

A Template for CAT Final Project Reports

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**MOD002791 Final Project**

**Final Project Report**

**BSc (Hons) Computer Science**

***(substitute above line with correct course and delete this italicised line)***

**Submitted: Month Year**

# Abstract

The Abstract is the first page the reader should see after the front page (excluding the hard cover). It should summarise the whole project including the introduction/aim(s), methodology, implementation, results, discussion and conclusion. Do not include any references here. It should be no more than 300 words and no longer than one page. The font should be Times New Roman 11 or 12pt and single-spaced. The Abstract is usually written in one single paragraph (although this is not explicitly required) and centered vertically in the middle of the page. Page numbering starts with roman numerals i (the title page, but number not displayed) and then the Abstract page ii (this page), iii, iv, v, etc up to the first page of the Introduction, where page numbering then recommences with Arabic numbers 1, 2, 3 etc up to the last page of the Conclusion. All pages after the Conclusion then continue with roman numerals sequentially from the last page number before the start of the Introduction. For example, if the last roman numeral before the Introduction was v, then the first page after the Conclusion would be vi. Write the Abstract last of all, but take particular care with grammar and meaning – it is usually the first contact the examiner will have with the report and could have a lasting impression on how the rest of the project is viewed.

# Acknowledgements

An Acknowledgements statement is a means of recognising/thanking any person (friends, family, supervisor, institute) that has supported the student either generally during their time at University or specifically for the work on the Final Project. It is entirely optional if this section is included.

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**1.0 Introduction**

Each chapter should start on a new page. The chapter title should be Cambria 18pt but the main text should be Times New Roman 12pt and double-spaced. Optionally as in this example an unnumbered introductory (without sub-heading) section can be included. Section sub-headings should be left-aligned. Throughout the project it is recommended never to go to deeper than three hierarchical subsection levels otherwise it can be confusing for the reader as to where one is in the overall structure of the project. So for example a section 3.1.2 is acceptable, but say 2.3.4.6 is probably not. Try to keep to two levels wherever possible.

* 1. **Aims of the study**

State at least one aim, and optionally two or three subsidiary aims/objectives that will form part of that overall aim. If appropriate (discuss with supervisor) a statement might predict an outcome (i.e. an experimental hypothesis).

The aim of this work is to describe and provide a single text document that acts as both a document template and source of information for undergraduate Computing and Technology students writing their Final Project module reports. Ideally this document will;

* Be formatted in an appropriate style specific to the project requirements of the Department of Computing and Technology.
* Demonstrate good practice in academic writing (structure, grammar, written style, presentation).
* Provide an editable resource for individual project construction useful to all students enrolled on the various degree courses managed by the department.
  1. **Background**

Alternative sub-heading titles for this section are ‘Literature review’ and ‘Previous work’. Bear in mind a ‘Literature review’ is misleading as one usually has to draw on published literature throughout the project rather than being confined to one section, although it may well be that most citations occur earlier rather than later in the project. Seek advice from the supervisor.

References referred to (cited) in the main text must be done so in a standard way. It is Faculty policy that technical documents should follow the ‘Harvard referencing style’ (a document describing this style is on the library and module VLE sites). The following summarises some of this practice with some minor personal amendments. If there is a literature source whose author is ‘Smith’ listed under the References at the end of the project, then in the text cite that source with sentences such as ‘…as described by Smith (2009).’ or ‘… is known to produce a compilation error (Smith, 2009).’. Until recently it was looked down on to include web sources, as they can be unrefereed and potentially very inaccurate since it can be difficult to discriminate a fact from a personal view (fake news?). However there is now a proliferation of on-line only refereed (ie peer reviewed) web-based academic journals, so, if the web source is a journal, conference paper or book and has an author then cite these sources in exactly the same way as one would for a ‘hard copy’ source. Indeed they can be listed alphabetically by author amongst the ‘hard-copy’ listing of References at the back of the project. If however a web source has is no listed author, and/or no clear academic journal affiliation then do *not* include this kind of source in the References list; instead refer to the Uniform Resource Locator (URL) with a footnote on the same page it is being referred to listing the full URL and the date it was accessed (this is because links become out of date)[[1]](#footnote-1). This is an example immediately prior to this sentence. The link is to the University study support resources and includes various documents including support for project writing. Be aware they are generic at a University level rather than subject or faculty/departmental specific.

