

6. Writing and structuring reports

6.1 Reading

Finding and reading related work is the foundation of good research. Keep reading. Although background reading is the initial task in any research endeavour, important readings often surface later, especially if the focus of the research changes (Bailey 1992).

Reading is a good way to gauge the style and content of research writing. After reading something that is well written for instance, it is useful to consider the following:

- What makes it so easy to read?
- What level of detail is provided?
- What examples are used to demonstrate important concepts?
- What questions were left unanswered?

6.2 Writing

Good writing is essential in a research report since quite often your report is the only evidence of your project. Research in computer science often leads to a project involving programming. It is important to remember that *programming is not computer science research* (Bailey 1992).

Written work also serves to carry forward important concepts, so it is good practice to begin writing your report as soon as possible. Do not underestimate the time it takes to produce a report. Although you may not have any specific content early on in the project you should attempt to keep in mind the basic structure of your report. Planning the structure should start with a contents page. Report structure will be discussed later in the unit (see [section 6.4](#)).

You should try to apply the prescribed format standards, this will save time later when you are trying to collate your chapters, diagrams, tables etc and find they are presented inconsistently. Make sure you follow the guidelines that the university provides (see [section 6.7](#)).

6.3 Style

A good writing style comes with practice, the more you write the easier it becomes.

It is generally accepted that your report be written in the past tense as the report represents the results of the project which you have *completed*. However, we suggest that the present tense should be used when referencing the work of others.

Some research authors are renowned for overusing jargon and producing pompous prose, however, you cannot avoid *necessary* jargon in your discipline, nor should you try to do so. Academic jargon often does specialist things and often has a more precise

meaning. But you should always check that you fully appreciate the meanings of the words you use.

Avoid jokes and personal asides and avoid shortened forms such as isn't instead of is not. Be careful about the use of acronyms in your report; only use them for specialised concepts that occur often. Choose the simplest form of the acronym, for instance Nato or NATO, but not N.A.T.O. Each acronym should be explained on its first use and also if you start reusing it after a period when it has not been present.

Moving away from basic grammar what you should always keep in mind is your report's overall content and structure. Your report should be constructed so that it has:

- A beginning – the introduction and literature review that set the scene.
- A middle – the bulk of the report where the main components of your project are discussed.
- An end – the summary, conclusions and recommendations for future work.

This kind of structure should also be evident within the individual chapters of your report. They too should have an introduction (possibly a chapter overview), the main body of the chapter and an end (possibly a chapter summary or conclusions from the chapter (Dawson 2000)).

6.4 Structure

Your project report must have the following structure:

- Title page (follow the guidelines provided in section 6.4.1).
- Abstract.
- Acknowledgements to people you wish to thank for helping you with your project.
- Contents listing with page numbers.
- Introduction/literature review.
- Main chapters.
- Conclusion and evaluation.
- Bibliography.
- Appendices, labelled as Appendix A, Appendix B etc. These may be program listings, test results, your project plan and meeting reports for example.

When taken together, the introduction, main chapters, conclusions and evaluation should not exceed 12,000 words (around 40 pages of *text*).

6.4.1 Title Page

The title page must be laid out in accordance with the example given at the end of this document.

6.4.2 Abstract

The abstract should be a statement not more than a page in length describing the subject matter of the project report and the main findings and conclusions presented in the report. A reader should be able to decide whether the report is of interest by reading this alone.

6.4.3 Contents page

This should be numbered as page 1. The contents page must show the chapters of the report, with the title of each and the page number on which the chapters begin. If your chapters are organised into sections, with a title for each, display these on the contents page as well. Do not go to greater detail than sections (a contents page should be just one page). A contents page should look like this (page numbers are examples only):

Contents	Page
Abstract	
Acknowledgements	
1 Introduction	2
2 Main chapter	12
2.1 First section	14
3. Main chapter	26
3.1 First section	30
3.2 Second Section	32
.....	
n Conclusion and evaluation	30
Bibliography	
Appendix A	
Appendix B	
.....	

Page 1

6.4.4 The Introduction

The first chapter of your report should always be an introduction. Often this introductory chapter also serves as a literature review, but it can also be a brief overview of the project with the literature review presented in its own right later.

The introduction *must* (absolutely without fail) set out the project objectives. It should also give a very brief statement of the contents of each chapter of the report, just to help the reader gain an idea of how you are going to present the outcome of your work.

6.4.5 The Main Chapters

We can give very little specific guidance on how to present these because it will depend very largely on the subject of the project – but here are a few pointers:

- You may assume that your readership has the level of knowledge of an Advanced Masters degree student who has taken the same courses as you. Bear this in mind when writing your chapter on background information and do not present either information that such a reader would already know or large amounts of background on the topic area that could be read in a standard textbook on the topic. Simply reference that textbook in your bibliography, and keep the information you present very specific to your own work.
- Your chapters should describe the tasks that you carried out as you worked to meet your objectives, but it is not a good idea to adopt a diary-style order of presentation. It is much better to organise the chapters around topics or tasks.
- It is very important to present the results of your project work properly, especially when the main task of the project was a software development. A weakness of too many student projects is a failure to present program results and to discuss the significance of those results, leaving the examiners with a possibly excellent specification and design, but very little idea of whether the implementation actually worked.

NOTE: It is natural to want to postpone the generation of final test results for as long as possible while you put the final touches to the system, but you should resist this temptation.

