

COM6905 Research Methods and Professional Issues

Spring Semester 2019~2020

Project Background Report (80% of module assessment)

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Deadline: 3pm Wednesday 20th May 2020 (week 12)

Introduction and Aims

The aim of this project background report is to help you prepare for the summer MSc project. The main component of the report is an *extensive literature survey* (or similar technology/mathematical survey for certain types of project). In addition, the report should contain a clear presentation of what the project is aiming to achieve, and a description of the work done so far. It should also include a *detailed project plan*, including consideration of *how risk will be managed* during the project and consideration of *legal/ethical issues*.

You will receive feedback on this report from your supervisor and second marker, which will help you to prepare your final MSc dissertation. Much of what is written for this report will probably be reused in a modified form in the final dissertation.

You are strongly advised to submit a draft of your report to your supervisor at least two weeks before the hand-in date for comment/feedback; experience shows that this is the best way of avoiding common pitfalls.

Report Structure

The report should be no more than 20 A4 pages long, not including: title page, declaration, table of contents, references and appendices. The font size should be 11pt or 12pt. Use of the LaTeX template provided on MOLE is **strongly encouraged**.

There is some flexibility regarding the structure of the report, depending on the requirements of your particular project. The following structure will suit most projects; please discuss with your supervisor if you want to deviate from it. **Please note that sections on risk analysis and ethical/legal issues are necessary to satisfy BCS accreditation requirements, and must be included.**

Title page	Title, name, supervisor, module code, date, and the following statement: <i>This report is submitted in partial fulfilment of the requirement for the degree of [Degree Title] by [Full Name].</i>
Signed declaration	The second page should be the following signed declaration: <i>All sentences or passages quoted in this report from other people's work have been specifically acknowledged by clear cross-referencing to author, work and page(s). Any illustrations that are not the work of the author of this report have been used with the explicit permission of the originator and are specifically acknowledged. I understand that failure to do this amounts to plagiarism and will be considered grounds for failure in this project and the degree examination as a whole.</i>

	<p><i>Name:</i></p> <p><i>Signature:</i></p> <p><i>Date:</i></p>
Abstract	Two or three short paragraphs (100-150 words total), summarising the report. A suggested flow is background, project aims, and key findings from the analysis. It should not simply be a restatement of the original project outline.
Contents	Includes titles and page numbers of all sections and subsections. Chapter 1 begins on page 1. Use roman numerals for all previous pages, e.g. title page (i), signed declaration (ii) abstract (iii), acknowledgements (iv) and contents (v-p). It is best to include a separate list of all the figures (figure number, caption, page number), and a separate list of all the tables (table number, caption, page number).
Chapter 1: Introduction	The introduction has several purposes. One is to set the scene for the project by giving a little relevant background information – try to grab the reader's interest early. Another is to clearly elucidate the aims and objectives of the project and the constraints that might affect the way in which the project is carried out. If the project involves the solution of a specific problem or the production of a specific system this should be clearly specified in an informal way. Finally, the introduction should summarise the remaining chapters of the report, thereby giving the reader an overview of what is to come.
Chapter 2: Literature survey	<p>Depending on the type of the project, relevant literature may be hard to find, and a technology survey/review of relevant mathematics/review of similar software tools may be more appropriate – you should discuss this with your supervisor.</p> <p>A good literature survey should demonstrate your awareness and understanding of the background literature to your topic. It should begin by setting the proposed research in a wide context, and progress to a more detailed account of the most relevant work in the area, taking care to include some up-to-date references. Reviewing the literature can help to identify questions and issues that have not yet been answered, ideally questions that will be addressed through your project. You should also critically assess previous work (of course, you need to take care that your criticisms do not reflect a lack of understanding).</p> <p>Think of the review as writing an essay on the background literature for your project. You should not just provide a list of references followed by a short summary of each of them. Instead the review should be organised and structured in a meaningful way, and the themes and relationships between the references identified. You should expect to redraft the review several times in order to arrive at a text that is clearly written, easy to understand, but that displays an in-depth understanding of the topic.</p> <p>It is usual to assume that you are writing for a competent computer science graduate, so mainstream topics do not require explanation. However, any specialist material/concepts relating to your project should be introduced and explained, and suitable references cited.</p>
Chapter 3: Analysis	Detail the aims and objectives of your project and analyse individual parts in detail. The analysis may cover more than is finally implemented. As a result of the analysis, you should state what will be covered by the project and what will not be done and why. Due consideration should also be given to how you will evaluate your work. Evaluation is one of the most important aspects of any piece of work and it should be thought about in the early stages. Consider tests or experiments that can be conducted to establish the success of the work.

