

How to Write a Well- Structured Technical Report

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Writing technical reports require your ability to arrange your thoughts clearly, concisely, and logically. After all, a technical report is a formal report designed to convey technical information in a clear and easily accessible format. It should be written in correct, non-colloquial language with due attention to style, clarity, conciseness, grammar, punctuation, and spelling.

Business and industry, as well as universities, often demand writing technical reports. Engineers, scientists, and managers usually write research reports to communicate the results of their research work, field work, or experiments. Technical reports are diverse in their aim and focus, and differ greatly in their structure; they are proposals, progress reports, trip reports, completion reports, investigation reports, feasibility studies, or evaluation reports. No matter how diverse are technical reports in their forms and objectives, they share one feature in common: they communicate to the audience.

All technical reports usually have a defined final organization and divided up into sections. Each section has a specific purpose, and there are peculiar guidelines for formatting each section. Though, there is a standard model of structure, style, and sections' arrangement, which we will refer to.

The major sections of the technical report are: title page, abstract, table of contents, introduction, results, conclusion, recommendations, references, and appendices.

Title page

The title page of the report usually contains four main parts of the information: the report title; the name of the person, organization, or company for whom this report has been prepared; the name of the author or the institution, which originated the report. This is the essential information that should be included to the title page of your report.

One of the most perplexing issues at this stage of technical report writing is composing the title of the report itself. Bear in mind that the effective title should be informative, but reasonably short. Indeed, there are four basic approaches that writers use in writing the title of their technical reports. You can:

- 1) Make the title the restatement of the investigated subject.
- 2) Incorporate one of the major research methods into the title of the report.
- 3) Include the name of the hypothesis, theory, or problem that was researched in the title of your research report.
- 4) Provide a concise description of the obtained results in your report title.

Abstract

"An abstract is an accurate representation of the contents of a document in an abbreviated form." The abstract states the report in miniature. In fact, it summarizes the whole report in one, and has a form of the concise paragraph that incorporates 100-200 words. As soon as it condenses and summarizes the whole report, it should be written after the report has been completed. You should include the objective, research methods used in the investigation, results of your research and recommendations that you give to the readers. Pay special attention to describing the objective of your report that states the problem, and the analysis of the results that incorporates your recommendations.

Table of Contents

Most reports contain the table of contents section, where you list the contents of your report and show how the report is organized. You can label each section with descriptive headings and subheadings to explain the readers what each section is all about. A good table of contents makes it easy for the readers to locate each section of your report.

Introduction

The introduction of a technical report represents the subject, the purpose, and the plan of the development of your report. Writing the introduction, you should keep in mind that your main aim is to introduce your readers to the problem that you are setting out to solve in the course of your technical report. You can also include some background information into the introduction to get your readers acquainted with the history and background of the subject that you have chosen and thoroughly researched. Remember that stating the objectives and the problem of the carried research are the main functions of this section.

Results

"All the preceding sections of the report lead in to the results section and all the subsequent sections will consider what the results section means."

Results is usually the longest and most important part of your report, where you have to report the results of the carried research. Literally you have to discuss here what you have invented, discovered, confirmed through your research, and to present this information in the form of calculated values, visual observations, plots, illustrations, graphs, or tables.

You should focus on facts of your research in the results section. As stated above, you'll extensively use tables and figures in this section. They are the indispensable part of presenting the results of your research work, because they help you to convey the data to the readers more efficiently, in addition, to simplify and to visualize presented information. With the help of figures and tables you will convey numerical data and measurements taken during your experiment in your report. Remember that the results of your research should be presented as plainly as possible.

Conclusion

It is a very short section, where you summarize your findings and generalize their importance. As you draw conclusions, you should explain them in terms of the preceding results section, and give your opinions based on the evidence and data presented in the results section. You don't have to introduce any new ideas in this section; though, you can raise unanswered and ambiguous questions in the conclusions.

Recommendations

In this section you have to provide suggestions based on the results and conclusions of your work. Recommendations section indicates that you are completely versed in the importance and implication of your research, as you give some piece of advice to your readers.

References

The main objective of citing references is to give the readers an opportunity to follow up your work. References show the readers that the materials and data you have used in your research are credible. Don't forget to include references that you directly cited in the text.

Be sure to include enough references, because the reader may want to follow up your references for further research on the topic, or simply to get to know more on the topic. You have to incorporate the authors, year, edition, publisher's name and publisher's location for books that you have used in your research; for articles in journals give the authors, year, and name of the publication, volume and page numbers. Don't include secondary sources that are slightly related to your research, just to make a list of references longer.

Structure your technical report logically, and to make it precise, specific and detailed.

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