6.4.6 Conclusion and Evaluation

What is crucial about this chapter is whether it contains a self-critical evaluation of the extent to which you have achieved the objectives you set. You are not penalised for acknowledging that you failed to achieve all of your objectives, and especially not the advanced ones, but you certainly *would* be criticised if you gave the impression of not having noticed that you had failed to meet an objective, or even of having forgotten about them altogether! The extent to which you demonstrate the ability to reflect upon your work is very important. You may find it assists you to evaluate each of the following, where relevant to your project: the project plan and its management (referring to the Extended Project proposal and the Progress Reports that you produced), the choice of practical methodology, the practical process you went through, the products of your practical work both on their own merits and against the project objectives, the project as a whole against the objectives, the suitability and the quality of the objectives you chose, and so on.

6.4.7 Bibliography

This section should contain a systematic list of books and other works such as journal articles that you have used in your project.

6.5 Referencing material and avoiding plagiarism

In your research project report some of the subject matter may have been written about, discussed or in some way covered by another author. Avoid plagiarism (presenting another's work as your own) by being scrupulous about referencing your sources. There are several good reasons for doing this - apart from avoiding the severe penalties for being caught. One reason is that reading and referencing appropriate sources places your work in context with other recognised publications. Furthermore you can support and validate any statements you make using previous work presented in peer reviewed publications.

References to all materials (books, journals, conference proceedings, websites etc.) used during your project must be included in the bibliography. If you wish to quote directly from your sources this must be done in inverted commas, "...", and give a page reference. You may find this useful in the production of report but do not overdo it.

The suggested format for references and for the bibliography is the Harvard system. Notes on this are available from Learning and Information Services.

You must be aware of the University's policies on plagiarism and collusion. These are severe offences with severe penalties.

6.6 Assessment

The final report is worth 85% of your final grade for the project. The Oral Presentation is not directly assessed, but you cannot pass the module without a satisfactory presentation and demonstration of your work.

The Definitive Module Document says:

"Projects will be assessed against the objectives which are set out in the project plan, including the deliverables and the nature and content of the written thesis"

Your project will be assessed against the objectives set out in your Extended Project Proposal and these should be *restated* in your Final Project Report (thesis). Assessment will take account of objectives that are over-ambitious or under-ambitious, and if you have made significant changes to objectives or methodology (since the Extended Project Proposal) you must give an explanation of and a justification for those changes in your report.

Assessments will be done by your supervisor and a second marker, another member of staff who marks the work independently. Factors considered in the assessment will include the following:

- Competence in independent work.
- Evidence of a literature review.
- Evidence of originality of investigation or testing of ideas at an appropriate postgraduate level.
- Understanding of techniques used and reflection on them.
- Worthiness for publication.

The grades will be collated and processed as follows:

- Where there is no difference between the two marks, then the grading will stand.
- Where there is a small difference (1 or 2 grades) then the grades are averaged.
- Where there is a minor difference (3 grades) between supervisor and moderator they will be asked to discuss the project and resolve the difference.
- Where there is a large difference another supervisor will be asked to assess the project as a third marker.

6.7 Presentation of Reports

There are certain stipulations concerning the format of reports to ensure uniformity and to facilitate binding. These are:

- Good quality white A4-size paper is to be used.
- The text is to be of a consistent size (preferably 12 pt), in a good, clearly-defined typeface, at either spacing-and-a-half or single-spaced, according to the typeface.
- Each page must be printed on one side only, with a 4cm margin at the left and 2.5 cm clear top and bottom. The 4cm left margin is needed to ensure the report will be readable when bound, and the 2.5cm is to allow for the guillotining of the edges.
- Diagrams, tables, graphs, etc. may be of any size, but must be folded in such a way as to fit within the main body of the report and to be easily opened after binding.
- Each page from the contents page, including any appendices, should be numbered in sequence from 1 using Arabic numerals. The only exception to this is the case of a self-contained document, such as a user guide, which forms an appendix and has its own internal numbering sequence. Such a document should be preceded by a single page bearing the appendix title, and should not be numbered within the sequence of the main report. Program listings should form an appendix in the report.
- Keep the work count (please refer to [section 6.4](#)).

Tips (Dawson 2000)

- Set deadlines. Your report will take a long time to produce. If you do not set yourself deadlines and stick to them you will not finish on time. Using a report breakdown structure can help you to plan your time commitments to your report.
- Write regularly. Find your best time of day for writing and your favourite location. In other words, make sure that you write when your mind is fresh and find a regular writing place. People often find they cannot write with distractions or when they are over-tired.
- Create a work rhythm. Once you are under way, keep going. Don't stop to check a reference if the text is flowing, keep going until you reach a natural break.
- Write up section when they ready – when they are clear in your mind. This will save time towards the end of you project when your project write-up might be

little more than a collation of your existing text and producing an introduction and conclusion.

- Stop at a point from which it is easy to restart. It can often take a lot of time to get going again after a break so try to stop at a natural break in your report; for example, when you have completed an entire section.

References

Dawson, C.W. (2000). *Computing projects, a student's guide*. Harlow: Pearson Education Limited.

Bailey, D.A. (1992). *An open letter to research students*. Invited lecture, National Meeting of the Council on Undergraduate Research, Hope College.

Further reading

Phillips, E.M. and Pugh, D.S. (2000). *How to get a PhD* (3rd edn). Buckingham: Open University Press.

Dunleavy, P. (2003). *Authoring a PhD: how to plan, draft, write and finish a doctoral thesis or dissertation*. Basingstoke: Palgrave.

Wisker, G. (2001). *The postgraduate research handbook; succeed with your MA, MPhil, EdD and PhD*. Basingstoke: Palgrave.

UNIVERSITY OF HERTFORDSHIRE

Faculty of Engineering and Information Sciences

MCOM0177 Computer Science MSc Project (Online)

Final Report
<date: month & year>

Title of project

Author's initials and surname