

Final Report Template and Rubric

This guide is provided to help you structure your project report. Follow these guidelines as much as possible but only as far as they make sense for your topic and report. They apply to both the penultimate and final report.

1 Content Guide (35 points)

Your project advances the body of knowledge of the related fields in some way. This novelty could take several forms. It could lie in your research questions, your methods, or the application of a new theoretical logic to a problem. Be sure to discuss these contributions in your paper, either in the introduction, the discussion, or the conclusion.

1.1 Abstract (2 points)

The abstract is intended to serve as a summary of the paper. It should be self-contained and include your topic, problem statement, research questions, research design, setting, and major conclusions and implications. It should begin with the most important information and highlight the main points.

Write the abstract in prose. Use the active voice and present tense. Avoid numbering, bullets, and in-text citations in the abstract.

1.2 Introduction (3 points)

The introduction is an overview of the report. Its purpose is to explain to readers the importance of the problem and convince them that the problem is worth solving, so it presents the specific problem under study and the motivation for studying the problem. It also presents the specific research question being studied. It must convince the reader that the report contains a well reasoned and researched solution or steps toward a solution to the problem.

Therefore, the introduction should include the following: the problem domain, the phenomenon, the gap in knowledge from which the problem arises (i.e. how does this work relate to other work in the area and fill in gaps in that work), the motivation (why do you care about this problem and why should others care), the problem statement, the research questions, the relation of the research design to the problem, and the implications of the work.

1.3 Literature Review (5 points)

The literature review can be a few sections or subsections. This part of your paper provides a critical summary and evaluation of what others in the field have written on the topic. It should go beyond a summary of what has been written. The literature review should take these writings and distill them into a basis for your work. It should be organized into a logical flow and be relevant to the problem and the design of your research. In particular, it should clearly situate the problem in the domain space and link the problem to the research design

Basically, the literature you choose should provide evidence to build your argument for your approach to solving the problem at hand. If a previous work contradicts yours, *do not omit it*; include it, and provide a suitable justification for disagreeing.

This section is not expected to be an exhaustive literature review but it should contain the most relevant literature to your question and an explanation of how that literature affects your research. It should not be a repeat of the introduction section.

1.4 Problem Statement (2 points)

The problem statement is a clear and detailed statement of the problem. It positions the problem in the broader context and expresses the source and significance of the problem, the possible stakeholders, the limitations and assumptions made. This section also includes a solution statement that tells the reader what the project will achieve with regard to the problem. This section basically summarizes the introduction and literature review to refocus the reader.

1.5 Methods and Procedures (7 points)

This section describes how you will go about answering the research questions and solving the problem. It presents your research design, your data collection method, your data, your analysis method, and your explanation for choosing each of the above. In this section you will explain in sufficient detail your overall design (e.g. descriptive, experimental, comparative, etc.), your expected research setting and equipment, your participants (including roles and demographics) if any, your sampling method, your data collection methods, and your data analysis. Include a description of all equipment, instruments, measures, timeframes, and so forth. Your research method and procedures should be described in sufficient detail to be replicated exactly. Any assumptions, potential sources of error, and adjustments to the initial design should be included.

1.6 Results (5 points)

In this section you will describe the results of your data analysis and all deliverables produced (include the deliverables as appendices). For each result, the data used and the analysis method should be clearly explained, as well as how it leads to that result. You are encouraged to use more than one representation of your findings, for example by using graphs to augment the text. All scales used should be comparable and all units should be clearly labeled.

1.7 Discussion (6 points)

This section takes the results and uses them as evidence to suggest solutions or steps toward solutions for the stated problem. This evidence must be placed in the context of the logic constructed in the literature review. The discussion also points out the implications of the findings that follow logically from the results. It clearly states the assumptions made. The discussion also outlines the contributions of this work to related questions in the problem domain.

Be careful not to describe implications or make recommendations that are not supported by your results.

1.8 Conclusion (2 points)

The conclusion summarizes the entire project. It should include the problem domain, the problem statement, the motivation, key related research, a brief summary of steps taken to solve the problem, key results and key implications and recommendations. A reader should be able to get the gist of the paper from reading the conclusion. This is your final chance to influence the reader.