**2.0 Methodology**

* 1. **A description of Methodology**

Methodology is the systematic analysis of the methods applied to a field of study (not to be confused with ‘the Scientific Method’ which is a formal series of steps to test a hypothesis). This chapter should describe exactly what was to be done and how it was to be done. By reading the Methodology chapter, anyone with access to the same tools should be able to repeat the study. Describe how the problem will be tackled (design) and the associated work undertaken to achieve this (tools used, approach to developing software and/or building of hardware, collation of data from literature sources). Exactly how many subsections there are and what their sub-headings will be is project specific.

**2.2 Use of acronyms**

An acronym is a short-hand version of a phrase, statement or title, usually capitalised and including most of the first letters of each word. Their use in computing/technology literature is very common because of the large number of specialist technical phrases inherent in the subject areas. It is perfectly acceptable to use such acronyms in the Final Project report (described more fully as part of the Harvard referencing style) and here are the main guidelines:

1. An acronym should be defined *once* only in the document on first use of the phrase in the project. Once the acronym is defined that acronym should always be used instead of the actual phrase (otherwise what is the point of the acronym?). For example ’All research in the University must be ethically approved by the relevant research ethics committees and sub-committees. Within the Department of Computing and Technology advice on ethical issues can be sought in the first instance from the Departmental Research Ethics Panel (CAT-DREP)'.
2. Avoid use of too many acronyms – if a technical name or phrase is only used once or twice in the whole project use the full statement rather than defining an acronym. A project in which too many acronyms are used will be difficult to follow as the reader has to remember what they mean. Even if a glossary is included (not recommended as academic papers do not usually include a glossary) it is distracting to have to switch between the current page and looking up the glossary term).

**2.3 Presenting equations**

The project may involve the listing of equations. They should be presented left-justified with an indent as with the start of a paragraph in normal text, and if referred to in the main text should be numbered with that number recorded right-justified. The following example (Equation 1) describes an equation for linear, uniformly accelerated motion where *s* = distance (meters), *u* = velocity (meters/second), *a* = acceleration (meters per second per second), and *t* = time (seconds):

*s* = *u t* + ½ *a t* 2 (1)

Equation 1 has been written simply through using the font style options in the word processor (italics, insert symbol and superscript) but for more complicated equations an Equation Editor can be used (Word for example has such a built in editor, selected by Insert/Equation).

If the project only has a few equations to present then it is probably sufficient to simply number them from the start of the project sequentially through to the end of the project. Alternatively where there are many equations a chapter/number system can be used similar to hierarchical chapter numbering; so in this scheme the (1) would be replace by (2.1) and now referred to as equation 2.1.

**2.3.1 Academic style and grammar**

Writing in an academic style does not normally come naturally and takes practice because the grammar should be formal and completely un-emotive. Such phrases as ‘It worked brilliantly’ or ‘things just didn’t work out because I ran out of time’ are too emotive, better alternatives are ‘the experiments returned meaningful results’ or ‘results are restricted in scope because of time constraints’. Do not use ‘personal’ language. A report written entirely in the first person (‘I did this, I did that’) is distracting; the reader is trying to determine what was done and what the results were, not the personality of the researcher. An example of bad practice: ‘I did the experiment on a 2GHz Pentium PC...’. An example of good practice: ‘The experiment was performed on a 2GHz Pentium PC...’. To put this another way always write in the third-person (i.e. as if the author were an observer of his/her own work) avoiding the word ‘I’ in particular. The one exception to this is the in writing the Acknowledgement where it could be regarded as acceptable since one is making a personal thank you for support. Apart from the examples in this paragraph, this whole template document is written without use of ‘I’, ‘you’ or ‘yours’. Try also to maintain a present tense, although a past tense can sometimes be acceptable (e.g. background review, discussion). If one has difficulty adopting this formal style look at the wording of a few refereed Computer Science/Technology Journals and mimic that style although the student should also seek advice from their supervisor.

