

MANCHESTER METROPOLITAN
UNIVERSITY
DEPARTMENT OF COMPUTING AND
MATHEMATICS

COMPUTING AND DIGITAL TECHNOLOGY
DEGREE SCHEME

6G6Z0019 SYNOPTIC PROJECT HANDBOOK

2023-2024

Contents

1	Project Elements and Schedule	4
1.1	Project Components	4
2	Showcase Guidelines	6
2.1	Introduction	6
2.2	The slides and talk	7
2.3	The demonstration	7
2.4	The questions	8
2.5	The end	8
3	The Report	9
3.1	Introduction	9
3.2	Report Formatting	9
3.3	Report style and presentation	11
3.3.1	Figures and Tables	12
3.3.2	Equations	12
3.3.3	Bullet Points and Ordered Lists	13
3.3.4	Footnotes and Endnotes	13
3.3.5	Referencing	13
3.3.6	Quotations	15
3.4	Report structure	15
3.5	Dissertation chapters and sections	18
3.5.1	The abstract	18
3.5.2	The introduction	18
3.5.3	The literature survey	19
3.5.4	What you have done	19
3.5.5	The body of your report	19
3.5.6	Evaluation	19
3.5.7	Conclusions	20
3.5.8	References	20
3.5.9	Bibliography	20

4	General Project Advice	21
4.1	Introduction	21
4.2	Positives and negatives	21
4.2.1	Common errors to avoid	21
4.2.2	The ideal dissertation will...	22
4.3	Submission FAQs	23
5	Submission and Assessment	28
5.1	Assessment Criteria	28
5.2	Re-assessment Arrangements	29

The Project unit involves a single piece of work; you are required to undertake an substantial original piece of work, specified and executed in conjunction with your supervisor. Your supervisor will be assigned to you, subject to the constraints of work-load balancing, in accordance with your timely-expressed preferences, or, failing this, your degree title. This work will typically involve an element of research and/or software development, making a unique contribution to knowledge. The project is assessed through two separate Elements of Assessment (assignments), the Creative Piece (35%) and the Report (65%). Individual assignment briefs will be issued, but it is important to consider the task as a whole, as success in one part relies on success in another.

Chapter 1

Project Elements and Schedule

1.1 Project Components

The work will be described and assessed by your completion of two components:

1. The development of the Creative Piece, typically a piece of software, a game or immersive environment, or perhaps a scientific investigation or video, worth 35% of the marks. You will be asked to describe the project in person, via the Showcase event.
2. The writing of a Report describing the project and its outcomes, worth 65% of the marks.

The following are short, indicative, descriptions of the characteristics of the components by which the Project is assessed. In each case, longer descriptions will be made available in due course.

- **The Creative Piece** The nature of this will vary, given the topic of the project. In most cases, it will take the form of a piece of software. This can, for example, be an independent executable, a web-site, database system, mobile “app” or plug-in. Alternatively, the Creative Piece can take the form of a scientific investigation of a topic, such as, for example, a User Experience assessment or the exploration of the use of particular machine-learning techniques for a particular problem (in both these cases, the investigation protocols and experimentation, assessment scripts and as far as possible raw data should be submitted). Further, it could be that the project topic involves the development and exploration of some media-production method or technique. In cases such as this, the Product would usually be a piece of audio-visual work demonstrating the particular features

considered in the project. In whatever form, in all cases, the Project must include a distinct Creative Piece, the design and development of which are the centre-piece of the whole Project. Projects which

As part of the Creative Piece assessment, you will be asked to take part in the Showcase. This is your opportunity to explain your project and its outcomes to your examiners. These will be drawn from your Theme. The Showcase will be held shortly after submission of the Creative Piece and will be a communal event for the members of the Theme. The day (Tuesday 07/05/24), time and place will appear in your timetable; all members will meet together. Students will individually demonstrate their Creative Pieces and explain the wider project to the staff members present. We will strongly attempt to ensure that at least two members of staff assess each student's work. It is anticipated that some "materials" (slides or similar) will be used to assist the presentation. Although students will be encouraged to present work to each other, it is anticipated that more than one student will be presenting at a time. In particular, there will be no requirement that students give a formal presentation to their peers as a whole.

- **The Report** This is a description of the project achievements containing, as a minimum requirement, a discussion of the problem being addressed, a critical review of relevant literature and related work, and a description and critical evaluation of the solution proposed. Normally, a project Report is expected to contain 8,000 to 14,000 words. The Report must include a declaration stating that the work was done in accordance with the University's ethical procedures and giving the reference number of the ethical approval obtained as part of the Feasibility Study process. Failure to do so will be treated as evidence to subvert the University's Research Ethics and Governance regulations and will be treated appropriately. A fuller description of the Report is given later in this document.

Chapter 2

Showcase Guidelines

2.1 Introduction

This document is intended to help you to prepare for your Project Showcase; it is not a comprehensive briefing and is only a set of indications.

