UNIVERSITY OF LINCOLN

Lincoln School of Computer Science

Assessment Item Briefing Document

Title:	**Indicative Weighting:**
CMP 9056M – MComp Research Project **Assignment 2 – Project Report and viva**	**85%**

Learning Outcomes:

On successful completion of this assessment item a student will have demonstrated competence in the following areas:

LO2 – apply practical and analytical skills in the design, specification and/or implementation of an artefact that represents an output from at least two stages of the software development life cycle and that reflects current research within the field.

LO3 – demonstrate self-direction and autonomous working in developing a solution to the project.

LO4 – prepare a formal technical report that describes, justifies, evaluates and contextualizes work undertaken in a significant M Level project. Support this written report with a project demonstration that serves as a viva for this module.

Requirements

The project solution (or artefact) that you produce, and the report that describes the processes you followed to produce it, are complementary. To gain a high mark, your solution and the report that describes it must be of the highest standard. Assignment 2 takes the form of substantial written report which shows how the plan/proposal submitted for assignment 1 was executed. The viva for this assignment is a demonstration given to your first and second marker where you demonstrate the artefact, or project solution, that has been described in your project report.

Failure to engage in the viva will mean your project will not be formally marked. Your project report cannot be marked until after the viva.

The emphasis for this assignment, as with assignment 1, is on working independently, with the support of a supervisor, to achieve a set aim. Students work independently to fulfil the project goals that they set out in their proposal. Through this process, students are expected to demonstrate the application of practical and analytical skills, innovation and/or creativity, and the synthesis of information, ideas and practices to generate a coherent problem solution. The generation of an artefact that represents an output from two or more stages of the software development life cycle is a key requirement of assignment 2.

The Project Report should stand alone without the need for the reader to refer back to the project proposal. It must include the following sections:

1. **Abstract**.

An abstract presents a brief summary of the project in its entirety and is used to help the reader quickly ascertain the project's purpose, context and outcome. The purpose of the abstract is to enable readers to have a view of what the report is about without having to read the entire document. The abstract is usually written when the project report has been completed and goes at the beginning of the document. See academic papers for examples of what this should look like.

2. **Background and in-depth literature review**.

The literature review is an essential requirement of any academic project. An initial literature review formed part of the project proposal. A more comprehensive review of the literature will provide further background to the project and can include material that formed the initial literature review – the project report should stand alone without the need for the reader to refer back to the project proposal. This section establishes what you intended to do, and shows the reader that what you have done is the result of academic study, rather than an unfounded whim. The literature review is where you contextualise your work with respect to existing published literature. If you are undertaking an external project, you should also describe the client and outline the nature of their work or business, and explain how the artefact will address the client's needs.

A literature review is an account of what has been published on a topic by accredited scholars and researchers. In writing the literature review, your purpose is to convey to your reader what knowledge and ideas have been established on your chosen topic, and what their strengths and weaknesses are. As a piece of writing, the literature review must be defined by a guiding concept (e.g., your research objective, the problem or issue you are discussing). It is ***not*** just a descriptive list of the material available, or a set of summaries.

3. **Methodology**.

This section will cover a number of sub-sections – where appropriate. Not all projects will require every section – discuss this with your supervisor. Your supervisor will recommend the most appropriate structure for this section of your report. The key thing is that you demonstrate critical awareness of all of the processes that you have employed in your work.

3.1 **Project Management**.

Some awareness of project management should be demonstrated in all projects. This section should outline the nature of your project and the specific characteristics that need to be considered in determining what project management methodology you should use. You should identify the specific demands of your project in terms of project management, and support your rationale for the selection of a methodology with appropriate, recent academic references.

3.2 **Software Development**.

There should be a methodological analysis of software development approaches used. The determining factors for selection will, amongst other things, be the particular characteristics of the software to be developed, the nature and predisposition of the client (if applicable) and the computer environment requirements.

It is important to note that what is NOT required here is a pedestrian account of popular software/

IS development methodologies or a simplistic review of their strengths and weaknesses. You are to work from the specific requirements of your project and explain how these might determine approaches for software /IS methodologies. Where relevant, you should give serious thought to the proper design of research and requirements capture approaches. This may include surveys, questionnaires and interviews.

You should identify the specific demands of your project in terms of software development, and support your rationale for the selection of a methodology with appropriate, recent academic references. DO NOT produce a simple discussion of software development, or explain how typical methodologies work – (spiral, waterfall, etc.) – your first and second markers already know this.

3.3 **Toolsets and Machine Environments**.

Toolsets refer to both software development and to project management, so the coverage should address both. This section will outline the tools for software development and project management process; it will make appropriate comparisons between tools available and argue for the most appropriate selection based on metrics, possibly a matrix diagram and other criteria.

The report will discuss possible machine environments under which the artefact might be required to operate and through analysis, comparison of features and possible user requirements a determination of the chosen environment (s) will be made. You should identify the specific demands of your project in terms of software development, and support your rationale for the selection of a methodology with appropriate, recent academic references.

