Writing Reports: the Good, the Bad and the Ugly

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Outline

- When will we stop teaching this?
- Do you really need to do the documentation?
- Organizational tips for a report.
- Formatting tips for a report.
Why still learn how to write?

- Knowing the theory and practicing it:
  Do you believe you can write effectively?

- What is the purpose?:
  Fullfilling the requirements or stating your work?

- Rules of writing and formatting a document:
  not invented to tease you. They really help you stating your idea.
Why Documentation?

• Lifetime of work with and without documentation
• How your work is evaluated
• Can all the members know all of the details?
• Can you remember all of the details?
• Can you continue your project after a period of time without forgetting something?
• A superb work without documentation versus a work of mediocre quality with full documentation... Which would you buy?
Organizational Tips for a Report

- Developing the outline is very important: Design your document with a logical organization.
- Top-down construction of the document. Is it possible to do it bottom-up?
- Determine the purpose and audience of the document.
- Writing a report is not filling in the requirements
  A section title from an earlier years report:
  2. Data object description (Use ER diagram)
  Title directly copied from our announcement.
The Plan

Points to keep in mind when planning the report

W.L. Barnes

• Identify the story you wish to tell. Often this can be simply done by deciding which diagrams and graphs of data you wish to include.

• Draw up a plan of what you want to say and how this fits around the diagrams/graphs you want to use.

• Extend you plan to an outline that includes all the section headings you will need.

• Check through the outline to see that sequence is sensible and that nothing vital has been ignored.
– Check your outline through with someone else e.g. fellow student, tutor or demonstrator.
– Write a first full draft of the report.
– Check the first draft through for consistency, obvious errors and omissions (e.g. figure captions missing? References still to do?) If you can get a friend to read through it critically so much the better.
– Revise the draft and re-check until satisfied.
– Submit report.
While Writing

• Points to keep in mind when writing a report *W.L. Barnes*
  – Make sure you mention the background to, and aims of, the investigation
  – Include the basic concepts and theory relating to the investigation.
  – Describe the procedures used. Identify major sources of error and explain how they were dealt with.
  – Only data directly relevant to the calculation of final results should be presented, omit raw data. Graphs are a particularly effective way of presenting results – only use table where it would make more sense that providing a graph.
– Final results should be presented clearly and concisely; include an analysis of errors, but omit details of arithmetical manipulations.

– If computer code was used or written, give details of the checks and validations you performed on the code.

– The interpretation of the results must be discussed, and improvements and possible extensions of the work suggested.

– Give references to any books, articles or other sources of information (e.g. web sites) that have proved useful in preparing the report, or carrying out the work.
• Balance of content detail:

<table>
<thead>
<tr>
<th>Section</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td></td>
<td></td>
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<tr>
<td>Literature survey</td>
<td></td>
<td></td>
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<tr>
<td>Problem definition</td>
<td></td>
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<tr>
<td>Requirement specification</td>
<td></td>
<td></td>
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<tr>
<td>Schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conclusion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• Do not copy!! Directly copying from an external source is:
  – Not ethical
  – It is obvious that it does not belong to you.
  – Why should I read your report instead of it?

Briefly describe and cite (give reference)
If you will use the detailed information in your report:
  – paraphrase (reword)
  – Relate to your problem
  – If you have to include exact words, quote and indent it.
Formatting Tips

- Use fonts and typesetting to represent document structure.
  Number and format your headings hierarchically in suitable font types, sizing and alignments.
- Give references to bibliography correctly.
  See [1,2,3,6,23,123].
  versus:
  “XML is a standard by World Wide Web consortium [1] introduced in late 1990’s”
  “There are many applications to detect possible anomalies in a subnet. Some of them are commercial [12, 10, 7] and some of them are free software [1, 3, 4].”
  “In this paper authors introduce a new method for .... [Sehitoglu01]”
• Give correct bibliographic entries at a References or Bibliography section after the conclusion, before appendix if any exists.

Incorrect:

– http://www.w3.org/
– “Cin Ali Sirkte”.

Correct:

http://www.ceng.metu.edu.tr/~onur/490/formreport.pdf
• Balance formal specification versus verbal specification. Do not:

  – Put diagrams but spend no words.
  – Describe verbally but no diagram or any formal specification.

Just spend some words to describe the diagram, what are the major components, which parts they describe etc.

• Typeset your documents correctly.

  – *Emphasize* the defined phrases and keywords.
  – Typeset formulas correctly:
    \[ x_i = \sqrt{\frac{y_i^2 + x_i^2}{2}} \rightarrow z_i \quad \forall i = 1, \ldots, n \]
versus

\[ x_i = \sqrt{\frac{y_i^2 + x_i^2}{2}} \rightarrow z_i \quad \forall i = 1, \ldots, n \]
Proofread your reports!!!!

Spellcheck!!!

He said to himself: what happened is not really what happened. For the first time in his experience of writing reports, he discovers that words do not necessarily work, that it is possible for them to obscure the things they are trying to say. Paul Auster, Ghosts