Report Writing Tutorial

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OVERVIEW

- Writing a Report
- The vital parts
- Summary

- But first…

DO NOT CUT AND PASTE !!!
STUDENTS HAVE BEEN EXPELLED!

- ***This means: Write in your own words!***

- You should use external information
  - But rewrite and give a reference to the original source
  - Its your own understanding that should be written down, not someone else's
  - Read the source, put away, and then write
- Refer to the original source
  - Ex: According to Handley, the interference from microwave ovens may very well lower the capacity in WLANs operating in the 2.4 GHz frequency band [8].
- The report will not be graded if content is cut and paste
  - All the reports will be sent to Urkund
  - An automatic service to search for plagiarism

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Writing a Report

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THE REPORT TEMPLATE

- Use the OpenOffice variant
  - It works the best…
- It helps you with the structure, layout etc.
  - And has all vital parts for grading
  - It will also make your report look uniform and consistent
- If you use the Word template, it is divided into two parts
  - Part 1
    - Read and understand the instructions
  - Part 2
    - Write your report in the template
    - Remove part one

THE VITAL PARTS

- Title and Abstract
- Introduction and Problem Statement
- Theory
- Method
- (Implementation)
- Results
- Conclusions and Discussion
- References

THE VITAL PARTS CONT.

- All parts of the parts has to hang together

- Engage the reader
  - Title, summary, etc.
- What are you going to do?
  - Introduction, problem, goals etc.
- Needed prior knowledge
  - Theory and background
- How are you going to do it?
  - Methodology
- Explanation of what you actually did
  - Design and implementation
- The end results of your work
  - Application, measurements, etc.
- Wrap up and self criticise your work
  - Conclusions and Discussion

TITLE PAGE AND ABSTRACT

- ***Summarizes the whole report***

- Title Page
  - Interesting
  - Illustrative
  - Understandable

- Abstract
  - Summarize the report and your work
    - The problem statement
    - Answer to the problem
    - Method used to solve the problem
    - Conclusions
  - A single paragraph

TITLE PAGE AND ABSTRACT

- ***In this project***
  - Make sure you have the blue title page
  - And a single paragraph abstract

INTRODUCTION

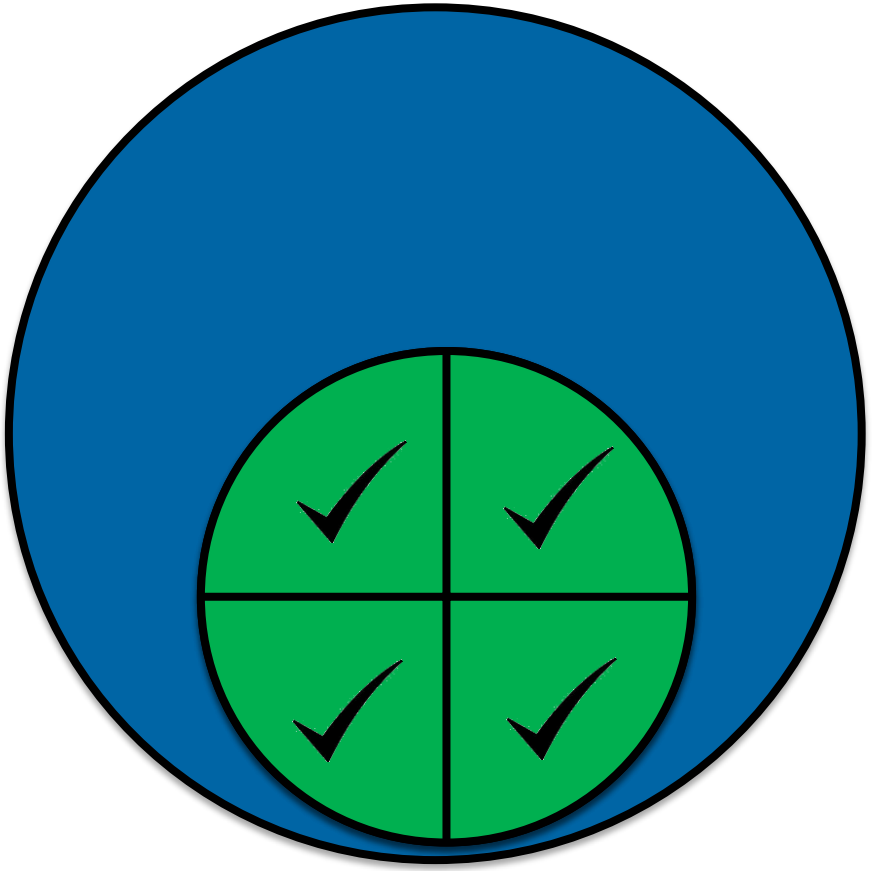
- ***Describes <u>what</u> you will do in your work***

- Background and problem motivation
  - Why did you do this project and what it the state of the world?
- Overall aim
  - *Ex. The overall aim with this project is to create an augmented reality game for mobile devices, that people will want to use when they travel in unknown areas.*
- Problem statement
  - What is the problem? What bad situation do you want to avoid?
  - *Ex. People can not remember the bus timetables. Hence I want to find out if it is possible to create a location aware web page for mobile phones that solves this for them.*
- Concrete Goals
  - The pieces that make up the whole problem statement
  - What will you have when you are done? (Deliverables)
- Scope
  - *Ex. We focus on the use of PHP and MySQL in this study*

INTRODUCTION CONT.

