

Formal Report

This formal report should be a typed and well-written (and proofread) report that documents a project or lab.

Your report should include the following

1. **Title page:** Including name of project, name of team or division, names of team members and author, and date. In your case, since you are not working on teams, include the title, your name, date, and class.
2. **Abstract:** This essentially is a preview summary of your report. An abstract is a concise, one paragraph description (less than 200 words) of your entire project, including results. Later in the report you will expand on these concepts in greater detail. This is the most important part of most papers as it is often times the only part most people will read.
3. **Introduction:** This should be a brief introduction to your project. It should briefly discuss what you are working on exactly and explain the problem at hand. The procedure and results will be discussed later in the following sections.
4. **Theory of operation:** Here the basic idea is to describe how the device(s) work. Include a block diagram of the device(s) in question. Include any equations and formulae you developed or borrowed (mention where they came from) that can be used to determine the characteristics of the system. You should go into enough detail that someone of your own level of expertise could pick up the report and understand the basics of how the device(s) work.
5. **Design procedure:** The goal of this part is to convey what you did in the project. A description of the total process. Here you want to describe each part of the project with a few sentences in a short paragraph. You do not have to stick to one paragraph for each section, but remember you dont need to write a book either. Make sure you cover everything in enough detail to convey what you did in a way that it could be repeated from this report. A schematic of your circuit should be included and explained.
6. **Results and Conclusions:** The purpose of this part is to evaluate your implementation of the project. In this section you detail the performance of the device(s). Mention what went as expected and what did not. Compare and analyze data from theoretical calculations and the simulation. If the design did not meet the specs, explain why and discuss whether the margin of error is acceptable. Describe your conclusions about why it did or did not perform as expected, what went well, and what you would do differently.
7. **Appendix:** Include the following pertinent information in an appendix
 - Data sheet for the device (the title page from the data sheet is sufficient, do not include the entire datasheet, the point here is to be able to find it and use it.)
 - A BOM or "bill of materials" on which you must list what parts and materials were used in the final product. Specify part numbers, quantity and cost of each item and a total.