If the student is aware that their written English is not very good, here are some strategies to try:

1. Read it out loud. If one keeps stumbling or the sense of what is being said just doesn’t sound right, then it needs re-writing.
2. Ask someone to read what has been written. If another computer science student cannot understand what was done and what the results are, then it needs re-writing.
3. Never be happy with the first draft – the author of a paper/report might re-write sections several times before being satisfied with the product (if that situation is *ever* reached).
   1. **Pseudocode**

Sometimes it may be desirable to present the description of an algorithm in pseudocode. This is quite acceptable and is usually embedded in the text without a title, but indented and presented in a different layout/font style. For example, pseudocode for describing a sorting algorithm might be:

*Enter the number of values, N*

*Store in array values[0 to N-1]*

*for i = 0 to N - 1*

*{*

*for j = i to 0*

*{*

*if (values[j] > values[j - 1]*

*swap them round*

*else*

*break*

*}*

*}*

Unless the project is specifically about pseudocode be very selective in describing relevant algorithms in this way; it is easy to overdo pseudocode and is best reserved for those more difficult procedures that cannot be described in normal English sentences. Note that procedures in general such as the assembly of an electronic component can be presented in a similar way, but *never* referred to as pseudocode of course as this is reserved for something translatable into code.

**3.0 Implementation and Results**

Many studies in Computing and Technology all involve collecting measurements of some form or another, including collation of information from published work. ‘Primary data’ refers to the new results generated by the researcher/author of the project, whilst ‘secondary data’ refers to work collected and published by someone else. For example if the background review involves presenting a published table of results from a literature source (referenced appropriately of course – see Harvard referencing) then this is clearly secondary data. If a table is presented showing the results of the testing of an electronic component developed by the researcher for this project then this is primary data. It is a requirement for the award of a professionally accredited degree by the IET/BCS that the project should include a deliverable (something that is **designed and created**) and for a non-professionally accredited award the assessment emphasis will depress the mark if a deliverable is not included. Note that the deliverable need not be hardware or software (although this is the most obvious way to comply with the requirement) but could involve the development of a new practice, a new protocol, or a new design metric for example. To re-emphasise the project should include something that is designed and created whatever that might be. To comply with professional recognition the project should not just be an extended literature review. If most of your project is very literature based it is advisable to think of ways that the secondary data can be processed in new ways particularly for the purposes of discussion, hence deriving data that could be regarded as a combination of primary/secondary data (primary in the sense the numbers are new for the study, but secondary in that they are derived from existing published work).

**3.1 Presenting Tables**

A general (but not exclusive) rule of thumb is to present the data results in one or more tables. There should be an initial description describing how the results are presented (e.g. what the numbers mean, units, phrases, codes etc) followed by the tabulated data. The tables should be numbered consecutively by chapter, with the table title above the table and explicitly referred to at least once in the main text as in this example (Table 3.1). The ‘3’ refers to chapter 3 (this chapter) and the ‘1’ is because it is the first table presented in the chapter. The system is effectively an extension of the hierarchical chapter section numbering system described earlier.

**Table 3.1 Comparison of in-game 3-marine resource building completion times. Data for SCFusion, Genetic Algorithm and Human player. *Note this table legend is single spaced*.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Target: 3 Marines** | | | | | |
| **SCFusion** | | **Genetic Algorithm Program** | | **Human** | |
| **Time** | **Gene** | **Time** | **Gene** | **Time** | **Gene** |
| 2s | SCV | 0s | SCV | 12s | Supply Depot |
| 24s | Supply Depot | 23s | Supply Depot | 53s | Barracks |
| 1m00s | Barracks | 58s | Barracks | 1m36s | Barracks |
| 1m50s | Barracks | 1m34s | Barracks | 1m 54s | SCV |
| 2m07s | SCV | 1m48s | SCV | 2m09s | Marine |
| 2m15s | SCV | 2m08s | SCV | 2m34s | Marine |
| 2m40s | Marine | 2m13s | Marine | 2m41s | Marine |
| 2m40s | Marine | 2m38s | Marine |  |  |
| 2m43s | Marine | 2m39s | Marine |  |  |
| **Completion Time** | **3m05s** | **Completion Time** | **3m05s** | **Completion Time** | **3m07s** |
| **Actual Completion Time** | **3m14s** | **Actual Completion Time** | **3m14s** | **Actual Completion Time** | **3m15s** |

A table (or Figure for that matter) can be either embedded within the text as with Table 3.1 or presented on its own stand-alone page (see Table 3.2). If embedded ensure it does not extend across a page break. To re-emphasise, ensure the table is referred to at least once in the text – this is important to avoid confusion as to which table is actually being referred to. If an embedded table cannot be located on the same page that it is first referred to then it should be located it on the next available page (it might be referred to many times elsewhere further in the project).

