



Prince Mohammad Bin Fahd University  
**Electrical Engineering Department**

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## Project Report Template

**Version 2.0**

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**Note:** It is assumed that you have already read the document "General Guidelines for writing Technical Reports".

## Report Format:

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Project Report is a very important document which describes the problem statement, the motivation, the background, what you have done and how you carried out your project work, results and analysis. This document should be very comprehensive and should be supported with figures and facts.

The following should roughly be the structure of your report. Note that these are just *guidelines*, not *rules*. You have to use your intelligence in working out the details of your specific writing.

1. **Cover page:** You should have a proper cover page that mentions the project title, name of the course, semester, team members, supervisor name, and date of submission (see next section)

The title should reflect what you have done and should bring out any eye-catching factor of your work, for good impact.

2. **Abstract:** The abstract should be short, generally within about 2 paragraphs (250 words or so total). The abstract should contain the essence of the report, based on which the reader decides whether to go ahead with reading the report or not. It can contain the following in varying amounts of detail as is appropriate: main motivation, main design point, essential difference from previous work, methodology, and some eye-catching results if any.
3. **Table of Contents:** Insert a Table of Contents which lists all the sections of your report (upto 3 levels – Heading1, Heading2 and Heading3) against page numbers. Go to Reference and select Table of Contents to insert one, and format all section/sub-sections titles appropriately as Heading 1, 2 or 3. Don't forget to refresh the Table of Contents every time you make changes to your report.
4. **List of Tables and Figures:** Include a complete list of all tables and figures in your report.
5. **Introduction:** This section is a shorter version of the rest of the report. After abstract, introduction and conclusions are the two mainly read parts of a report. In this section you should answer the following questions:
  - What exactly is the problem you are trying to solve? This is the *problem statement*.
  - Why is the problem important to solve? This is the *motivation*. In some cases, it may be implicit in the background, or the problem statement itself.
  - Is the problem still unsolved? This constitutes the statement of *past/related work*.
  - Why is the problem difficult to solve? This is the statement of *challenges*..
  - How have you solved the problem? Here you state the essence of your *approach*. This is of course expanded upon later, but it must be stated explicitly here.

- What are the conditions under which your solution is applicable? This is a statement of *assumptions*.
  - What are the main results? You have to present the main *summary of the results* here.
  - What is the summary of your contributions?
  - How is the rest of the report organized? Here you include a paragraph on the *flow of ideas* in the rest of the report.
6. **Background:** In this section include sufficient background about the basic aspects or the theoretical underpinnings of your project which the general reader must understand before knowing the details of your work.
7. **Past/related work:** In this section explain what is novel about what you have done in this project. Here, you must try to think of *dimensions of comparison* of your work with other work. For instance, you may compare in terms of functionality, in terms of performance, and/or in terms of approach.
8. **Project Management:** In this section, you must describe your project management strategy – how you have managed this project given the resources and time (project duration) in order to successfully complete this project. List the break-down of your project into a set of smaller tasks, role of team members and describe how they contributed to the success of the project. Show your project plan using Gantt Charts and/or Pert Charts.
- Also, explain any changes in the project plan from the original one in your proposal, if any. It is normal to make changes to your original project plan as the project progresses towards its completion.
9. **Technical Sections:** This is the most important section as it describes your design in details. You may have different sections which delve into different aspects of the design. The organization of the report here is problem specific. The organization of the report here is problem specific. You may also have a separate section for statement of design methodology, or experimental methodology.

You should mention the following main points:

- **Design details:** Describe your design in as much detail as possible supported by pictures, graphs and drawings.
- **Calculations:** Include all necessary calculations as well as design/circuit diagrams. Make sure your figures are clear and well labeled.
- **Use of figures:** The saying "a picture is worth a thousand words" is appropriate here. Spend time thinking about pictures. Wherever necessary, explain all aspects of a figure and do not leave the reader wondering as to what the connection between the figure and the text is.
- **Terminology:** Define each term/symbol before you use it, or right after its first use. Stick to a common terminology throughout the report.

10. **Project Results and Analysis:** In this section, discuss the project results in detail supported by facts and figures.
  - State the principal results and discuss them.
  - If you have proposed a new idea, algorithm or design, discuss how it compares with existing ones.
  - Tabulate your data and produce necessary plots. Analyze the data and/or plots and make comments.
11. **Challenges Faced:** Describe all challenges you faced in the project and how they impacted the project schedule, scope or expected results. Also, write about how you solved these challenges or found a way around them.
  - Problems with team members not cooperating/meeting.
  - Problems or delays in procuring required parts/components/tools.
  - Problems with equipment or components not working or malfunctioning.
12. **Final Budget:** In this section, you list all the expenses incurred in completing your project for things such as hardware, software, and related costs, etc. If you exceeded the original estimated budget, give details about and justification for the extra expenses.
13. **Project Deliverables:** In this section, you list out the **actual** project deliverables (results or outcomes) such as a product, detailed design documents, a final report, publications, etc. The success of the project is gauged from what you actually delivered compared with what you set out to achieve at the beginning of the project. Provide justification if you fell short.
14. **Recommendations and Future Work:** Here you state aspects of the project you have not considered due to lack of time and/or resources. Also, provide suggestions/recommendations for further extensions or improvements.
15. **Conclusions:** This is one of the sections commonly looked at by the readers. State briefly the main take-away points from your work. Re-state the main objectives of your project and to what degree they were achieved. Write about what went wrong and your project was impacted. Also, write about the significance of your work and the results you obtained.
16. **References:** All sources of information for your report should be cited in the writing.

At the end of the report/paper, include a section called References and list each. The titles of books and articles are also to be included with the page numbers. This is intended to provide convenient means for the reader to locate the cited material.

**Note:** Refer to the document “General Guidelines for writing Technical Reports” for citing references.

17. **Appendix:** In this section, you include additional information related to your project which the reader can refer to if needed, such as:

- data sheets of components you have used
- source code of programs you have written
- proofs of theorems, full-page graphs and plots
- additional PSpice and/or Matlab simulation results, etc.
- printout of LabVIEW VIs
- hardware schematics

**Cover Page:** Your final report must have a cover page with the following information:

- Name of department and university
- Project title
- Names and IDs of group members
- Date of submission
- Supervisor name

See next page for a sample cover page.

**Department of Electrical Engineering**  
**Prince Mohammad University**

PROJECT REPORT

Design of a Smart Home System

Group members:

Abdullah - 201010101

Osama - 201010102

Date of submission: 22/4/2012

Supervisor: Mr. Ahmed A Hussain