	<p>Subsection: Ethical, Professional and Legal Issues associated with project.</p> <p>A clearly-labelled subsection in this chapter should address ethical, professional and legal issues associated with the project:</p> <ul style="list-style-type: none"> - You should indicate whether ethical review of the project was sought, and why (or why not). - You should identify issues in the project that relate to the BCS code of conduct or relevant legislation (e.g., confidentiality, if dealing with an external client).
<p>Chapter 4: Planning</p> <p>(Risk Analysis and Work Plan)</p>	<p>This chapter should:</p> <ul style="list-style-type: none"> - begin with an analysis of risk in the project; include a risk assessment and indicate how risks will be managed (e.g., prototyping, contingency planning). - give a detailed plan of work, including a Gantt chart and a brief description of each activity in the work breakdown structure. Dependencies between tasks should be identified. A full critical path analysis is not required, but time-critical tasks should be identified that are likely to delay the project if they are started or completed late.
<p>Chapter 5: Conclusions</p>	<p>Give a brief summary of the main achievements to date, and a summary of the conclusions that you have drawn from your analysis of the problem.</p>
<p>References</p>	<p>It is very important that you acknowledge the work of others that you use or adapt in your own work, or that provides the essential background or context to your dissertation. The use of references is the standard way to do this. References can be given in IEEE style (bracketed numbers) or Harvard style (name and date). Either is acceptable, but you must be consistent. It is acceptable to include URLs in your list of references, and it is good practice to include a "last date visited" field for these. If you use the LaTeX template, the associated bibliography tool (BibTex) provides an easy way to manage references and ensure that formatting and citations are consistent.</p>
<p>Appendices</p>	<p>These may be provided to include details that are not central to the main report, e.g. a log of project milestones. In particular, if there are technical details of the work done that might be useful to others, but that are not sufficiently important to the project as a whole to justify being discussed in the main body of the dissertation, then they could be included as appendices, (although this will be more important for the final dissertation than for this background report).</p> <p>Any appendices do not count towards the page limit, but equally they are not treated as part of the report for the purposes of assessing it. In other words, there is no expectation that the examiners should read the appendices as part of the assessment process. Hence, it is important that any material which will be significant to judging the quality of the report or of the project as a whole should be in the main body of the report.</p>

What to Hand In

You are required to **submit an electronic copy via MOLE by 3pm Wednesday 15th May 2018 (week 12)**. (the module appears as *COM6905 Research Methods and Professional Issues (SPRING 2018~19)*), and submission is via the *Assessment* link on the left of the screen.

Late Work

Late work will be penalised according to standard University procedure (5% of the mark is deducted per working day late; work will be awarded a mark of zero if more than 5 days late). See <http://www.dcs.shef.ac.uk/intranet/teaching/public/assessment/latehandin.html>.

Assessment

Your report will be examined independently by your supervisor and second examiner. You will receive feedback from both markers, and a combined mark that constitutes 80% of the assessment for the COM6905 module.

Some of the questions that the supervisor and second examiner will consider in marking the report are:

- Is the project clearly defined?
- Are the objectives attainable?
- Does the student understand the key concepts related to the project?
- Does the student have a clear understanding of what is required in order to produce a satisfactory final dissertation?
- Is progress so far satisfactory?
- Does the literature survey synthesize information from several sources, and is it sufficiently critical?
- Are sources suitably referenced and is the bibliography/list of citations adequate?
- Have potential problems and possible processes/tools/techniques been identified?
- Is the writing clear, precise and of the standard expected for a MSc degree in science or engineering?
- Have legal and ethical issues arising from the project been identified?
- Has a risk analysis been performed, and is there a plan for managing risk?
- Is the plan of action realistic and sufficiently detailed?