If the tabulated results extend over several pages and/or would seem unwieldy to include in the Implementation and Results chapter, then an example sub-set could be included to demonstrate the nature of these results and reference made to the complete data set placed in an Appendix. However if the Appendix data then also seems unrealistically too much then alternatively have that data stored as an electronic appendix file on the disk submitted with the project. Seek advice from the supervisor as these issues are usually topic specific.

* 1. **Computer code**

As with pseudocode, sometimes it may be desirable to present actual snippets of code as the MatLab example below demonstrates:

% Declare vector of harmonic numbers 1-20.

h = [1:20]';

% Declare vector of angles 1-360 degrees.

degrees = [1:360]';

% Declare matrix for summated harmonic radii.

Rth = [];

for degree = 1:360

cosdat = (h(1:20) .\* theta(degree)) - phase(1:20);

trig = cos(cosdat);

hterm = Rn(1:20) .\* trig;

% Summate harmonics and add 1 - zero'th harmonic

sumterms = sum(hterm);

sumterms = 1 + sum(hterm);

Rth = [Rth;sumterms];

end

**Table 3.2 Comparison of run time executions. Duration times (Diff) for fixed point versus floating point calculations repeated 50,000 times for n number of random values. Sigma is standard deviation.**

|  | | | **Fixed Point (integer) Calculations** | | | | | **Floating Point Calculations** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Experiment number** | | | **Start Time** | | **Stop Time** | | **Diff** | **Start Time** | | **Stop Time** | | **Diff** |
| n | Sigma(fn) | ∑n | min | msec | min | msec | msec | min | msec | min | msec | msec |
| 1 | 1.00E+00 | 1 | 1280 | 54490 | 1280 | 54490 | 0 | 1268 | 37720 | 1268 | 37830 | 110 |
| 2 | 3.00E+00 |  |  |  |  |  |  | 1268 | 45740 | 1268 | 45960 | 220 |
| 3 | 6.00E+00 |  |  |  |  |  |  | 1268 | 50680 | 1268 | 51070 | 390 |
| 4 | 1.00E+01 |  |  |  |  |  |  | 1272 | 28410 | 1272 | 28850 | 440 |
| 5 | 1.50E+01 | 15 | 1281 | 40190 | 1281 | 40240 | 50 | 1272 | 55760 | 1272 | 56310 | 550 |
| 6 | 2.10E+01 |  |  |  |  |  |  | 1273 | 21080 | 1273 | 21740 | 660 |
| 8 | 3.60E+01 |  |  |  |  |  |  | 1273 | 54090 | 1273 | 54970 | 880 |
| 10 | 5.50E+01 | 55 | 1282 | 11280 | 1282 | 11330 | 50 | 1274 | 33360 | 1274 | 34410 | 1050 |
| 15 | 1.20E+02 |  |  |  |  |  |  | 1275 | 4780 | 1275 | 6320 | 1540 |
| 20 | 2.10E+02 | 210 | 1282 | 35660 | 1282 | 35770 | 110 | 1275 | 48060 | 1275 | 50150 | 2090 |
| 50 | 1.28E+03 | 1275 | 1283 | 2470 | 1283 | 2740 | 270 | 1276 | 24420 | 1276 | 29590 | 5170 |
| 100 | 5.05E+03 | 5050 | 1283 | 27290 | 1283 | 27790 | 500 | 1277 | 3310 | 1277 | 13580 | 10270 |
| 200 | 2.01E+04 | 20100 | 1283 | 57940 | 1283 | 58930 | 990 | 1277 | 52470 | 1278 | 13070 | 20600 |
| 500 | 1.25E+05 | 59714 | 1284 | 36500 | 1284 | 39030 | 2530 | 1278 | 40750 | 1279 | 32100 | 51350 |

If a computer program has been developed remember the source code would normally be included in an Appendix at the end of the project, so only use *short* insertions of code in the main text in this way to clarify the implementation of an algorithm that otherwise would be difficult to communicate to the reader.

