How to write a good technical report ?

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How to write a good technical report ?

- In Engineering, one of the major forms of communication is the technical report. This is the conventional format for reporting the results of your
- research
- investigations
- and design projects.

Who are the receivers ?

- At university, reports are read by lecturers and tutors in order to assess your mastery of the subjects and your ability to apply your knowledge to a practical task.
- In the workplace, they will be read by managers, clients, and the construction engineers responsible for building from your designs.

Key features of reports

- are designed for quick and easy communication of information
- are designed for selective reading
- use sections with numbered headings and subheadings
- use figures and diagrams to convey data.

Before writing the first word:

- Make your mind regarding the message you want to convey
- Try to define the likely audience:
  - Technical audience
  - Non-technical, e.g., general public
- Taking into account the audience's limitations and the message you want to convey, choose an appropriate outline

Basic structure of a report

- Title Page
- Summary
- Table of Contents
- Introduction
- The Body of the Report
- Conclusion
- References
- Appendices

Title Page

- the title of the report
- the authors' names and ID numbers
- the course name and number, the department, and university
- the date of submission.

The summary:

- states the topic of the report
- outlines your approach to the task if applicable
- gives the most important findings of your research or investigation, or the key aspects of your design
- states the main outcomes or conclusions.

The summary does NOT:

- provide general background information
- explain why you are doing the research, investigation or design
- refer to later diagrams or references.

Table of Contents

Introduction

- A transition toward the main body of the document. It should take an uninformed reader from a level of **zero-knowledge** to a level in which the reader is able to **understand the main body** of the document.

A good introduction must have:

- Motivation (i.e., why is it important?)
  - General
  - Specific
- Background (i.e., what is the history of this issue?)
- Objectives (i.e., what are you trying to accomplish?)
- Scope (i.e., what is the focus of your analysis?)
- Limitations (i.e., what constraints did you face?)
- Content (i.e., what is in the report?)
- Organization (i.e., how the report is organized?)

The body of the report:

- presents the information from your research, both real world and theoretical, or your design
- organizes information logically under appropriate headings
- conveys information in the most effective way for communication:
  - uses figures and tables
  - can use bulleted or numbered lists
  - can use formatting to break up large slabs of text

Conclusion

- states whether you have achieved your aims
- gives a brief summary of the key findings or information in your report
- highlights the major outcomes of your investigation and their significance.
- The conclusions should relate to the aims of the work:

Example :

- **Aim**

  The aim of this project is to design a mobile phone tower.

- **Conclusions**

  In this report, a design for a mobile phone tower has been presented. The key features of the tower are... It was found that...

References

The two parts to referencing are:

- **citations** in the text of the report
- a **list of references** in the final section

A **citation** shows that information comes from another source.

The **reference list** gives the details of these sources. You need to use in-text citations and provide details in the references section when:

Example :

- **In-text citation**

  Corrosion is defined as a 'chemical action which harms the properties of a metal' (Glendinning 1973, p.12). Because corrosion reduces the life of the material and protection procedures are expensive, special corrosion-resistant metals have been developed, including Monel metals which are particularly suited to marine applications (Glendinning 1973).

- **Reference list entry**

  Glendinning, E.H. 1973 *English in mechanical engineering*, Oxford, Oxford University Press.

Appendices

These contain material that is too detailed to include in the main report, such as raw data or detailed drawings. The conventions for appendices are as follows:

- each appendix must be given a number (or letter) and title;
- each appendix must be referred to by number (or letter) at the relevant point in the text.

- **Example:**
  The data obtained are summarised below. The detailed data are given in Appendix 3.