Guide to a Project report

Essentials

Contents

1 | Goals of a technical report

Projects in the field of engineering are usually carried out by a team. The report enables the various project members to coordinate their activities.

At the end of the development phase (sometimes several years later), the engineers can correct mistakes, continue with the development or understand the reasons for decisions made.

The author of a report can apply these rules flexibly: Adaptation to the context is preferred to strict control.

In concrete terms, this means that the report:

- all the results of the project are understood and
- the reasons for all decisions taken can be understood.

The rules listed below serve as a guide. The author does not have to strictly follow these rules, but adapts the report to the project context.

These recommendations are suitable for a small or medium-sized project whose results can be summarized in a single report.

The quality of a report is characterized by the fact that it can be easily adopted by a third party.

2 | Characteristics of the reader

The reader is usually an engineer who has the same general knowledge as the author, but not necessarily the same specific skills. For example, the reader is expected to be familiar with digital systems, microcontroller architecture, the C language, and protocols. However, he is not expected to know the specific architecture of the PIC microcontroller family or the CAN protocol.

The technological objective of the project does not necessarily have to be known to the reader.

At a school, a project may also serve to achieve educational objectives ("be able to develop applications that use the CAN bus"). These objectives are of course important, but do not interest the reader a priori. The author may briefly address them in the conclusion, for example.

Personal comments (interest in the project, difficulties encountered,...) are usually not of interest to the reader. The report is therefore limited to the facts.

3 | Theoretical elements

Does theory have its place in technical reports? The answer to this question depends heavily on the context, but the following rules can be made:

- The report is not a tutorial. A tutorial serves to convey knowledge. A report, on the other hand, describes a development and an implementation.
- The reader must be able to understand the process and the results of the project. For this purpose, either the necessary theoretical knowledge is briefly described or it is indicated where the reader can find this information. Theoretical knowledge that is not related to the development is not mentioned.

4 | Auxiliaries

Auxiliaries are necessary for the execution of a project.

These tools and their circumstances of use are indicated. If possible, reference is made to existing documents instead of including a complete description in the report.

Very often, existing hardware or software components are used in a project. The report does not include a description of these components, but a reference to where this description can be found. These components very often have to be parameterized or adapted. These parameters and adjustments are project-specific and must therefore be described in the report.

5 | Structure of the report

The recommendations below assume that the report is a single document (and appendices).

5.1 The title page

This includes at least the project title, information on the place of execution of the project (in the case of a school: name of the school, course of study, module), the names of the authors (first name and last name in that order) and the date of submission of the report. The number of the version can also be indicated.

5.2 The table of contents

The table of contents includes the list of chapters and subchapters with their respective page numbers. The appendices must also be mentioned in the table of contents.

Long and comprehensive reports also have a list of figures and, if applicable, a list of tables.

For reports of less than 10 pages, a table of contents may be omitted.

5.3 The introduction

The introduction usually defines the project objectives. If necessary, the project context is also explained. The proposed approach as well as the available tools may also be mentioned.

The introduction also gives a brief overview of the structure of the report. The individual chapters are briefly summarized and their linkage is shown.

5.4 The chapters

For the division into the chapters, one uses the top-down principle, i.e. one starts with the general structures and then moves on to the implementation details.

The chapters do not all have to be the same length. However, it is recommended to divide long chapters into subchapters. A chapter usually starts on a new page. Chapters and subchapters must be numbered.

Subchapters have no more than three levels (example: §1.2.3). More levels will make the report more difficult to read.

One should also remember the following principle: "A drawing or a sketch is worth a thousand words."

5.5 The conclusion

The conclusion must meet the objectives defined in the introduction and summarize the different stages of the project and their main results. It may also include improvement or development opportunities proposed by the author.

5.6 The signature

The report is dated and signed by the authors after the conclusion and before the appendices. By this signature, they certify that they are the authors of the report.

5.7 The references

Sources cited in the report must be clearly stated. Also listed must be the main reference documents that formed the basis for the developments.

5.8 The annexes

All information necessary for understanding the report must be in the report itself and not in the appendices. Appendices should enable the reader to improve his knowledge and/or understanding of certain points. Thanks to the appendices, the report can also be made shorter and clearer.
The programming code is usually included in the appendices. One chooses a small font size and a reader-friendly page layout (line alignment).
Each appendix includes a title and is numbered. A reference is inserted in the main text for each appendix, regardless of the list of appendices.

6 | Style of the report

6.1 The outline

Sentences should be short and grammatically correct. If possible, a paragraph should not be longer than half a page or one page.

6.2 The font

An easily readable and neutral font should be chosen.

6.3 The font size

This must be chosen depending on the font used. The main focus is to make the report easy to read.

6.4 The illustrations

Each figure is numbered and labeled. In the text, reference is made at least once to each figure.

6.5 The tables

Each table is numbered and labeled. Each table is referenced at least once in the text.

6.6 The references

It is often desirable and useful to include a text, table, figure, or other element from a third-party document in the report. In this case, the source is explicitly indicated as follows: A reference [1] is

inserted immediately after the adopted element. In the footer or at the end of the report, the information that allows the reader to find the original document is provided. Before the final submission of the report, the validity of these references must be checked again. The reader knows that certain Internet addresses may no longer be valid.

Bibliography

[1] T. Linus, "Git." https://git-scm.com/ (accessed: Apr. 25, 2023).