Formal Report

- **Recommended reading**
  Part Four of Book: Technical Communication.

- **Formal report**
  A formal technical report is usually a long document to report the results of a completed research/industry project in details. It is distributed to peers for sharing the information obtained in the project. A formal report usually consists of a title, an abstract (summary), a table of contents (optional), a list of illustrations (optional), an introduction chapter (or section), a main part of multiple chapters (or sections), a conclusion chapter (or section), a list of references, and appendicies (optional).

- **Title**
  There is usually a title page in the format for a formal report. The title page usually contains the information on the title, the recipient, author, and the date of the report. The title of the report should be concise and representative.

- **Abstract**
  An abstract in a technical report is a short self-contained document which gives the information on the purpose, scope, method, results, and main recommendations of the report. It gives only the most central information and does not include elaboration and/or discussion. Readers usually use the abstract to get a preview of the entire report and decide if to read the entire report or parts of the report.

- **Table of contents**
  For a long report with many chapters and sections, a table of contents which lists the numbers of the first pages for the chapters and sections helps readers to find the interesting information efficiently.

- **List of illustrations**
  The list of illustrations gives what page numbers where the graphics used in the report appear.

- **Introduction**
  The introduction is the first chapter (or section) of the report. It introduces the body of the report and usually includes the background and significance of the project, the state of the art of the research related to the project, the method used and the results obtained in the project, and the impact and limitations of the project.

- **Main part**
  The technical results to be delivered to readers are described in details here. The description is usually partitioned into multiple chapters (or sections). Normally a preliminary chapter
(section) is used to define the notation and technical terms of the report. In a technical report, the state of the art of the research related to the report should be introduced. If the related work can be briefly outlined without using the notation and technical terms defined in the report, the related work is usually introduced in the Introduction. However, in many cases a more precise and detailed descriptions of the related work are needed and the descriptions may have to rely on the notation and technical terms defined in the report. In these cases, in addition to a brief outline of the related work in the Introduction, a more detailed description is included in the preliminary chapter or put into an independent chapter.

There should be chapters (sections) on describing the methods used in the project, the results obtained, and analysis of the results. Theoretical study and empirical study should be introduced in different chapters. Topics in parallel should be introduced in parallel chapters.

- **Conclusion**

  Usually the results of the project are discussed in details in the main part of the report. The Conclusion chapter (section) summarizes the results of the project and gives the recommendations for the future work. The conclusion usually covers the main purpose, methods, and results of the report; whether the proposed goals have been realized; and recommendations for the future work.

- **References**

  The reference section gives the list of references cited in the report. The references provide the information for readers to find the original documents cited in the report. The references are also used to meet the ethical and legal requirements of acknowledging the work of others.

- **Appendices**

  An appendix is used to cover some contents which should be included in the report but may be too details or interrupt the readability of the report if they are included in the main part. For example, a nice result is obtained by a very lengthy and complex proof using a standard method. Most readers would be interested only in the result but not the proof itself. However, the result must be supported by the proved evidence. In this case, it may be better to include the result in the main part and the proof in an appendix.

- **Others**

  A technical report may also have a list of key words which specifies the area of the work, a glossary section to explain the technical terms, and an acknowledgement section to acknowledge the supports and helps received by the author to complete the project and report.