliga resultat.
- Kunna dokumentera och presentera sitt arbete med krav på struktur, formalia och språkhantering.
- Kunna identifiera sitt behov av ytterligare kunskap och ta ansvar för sin kunskapsutveckling.

Things Like:

- Apply your acquired knowledge and skills.
- Show your analytic and problem solving abilities.
- Reflect on, and evaluate, own and other’s solutions.
- Relate your work to the state of the art.
- Acquire new knowledge as and when needed.
- Document and present your results professionally.
- Put your work in societal, economic and ethical context, where applicable.

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General + individual engineering skills

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- Put your work in societal, economic and ethical context, where applicable.

Tested in the essay project

As Well As:

- Apply standard methods of practice in industry, administration and academic environments regarding planning, conducting, reporting and evaluating independent design and investigation projects.
- Independently collect and systematize requirements and expectations on the project deliverables, and asses the reasonableness of these in light of available time and resources.

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Engineering project skills

As Well As:

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Tested in the MVK project

The Essay Project

- Individual or in pairs.
- Pairwise projects are recommended
  - Historically, more likely to complete with good grades.
- Supervisor groups of about 10 students.
- Shares some activities
  - Half-way meetings
  - A few checkpoint meetings
  - Group supervisor organizes this
- Exjobbskonferens April 24-25 2013 !

Schedule

- Today: Kickoff meeting
- Monday 21, 24:00: Mail subject preference to celebrandil@gmail.com.
- Thursday 24: Supervisor group assignments
- Feb 3, 24:00: Project specification deadline
- Feb 15: Lecture on report writing (Richard Nordberg, TMH)
- Mar 1-8: Half-way meetings (Richard Nordberg, TMH)
- Apr 10: Lecture on presentation techniques (Richard Nordberg, TMH)
- Apr 12, 24:00: Essay hand in (graded version)
- Apr 23: Written review deadline
- Apr 24-25: Exjobb conference
- Early May: Essay hand in (final version with corrections and abstract)

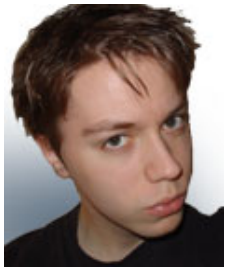
Project idea selection

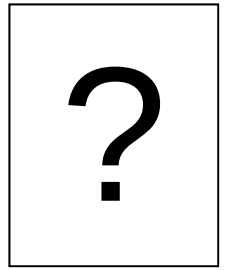
When you send in your project idea by email to celebrandil@gmail.com, include the following:

1. Your name
2. Your partner's name
3. Preliminary project title
4. Alternative project title (if too many pick the same)
5. Supervisor (if you want a particular one)
6. Short description (if you have your own idea)

Supervisors

- **Sten Andersson**: programming and algorithms
- **Douglas Wikström**: security, protocols and systems, algorithms, programming languages
- **Johan Boye**: language technology, algorithms, artificial intelligence
- **Per Austrin**: algorithms, theoretical computer science
- **Roberto Bresin**: expressive music performance and sonification
- **Gabriel Skantze**: speech and language technology



Supervisors

- **Anders Askenfelt**: speech and music technologies
- **Anna Hjalmarsson:** speech and language technology
- **Petter Ögren**: robotics, autonomous systems, multi-agent systems, computer game AI
- **Pawel Herman**: algorithms, pattern recognition, optimisation, uncertainty handling
- **Vahid Mosavat**: programming and algorithms

?

Supervisors

- The supervisor is the first port of call.
- Most supervisors are able to supervise all subjects.
- Feedback on subject, work, and writing.
- Meeting frequency and arrangements is up to supervisor and students.
- Minimum 2-3 meetings, more if needed.
- Important: Project specification must be accepted by the supervisor.

What Is a Good Project?

- Demonstrate that you meet the goals.
- So study them !
- Some important points:
  - Analytic skills (problem statement, analysis, evaluation, criteria and criticism)
  - Problem solving skills
  - Motivation and context (societal, economical, environmental, ethical, etc.)
  - Identify and review suitable background literature, relate to state of the art
  - Planning and execution
  - Quality of report and oral presentation

Finding a Good Subject

Look at the project catalogue on the web
www.csc.kth.se/utbildning/kth/kurser/DD143X/dkand13/ProjectIdeas

Several essay groups can choose the same subject

- Maximum three groups per subject.
- Some subjects might limited by available hardware or external advisors.