The Showcase will be held on one day, Tuesday 7th of May 2024 (this in Semester II, Assessment Week II). It will operate in a manner similar to a conference poster session, trade show or a degree show for an art-based subject. The essence of this is all the presenters have prepared their display in advance and wait by it, and the viewers move around from presenter to presenter. Thus the assessment of many different presenters will occur in parallel. While the presenters are able to see each other's work, and may discuss it between themselves, individuals are not expected to give a formal presentation in the manner of a lecture to the class as a whole. Each student will be assessed by a minimum of two members of staff (these will be drawn from the correct Theme). However, you should expect to interact with a rather greater number of staff and leaving as soon as the first pair of assessors have spoken to you will not be allowed.

The following components can normally be expected of your interaction:

- Explanation of the project by the student, this normally takes the form of a short talk, typically illustrated by a few slides;
- Interrogation of the student by the assessors, a question-and-answer session designed to broaden their understanding of the project;
- Demonstration of the Creative Piece; this normally will take the form of the student showing a video of the application, but may be done "live".

It is normal that the discussion of the project between the assessors and student will flow over and through the demonstration.

2.2 The slides and talk

This should be brief and to the point. The assessors will not welcome lengthy explanations (more than about 5 minutes uninterrupted speech and/or five slides). The intention is to give the student an opportunity to answer the question “please explain what your project was about”, setting the scene for the demonstration and discussion. It also allows you to cover issues of aims, background, design and testing which are not necessarily obvious when simply showing the Creative Piece. The slides and talk should be addressed to a knowledgeable audience, composed of experts in the general field of the project.

Essential points to consider and address are:

- What was the central problem or task of the project. This will be derived from the aims and objectives, but should be posed as the intellectual problem or challenge, rather than the set of exercises such as the report-writing which you had to undertake.
- Previous systems, algorithms and/or data which you had at your disposal to guide your research and development.
- Techniques used to solve the problems (this will vary between projects, but might centre on software design and development methodologies, perhaps showing a UML-style class hierarchy, some algorithmic pseudo-code or equations underlying your solution).
- An indication of how you can be confident that your solution works effectively (that is to say, some results from your evaluation stage).
- Some very brief conclusions and lessons or implications from the work.

2.3 The demonstration

Obviously, the nature of this stage will vary with the project you have undertaken. However, please note that it is your responsibility to ensure that, if appropriate, the Creative Piece will run at that time (it may be necessary for you to use suitable hardware, matters of this sort should be discussed with your Theme staff beforehand). If you have generated an executable, you may run it in your own file-space or on your own computer (there is no requirement to actually run a copy already uploaded onto the oneDrive, although changing the code after Creative Piece submission is not allowed). You can expect the examiners not be impressed if you have difficulty getting the code running, and, since this is a demonstration, there is no requirement that they operate the product themselves, although they may wish to do so.

2.4 The questions

These are relatively relaxed and informal. The assessors will be looking to see if you understand the project area and have undertaken the work yourself. You may be asked about the technical aspects of the Creative Piece, perhaps with regard to the design process or algorithm logic. You are unlikely, however to be asked to explain individual sections of code. The examiners will seek to explore the functionality of your Creative Piece, and see if you appreciate its limitations. A few questions include:

- “what other features would you add to the system”,
- “what has gone wrong with the system”,
- “what are you most proud of”,
- “what would you do differently if you did the project again”, and
- “what have you learned from doing the project”.

2.5 The end

Finally, the assessors will ask you if you have anything else you wish to tell them, or any questions for them. You will then be free to go, but we would prefer it if you stay and show your work to the other students. Final Project submission will be on the Friday evening when the Report must be uploaded.

Chapter 3

The Report

3.1 Introduction

This chapter is intended to help you to write your dissertation. The material presented here is not part of the Regulations of the Modular Degree. Any disputes or appeals arising from the consideration of your project will be judged solely in accordance with the Regulations as published in the Student Handbook.

This document aims for generality. There is a wide variety of projects in the school, so the particular form of your dissertation will be unique to your project. Therefore, this document concentrates on those aspects of a project report that are always required, e.g.: structure, presentation, etc. Discuss with your supervisor the form that your particular dissertation should take.

Remember to leave sufficient time for writing up your project. You should discuss with your Theme staff whether you are ready to start writing your report. In order to get full credit for the work you have put in, you must write a good dissertation. This takes time, so do not leave it until the last minute.

3.2 Report Formatting

The dissertation is probably the largest and most comprehensive document that you will have produced to date in your programme of study. Its purpose is to communicate the work done throughout the course of the project to a non-specialist (but one who has a good understanding of undergraduate level computing) so that the reader fully understands what is being presented. This carries the largest weighting of all of the project deliverables and is expected to take the majority of the time allocated for the project unit to produce.

