

LITEC Reports

The Writing Center
At Rensselaer

4508 Sage Lab
518/276-8983
writingcenter@rpi.edu
www.rpi.edu/web/writingcenter

Developed by:
Debopriyo Roy

Introduction

The format shown in this handout is fairly standard for Laboratory reports. But, it is also true that there is no one standard as to how a lab report should be constructed. The style and format may vary to a certain extent depending on the TA and the difference in the way the laboratory experiment has been conducted. Always check with your TA about the specific format he/she desires. Adapting to the particular situation is very important.

Whatever format is followed, an excellent lab report explains what you did, how you did it, why you did it and what conclusions can be drawn. Moreover, it should also be expected that the report is grammatically correct, has no spelling errors, looks professional and should be sufficient to convey all relevant information.

You may want to bring a draft of your final report to the Writing Center for a critique. Please allow yourself sufficient time before the submission of the final report to your TA, so that you can make the necessary changes that may be required.

Title Page

The title page should be concise, specific and informative. Use words that are reflective of the work you have performed and can be taken as keywords for a database or index search for similar papers. Do not use abbreviations, formulas and specialized jargons. The title page should provide the name of the lab experiment, the names of the lab partners, name of your TA, the session your lab meets, the date and any other information that your TA requires.

Abstract

This is the summary of your project and is encapsulated in 100-200 words. It is strongly recommended that the style of an informative abstract be followed. It encapsulates the most significant points in the report by presenting the problem and purpose, scope, methods, and major results and conclusions. The abstract summarizes the report itself, not the actual experiment. Hence, you cannot write the abstract until after you have completed the report.

Write your abstract after you have written the rest of your report. Use the active voice whenever appropriate. Before writing the abstract, it is often helpful to summarize each section of the report (introduction, methods and materials, procedure, results, discussion and conclusion) in one or two sentences. Then try to arrange this information into a short paragraph. Always remember to keep in mind the sequence in which the project has been completed and the report prepared.

Body of the Report

1. Introduction and Laboratory Objectives

Typically, the introduction states the problem to be solved or the experiment to be performed and explains its purpose and significance. You will describe your laboratory objectives for the assignment. It is very important to inform the reader about the contents of the report in a concise manner. Establish a correlation among the current, the preceding and succeeding lab exercises to provide a sense of continuity. These would include such objectives as becoming familiar with lab equipment, designing and testing software or hardware, acquiring and analyzing data, and any additional objectives that you may have chosen. Attainment of additional objectives may, if approved by your TA, yield extra credit for the laboratory exercise.

Summarized points are:

1. What is the purpose of your project?
2. Why have you done this work? (Motivation)
3. What need or problem does it address?
4. What are your goals and your approach?
5. Why have you chosen this approach over others?
6. What are the criteria by which this work is to be judged?

2. Methods and Procedures

Here you will describe your methodology, including a description of any hardware and/or software that you used in meeting the laboratory objectives.

Description of hardware

Do:

1. Describe the function and assembly of the circuitry you used (both verbal and schematic descriptions) and functions of all chips/components used in the circuit. Document any hardware problem, solutions or potential solutions.
2. Write a complete description of all of your hardware – each report should stand alone as a complete system description.

Examples:

- Answer the question: “Why is the chip/component needed in the circuit?”
- Which ports control which functions. (Example: Port B is used to control the LEDs.)
- Any special calibration procedures. (Example: Describe how the gains on the optical tracking unit circuits are determined.)

Do not include:

- Redundant information like laboratory tools used or basic equipment used.
- Specific pin connections. Example: Pin 30 on the EVB is connected to pin 2 on the 7405 inverter. Pin numbers can be read off the schematic.

Description of software

Describe the software you have written, and show how it meets the performance requirements of the system being designed. In addition to an overall description, you should provide details on segments of interest.

In Summary:

1. An overview of the program structure, describing in detail each of the functions.
2. Detailed descriptions on procedures performed in your code.

3. Results

In the Results section of your report, you will:

1. Describe results obtained from the lab experiment.
2. Briefly outline your success in meeting the week's objectives.
3. Talk about any unique features of your approach.
4. Discuss any substantial problem that you encountered.

Do Include:

- Graphs of any responses obtained in the experiment. Example: Optical tracking unit versus lateral track position response, closed loop speed control responses.

4. Conclusions

Draw conclusions from the results and discussion that answer the question, so what? Then go on to explain your conclusions. Criticisms and recommendations should focus on the lab as a learning experience; mere complaints about faulty equipment or amount of time spent are not appropriate.

Participation

An outline or summary of who did what toward the completion of the lab exercise must be included in all lab reports. All the lab partners should sign this portion.

References

Any information you used which was not your own and is not considered common knowledge must be referenced.

Appendices

Appendices should contain all extra material that does not fit into the body of the report. This includes well-commented C source code, schematics, and raw data as required. Schematics should accurately represent the circuit, which was constructed for the laboratory, and all the pin numbers for all connections should be included. Appendices may further include calculations, graphs, and other quantitative materials that were part of the experiment, but not reported in any of the above sections.