Own suggestions are very welcome

- Start thinking yesterday
- Wide scope of possibilities

Note: Choice of subject must be approved by supervisor

What Is a Good Subject?

Subjects that allow you to demonstrate that you meet the goals as well as possible

- High quality background material
  - Scientific papers
  - Open source projects
  - Textbooks
  - High quality systems, applications, tools
- Some own contribution
  - Examination
  - Evaluation/test
  - Case study
  - Interviews
  - Prototype
  - Animation
  - Project plan
  - System description

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Both elements are important!

What Is NOT a Good Subject?

For some subjects it’s hard to do something own.

Do not be overambitious!

- Time is limited.
- Better to do a good job on a limited project.
- Than a bad job on a overambitious project.

Beware of DIY!

No references of good engineering or scientific quality?

Example Essay Structure

- Introduction
  - What is the general subject and why is it interesting?
- Problem statement
  - Important – aim for precision and conciseness
- Background
  - What has been done by others before?
- Approach
  - How did we do it?
- Results
  - Elaborate, maybe in several sections.
- Conclusions

Note: By only reading the introduction and conclusions, you should be able to tell whether its worth reading the whole report.

Example Project Specification

- Introduction
  - What is the general subject and why is it interesting?
  - Brief – a couple of paragraphs will do.
- Problem statement
  - As precise as possible at this point.
- Approach
  - What you will do to solve the problem?
- References
  - Important relevant references that you have identified so far.
- Time plan

1-2 pages, due on Sun Feb 3, midnight!

Requirements

1. Approved project specification
2. The essay itself
   - Can be written in Swedish or English
3. Oral presentation
   - At the exjobb conference
   - Can be done in Swedish or English
4. Written review of another essay
5. Opposition at the exjobb conference

Pass mark always required

Grading

Total dkand13 grade =

average of essay and MVK grades, rounded downwards.

Essay project	A-F
MVK	A-F

Essay project:	Grades	Weight
• Approved project specification	P/F	-
• Essay: Scientific and engineering content	A-F	2
• Essay: Presentation	A-F	2
• Oral presentation	A-F	1
• Written review	A-F	1
• Oral opposition	P/F	-

Scientific + Engineering Content

- Clearly delimited and relevant problem
- Well motivated choice of methods
- Well executed experiments and investigations
- Technical correctness
- Originality and independence
- Good understanding of technical background material and previously done work

Report

- Purpose and research question are easily identifiable and supported by the content
- Presentation style is well suited to the intended readers
- The main ideas and results are emphasised
- Opinions and own comments are well-founded
- Data are presented and explained in a clear way
- Tables and / or graphs illustrate the main results
- The conclusions are reasonable
- The work is set in a context
- The language of the report is clear and well structured
- Spelling, grammar and style are at a satisfactory level

Written Review

- The report is summarised fairly
- Points brought forward are relevant and constructive
- Main points are addressed
- Advice on improvements is given
- The relevant evaluation criteria are covered

Presentation

- Do they present themselves? Begin without getting stuck?
- Problem description and background (easy to understand? suitable length? raise interest?)
- Approach and methodology (detailed enough? correctness?)
- The use of the projector (text, images and videos)
- How are results presented?
- Conclusions, own thoughts and final twist?
- Does the division of subject matter make sense (for two people)?
- Are they well prepared?
- Are they engaging and manage to make the presentation interesting? Contact?
- Do they respect the time limit?
- Do they respond well to questions?

Sample Reports

Some sample reports can be found at:

http://www.csc.kth.se/utbildning/kandidatexjobb/datateknik/2011/index.php

Plagerism

- All reports will be tested for plagerism.
- Even translations can be tested nowadays.
  - Which some earlier students have noticed.
- If you get stuck in writing, talk to your supervisor.
  - Everyone gets stuck sometimes, even professors.
- Remember that people at CSC do research in detection of plagerism. ☺

Questions?