The project documents should comply by the following university standards for academic project reports:

- The report must be a typeset PDF document.
- The report must have a title page that includes: the university logo; the name of the faculty; the name of the student; the degree title of the programme; the title of the project; the month and year that the project was completed; the name of the school to which the student belongs.
- The report must have a preamble consisting of (on separate pages): a full-page abstract; an acknowledgments page; a signed university plagiarism and ethics disclaimer; a table of contents; a list of figures.
- The report should use a 12pt Times New Roman (or the \LaTeX equivalent) font with 1.5 times the standard spacing for the main text with suitable larger bold type fonts for the chapter, section and sub-section headings. Chapters, sections and sub-sections should be numbered appropriately. All chapters should start on a new page.
- All pages with the exception of the title page should be numbered at the bottom aligned to the centre of the page. Roman numerals should be used for pages in the preamble and Arabic numerals used for all other pages starting at 1 for the first page of the first chapter.
- All mathematical expressions should be typeset using an equation editor. All display equations should be centred on the page. Where a display equation is numbered, the number should be aligned to the right-hand margin alongside the equation and enclosed in parentheses.
- All figures and tables should be centred on the page and should not have elements placed alongside. Numbered figure captions should appear below figures and tables.
- All sources should be cited using the Harvard method with a list of references containing the citation information in alphabetical order by the first author's surname placed after the conclusions chapter. See the University's referencing guide for more information using the following link: <http://libguides.mmu.ac.uk/refguide/mmuharvard>.

The project supervisors will advise on the detailed aspects of the report and will provide formative feedback on the interim documents, which are expected to form draft sections of the report. Students should however note that project supervisors will not proof read the whole report prior to submission. Students are advised to use either \LaTeX or Microsoft Word software available on the university machines on which to prepare their dissertation. Skeletal templates that give an indication of the basic formatting in both \LaTeX and Microsoft Word formats are provided on the Moodle area for this unit.

3.3 Report style and presentation

The report should be as short as possible, consistent with a good description of the work carried out. For the vast majority of projects, the word count is to be somewhere between 8,000 and 14,000 words. This would generally result in a report with about 50 to 70 pages containing not only written text, but also figures and fragments of code, for example. While word or page counts are useful for measures of the workload involved, it far more important that your report forms a coherent description that is concise but, at the same, contains all the relevant sections given your project aim and objectives. Please seek advice from your supervisor on this - the last deliverable, which is the Report Structure, is particularly helpful for this purpose.

A high standard of organisation and presentation is required. The report must be written in competent English. Reports should be use a 12pt Times New Roman (or the L^AT_EX equivalent) font with 1.5 line spacing for the main text. Chapters, sections and sub-sections should be numbered appropriately. All chapters should start on a new page. Sections of computer code should be indented and presented in Courier font. Chapter and section headings may be in a slightly larger font, emboldened or both. Avoid overuse of different fonts and styles. All text should be justified on both the left and right margins.

The title page should not be numbered. All other material before Chapter 1 should be numbered using Roman numerals, starting with the digit *i*, and should be positioned on either the bottom centre or the bottom right hand side of the page. The first page of Chapter 1 should be numbered as page 1 (using decimal numbers) using the same page number positioning. All proceeding pages should be numbered using the same method, with the exception of divider pages, which should be unnumbered (e.g. a page that states the word Appendices should not contain a page number).

Your report must be written in a clear and unambiguous style. This means that your work will be grammatically correct and your use of English will strike an appropriate balance between formality and readability. You must check your work for spelling. Modern word-processors have spell-checkers so there is no excuse for spelling mistakes. Obviously, a spell-checker cannot distinguish between “their”, “they’re” and “there”, or other similar homonyms, so you must read your work carefully. As final year students you are expected to be able to write properly in English.

You must use punctuation properly. You should be particularly careful with commas and apostrophes. If you have a sentence with several commas in it, try reading it aloud. You will probably find that it is too long to make any real sense. Split such sentences up into more manageable units. Apostrophes are used only to indicate possession or elision. The use of brackets to indicate sub-clauses, comments or asides should also be avoided (although sometimes they can appropriate).

As a general piece of advice, ask another student to comment on a draft of your dissertation. Another person will often spot grammatical and typographical errors that you miss. Also, you will get some idea of how clearly you have expressed your ideas and how convincing are your arguments.

3.3.1 Figures and Tables

A figure caption should appear below each figure, and a table caption should appear below each table. Insert figures and tables after they are cited in the text; make sure that you cite them all. The figure or table, together with the caption (which should give the number of the figure or table), should be centred and referred to within the text as “Figure 3.1 shows...” or “...as shown in Table 3.1”. There should be a blank line above and below each figure or table.

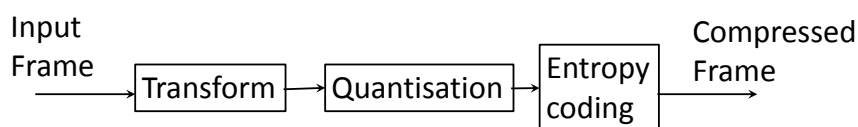


Figure 3.1: Transform coding.

