



DD143X/dkand12

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



Today's subject !

Practicalities

Registration:

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

Mailing list:

- dkand-12@csc.kth.se
- Needed? How to use?

Objectives

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

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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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 assess the reasonableness of these in light of available time and resources.

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Engineering project skills

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Tested in the MVK project

The Essay Project

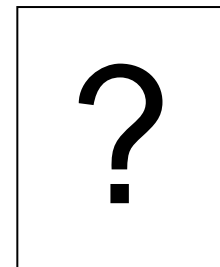
- Individual or in pairs.
- Pairwise projects are recommended.
- Supervisor groups of 10-12 students.
- Shares some activities
 - Half-way meetings
 - A few checkpoint meetings
 - Group supervisor organizes this
- Exjobbskonferens April 24-25 2012 !

Schedule

- Today: Kickoff meeting
- Saturday 21: Mail to celle@csc.kth.se on essay group and subject preference.
- Tuesday 24: Supervisor group assignments
- Feb 12, 24:00: Project specification deadline
- Feb 14: Lecture on report writing (Richard Nordberg, TMH)
- Mar 6-9: 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)

Supervisors

- **Mårten Björkman**: computer vision, machine learning, programming
- **Mads Dam**: verification, languages, theory, security, distributed systems
- **Michael Minnock**: machine learning, databases, logics
- **Johan Boye**: language technology, artificial intelligence
- **Anders Askenfelt**: speech, music
- **Mikael Goldmann**: theory, security, cryptography
- **Alexander Baltatzis**: languages, programming
- **Henrik Eriksson**: algorithms, combinatorics



Supervisors

- First port of call.
- 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.

Supervisor Groups

- Projects divided in 9 supervisor groups.
- 10-12 students per supervisor group.
- All supervisors are able to supervise all subjects.
- The supervisors organize the groups.

Note: Everybody cannot get their first choice.

- Some subjects might be limited by available hardware or external advisors.

However:

- We do the best we can.
- We are happy to see some thematic coherence.

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

Several essay groups can choose the same subject

- Within reasonable limits, of course.

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?

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 12, midnight!



Requirements

- Approved project specification
- The essay itself
 - Can be written in Swedish or English
- Oral presentation
 - At the exjobb conference
 - Can be done in Swedish or English
- Written review of another essay
- Opposition at the exjobb conference
- Pass mark always required

Grading

Total dkand12 grade = average of essay and MVK grades, rounded downwards.

Essay project	A-F
MVK	A-F

Essay project:

		Weight
• Approved project specification	U/G	-
• Essay		
– Scientific and engineering content	A-F	3
– Report	A-F	1
• Oral presentation	A-F	1
• Written review	A-F	1
• Oral opposition	U/G	-

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/datat teknik/2011/index.php>

Questions?