Be sure to emphasize the key takeaways from your document!

1.9 References (3 points)

The reference section should begin on a new page. All claims made and quotes used in the report should be properly referenced. All references in the reference section should also be cited within the text of the document, so there should be a reference in the reference list for every citation in the paper and every citation in the paper should have a reference in the reference list. References should be cited accurately, so that an interested reader can locate them immediately; so, for example, include the DOI or URL in the citation.

2 Style Guide (5 points)

You may use any of the USENIX conference format, ACM conference format, or IEEE conference format templates. If you prefer to use your own format, please follow the formatting guidelines below.

2.1 Writing Style

Write your paper in clear, correct English using correct grammar, spelling, and punctuation. Define any technical jargon, acronyms, and abbreviations clearly. Explain complex issues. Use straightforward sentences; the writing should be logical and easy to follow. Use simple language and avoid redundancy. Ease the flow between paragraphs and sections with appropriate transitions. Proofread your work several times.

2.2 General Formatting

Your paper should have 1-inch margins, and be in a font and size that is easy to read (for example, 11 or 12 point Times New Roman or Computer Modern). It should be double-spaced.

Put headings in 12 point font, left aligned, bold and in capital letters. Put subheadings in 12 point font, left aligned, and bold using mixed upper and lower case. Please use italics (rather than bold fonts, quotation marks, or underlining) to emphasize words in running text.

You should have a running header of no more than 50 characters (including letters, punctuation, and spaces) consisting of the title of the paper, or a reasonable abbreviation of the title. Avoid footnotes and endnotes but, if you must, use footnotes rather than endnotes.

2.3 Title

The title should be simple and direct. It summarize the main idea of the paper. The title should also reflect the main topic and the variables and theoretical issues under investigation.

2.4 Abstract

Your abstract should be no more than 500 words and be single-spaced.

2.5 Tables and Figures

Tables and figures should complement the text and be consecutively numbered. They should be placed in the correct position within the text. All tables, figures or other illustrations should be original. Avoid using illustrations scanned from other sources; if you must do so, of course, cite the source. Legends should appear below the table or figure. Tables, figures, and their legends should be centered and use single line spacing. All table and figure legends should be completely self-contained (i.e. if they were seen out of context, they could still be identified and understood).

2.6 Bulleted Lists

Bulleted lists should be used sparingly, single spaced in the following format:

- First list item
- Second list item
- Last list item

2.7 Page Numbering

All pages should be numbered. Page numbers should be in the bottom right corner.

2.8 References and Citations

All references cited in the text should be listed alphabetically by author at the end of the paper starting in a separate page titled “References”. Please try to avoid referencing unpublished works. Check your references for completeness, accuracy, and consistency. Number these references, and in the text refer to the references by number.

The reference list should be single spaced, with a hanging indent of the number of the reference. Put some space between each pair of references.

3 Writing Tips

Here are some common errors in final reports (and technical papers as well as published papers). Please avoid them!

1. You do not explain precisely what problem you are trying to solve and why;
2. You do not clearly identify what is new, significant, and nontrivial about your work;
3. You simply list previous work; you must comment upon it critically;
4. You do not clearly identify the units and scale of axes on graphs;
5. When you report average values from experimental work, you do not give the standard deviations;
6. The document is missing one or more required parts, such as author affiliations, abstract, acknowledgments, or keywords; and
7. The abstract is not informative—it must explicitly state what you accomplished and should serve as a summary for the entire paper. Do not confuse it with the introduction, which is to motivate the paper.

Prof. Alan Sherman, of the University of Maryland Baltimore County, has some good tips on writing reports. See his web page “Some advice on writing a technical report” at http://www.cs.umbc.edu/~sherman/Courses/documents/TR_how_to.html.

4 Presentation

Your team must also prepare and present a research talk of about 20 minutes similar in style to those given at research conferences. Each team member should speak for some of the time. Most importantly, communicate what you did, why you did it, what you found, and what is new and significant about your findings. Include enough detail (for example, using an example or special case) to communicate the core technical difficulties and how you solved them.