Number	Measurement
M0	Difference in Y values
M1	Maximum of TI
M2	RMS of TI
M3	Range of TI values
M4	RMS of SI

Table 3.1: Quality measurements used by CQA

If preparing your report on Word, use its caption handling facility to enter figure and table headings. This will allow you to auto-number the headings and also to generate a List of Figures and a List of Tables at the beginning of your report.

3.3.2 Equations

Number equations consecutively within each chapter (e.g. the first equation in Chapter 1 should be numbered (1.1), the first equation in Chapter 2 should be numbered (2.1) etc.). Equation numbers, within parentheses, should be positioned flush right as in (3.1). The equation should be centred and included in the sentence within your text which brackets it. There should be a blank line above and below each equation.

The following is an example of the correct use and formatting of an equation:

Using the root mean square error,

$$RMSE = \sqrt{\frac{1}{N} \sum_{i=1}^N (x_i - m_i)^2}, \quad (3.1)$$

as a measure of accuracy, where x_i and m_i are respectively the i -th elements of the observation and reference,....

Be sure that symbols in your equation have been defined before or immediately following the equation.

3.3.3 Bullet Points and Ordered Lists

Ordered (numbered) lists and bullet point lists should be indented on both the left and right margins (see Section 4.2.1 “Common mistakes”).

3.3.4 Footnotes and Endnotes

Do not use footnotes¹ or endnotes.

3.3.5 Referencing

Whenever you refer to another’s ideas or findings you should include a reference. This will allow the reader to locate and refer to the original source in the event of wishing to find out more information about a particular topic. Please note that references do not allow you to copy sections of work that are not your own.

There are a number of conventions for citing references. You should follow the one referred to as “Harvard”, described in great detail in the University’s guide <http://libguides.mmu.ac.uk/refguide/mmuharvard>.

The citation should be given name and a year, as in the case this case: (Britch, 2003a). This name form is easier to work with than others and gives some visual clue to the reference. When naming authors, use their surname only; do not use their personal names, titles or initials unless it is necessary to distinguish two people with the same surname. If there are two authors of a paper, use both their surnames to identify it (Britch and Costen, 2005). For three or more, give the name of the first author and the words “et al” (Britch et al, 2007). It is not normal to state where the authors work; this

¹This is a footnote. Endnotes are similar but placed at the end of the document. They are annoying and deprecated in scientific writing. Other, non-scientific subjects, typically including humanities such as history or music have different standards and make use of them.

is an attempt by journalists to give credibility their statements and is not appropriate in scientific writing where we are concentrating on the content of the work.

A citation is placed in the text and the corresponding work is included in the list of references. All citations in the text should be represented in the list of references and conversely, all works in the list of references must be cited in the text. Works that are not explicitly cited, for example material on computer languages, design methodologies etc., that have been used in the process of carrying out the project and so should be acknowledged, should be placed in a separate bibliography.

One of the useful features of the Harvard system is that the citation can take several forms, depending upon which part it plays in the sentence. The citation should be entered into the text wherever you wish to refer the reader to the original source e.g.:

A detailed explanation of the stages of the waterfall model can be found in Sommerville (2004).

Recommendation BT.500 (CCIR, 1982) defines experimental conditions such as the minimum number of participants, lighting conditions, timing etc.

For example, it has been found experimentally that perceptually proper division of bits between luminance and chrominance in the compressed bit stream is obtained by application of the Euclidean distance in YUV space (Westerink et al., 1992).

At the end of the document you should include a list of references, ordered by name then year. Such a list is shown below, as an example. The title of the work should be italicized. Also note that when referencing a book, exact page numbers should be included.

Britch, D., *Wavelet-based digital image watermarking for copyright protection*, 10th IEEE International Workshop on Systems, Signals and Image Processing, Prague, Czech Republic, 10–11 September 2003.

Britch, D. (D.Britch@mmu.ac.uk), *Project allocation*, Email to John Smith (J.Smith@mmu.ac.uk), 5th October 2003.

CCIR, *Recommendation 500-2, Method for the subjective assessment of the quality of television pictures*, Recommendations and reports of the CCIR, Geneva, 1982.

Shoemaker, C. *A survey of techniques for digital watermarking*, <http://www.vu.union.edu/~shoemakc/watermarking/>, 27th October 2002.

Sommerville, I., *Software Engineering*, 7th edition, Pearson Education, Harlow, UK, pp. 65 — 68, 2004.

Westerink, P. H., Biemond, J. and Boekee, D. E., *Scalar quantisation error analysis for image coding using QMFs*, IEEE Transactions on Signal Processing, **40****2**, pp. 421–428, 1992.

In the event of an author having published multiple documents in the same year you can append a letter to the end of the year, in order to uniquely identify the reference e.g. (Britch 2005b). When referencing a web page, you should list it as “viewed on dd-mm-yyyy”. This only applies to blogs and other self-published source of information. Journal articles and books or their sections are cited via the publisher’s name and the issue etc, even if they are available via a website. The name of the journal, conference or book gives weight to the publication you are citing; it is important that you take the time to find the full citation of the papers you use. As mentioned in other documents, writing your report in L^AT_EX will allow you to solve all of these problems with ease.

