CSCM10 Computer Science Project Research Methods
Methods
Writing a Background Research Report

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http://www.cs.swan.ac.uk/∼csetzer/lectures/
computerScienceProjectResearchMethods/current/index.html

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1 Details of Report

2 Writing a Good Report

Assignment

From Assignment Handout (on Blackboard):

- A report surveying a research area of interest to you.
- Contributes 35% of the mark for the module.
- Approximately 2000 words.
- Due 8 December 2017 (11:00 am).
- You will need to submit an electronic copy via Blackboard/Turnitin and two paper copies.
- This report should consist of
    - a review of the literature for a research area/topic and
    - include an indication of possible avenues for future research/project work.

Submission

- Electronic Copy via blackboard.
- **In addition** 2 paper copies.
  - Print out two cover pages from College Intranet.
    - Print them out early, so that you don't have to do it in a rush.
    - Calculate in the possibility of printer problems when many students are submitting at the same time.
  - Stable them in front of your submission.
  - Hand it into the drop boxes outside Talbot PC Lab 043, Ground floor, Talbot building.
  - If you are submitting late and have a valid documented reason
    - (e.g. medical certificate)
    - you can get a penalty waver form for your coursework from the College intranet,
    - and submit it together with your coursework to the College of Science student information office Faraday-123.

Topics

- A list of topics will be made available on Blackboard.
- You can choose your own topic,
- or a topic from the list.
- You need to discuss your topic with your tutor (usually in the tutorials).

Section 2 based on material by Liam O'Reilly

Story Teller's Rule

- Step 1: Tell them what you will tell them.
- Step 2: Tell them.
- Step 3. Tell them what you told them.

Main parts

A report should have

- A title page or a clearly worked out title,
- an abstract (optional),
- an introduction (Step 1),
- a body (Step 2),
- a summary or conclusion (Step 3),
- a bibliography (also called references).

Title Page or Title

- Should contain
  - the title of your document,
  - coursework reference (probably best: CSCM10 Report),
  - date of submission (for future referencing),
  - student number.
- I recommend to add "CSCM10 report" and your student number on every page.
  - allows to identify its purpose in case pages get loose.

Abstract

- Can be on the title page, or put directly after the title,
- usually indented.
- Summarises in a few sentence what your document is about.
- Is a help for any reader who wants to decide whether to read it or not.

Introduction

- Introduces main concepts in the report.
- Gives a motivation
  - When motivating, don't write why you are motivated, but write what could motivate **the reader** to read your document.
  - Keep a dry style in the motivation.
  - E.g. if motivating an essay on computer security, one could write something like

    Computer crime has been rising sharply in recent years The UK government estimates ([3], p. 50) that the annual cost of computer crime to businesses, has increased from XX billion pounds in 2005 to XX billion pounds in 2016. . . .
- Briefly states what will come in each major section of the body.
- After reading this the reader
  - should be motivated to read your report,
  - should have a good idea what the report is about,
  - and what is to come.

Body

- The body is where you present the bulk of the material.
- Should be logically structured (see below)

Summary / Conclusion

- If the report makes recommendations or analyses a topic
  - there should be a **Conclusion Section** which
    - clearly states the conclusion(s) of the report (which should already have been presented in the body).
    - summarises the report
    - reminds the reader what they have read.
- If the report simply reports on a topic
  - a conclusion does not seem appropriate.
  - Instead, the report should have a **Summary Section**, which
    - summarises the report
    - reminds the reader what they have read.
- Summary / conclusion should introduce no new topics.
- It should remind the reader of what they have read,
- and reiterate any conclusions.

Bibliography

Lecture on bibliographies will be given.

General Good Practises

- Write in full sentences.
- Report should be a self contained document.
- As the reader reads it they should understand the content without needing a question, task or other description.
- Write with precision.
- Give evidence, proofs, supporting information for your statements.
- Be self critical. It is positive to write about weaknesses of your approach.

General Good Practises

- Use plenty of citations. Citations are positive since they
  - document proper scientific working.
  - allow the reader to check what you have been written
  - and allows the reader to identify other material which could be of interest to him/her.

- The style should be more dry scientific style, not like a magazine, no jargon, no slang.

Use the Active Voice

- Avoid use of 1st person, i.e., don't do "I did . . ."
- Use active voice:

No	Yes
I investigated . . .	We investigated . . .
Hence, I recommend to . . .	Hence, we recommend to. . .
It can be seen that . . .	We can see that . . .
34 tests were run . . .	We ran 34 tests . . .
These properties were thought desirable.	We wanted to retain these properties.
It might be thought that this would be a type error.	You might think this would be a type error.

Logical Structure

- Use sections, subsections (and even subsubsections) to structure your report.
- Example:
    1. Propositional Logic
       Propositional logic uses atomic propositions . . . . Atomic propositions can be 'glued' together using the logical connectives: and, or, implies, and equivalence.
        1.1 Disjunction
            . . .
        1.2 Negation
            . . .
        1.3 Implication
            Definition of implies
            . . .
            Reduction of implication to disjunction and negation.
            . . .
    2. Type Theory.

Consistent Formatting

- Aim at uniform formatting.
- In MS Word you use for headings section heads such as "Heading 1", "Heading 2".
  - Allows to generate table of contents (e.g. for your dissertation).
  - Allows cross referencing.

Figures

- Figures should have a a caption, and should be referred to in the text.
- Usually they have numbers (for easier referencing).
- If a figure comes from some other source, you need to state clearly the source ("taken from [3]").

Footnotes

- The purpose of footnotes
  (at least in Computer Science)
  is to provide a place for distracting text
  that is not part of the main story.
  The interested reader can choose to read the distracting part.

Quotes

- When quoting text, you need to make it clear that this is from a different source, e.g.
  John ExampleAuthor states in [3], p. 381:

  > "This is a quoted text which is copied verbally from some other source it is quite long and intended"

- **Just writing [3] without quotation mark doesn't express that you are quoting verbally**
  - It is **Not** enough to prevent you from accusation of **academic misconduct**.
  - Use of [3] means that some of the knowledge you present originates from [3] or that [3] is just some additional source of information.
  - Quotations like this are benedificial and add to your report.

Before Submission

- Make sure all text is justified (straight line at the right side) where appropriate.
- Text has been spell-checked.
- Text is uniformly formatted (same font for text of the same category).
- References, cross references, page numbers are correct.
- Student number and module code is on title page, and is repeated on every page.