

# **Assignment Reports in Computer Science: A Style Guide, Student Version**

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An assignment report for a course in the Queens University School of Computing should be written in the general format and tone of an article in a peer-reviewed journal. There are at least hundreds of style guides that provide extensive and detailed information; a useful technical guide is published by the Institute of Electrical and Electronics Engineers (IEEE) and a widely regarded general guide is the Chicago Manual of Style.

Overall, the report should be written to clearly communicate the methods and findings of the assignment to the person who is grading the report. This guide is intended to help a student to be clear and concise.

## **Structure of the Report**

An assignment report has the structure of a typical scientific article: a preamble, an introduction, a description of the methods, the main results, a discussion of the results, and references. The preamble material is the title, author, and an abstract of the report. The introduction, for an assignment report, is usually short and factual. The methods, which describe how the work was performed, is the heart of the report. The results are a factual statement of the findings, largely devoid of commentary. In an assignment report, these are often data that are presented as tables and/or as figures.

The discussion is where concepts are communicated and conclusions are drawn. This is where themes are described, inconsistencies or paradoxes are observed, and the scientific question for the assignment is directly addressed.

## **Structure of the Preamble**

The title page should include a header, title, and abstract. The structure and a suggested format are available in the “Graders Version” of the style guide. The abstract must be short. Most students find that, after the hypothesis has been stated, the results are known, and the conclusions are drawn, it is much easier to meet the word limit than it is when writing the abstract first.

## **Structure of the Introduction**

The introduction of an assignment report states the motivation of the assignment and describes the context of the study. This is usually in three parts, often in three paragraphs. The first part of the introduction is the purpose of the study. The second part of the introduction describes the background of the assignment. The third part states the scientific question and how the question was tested.

The introduction of an assignment report will typically vary in size from three sentences to three paragraphs, depending on the complexity of the assignment.

## **Structure of the Methods**

The methods of an assignment report will typically describe the algorithm used to solve the problem of the assignment, the testing process, and how the tests were evaluated. The testing process establishes scientific reproducibility. The ideas must be described so that the reader could reproduce the results from the report and the reference material.

The methods section may vary in length from a single paragraph to multiple pages, depending on the complexity of the assignment.

## **Structure of the Results**

The results of an assignment problem are usually values that are presented in tables and/or figures. The tables and figures must have captions that are concise and describe the data without much need to refer to the methods. Numerical results should be presented with only as many significant digits as make sense. Results should not be discussed or commented on beyond minimum needs. Style for tables and figures are available in the “Graders Version” of the style guide.

The results section may vary in length from a one paragraph plus data to multiple pages, depending on the complexity of the assignment.

## **Structure of the Discussion**

The discussion is where the scientific question is evaluated, where the results are put in context, and where a student can demonstrate conceptual understanding of the educational purpose of the assignment. It is common to have three parts to the discussion: analysis, interpretation, and conclusions.

The analysis of the results is a statement of the scientific findings. The interpretation of the results is where a student can demonstrate conceptual mastery of the subject matter. The interpretation may, depending on the assignment, also include a discussion of error and the limitations of the methods. The conclusions of an assignment report are usually simple and straightforward. One or two sentences often suffice to summarize the factual findings.

## **References**

In an undergraduate assignment, references to external work vary from few in number to extensive. As a general rule, primary peer-reviewed work should be preferred. Review articles, blog posts, encyclopedic articles, or web sites are not authoritative but a student can use these sources to inform the reader about what concepts were used in understanding and performing the work in the assignment. If an assignment does not specify the reference style, then the Vancouver style should be used because it is concise and widely recognized.

## **Sample Layout of a Report**

A brief sample layout is available in the Graders Version of the style guide. The “Graders Version” will be used by graders to assign and deduct marks for the report.