3.3.6 Quotations

In general, quotations should be avoided. They are generally only appropriate when you want to introduce some text as data into the report to be considered and criticized; it is rare for this to be done in computing. However, if necessary, short quotations can be embedded into the text. They should be italicized and placed in quotation marks with a reference being given, as follows:

Unfortunately, watermarks are not always robust to standard image filtering techniques. “*While the watermarks are still visible after sharpening and blurring, too much information from the original image is also present and obscuring the watermark.*” (Britch, 2003a)

Longer quotations should be in-set as follows:

“*Furthermore, the watermarks are not very robust to the addition of random noise. Even at an addition of 10%, the noise overwhelms the watermark. However, the watermark is more robust to the addition of uniform noise.*” (Britch, 2003a)

3.4 Report structure

Before beginning the write-up you should agree the general structure and contents of your dissertation with your supervisor. However, the precise structure will depend on the nature of the subject matter and on how you

approached your topic. Nevertheless, in any dissertation one would expect at least an introduction at the beginning and a conclusion at the end. The most important thing is that the report should be structured logically. You should try to establish a structure before you start writing. A suggested report structure is shown below.

Title Page	Give: project title, University logo, author, formal title of degree, supervisor.
Declaration	A signed plagiarism and ethics disclaimer, as follows:

No part of this project has been submitted in support of an application for any other degree or qualification at this or any other institute of learning. Apart from those parts of the project containing citations to the work of others, this project is my own unaided work. This work has been carried out in accordance with the Manchester Metropolitan University research ethics procedures, and has received ethical approval number XXXXXX.

Signed

Acknowledgments	Optional (acknowledge anyone who helped you with your project).
Abstract	A summary of the work undertaken, stating the problem, how the problem has been solved, and the result.
Contents	A list of chapter and section headings, with their respective page numbers.
List of Figures	A list of figure headings and page numbers.
List of Tables	A list of table headings and page numbers.
Abbreviations	A table showing each abbreviation used within the report, and its full meaning.
Chapter 1 – Introduction	A statement of the aims of the work and a brief overview of the remainder of the report.

Chapter 2 – Literature Review	<p>Relate your work to previous work (literature). Give the context of the Analysis work and any technical details necessary for understanding the work.</p> <p>Establish motivation for the present work and relate it to the wider social, ethical, legal and professional context.</p>
Chapter 3 – Design	State the identified requirements and show design diagrams with full explanations for your product.
Chapter 4 – Implementation	Describe the work undertaken and the results obtained. Small sections of code can be used to aid the understanding of a particular point. Discuss testing strategy and show testing details.
Chapter 5 – Evaluation	Examine critically the completed work and the results achieved. Relative achievements (or lack of them) to the original objectives. Depending on the type of project, this may involve significant user-evaluation, statistical or application-completeness testing.
Chapter 6 – Conclusion	Briefly restate the work undertaken, summarise any findings or recommendations, acknowledge limitations and make suggestions for further work.
References	Use a recognised referencing system and be consistent.
Bibliography	List any material consulted but not specifically referenced.
Glossary	Optional.
Appendices	<p>Appendix A : Your Feasibility Study</p> <p>Appendix B, C, D, E, etc : Other materials - User manual, test runs, questionnaires etc. You do not need to include your entire source code. Note that each appendix should be referred to within the report text.</p>

Initially, try to put yourself in the position of someone who knows nothing about what you have been doing during your project. (NB the second reader will know something about the general area of your project but not about the detail of what you have been doing in that area). You have to

convince this person of: (a) the justification for your project (i.e. that what you have done is worthwhile/sensible/useful etc); and (b) the quality of your work (i.e. that you have made a good job of whatever it is that you have done). It is guaranteed that if your report is not logically structured, you will fail to achieve either (a) or (b).

Obviously, your report should be organised into chapters and each chapter should be organized into sections. Each chapter between the Introduction and the Conclusions should deal with a substantive area of your work. Although chapters should normally be relatively independent of each other, there is nothing wrong with establishing a link with the next chapter at the end of the current one.

When writing the sections of a chapter, there are a number of points that you should bear in mind. First, make sure that section headings reflect the content of the sections. Second, if you are numbering sections 1.1, 1.2, 1.2.1, 1.2.2 etc (and there are very good reasons to do so), make sure that you do not go beyond three levels of subsection. Remember that you are trying to convince someone of something. You cannot expect the reader to remember where they are in a maze of sections and subsections, much less follow the arguments you are trying to put. If you find yourself writing section 6.4.1.3.1.1, ask yourself what you are trying to say and whether or not you might find a better way of saying it.

It is not acceptable to ask your Supervisor to read your dissertation through in full before he/she has to mark it, but it is entirely reasonable to ask them to comment on the structure you propose for your report. Start with a list of chapter titles and then refine this by adding the titles of the major sections within each chapter.