Feedback

Feedback will be returned on the following categories:

Student performance (supervisor only): Covers the engagement of the student with the project, attendance at and preparation for project meetings, and the extent to which the student requires close supervision.

Amount of work completed: The amount of work done in the project so far, in relation to what could be reasonably expected to be done on the particular project, given its level of difficulty and the time available.

Literature survey: This category will be used to assess the critical evaluation of the literature, as well as other available tools and methodologies. The balance between breadth and depth will be judged, as well as the evidence of critical thinking.

Analysis: Assesses your analysis of the problem; specifically how you have identified project aims, deliverables, and a scheme for evaluation, and how these are justified based on previous work. **Also assessed is the extent to which legal and ethical issues have been identified and discussed.**

Planning: Covers the completeness of the risk assessment and project plan, the quality of any planning diagrams (such as a Gantt chart), and whether there are sensible provisions for project dependencies and risks.

Report presentation: The readability of the report and the precision of its language will be judged here, along with the overall presentation: sensible notation, diagrams, layout, headings, and referencing.

The table on the next page gives an indication of how various aspects of the quality of your report map to mark range:

90-100	Indicates that the work satisfies all described under 70-79 below, and is also original and of publishable quality.
80-89	Satisfies all described under 70-79 below, and has some originality, and with further work could be of publishable quality.
70-79	Sensible subdivision of material into chapters and sections to produce a coherent and well-balanced report. Good introduction chapter that puts the case for the project and its aims. Review is well researched. Thorough understanding of subject. Focussed on topic. Factually correct. Addresses issues critically. Analysis of problem area is in-depth and requirements of project are clear. Project evaluation is addressed with insight and testing is properly covered. Legal and ethical issues have been identified. Design is precise, methodical and shows some flair. Thorough risk analysis and detailed project plan, with clear diagram indicating dependencies and contingencies. Conclusions are correct and show ability to summarise with acumen. Diagrams/math tables should be relevant and clearly presented. Unambiguous and grammatically correct English. Perfection is not essential. Some originality or innovation.
60-69	Well-organised with a sensible subdivision of material into chapters and sections. Decent introduction that generally makes the project aims clear. Review shows some evidence of research. Good understanding of subject. Predominantly focussed on topic. Largely factually accurate. May contain some irrelevant material. Analysis is generally good and project requirements are clear. Most legal and ethical issues have been identified. Decent attempt at addressing issues of testing and evaluation. Design generally shows clarity. Includes a project plan, with Gantt chart or equivalent. Decent risk analysis and planning for contingencies. Conclusions are competently covered. Diagrams/math tables should be relevant and clearly presented. Predominantly unambiguous and grammatically correct English.
50-59	Logical structure with sensible subdivision into chapters and sections. Introduction chapter is generally ok. Review is competent but generally exhibits a basic understanding of the subject. Largely focussed on topic. Largely factually correct, but may contain some irrelevant material or miss some important points. Analysis and requirements are adequate. Some legal and ethical issues have been identified. Evaluation and testing is covered. Design lacks depth. A limited project plan, some attempt to analyse risk and plan for it. Conclusions may ramble in parts. Some use of diagrams/math tables, but may be poorly organised. Clearly written overall, but may be ambiguous in places and show lapses of grammar.
40-49	Subdivided into chapters and sections, but not particularly logical in flow of material within chapters. Introduction chapter is unclear. Review, analysis and requirements show an incomplete understanding of subject. Poorly focussed with either irrelevant material or a failure to appreciate important points. Some material may be incorrect. Analysis and requirements are rather general. Many legal and ethical issues have been missed. Little or no attempt to describe plan for implementation of the project. Poor risk analysis, little attempt to plan for contingencies. Poor or little use of diagrams/math tables. Style and grammar poor.
30-39	Some attempt, but unfocussed with high content of irrelevant material. Some material may be incorrect. Poorly organised with major omissions and/or major errors. Inadequate style and/or grammar.