Guidelines on the Project Report

Zhizhang Chen

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1.0 Objectives

The objectives of a laboratory project report are to present how and what you have done and discovered in a project in such a clear and convincing manner so that others, including yourself, can follow and possibly reproduce at a later time.

2.0 Contents of the Report

A report should include at least the following contents:

- Very brief description on the objective or what to be done
- Design description
- Procedures or methodology
- Implementation and measurements
- Analysis
- Conclusions or summary

The suggested length of the report should be less than 7 pages excluding the appendices. If possible, itemize your topics and explanations.

The description on the objective should be brief. Three to four sentences are usually sufficient.

The design description may include the name of the circuit or component you are "developing", circuit or component topology you are using, functions of circuits and components in a system, important specifications for the circuit and component, design goal for the specifications, and software files you create.

The design procedures should describe the design steps and reasoning behind what you designed. In particular, it should include, if any, explanations on the process you use, the trade-off factors involved in your choice of component values and creation of layout and supporting data from calculations and simulations, circuit and component models you develop and apply and references (e.g. books, equations and theory) you cite and base on.

The implementation and measurement is to describe the real circuits you built and measured. It should also contain the test setup, modifications of the initial design, and measurement results including any unusual, unexpected or interesting behaviors in the circuits.

The analysis is probably the most *difficult but the most important* section as you need to think and analyze what you obtain from the design and measurements. It normally includes the comparisons between your initial design and final design, measurement results and simulation results. It should also include your hypotheses (educated guess) and your supporting simulations (or calculations) on the main factors that cause errors and deviations from the theoretical results. Then, it should include what you have done to correct and optimize your design and what you will do to further improve the design. Finally, the analysis should contain your explanations on new discoveries if any in your design process.

The conclusion and summary is to summarize the key findings, important measurement results and the degree of your success in achieving the specifications. To make the conclusion and summary clear and succinct, use a table if applicable.

3.0 Requirements for Printout and Graphs

- Try not to include a printout that is directly plotted from CAD tools or the instrument plotter because it is usually not intelligible most of the times. Always enhance and process the plots. Have clear legends and right scales.
- Do not show too many things on a single graph.

4.0 Grading

- Each project report is equally weighted.
- The distribution of the grades among different parts of a report is as follows:
  Design description (10%), Design procedure (20%), Implementation (20%), Analysis (40%), Conclusion (10%)