3.5 Dissertation chapters and sections

This section describes some of the chapters and Sections your report should contain. This is not an exhaustive list.

3.5.1 The abstract

Your report should be prefaced by an abstract. This is a single-paragraph summary describing the problem you were trying to solve, how you solved the problem, and the result.

3.5.2 The introduction

Your report must have a coherent introduction. A useful basis for your introduction might be:

- Background to the project (i.e. an expanded version of the section in your terms of reference).

- Detailed assessment of the problem. Your account of the problem your project is addressing.
- Realistic aims and objectives for the project.
- Brief overview of the chapters in the report. You should aim in this section to give some sort of idea of how the report is structured.

3.5.3 The literature survey

All dissertations are expected to include a literature survey, and this will normally be detailed enough to warrant a chapter of its own. You should present your literature survey in narrative form. It is not enough to produce a long list in the form of “Smith (1990) said this. Jones et al (1992) said that”. You should aim to critically evaluate the work you have read and to show how your understanding of this work has contributed to your project.

3.5.4 What you have done

Somewhere in your report you will need to explain what you have done during the year. You may feel that this discussion is best distributed over several chapters. For example, you may want to describe the functionality of a system in one chapter and the user interface to the system in another. Wherever this discussion is situated, you must be careful to justify what you have done instead of merely describing it.

3.5.5 The body of your report

As has been said, it is not possible to state generally what should go in the body of your report; this depends entirely on the nature of your project. However, there are some remarks that are appropriate for all chapters.

First, you should introduce each chapter with its own mini-introduction. This should summarize how the chapter fits into the whole report. If appropriate, it should summarize what the previous chapter says and indicate how this chapter follows on.

At the end of each chapter, you should summarize the contents of the chapter and what you expect the user to have understood from it. Again, where appropriate, you should indicate how the next chapter follows on from the present one.

3.5.6 Evaluation

It is not enough in a project to do something and then report how you did it. In most cases you will be expected to evaluate what you have done against some criteria that you have designed. Depending on the nature of your project, this evaluation may warrant a chapter on its own.

You will be expected to have considered the evaluation criteria before embarking on any development work, and it may be that you have alluded to them in several chapters in your report. Nevertheless, it is worth restating and justifying all your evaluation criteria together in a separate section or chapter. Your evaluation should normally cover all aspects of your project. If there are some aspects of your project that you do not evaluate, you should explain this and explain why.

3.5.7 Conclusions

Your report must have a conclusions chapter. In the final chapter, you will attempt to draw together the themes and arguments presented in the body of your report. As with the other chapters, you should introduce the conclusions with a very general overview of what is to follow.

In your conclusions, you should attempt to reiterate what you have achieved during your project. You should emphasize the positive aspects of your work and show how you dealt with the problems that arose during the course of the year. Where problems have proved insurmountable, you should describe potential solutions to the problems and show how you worked around them. If you feel that more work could profitably be done in the area of your project, you should indicate this and describe the form this work might take.

Finally, you should attempt to comment on how you feel you tackled your project and how you might have approached it differently. In this section you might like to comment on how the other modules you have taken during your degree have contributed to your project and how you feel your project may help you in your future career.

3.5.8 References

Your dissertation must have a references section. This section lists all the material that you have referred to in your dissertation.

3.5.9 Bibliography

Your dissertation may contain a bibliography section. This section lists all the material that you have consulted while undertaking your project, but not referred to in your dissertation.

Chapter 4

General Project Advice

4.1 Introduction

This chapter gives some of the characteristics of the ideal project. Bear in mind that these give generally applicable advice. Therefore, nothing is said about documentation, but if you have designed a piece of software, it should really be documented appropriately. Equally, if you have conducted a survey, you should ensure that you have clearly explained what information it is supposed to elicit, how you selected the methods you used, how you chose your subjects, etc.

4.2 Positives and negatives

This is a miscellaneous collection of pieces of advice on the Report.

4.2.1 Common errors to avoid

- It is generally not appropriate to use the first person (“I” or “we”) to describe activities undertaken in the project. The readers know that the work (is meant) to be your work, so you don’t need to say it. Using the first person plural (“we did (something)...”) encourages the readers to ask if someone else undertook the research. Use the indefinite, passive form (“it can be seen”, “it was undertaken”) by preference. The Word grammar checker may object, but this is appropriate academic form.
- The word *data* is plural, not singular.
- Do not use the word *essentially* to mean approximately or effectively.
- Be aware of the different meanings of the homophones *affect* and *effect*, *complement* and *compliment*, *discreet* and *discrete*, *principal* and *principle*.