DO NOT justify the grounds for using specific toolsets and environments simply because you know them well or have developed skills already. This project gives you the opportunity to challenge yourself.

3.4 **Research Methods**.

You should include a section that investigates the types of research methods necessary to validly answer the research question that your project addresses. You should cite relevant sources to justify your choices.

For example:
Were quantitative or qualitative research methods more appropriate? Why?
Do you need to have objective, observable data, or subjective, self-reported data? Or a mixture of both?
Should the form of your data be nominal, ordinal, interval or ratio?
How do you intend representing your results? – this will have an impact on your study design.
If you are doing an experimental analysis:
What are your independent and dependent variables?
Is a between-groups or within-groups approach most appropriate?
Do you need to statistically analyse your results?
Consult your supervisor when drawing this section up.

4. **<u>Design, Development and Evaluation</u>**.

This section of the report will vary significantly in both structure and content, depending on the type

of project you are undertaking. For example, a Games project may include a Game Design Document. However, it must be noted that if your project contains significant software development work, this should be presented in the structure expected of a formal development report. If your project involves an experimental evaluation – especially if that evaluation involved human participants – you are expected to write this work up in the format expected of a scientific research report. Some projects will include both software development and experimental evaluation with human participants. In this case, you are expected to discuss both procedures with sufficient detail.

4.1 **Software development projects**.

For projects that involve significant software development components, it is expected that you discuss:

1. Requirements elicitation, collection and analysis
2. Design
3. Building or coding
4. Testing
5. Operations and maintenance

4.2 **Research projects**.

For projects that include primary research components it is expected that you present this work in a manner appropriate to a scientific report.

1. Participant recruitment
2. Evidence that ethical procedures have been followed. Include informed consent documentation.
3. Study design (short summary of research methods section) – including hypotheses.
4. A detailed description of the procedure that each study participant experienced. Include every detail that would be needed in order to replicate your work.
5. Results of experiment – present in the format of a scientific report.
6. Analysis of results. Consider the results of your work with respect to both your own specific hypotheses and wider context identified in your literature review.

5. **Project Conclusion**.

This section is where you report your findings, along with the answer(s) to any research question(s) you may have posed in your introduction. The conclusion should be understandable not only by the person who writes it, but by the person who just wants to have the general picture of the work and its results. It is very important to base your conclusions upon issues that have been raised in your introduction, and then investigated in your methodology and evaluation. In the introduction, the author of the work presents the main ideas that are to be examined, developed and discussed in the project. Therefore, in the conclusion the necessary responses to the questions or problems or requirements listed in the introduction are shown and discussed. Therefore, the structure of the conclusion in a project is governed by the structure of introduction.

Evaluation: Your artefact is the key deliverable in the project, so there must be an evaluation carried out to determine how effective and efficient your "solution" is at addressing the problem identified. Appropriate metrics should be considered for this evaluation along with an appropriate audience(s). Changes or amendments that may be required to the original delivered artefact should be discussed here, pointing out how and why these changes might have been effected if time or opportunity presented itself.

6. **Reflective Analysis**.

Finally, the report should conclude with a critical reflection on the process of completing the project. How did things go? What might have been done differently, given 20:20 hindsight? What went well and why? What went badly, why was that and how were any problems addressed? What more could have been done, had time and circumstances not been constraints? Consideration of the theory versus the practice in terms of methodological process requires discussion. This is the only section of your report that can, justifiably, be written in the first person.

All of the above is supported by a demonstration of your project solution. This demonstration serves as the viva for this module and failure to engage in it will mean that your project cannot be formally marked.

7. The report will conclude with a **List of References**, in accordance with the University of Lincoln Harvard Referencing Guide. Any **Appendices** will appear after the List of References.

8. Many student projects have a brief section labelled 'Acknowledgements' at the beginning. This gives students a place to acknowledge, by name, anyone who has helped them complete their project. Don't try to emulate an Oscar winner's speech here – it should be a short paragraph. You may, however, want to thank family and friends who have helped you. It is also traditional (and shows good manners) to thank your supervisor and any other staff members who have helped you with your project.

Useful Information

Word Count: For a dissertation of this magnitude, a rough rule of thumb for word count is 15,000 – 20,000 words. Remember, this a guide to help you understand roughly the amount of work expected. You won't be marked down specifically for going over 20,000 or under 15,000 words. However, if your report is significantly above or below those marks, you may have done something wrong – e.g. left something out, or included things that should, perhaps, be in an appendix (or even several appendices). Please discuss this with your supervisor in your regular weekly meetings.

This assignment must be presented according to the Lincoln School of Computer Science guidelines for the presentation of assessed written work.
Students should ensure that they have a clear understanding of the grading principles for this component, as detailed in the accompanying Criterion Reference Grid.
If students are unsure about any aspect of this assessment component, they should seek the advice of their supervisor (in the first instance) or, if the supervisor is unclear, that of a member of the delivery team.

Submission Instructions

The deadline for submission of this work is included in the School Submission dates on Blackboard.

An electronic submission is required for this assignment.

DO NOT include this briefing document with your submission.