**3.3 Summary**

In summary therefore the Implementation and Results chapter should present data describing the created artefact. This can include written descriptions as well as numerical data, which if possible should be tabulated (but see section 4.3). Remember to include a brief description of how the data is presented. One point worth emphasising is that the Implementation and Results chapter should *contain no interpretation or evaluation*.

**4.0 Discussion**

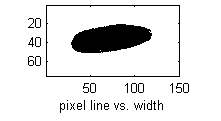
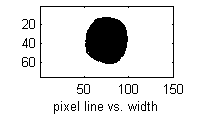
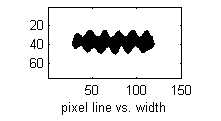
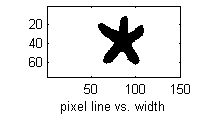
**4.1 Purpose of a Discussion chapter**

Whatever the topic, be it computer science, gaming, electronics, and whatever the approach there needs to be an evaluation of that outcome. Some examiners place a lot of emphasis on the discussion because it is often a good reflection of the students’ critical abilities. Tables and figures which were presented in an Implementation and Results chapter can be referred to, or new tables and figures can be presented for discussion (best) or a mixture of both. Are the results expected? (i.e. do the results support the hypothesis/expected outcome if there is one one?). How strong is the evidence? Are there any problems with the design which should urge caution about interpreting the results? What further work might be suggested in light of the results? Even if there is no titled ‘Discussion’ chapter (see section 4.3) one would expect to see elements of discussion somewhere in the project.

**4.2 Presenting Figures**

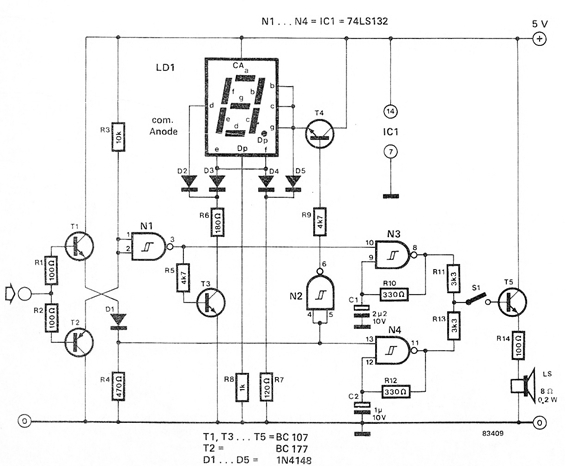
A ‘Figure’ is a picture, a graph, or a diagram. Whilst figures (and tables) can occur anywhere in the project, with reference to the results they provide a means of evaluating that data presented in the ‘Implementation and Results’ chapter. The graphing of a dataset of results for example might demonstrate a relationship that otherwise would be difficult to see from the raw data alone. The cliché ‘a picture is worth a thousand words’ is very true; the human brain can assimilate and recognise patterns in data presented graphically far more quickly than just a view of raw tabulated data.

The rules for referring, locating and presenting figures in the project are the same as those for tables, with one important difference. The figure number affiliation and title/legend describing the figure should be located *beneath* the graphic, not *above* it as is the case for tables. See Figure 4.1 as an example.



**Figure 4.1 Tests for Roundness (R) and Circularity (C) on four pre-defined shapes. Note this legend is single spaced.**

As with tables, figures can either be embedded within the text or presented on a stand-alone separate page (Figure 4.2). The important point to note is that whatever approach is adopted there should be *consistency*; do *not* have one table or figure embedded and the next table or figure on a stand-alone separate page (although this template document does this to illustrate the two approaches!).



**Figure 4.2 Digital Hi Lo logic tester circuit diagram[[2]](#footnote-2).**

**4.3 Variations to chapter structure**

This project document template presents a very conventional approach to structuring a ‘scientific’ project and tailored for Computing and Technology projects. However any review of various published journal papers in the computing and technology literature will reveal substantial flexibility. For example one can separate the ‘Implementation and Results’ chapter into two separate chapters, or combine the ‘Methodology’ chapter with the ‘Implementation and Results’ chapter to create a single ‘Methodology and Results’ chapter. Perhaps the ‘Implementation and Results’ chapter could be combined with the ‘Discussion’ chapter to create a ‘Results and Discussion’ chapter. There are even some examples of published papers that have a combined ‘Discussion and Conclusion’ section although this is unusual and tends to be more common in short conference publications. In fact completely different chapter titles could be used provided there is an ‘Introduction’ and a ‘Conclusion’. Nevertheless following the formal approach presented here is recommended as it will force a compartmentalisation of the work in a logical way. Often the choice of chapter headings can become a matter of personal choice and specific to the subject of the study. If necessary seek advice from the supervisor.