- Do not confuse *imply* and *infer*.
- The prefix *non* is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the *et* in the Latin abbreviation *et al.*.
- The abbreviation *i.e.* means “that is”, and the abbreviation *e.g.* means “for example”. Generally, they should be avoided, in any case.
- A graph within a graph is an *inset*, not an *insert*.
- The word *alternatively* is preferred to the word *alternately* (unless you really mean something that alternates).
- Commas, semi-colons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
- British form is to use a decimal point between the integer and fractional components of a real number (as in 1.25), and commas between units of 1000 (as in 1,200,000.25). Some other languages reverse this arrangement. Use a zero before decimal points: 0.25, not .25.

4.2.2 The ideal dissertation will...

- Contain arguments that are expressed clearly and persuasively. Reasoned justifications to support these arguments will be presented. Appropriate reference to the literature will be made to support the arguments. Dissenting views from the literature will be discussed.
- Contain a detailed and critical assessment of previous work conducted in this area. The main contributors to the debate will be highlighted and their work will be discussed in more detail. The student will attempt to demonstrate where his or her work fits in with the literature presented.
- Identify the major problems addressed by the project. The report will set these problems in the context of the aims and objectives identified for the project. These problems will be explained in detail as a prelude to the student’s account of how they were solved. The report will also indicate other possible solutions to these problems. Where particular

problems have proved too difficult in the time available for the project, they should be discussed and the student should identify potential solutions.

- Include an element of self-critical reflection. The report should review openly whether certain decisions were justified and whether certain activities could have been done better. The report should demonstrate how the student has learned from any mistakes that have been made. The report should also show what the student has learned from the positive achievements of the project. The report should demonstrate the student's ability to discuss alternative approaches to the work undertaken in the project. The report should also reflect how the student's other courses (including the placement, if any) have contributed to the project.
- Contain a section that indicates what further work might be fruitful. This other work might be a continuation of the project or in a different but related area. In either case, the report will explain what the contribution the student thinks his/her work can make to this future work.
- Demonstrate that the student has managed his/her time appropriately in completing the project. Will clearly show where changes to the project plan have had to be made and will indicate how the student adapted his/her project to accommodate these changes.
- Only contain material that is relevant to the aims and objectives for the project, as expressed in the report.
- Be written in good English and the ideas will be expressed clearly, unambiguously and persuasively. The work will consist of coherent sentences that are punctuated correctly. There will be very few spelling mistakes.

4.3 Submission FAQs

This is a collection of queries and answers posed at the point of submission in previous years.

1. **Is it acceptable to use a figure from another research paper in my literature review? This is in addition to citing the paper.**

Yes, it is acceptable, but you must make the origin of the diagram clear to the reader. You should include a comment on the lines of "Diagram re-used from [reference]" in the figure's caption. It is not enough to just have a passing reference to paper in the text of the report.

2. **I submitted my project yesterday to test for similarity; it came as 8 percent. However today I added my appendices to it and its now showing as 26 percent. It's highlighted all my references as similar along with my declaration which is showing as 17 percent! And all my ethics forms!**

Don't worry, we know that that sort of "boilerplate" text raises similarity levels. Your supervisor will look at the overlap and see that it is caused by the inclusion of the forms and so on. The similarity checker actually allows individual source documents to be removed from the match, so that a score can be found ignoring this sort of overlap.

3. **I have deployed a running version of my project on Digital Ocean VM for demo purposes and as part of my project objectives. Do I need to provide a SSH access to the virtual host or simply give the domain name from which access the demo should be enough?**

You should put a copy of the code on the oneDrive and also a file with the URL so it can be run. There may be a couple of reasons why you shouldn't give full details on operation - one is that it takes a great deal of your time, the other is that you end up having to leave account login details living around. You'll have to make a judgment.

Inevitably there is a trade-off involved about access and operation - the examiners want evidence that you have generated a product, that is has well written code and that it runs. However, we appreciate that it may integrate with impractically large amounts of external materials or require specialized software to compile and operate.

The underlying idea however is that we'd like to be able to get at your code, as it is today. We may need to look at it at some point well in the future. We're aware that things change, and accounts may lapse. Hence the need to supply a copy of what you've written.

4. **The majority of my code and functionality is stored and ran from the online secured Amazon network. Should I just provide text-file versions of the code with a video example of it functioning as it is not possible to give the marker access to my skill development area.**

The code alone will be fine in cases such as this. There is no requirement to generate videos of the product operating (presumably, this has been done in the Showcase anyway).

5. **Does the spacing between the text have to be 2.0?**

It's a lot easier to read and make any notes on it necessary if the text is spread out a bit. On the other hand full double space is maybe a

bit excessive - 1.5 is probably optimum.

6. **I have uploaded the wrong version of my report to the submission! Please tell me there is something I can do to fix this!**

Don't worry, if you look at the upload page for your Report, you'll see the words "Submit Paper" and a little "up-cloud". Click on them and you can upload the new report.

7. **My product consists of a Java project and a large data set that has been collected. There are over 1 million rows within the data set. Am I expected to upload this data set in some form of CSV file to the oneDrive account?**

Ideally we want to be able to both see what you've done to create your Product, and also experience its effects. Thus you need the code and (if appropriate) the executable and any data it uses. We appreciate that in some cases, the data will be very large; in that case, the code alone is acceptable. In all cases, please remember to zip the files up so a single archive can be up- and down-loaded.