- Problem
- Scope
- Goals

- Wrap up



TITLE PAGE AND ABSTRACT

- ***In this project***
  - Make sure you have a introduction section
  - Make sure you have a aim section
  - Make sure you have a problem statement section
  - Make sure you have a section with concrete and verifiable goals
  - And make sure you have a scope

THEORY

- ***Describes the technical areas of the study***

- To give the reader a basic understanding of the project
  - In order to make the reader understand the rest of the report
- Must reference others work and external sources
  - Place the reference mark [1] at the right place.
- The headings should describe the content.
  - *Ex. Global Positioning*
  - *Ex. Context Awareness*

THEORY CONT.

- Finding Research Material
  - Scientific articles is accessible via MIUN
    - If you are on campus you can access most databases
- All available databases from MIUN
  - http://www.bib.miun.se/eng/searching/articles/
- IEEE Xplore
  - http://ieeexplore.ieee.org
- Google Scholar
  - http://scholar.google.se/
- Do NOT reference Wikipedia
  - But look at the sources of information that they use

THEORY

- ***In this project***
  - Make sure you present the knowledge needed to understand the rest
  - Make sure you present related work and what exists today

METHODOLOGY

- ***Explains how the results will be obtained***

- The method is NOT a diary
  - Write it in the future tense
- Write how you will approach the problem statement
  - How will you attack each one of the goals?
- Presents the evaluation method used in the project
  - How will you know that you have solved the problem?
- The method helps the reader to validate the result
  - Should make it possible for others to redo the study

METHODOLOGY

- ***In this project***
  - Make sure you present how you will achieve the problem
  - Make sure you present how you will attack each goal

DESIGN & IMPLEMENTATION

- ***Explains how the solution was built***

- Not actually scientifically vital…
  - Yet, most student spend most pages on this part
- A top down approach is preferred
  - Start with a large overview figure on the whole structure, “the big picture”
- Then use “Divide and Conquer”
  - Split the large figure in smaller components
  - Then talk about each component individually
  - One sub heading for each component
- Do not include code
  - Put code in an appendix

DESIGN & IMPLEMENTATION

- ***In this project***
  - Make sure you have an overview figure
  - Each sub section should be each part of this figure

RESULTS

- ***Presents the end results and final product***

- Objective and interesting data is presented
  - Save your personal opinions to the discussion
- It should include
  - What you have produced
  - Functionality, what can your program do?
  - Quantitative measurements, etc.
- Be as clear as possible
  - Pictures, screenshots, figures, tables, etc.

FIGURES, GRAPHS, AND TABLES

- ***Explains your results in an objective manner***

- They must all be numbered and captioned
  - *Ex. Figure 2, Overview of the solution*
- No figure, graph, or table is allowed to hang freely
  - All must be references from the text
  - *Ex. This detail can be seen Figure 3.*
- Any figure that you did not make yourself
  - Must have a reference to the original source

RESULTS

- ***In this project***
  - Present the resulting application
  - Screenshots are good
  - So is some type of evaluation and comparison to related work

CONCLUSIONS

- ***Discusses the results and draw conclusions***

- Summarize the project briefly
  - Draw your conclusions from the most interesting results
- Discuss and answer the problem statement
  - Have you solved the problem?
  - Have you met your deliverables and goals?
  - Was the results as expected?
  - Would a different method provide better results?
- Future work
  - If another student would follow your work, what would they do?

CONCLUSIONS

- ***In this project***
  - Make sure you answer all the goals
  - Make sure you answer the problem
  - Make sure you present future work

REFERENCES

- ***Shows your sources of theory and information***

- What you have based your results and conclusions on
  - Many references express a solid work
- Number your reference and use the numbers in the text
  - [1], [2], [3]
  - They must be in order, first used reference should be first in the list
- All reference must be used
  - No references are allowed to hang loose
- Use the correct format for writing the reference
  - To make it uniform and easy to find your sources for someone else

REFERENCES

- ***In this project***
  - Try to minimize the amount of Wikipedia references

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Summary

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SUMMARY

- The most common problem is loosing the “Red Thread”
  - Problem -> Goals -> Methodology -> Conclusions
- The “Red Thread”
  - The big and difficult problem
    - Is divided into smaller and easier concrete goals
  - The Method is how you approach and attack each goal
    - How and what will you do, in order to solve it?
  - The conclusions should answer all the concrete goals
    - And subsequently, also the problem statement
- Another common problem is the way students write
  - Write your report as a scientific result and solving a real problem
    - This is not a task forced upon you…
  - Do not make it personal (or like a diary)
    - This means, try to avoid “I did”, “We built”, “I studied”, etc.

SUMMARY

- Set up the report template
- Start writing the easy parts
  - Title, Introduction, Problem, Scope, Goals, Method
- Write headings for the other parts in your report
  - Plan what you will need to write later
  - Collect references
- Fill in information as the development progresses
- Code and gather results
- Finish the report
- Present!

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