**5.0 Conclusion**

The ‘Conclusion’ chapter should contain at least the three following components, possibly within their own headed sub-sections:

* A summary of the discussion. Whilst this can also include elements of methodology, implementation and results the focus must be uneqivalently be about conclusions drawn from the discussion including their significance. Note the conclusion should not include any major new items of information.
* An evaluation to what extent the aims outlined in the Introduction have been achieved. Aims can be completely achieved, partly achieved, or not achieved. If an aim is only partly or not achieved then explain why not and with the benefit of hindsight suggest what would have been done differently. Try to be as objective as possible; a non-achieved aim is still a valid result if the original aim was of appropriate scope at the time it was formulated.
* Suggestions for further work. Present any thoughts on how the project might be extended or improved in the future.

**5.1 Writing up the project**

Start writing up as the project progresses, right from the start of the project! (or start as soon as possible). Do not worry too much about where blocks of text will finally be placed – just save these blocks of information for cutting and pasting later when the final document has to be prepared. Also, start writing up first with those things that appear *easier* to write up, and gradually progress onto the harder topics. For example, one might find it easier to write up some aspect of methodology first before tackling a background review (students often finds Introductions and Conclusions the hardest to write).

**5.2 Using a spell-checker**

Only use the spell-checker *after* an initial draft of the report is completely written. This is because the spell-checker will not recognise specialist computing and technology words (unless told to do so) and therefore it can be very time-consuming to repeatedly spell-check such a document. Remember to also proof-read the report, as the spell checker may not distinguish between correctly spelt words which are grammatically incorrect. For example, “their” and “there” or “its” and “it’s”.

**5.3 Formatting the Table of Contents**

One of the last tasks to undertake is the word-processing completion of the Table of Contents section. This can be more time-consuming than one might expect. The Table of Contents at the beginning of this template document was typed in directly by the author. Alternatively one can automatically generate the Table of Contents using the Table of Contents wizard built into the host word processor (Word has such a wizard for example). The advantage of a wizard is that it can easily construct the Table of Contents section and can be easily updated, including page reference numbering. The disadvantage is that the wizard will implement template design constraints on sub-heading font style, font size, line indentation and spacing that will be evident throughout the document, and they may not be to the authors’ liking (often they can be more appropriate for an humanities-type style of presentation). On the other hand if a wizard is not used the page numbering in the Contents must be manually updated and care must be taken to ensure this is accurate. It is possible to customize the wizard sub-heading properties but this requires time to familiarise oneself with the configuration process. Whether an automatic Table of Contents wizard is used or not, be aware it might take a day’s work or longer to ensure the Table of Contents are presented correctly as one would like.

**5.4 Project submission**

Download and print off copies of the assignment cover sheet and receipt, and optionally a TurnitIn report. Go to the iCenter and request a ‘Declaration page’ for student projects. Complete the assignment cover sheet(s) and declaration page(s) by hand. Print off two copies of the project (NB printing to one side of A4 only), either via the Digital Copy Services (DCS) or elsewhere. Note that whilst documents in many formats can be printed, it is a good idea to save the project manuscript file in PDF format and print from that file, as the version and settings of Word (for example) used by the printing service may be different from that used to write the document and may inadvertently change the layout. Take the unbound manuscript(s) + assignment cover sheet(s) + declaration page(s) +/- TurnitIn report(s) to DCS for comb-binding. Request that the project be bound utilising an ‘undergraduate dissertation pack’ (this may be specific to DCS Cambridge or Chelmsford but essentially comprises an acetate cover, front and back white card covers, and a comb-spine appropriate for the size of the project). If the intention is to get the project comb-bound elsewhere then ensure the acetate and card covers supplied by DCS are used (or similar). The DCS staff are very familiar with the specific binding requirements for various undergraduate final project reports and will be happy to advise. Be aware that during the two days prior to project submission the printing service will be extremely busy – get the project bound in good time before the submission date. Submit the two copies of the project to the iCenter or equivalent for the attention of the supervisor.