8. **I have received an extension on my report due to exceptional factors, shall I still submit the other parts of the project today or should I submit it all on my revised deadline?**

We only have one submission date. Thus if you have an extension (EF or PLP) you should bind the components together and submit them by your new deadline.

If you have an extension and haven't done your Showcase presentation yet, please get in contact with your supervisor to arrange one. This should be close to, but before, your revised deadline. I'll alert the supervisors to the revised deadlines.

9. **Just a quick question about the word count. The document states between 8,000-14,000 words are recommended but doesn't not say whether that's a fixed limit or not. My report at the time of writing this is 14,835 before I've gone through and made some changes. Will I need to get that below 14K or is it okay as it is?**

It's not a hard limit (so your examiners won't stop reading at 14,000 words and give you 0 for the last part of the Report). However, there is a section on the mark grid for "style", where you can expect to be marked down if you say too much (or too little). You are expected to write an appropriate amount - please do try to cut it down a little.

10. **Just a quick question about the report. I'm moving it over to Latex, and I saw the template provided within Moodle. Would we be able to use this or would we have to create our own?**

Of course – the whole point of providing a template is that you should use it. You should be able to compile the text up to a copy of the PDF I've given you. I've also converted the PDF to Word, if you really want to use that document preparation scheme (note though that Word version is really just a picture of a document - you'll have to structure it yourself).

11. **Are you allowed to use text verbatim from your Feasibility Study (i.e parts from the project background I have previously written)?**

We won't object if you transfer over some sentences (the aims and objectives in particular), but the Introduction chapter shouldn't be a straight copy of the Feasibility Study – while the ground covered is very similar, we expect that you know rather more about the area now.

Last night I uploaded my report but didn't submit it. I can't figure out how to delete the uploaded document to replace with my new updated one. Is it possible to do this?

The act of uploading the file to Turnitin2 submits it, but you can over-write the file at any time up to the deadline. Just click on the upload button and do what it says. The last version you upload will automatically be given to your examiners.

12. **Can you explain a little more about the process for up-dating my work after I submitted an early draft? In particular, I am worried about clicking the button labeled "submit" as the file on Turnitin isn't the correct piece, and there seems to be no menu set saying delete or re-upload, I can only download it, which I do not want to do.**

You can get information on the operation of Turnitin by looking at this page (scroll down to the section of Turnitin and view the first video):

<https://moodle.mmu.ac.uk/course/view.php?id=36>

You'll see that the default page, before anything is submitted, has the same "Submit Paper" button, which you see when you want to update the work.

I think that the important thing to say is that there isn't actually a distinction between "uploading" and "submitting" something in Tur-

nitIn. By doing an upload, you are submitting. As the counterpart of that, you can alter the submitted work (including, I expect, deleting the file) at any time until the deadline through the same page you get to by clicking “submit”. Certainly, I don’t think that pressing “submit” commits you to giving the current draft to us academics to mark.

Chapter 5

Submission and Assessment

5.1 Assessment Criteria

The criteria are designed to align with the University's graduate outcomes. These are:

1. Apply skills of critical analysis to real world situations within a defined range of contexts;
2. Demonstrate a high degree of professionalism, e.g. initiative, creativity, motivation, professional practice and self management;
3. Express ideas effectively and communicate information appropriately and accurately using a range of media including ICT;
4. Develop working relationships using teamwork and leadership skills, recognising and respecting different perspectives;
5. Manage their professional development reflecting on progress and taking appropriate action;
6. Find, evaluate, synthesise and use information from a variety of sources;
7. Articulate an awareness of the social and community contexts within their disciplinary field.

Student effort and Feedback As a 30 credit unit, the Project requires that you undertake 300 hours of work. These are allocated as 25% (75 hours) summative assessment (direct production of materials yielding marks), 10% (30 hours) directed study (meetings with your supervisor, lectures, drop-in sessions) and 65% (195 hours) of student-centred work (independent research, design, development and testing). Given the number of weeks available, you should seek to consistently spend approximately 10 hours each week working on the Project. This includes time spent over the Christmas

and Easter vacations. Formative feedback will be given informally in the supervision sessions.

5.2 Re-assessment Arrangements

Should a student be determined by the examiners to have failed to meet the pass mark for the Project (this is 40% overall), they will, in completing the free-text assessment feedback, provide a list of aspects of the project which need to be amended to reach the 40% level. Should a student fail to submit their project, a mark of zero will be recorded and no feedback given.

The in the normal course of events students can expect to be informed of the re-assessment decision by late June, with a submission requirement of late July. Students likely to be re-assessed should, however, be aware of this some time earlier, on the basis of the assessment feedback. Support will be given by the student's Theme staff and Program Support Tutors both face to face and electronically. If a student is required to repeat the Project overall, with or without attendance, this whole description will apply.