Writing a report

A collection of hints and guidelines

Structure of a report

- Frontpage
  - Title, subtitle, author (name + student number), date
- Abstract
- Introduction
  - Background, overview of relevant literature, structure of remainder of the report
- Core
  - One or more sections describing your work
- Conclusions
  - Possibly also future work
- References
- Appendices

The introduction

- The introduction will
  - Introduce the problem that you have studied
  - Describe what others have done (related work)
  - Describe the structure of your report
- Make sure that you include enough and appropriate references.
  - Explain for each referenced paper why it is relevant for your paper.
- In some cases, depending on the size of each part, the problem statement and the related work should be made into separate sections or chapters.

The Core

- Your report must clearly explain what it is about, and should not just be a repository of facts.
- The structure of this part depends on the nature of your work. E.g.:
  - Start by describing your methods and algorithms
    - Use formulae, pseudo-code
  - Describe the implementation
    - Describe import choices, leave out what should be self-evident
    - But (well documented) source code goes to appendices, if to be included at all
  - Describe your experiment and the results
  - Interpret your results
- As with the introduction, the core may be split into separate sections, like methods, experimentation and interpretation of the results.

Conclusions and future work

- In this section you give a clear resume of the conclusions from your work and discuss its relation to previous research.
  - For that reason, some authors will actually put the section on related work after the core section(s)
  - The conclusions should reflect back on the original problem statement in your introduction.
- When applicable, your work may result in suggestions on how to further validate or extend your research.

The text

- Spell check your report and reread it.
- Check grammar, punctuation.
- Make sure all sentences run correctly.
- Be careful with repeated statements.
  - Refer back to statements, but avoid repeating yourself

Style

- Keep the style formal.
- Avoid using “I”; “we” is commonly used and should then be interpreted as the reader and the author.
- Try to use active forms rather than passive forms:
  - Not: a strong correlation was found between…
  - Better: We find a strong correlation between…
  - Best: In our results, A strongly correlates with B
- Do not mix present and past tense, avoid the present continuous if you can.
- Explain your terminology, introduce all abbreviations
- Write in English (UK spelling preferred) or in Dutch

Figures and tables

- Figures and tables must have
  - a number (by which they a referred to in the main text)
  - a caption, briefly describing the figure or table
- Figures and tables must be readable
  - Do not make them too small or too crowded
  - Do not include excessive numbers of decimal places
  - Add a legend to figures when necessary
  - Label the axes (correctly!)
- Figures and tables must be discussed (individually) in the main text
  - They should be an integral part of you “story”

Graphs

Very often you will need to include graphs of data in you report. Some guidelines for a well-designed graph:

- Choose the axes so that the graph does not hug the edges. Experiment with linear and logarithmic axes.
- Connect your data points only if they represent a (smoothly) changing function.
- Include error bars if possible.
- When you include multiple graphs in one figure, make sure they are easily distinguished.

References (1)

- Refer to a paper or publication from the text e.g. as
  - Dijkstra [1] describes a sorting algorithm …
  - Various authors [2,3,5] discuss methods to sort … In [2] an improved version of the shakersort ...
- Explain for each reference why it is relevant
  - Do not just give a long list of references to impress the reader
- The reference section is an ordered list fully identifying each reference from the text.

  [1] …

  [2] …

References (2)

- The aim of your reference section at the end is to allow the reader to find the information that you used.
- The best references therefore are those to the open literature (journals, books, PhD theses, conference proceedings).
- Try to avoid hard-to-find references like internal reports, obscure journals, personal communication.
  - If the publication is accessible through the UvA library it should be OK.
- (Personal) websites tend to change or be removed.
  - Try to find references that will still be valid 10 years from now. Personal website and such are really a last resort.

Appendices

- Appendices are not always required
- They contain complex or “large” material that would make the main text unreadable if included there, but that is essential for the detailed understanding of the work reported.
- Appendices should be independently understandable
  - E.g. code should be well documented with relevant comments

Using other people's materials

- You may only include material written by someone else if all of the following conditions are met:
  - It is immediately recognisable as such (e.g. quotation marks).
  - The author is clearly and unambiguously identified.
  - You have that author's permission (implicit or explicit).
  - The quotation is essential for your report and constitutes only a small fraction of that report.
- Other use is considered to be plagiarism
  - It is about the worst offence you can make in science.
  - It may get you expelled.
  - It is usually found out.