**References**

Berndtsson, M., Hansson, J., Olsson, B. and Lundell, B., 2006. *Planning and Implementing your Final year project – with Success!*: A Guide for Students in Computer Science and Information Systems. Springer.

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**Appendix I**

The Appendices should include supplementary information related to the project. At least one Appendix is needed which should refer to the contents of the CD\DVD included in a polythene, paper or similar *soft* sleeve **attached to the inside back cover** of the project. A single statement for Appendix I might be:

*Please see attached disk submitted with this project which contains an electronic version of this report and all associated elements of the Final Project module.*

Note that it is a University requirement that *all* coursework must be submitted on disk as an electronic archive whether or not it is submitted in hard copy form. For the Final Project module ensure the following three folders are included on disk:

* *Interim Report.* Note that assuming the IR was submitted to the relevant supervisor last semester then that mark will stand even if the project subsequently changed.
* *Poster.* Include a copy of the poster preferably in pdf form (other common formats acceptable).
* *Final Report.* Include an electronic copy of the final report (i.e. the customized version of this template document).

**Appendix II**

How many other Appendices will be included will be topic specific and advice should be sought from the supervisor. Typical reasons for additional appendices include;

1. **Presentation of computer source code.** If a software deliverable has been written then a hard-copy version should be included in an appendix. One normally needs to provide user-instructions for running the code in a paragraph prior to the program or in a separate appendix (see iii and iv). Be careful to avoid word-wrapping effects that can make the code difficult to read.
2. **Presentation of a hard-copy A4 version of the poster.** This is recommended as the subject matter should be very relevant to the project work.
3. **Additional data results.** If there is only a small amount of data results then all the results can be presented in the Results chapter and this appendix is not needed. If there is a large amount of data then a sample of that data should be presented in the Results chapter and all the data reproduced in full in hard-copy form in an Appendix. Only in exceptional circumstances (where for example, the data might actually exceed the length of the project before the Appendices) might the data *not* be presented in an Appendix hard-copy form. Instead refer to the data exclusively in electronic form on disk although advice from the supervisor should be sought as to whether this is acceptable/appropriate.
4. **Additional information.** If there is information that is relevant but somewhat superficial to the core of the project then that information could be placed in an Appendix instead of in the main text. One reason for doing this would be to ensure the main text of the project maintains its’ focus. Examples might include instructions for running a program, instructions for operating a camera, providing the detailed specification of a product, and providing the detailed background to some topic.
5. **Word limit constraints.** Note that the project word limit of 10,000 words *does not* include the appendices. Some studentsmay find it very difficult to keep their projects below the word limit of 10,000 words and if this is the case then as a last resort try separating a topic into more important (more relevant) and less important (less relevant) parts and move that less relevant information into an Appendix. However take advice from the supervisor, as should the Examiner deem inclusion of such appendix information above the 10,000 word limit unnecessary then it may be detrimental to the assessment of the project. Also remember that the word limit is an *equivalent word length*, that is, the ‘number of words’ is a measure of work rather than absolute word length. Depending on content it is quite acceptable for the actual word length of the project to be say 7,500 assuming a deliverable was also being produced and where the computer code or electronic circuit might be deemed equivalent to 2,500 words of work. There is no lower word limit, although as a rule of thumb an absolute project word count of less than 6000 is probably too short (seek advice from supervisor).
6. **Certificate of successful completion of Ethical Training.** All students should undertake the on-line VLE ethical training course. On successful completion of the course a certificate is generated as proof of completion and can be printed off and included in an appendix.

1. <http://web.anglia.ac.uk/anet/student_services/study_support/index.phtml> Accessed 28th February 2017. Most relevant resources are obtainable via a link to ‘Study Skills Guide’ and selecting the Tab for ‘Academic Writing’ which includes a ‘Reports & Dissertations’ section. [↑](#footnote-ref-1)
2. URL: <http://www.next.gr/circuits/Digital-High-Low-Logic-Tester-Circuit-diagram-l24853.html>.

   Accessed 28th February 2017. [↑](#footnote-ref-2)